WHITE PAPER

ON THE BUSINESS ENVIRONMENT IN CHINA

2021

中国营商环境
白皮书

AMCHAM
SOUTH CHINA

THE AMERICAN CHAMBER OF COMMERCE IN SOUTH CHINA

华 南 美 国 商 会

2021 White Paper
on the Business Environment in China

2021年中国营商环境白皮书

The American Chamber of Commerce in South China
华南美国商会

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华南美国商会

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Contents
目录

President's Message

Our *2021 White Paper on the Business Environment in China* is our 14th such endeavor, and I believe it to be our strongest. It has taken more than six months and a team of highly accomplished experts from both sides of the Pacific Ocean, including seven who hold doctoral degrees, as well as respected professors, business executives and legal and financial scholars. As a policy document—a structured argument in favor of choices we believe will benefit the Chinese economy and the foreign investors who have contributed to its historic growth—it is required to present a reasoned, factual foundation for what in the end is a rhetorical goal. Our purpose is to win the respect of our readers before winning their opinion.

You will note that, in pursuit of this goal, we have attempted to compile a well-balanced and neutral framework for our arguments. This framework is extensively researched and exhaustively cited. It does not represent the opinion of this Chamber so much as the condensed—distilled—opinion of a diverse cross section of interested parties. Both domestic and international media are represented, as are academics and statisticians from around the world.

In many ways, 2020 was a disappointing year that will long be remembered. We had anticipated the underlining theme of this year's book to be one of progress on a Phase II if not Phase III deal between the US and China. Instead, we had to face the undisputable consequences of COVID-19. Many of us tragically lost loved ones and friends. We also had to deal with the repercussions to our businesses as we continued to grieve.

I believe that there is much to be proud of as we enter 2021. Like a phoenix, we have risen again from what may have been certain catastrophic circumstances. We made it through together by helping each other. China was the first country to get back to business, but it was not easy. For example, we worked feverishly with government officials and other institutions such as the Guangdong Department of Commerce and Foreign Affairs Office (FAO) for a speedy return of our member company executives as well as teachers and administrators of international schools back to China. Our challenge was getting people back to work, and we succeeded. Although we were all hurting, AmCham South China also was able to raise millions of dollars in cash and supplies for those in need for we understand that doing what is best for our community is good for our businesses.

Ultimately, our success depends on the hard work and contributions of our membership. At the onset of COVID-19 AmCham South China members were quick to jump into action and by mid-February 2020 had already donated US$38 million in cash and 1.05 million US dollars in-kind to aid Wuhan, Hubei, and other areas in need. AmCham South China members also donated millions of US dollars to the last two Sichuan earthquakes in 2008 and 2013 (2008: US$ 35 million; 2013: US$ 14 million). I was delighted to see the 550 members and dignitaries attending our 2020 Hope Ball take time at the party to donate cash to the Guangzhou Women and Children's Hospital. All the money, which was donated directly to the hospital foundation, is never touched by our Chamber and goes directly to pay for immediate lifesaving surgeries for poor and orphaned children. In the past ten years we have raised over 5,172,000 RMB in cash that literally saved the lives of 221 orphaned children who otherwise would not be alive today. We have also raised 12,945,811 RMB in in-kind donations which, together with investments we have introduced, have raised four impoverished villages and tens of thousands of poor villagers above the poverty line. The philanthropic program has been wildly successful. I always believe that charity brings hope for tomorrow and we can always do more.

Economic shocks like the coronavirus pandemic of 2020 only arrive once every few generations, and they bring about permanent and far-reaching change. Measured by output, the world economy is well on the way to recovery from a slump the likes of which barely any of its 7.7 billion people have seen in their lifetimes. Vaccines should accelerate the rebound in 2021. But other legacies of COVID-19 will shape global growth for years to come. Some are already discernible. The takeover of factory and service jobs by robots will advance, while white-collar workers get to stay home more. There'll be more inequality between and within countries. Governments will play a larger role in the lives of citizens, spending—and owing—more money. Nevertheless, policy makers must move decisively. Although the world economy is already growing again following the 4.3% contraction of 2020, the pandemic caused a heavy toll of deaths and illness, plunged millions into poverty, and may depress economic activity and incomes for a prolonged period. To overcome the impacts of the pandemic and counter the investment headwind, there needs to be a major push to improve business environments, increase labor and product market flexibility, and strengthen transparency and governance. China's economy is expected to expand by 7.9% in 2021 following 2% growth last year. Excluding China, emerging market and developing economies are forecast to expand 3.4% in 2021 after a contraction of 5% in 2020. Among low income economies, activity is projected to increase 3.3% in 2021, after a contraction of 0.9% in 2020. According to the United Nations and the World Bank, the pandemic is expected to leave long lasting adverse effects on global activity with a likely slowdown in global growth stretching through the next decade, due to underinvestment, underemployment, and labor force declines in many advanced economies.

The global economy could be heading for a decade of growth disappointments unless policy makers put in place comprehensive reforms to improve the fundamental drivers of equitable and sustainable economic growth. Policymakers need to continue to sustain the recovery, gradually shifting from income support to growth-enhancing policies. In the longer run, in emerging market and developing economies, policies to improve health and education services, digital infrastructure, climate resilience, and business and governance practices will help mitigate the economic damage caused by the pandemic, reduce poverty and advance shared prosperity, while in the context of reduced public spending and elevated debt, institutional reforms to spur organic growth are particularly important.

According to the results of the AmCham South China's 2021 Special Report, our annual State of Business Study, the opportunities outweigh the challenges. As the first major economy to show a recovery, China has successfully navigated the extreme hardship brought by the COVID-19. AmCham South China members have withstood the impact to various degrees. While a combination of factors including the coronavirus pandemic severely impacted the global economy in 2020, only a slight decrease in reinvestment from profits in China was realized, with 17% of the studied companies having reduced their reinvestment quota in 2020 in China compared with 2019. Factors including huge market potential, preferential policies and uncertainties of pandemic in other countries, have whetted companies' interest to increase investment in China or shift investment to China. Furthermore, a vast majority of companies still have expansion plans in China in the next three years. Nearly all the studied companies express their willingness to stay in China despite US-China trade friction. Compared to the previous year, more companies firmly believe that they will see further improvement in US-China relations in 2021. American business has obviously not given up on China. Our governments must get back to the table immediately for a new Phase II deal. As Henry Ford once said, what is good for business is good for America.

An interesting finding of the 2021 Special Report is the direct connection between the reduced number of expatriate executives in China and the massive reduction in the number of very large planned reinvestments. While total dollar amount of budgeted reinvestments has held steady due to the increase in number of large, medium and small reinvestment projects (between 1 million and 250 million US dollars each), the number of very large foreign planned reinvestment projects involving 250 million US dollars or more each have reached the lowest levels in several years (a 4/5th reduction year on year for all foreign companies and nearly 3/4th for US companies). We predict that this will severely impact China's manufacturing output two to three years from now. The last time a similar situation happened was in 2016. Our 2017 study predicted the pre COVID-19 slowdown in China's economic growth in 2018 and 2019 (GDP growth dropped to 6.6% in 2018 and 6.1% in 2019).

The world's two largest economies have been locked in a bitter trade dispute since the beginning of the Trump presidency. The dispute has seen the US and China impose tariffs on hundreds of billions of dollars worth of one another's goods. President Trump has long accused China of unfair trading practices and intellectual property theft. In China, there is a perception that America is trying to curb its rise as a global economic power. Negotiations are ongoing but have proven difficult, but this remains necessary. Both sides signed a preliminary agreement widely known as the Phase I Deal in January of 2020. It has now been over a year and some of the thorniest issues remain unresolved. Now going into a new administration in the US, uncertainties around the trade conflict continue to hurt businesses and weigh heavily on the global economy. The Trump administration raised tariffs on a range of Chinese imports and implemented harsh sanctions against Chinese companies such as Huawei Technologies Co., citing national security, leading to a deterioration in relations. The relationship between China and the US has fallen to its lowest level since Beijing and Washington established formal diplomatic ties over 40 years ago, with the two countries clashing on a range of issues including trade and the handling of the Covid-19 pandemic. But many business leaders expected the Biden administration to maintain a tough stance on China when it comes to access to hi-tech equipment and components. President Biden may have inherited the trade conflict with China that now involves over $700 billion in bilateral trade, but he owns it now.

The tariffs have got to go, but Biden has already announced that he will not immediately cancel the trade agreement that Trump struck with China nor take steps to remove tariffs on Chinese exports. Biden said he would pursue policies targeting China's "abusive practices," such as "stealing intellectual property, dumping products, illegal subsidies to corporations" and forcing "tech transfers" from US companies to Chinese counterparts. But he also stressed the need to develop a bipartisan consensus at home and focus government efforts on investments in research and development, infrastructure and education that would allow companies to compete better with Chinese rivals. Don't expect a new deal with China in the first 100 days of the new presidency. According to Reuters, Biden said, "I want to make sure we're going to fight like hell by investing in America first." He wants to talk with American allies before proceeding. "The best China strategy, I think, is one which gets every one of our — or at least what used to be our — allies on the same page."

Chinese foreign ministry spokeswoman Hua Chunying responded to Biden's comments by reiterating a long-standing position that trade between the two countries should be mutually beneficial. She said, "Trade issues should be dealt with in the spirit of mutual respect and equal consultation." We agree with the leaders from both countries, but governments do not run on a linear plane. Both sides must return to the table. Both sides want a strong trade deal and international business should not have to wait. It's time to get busy.

Finally, after explaining how we believe the world sees China's economy, we make a single recommendation: continue moving forward, and continue offering the Chinese people opportunities for improved health, wealth and happiness. This opinion is, necessarily, transformative. We seek not to conserve what came before but rather to build newer, fairer and more profitable structures upon that robust foundation. This is a strategy of synthesis, and it is one with which we hope you will agree whole-heartedly.

With best regards,

Dr. Harley Seyedin
President, American Chamber of Commerce in South China
Winner of the 2017 Oslo Business for Peace Award (together with Elon Musk) , *awarded by the Award Committee of Nobel Laureates in Peace and Economics*
Visiting Scholar, Jinan University, Guangzhou, PRC
President, Allelon Energy Partners

会长致辞

从华南美国商会第一次发布年度《中国营商环境白皮书》开始，至今已是第十四个年头。我相信今年的"白皮书"比以往更出色。该"白皮书"的撰写共耗时六个多月，并由来自太平洋两岸的杰出专家组完成，其中包括七位拥有博士学位的专家以及受人尊敬的教授，企业高管以及法律和金融学者。我们的"白皮书"解读中国在过去一年的各项政策，以逻辑严谨的论述结构，提出有利于中国经济和外国投资者的建议—中国经济已经取得了历史性增长，对此外国投资者可谓功不可没。在我们的"白皮书"得出结论之前，它需要呈现清楚的事实和合理的逻辑。我们的目标是先赢得读者的尊重，然后再得到他们的认同。

为了实现这个目标，我们构建了一个平衡中立的论述框架。在此基础上，我们做了大量的调查研究，并详尽引用了各方面的观点和数据，使我们的论述有理有据，真实可靠。与其说这本"白皮书"代表了华南美国商会的观点，不如说它浓缩了众多利益群体的意见并加以提炼。本"白皮书"参考的信息和数据来源覆盖面极广，既包括国内外的媒体报道，也包括来自全世界学者和统计学家的意见。

从多个方面而言，2020年令人失望，也令人难忘。我们原计划将中美第二或第三阶段的谈判进展作为本书的主题。谁料新冠疫情爆发，引发一系列严重后果，也打乱了我们原有的节奏。许多人痛失挚爱亲友。在悲痛之余，还要应对疫情对业务造成的冲击。

我相信，随着2021年的到来，会有更多值得我们自豪的事情发生。我们挺过这次灾难，再次崛起，犹如凤凰涅槃。我们齐心协力，互伸援手，战胜危机。中国成为首个实现复工复产的国家，这背后是说不尽的艰辛。例如，为了让会员企业的主管以及国际学校的老师和管理人员尽早回到中国，我们全力配合广东省商务厅及外事办公室等政府部门的工作。当时，要让身在他国的人员重返中国、回归工作岗位并不容易，但我们做到了。尽管大家都身处困境，华南美国商会仍成功募得数百万美元的现金和物资，将其送到需要的人手中，因为我们深知，贡献社区即造福企业。

最终，我们的成功取决于会员的努力和贡献。新冠疫情爆发之初，华南美国商会的会员迅速行动，到2020年2月中旬已捐献了3800万美元的现金和价值105万美元的物资，用于援助湖北武汉及其它需要帮助的地区。我们的会员还分别在2008年汶川地震和2013年雅安地震捐赠了数百万美元（2008年为3500万美元；2013年为1400万美元）。2020年共有550名嘉宾参加我们举办的冬季舞会，我很高兴看到大家能够慷慨解囊，为广州市妇女儿童医疗中心捐赠善款。所有的善款都直接捐给医院基金会，用来支付贫困孤儿的手术费用。在过去的十年中，我们已经筹集了超过5,172,000元人民币的现金，挽救了221名孤儿的生命。我们还筹集了价值12,945,811元人民币的物资，再加上我们的投资，已帮助四条贫困村庄和数万贫困村民脱贫。这些慈善项目都取得了巨大的成功。我始终相信，慈善事业会为明天带来希望，而我们能做的远不止这些。

2020年新冠疫情对经济造成百年一遇的冲击，产生了深远广泛的影响。若以产出总量衡量，全球经济正逐渐从衰退中复苏。全球77亿人中，也许没几个人曾经历过这种程度的衰退。疫苗的上市将加速2021年的经济复苏。但新冠疫情带来的其它影响将决定未来数年的全球增长趋势。有些影响早已显现。机器人将进一步取代工厂和服务岗位，白领们会更多地居家办公。国家之间和国家内部的发展不平衡状况将进一步加剧。政府将在保障民生方面发挥更大的作用，这意味着更多的财政支出和更高的负债率。尽管如此，政策决策者必须果断行动。虽然全球经济在经历了2020年4.3%的萎缩后已实现再次增长，但疫情造成死亡和患病人数攀升，令数百万人陷入贫困，还可能长期抑制经济活动，导致收入减少。为克服疫情造成的影响，应对投资受阻，必须大力改善营商环境，提升劳动力和产品市场的灵活性，提高透明度和治理能力。中国经济继去年2%的增长过后，有望在2021年实现7.9%的增长。2020年，中国以外的新兴市场和发展中经济体经历了5%的萎缩，有望在2021年实现3.4%的增长。低收入国家2020年的经济萎缩了0.9%，预计在2021年增长3.3%。据联合国和世界银行报告，疫情可能对全球经济活动造成长期持续不利影响，且由于许多发达国家出现投资乏力、就业不足和劳动力减少等情况，未来十年全球的增长速度极有可能持续放缓。

除非政策决策者及时针对根本要素进行全面改革，推动合理经济可持续增长，否则，全球经济未来十年的增长状况将令人失望。政策决策者需要维持经济的复苏态势，逐渐将政策重心从保收入转移至促增长。长期来看，新兴市场和发展中国家推行改善卫生和教育服务、加强数字基础设施建设、提升适应气候变化能力以及优化商业和治理实践等政策有助于减轻疫情造成的经济损失，

减少贫困人口，促进共同繁荣，而实行体制改革，刺激有机增长，对于解决公共支出减少和债务高企等问题尤为重要。

华南美国商会发布的《2021年华南地区经济情况特别报告》指出，机遇大于挑战。作为首个展现复苏迹象的主要经济体，中国早已成功度过新冠疫情带来的严峻危机。华南美国商会的会员企业也经受住了不同程度的冲击。虽然2020年全球经济深受新冠疫情等因素的影响，但在华再投资盈利只出现略微下降，17%的受访企业2020年的再投资额比2019年有所减少。在中国巨大的市场潜力、各种优惠政策和其他国家疫情的不确定性等因素的推动下，外国企业加大在华投资力度或将投资重心转移到中国。此外，绝大多数受访企业仍计划在未来三年内扩大在华业务。尽管中美关系剑拔弩张，几乎所有受访企业都表示愿意留在中国。与去年相比，有更多企业坚信中美关系会在2021年有所改善。显然，美国企业并未放弃中国。两国政府必须立即重回谈判桌，达成全新的第二阶段协议。正如亨利 · 福特所言，对企业有利即对美国有利。

《特别报告》指出，在华外籍高管数量的减少与计划再投资特大项目的大幅减少存在着直接联系。大中小型再投资项目（100万美元至2.5亿美元）增加，在华再投资预算保持稳定，而涉及2.5亿美元以上的特大型再投资项目却达到了近年来的最低值（所有外资企业同比减少4/5，美资企业减少近3/4）。我们预测，这将对中国的制造业产出造成严重的影响，该影响或将持续两到三年。上一次类似情况发生在2016年。《2017年华南地区经济情况特别报告》预测，在疫情爆发之前，中国经济将在2018年和2019年出现放缓（GDP增长率在2018年降至6.6%，在2019年降至6.1%）。

自特朗普上台以来，这两个全球最大经济体便陷入了一场激烈的贸易争端。中美两国互相向对方价值数千亿美元的产品征收额外关税。特朗普总统长期指责中国的不公平贸易和知识产权剽窃行为。中国人则认为美国在试图遏制中国崛起成为全球经济大国。双方正在进行谈判，这个过程非常艰难，但很有必要。2020年1月，双方签署了一份初步协议，即广为人知的第一阶段协议。距离那次谈判已过去一年，还有一些最为棘手的问题仍未解决。如今，美国迎来新任总统，有关中美贸易摩擦的不确定性继续对企业造成伤害，全球经济承压严重。特朗普政府对一系列中国进口产品加征关税，还以国家安全为由对华为等中国企业进行严厉制裁，导致中美关系迅速恶化。自40多年前中美关系正常化以来，中美关系首次跌入最低谷。两国在贸易和应对新冠疫情等问题上产生严重分歧。许多企业领袖认为，在获得高科技设备和部件的问题上，拜登政府将维持对华强硬态度。拜登总统可能已决定要在贸易问题上继续与中国纠缠。这场争端涉及的双边贸易额如今已超过7000亿美元。但不管怎样，贸易纠纷这一烫手山芋已经由拜登来接手了。

关税必须要取消。但拜登早已宣布，他既不会立即废除特朗普政府与中国达成的协议，也不会取消对中国出口产品加征的关税。拜登表示，他将出台针对中国“不正当行为”的政策，例如，“剽窃知识产权、产品倾销、对企业进行非法补贴”以及强迫美国企业向中国同行进行“技术转让”等。他还强调，必须推动美国两党达成共识，政府将重点促进研发、基础设施和教育等领域投资，帮助美国企业在中美竞争中胜出。拜登在上任后的第一个百日内不会与中国达成新的协议。据路透社报道，拜登曾说，“我希望优先投资美国，全力制衡中国。”他希望在采取行动之前先与美国盟友进行谈判。“我认为，最好的对华策略是，让所有盟友，或者至少曾经的盟友，和我们站在同一阵营。”

在回应拜登的言论时，中国外交部发言人华春莹重申了中方长期以来的立场，即中美双方的贸易关系应该是互利共赢的。她表示，“应该本着互相尊重、平等协商的精神解决贸易纠纷。”我们对两国领导人的意见表示赞同，但两国政府的行动不在同一平面上。双方必须重新回到谈判桌前。双方都希望达成强有力的贸易协议，国际业务机遇很快就会到来。是时候忙碌起来了。

世界会如何看待中国经济?对此，我们将会做出深度解读。最后，我们提出一条建议：中国要继续在发展的道路上迈进，让中国人民拥有更多机会，创造更健康、更富裕、更幸福的生活。也就是说，中国必须继续进行改革。我们已经取得了举世瞩目的成就，但我们不能固步自封；相反，我们需要在已经创造的坚实基础上，创造更新颖、更公平、更有益的经济结构。这是我们综合各方面意见之后得出的结论，我们相信各位读者也会完全表示认同。

祝好！

哈利·赛亚丁博士
华南美国商会 会长
2017年奥斯陆商业促和平奖 获奖者 (同期获奖者包括伊隆·马斯克)
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暨南大学 访问学者
阿来龙能源 总裁

Part I

Commentary

第一部分

评论

1.1 The Covid-19 Pandemic

From the Beginning

The Covid-19 global pandemic is the most extensive to afflict humanity in a century. A serious crisis for the entire world, and a daunting challenge, it poses a grave threat to human life and health. From the beginning, China launched a resolute battle to prevent and control its spread. China adopted extensive, stringent, and thorough containment measures. 1.4 billion Chinese people have exhibited enormous tenacity and solidarity in erecting a defensive rampart that demonstrates their power in the face of such natural disasters. Having forged the idea that the world is a global community of shared future, and believing that it must act as a responsible member, China has fought shoulder to shoulder with the rests of the world. In an open, transparent, and responsible manner and in accordance with the law, China gave timely notification to the international community of the onset of a new coronavirus, and shared without reserve its experience in containing the spread of the virus and treating the infected (China Daily, Fighting Covid-19).

The outbreak of coronavirus disease (often referred to in the White Paper as Covid-19, coronavirus, or simply Covid) was first reported on December 31, 2019, in Wuhan, China. The virus spread rapidly throughout China over the next few weeks and within a month to several other countries, including Italy, the US, and Germany. Difficulty controlling such aggressive spread resulted partly from the size of Wuhan, which has an official population of over nine million and a transient population of an additional 5.10 million, for a total population of about 14 million people. Wuhan is located in central China and has a wide range of transportation links, including airplanes, trains, interstate buses, and private transportation. In an attempt to reduce virus transmission, on January 23, 2020, authorities locked down Wuhan, but by that time, about five million people had already left. Reasons for leaving included returning to hometowns for the Chinese New Year or leaving for vacation, but some left because of fear of Covid-19. By June 2020, the virus had been identified in every province or autonomous region in China, although the highest number of cases was still in Wuhan. As of January 23, the date of the Wuhan lockdown, the Gansu Provincial Centre for Disease Control and Prevention in Lanzhou, China had identified only two cases of Covid-19 in Lanzhou, the capital of Ganzu Province. One patient had traveled from Wuhan and another had been in contact with persons from Wuhan. Within two weeks, however, 54 cases of Covid-19 in Gansu Province were confirmed, indicating the seriousness of this outbreak and triggering the alarm for the Gansu Province government to make it mandatory that face masks be worn in public places (Fan et al.).

The coronavirus epidemic in China exposed the nation's over-reliance on big hospitals in cities and problems with its response to emergencies. William Hsiao, the K.T. Li Research Professor of Economics at the Harvard T.H. Chan School of Public Health in Boston noted in late February 2020 that China's leaders needed to be more "nuanced about transparency," especially when it comes to dealing with diseases like Covid-19. The Centers for Disease Control and Prevention (CDC) confirmed the first case in the US of the virus on 21 January. The patient had recently returned from Wuhan, China, where an outbreak of pneumonia caused by this novel coronavirus had been ongoing since December 2019. While originally thought to be spreading from animal-to-person, there were growing indications that limited person-to-person spread was happening. It was unclear at this point how easily this virus was spreading between people. The patient sought care at a medical facility in the state of Washington, where the patient was treated for the

1.1 新冠疫情

爆发之初

肆虐全球的新冠疫情是本世纪对人类影响最为深远的事件，给全球带来了巨大危机和严峻挑战，对人们的健康和生活造成严重威胁。中国从疫情爆发之初就果断采取了广泛、严格、彻底的防控措施，阻止病毒感染扩散。14亿中国人民以非凡的毅力和凝聚力，共同对抗病魔，展示了其强大的自然灾害应对能力。中国秉持着全球命运共同体的理念，与世界各国并肩作战，彰显了其负责任的国家形象。中国本着开放、透明和负责任的态度，依法及时向国际社会通报新型冠状病毒的发现，并毫不保留地分享其在阻断病毒扩散、治疗患者方面的经验（China Daily, Fighting Covid-19）。

2019年12月31日，新型冠状病毒肺炎疫情（本白皮书中将其简称为新冠肺炎疫情、新冠疫情或新冠）最先在中国武汉爆发。随后几周新冠疫情迅速席卷全国，并在一个月时间里扩散至意大利、美国和德国等国家。据官方统计，武汉总人口约为1400万，包括900多万常住人口及510万流动人口。这也是这座城市在阻挡病毒蔓延时面临重重困难的部分原因。武汉位于华中地区，机场、火车、长途客运和私人交通等网络四通八达。为阻止病毒扩散，政府在2020年1月23日下令封锁武汉。但在那之前，约有500万人因为度假、回家过年或出于对新冠病毒的害怕等原因早就已离开这座城市。到2020年6月，中国各省份和自治区均出现新冠肺炎病例，而武汉的发病率依然最高。在1月23日武汉正式封城之前，甘肃省疾病防控中心仅在省会兰州发现2例新冠肺炎病例。其中一名患者有武汉旅行史，另一名患者则曾接触过来自武汉的人。然而，仅仅两周后，甘肃省就确认了54例新冠肺炎病例，表明此次疫情的严重性，也促使甘肃省政府采取强制措施，要求民众在公共场合必须佩戴口罩（Fan et al.）。

此次疫情暴露了中国对大型城市医疗设施的过度依赖以及在应对公共突发事件时出现的各种问题。波士顿哈佛大学陈增熙公共卫生学院李国鼎讲座经济学教授萧庆伦（William Hsiao）曾在2020年2月下旬表示，中国领导人应以更加"微妙的方式把握信息的透明度"，尤其是在应对新冠肺炎这类传染性极强的疾病时。1月21日，美国疾控中心（CDA）确认发现美国首例新冠肺炎病例。该患者刚从中国武汉返回，而武汉自2019年12月起就一直笼罩在新冠肺炎的阴霾中。人们起初认为这种病毒只会由动物传染给人类，但越来越多的证据表明病毒正在以"人传人"的方式进行有限传播。那时，病毒"人传人"的传播机制尚不明确。那名病人在华盛顿州的医疗机构就医，接受了针对新冠肺炎的治疗。结合患者的旅行史和身体症状，医护人员怀疑这是一起新冠病例。从患者身上采集的临床样本当晚就被送到疾控中心进行检测，检测结果证实了新冠肺炎诊断（CDC）。

加利福尼亚州一名女性的新冠病毒检测结果为阳性，这是美国首例社区传染病例。社区传染指患者在无疫区旅行史的情况下感染病毒。此后，传染病学家表示病毒可能正悄悄在美国其它地区扩散，并对此感到担忧。美国的联邦检测标准非常严格，因此，其国内新冠检测力度十分有限。后来检测标准才有所放松。由于缺乏可靠的检测结果，美国在追踪病毒扩散链方面进展缓慢。美国疾控中心的新冠检测效果未达预期，且在2月26日之前，疾控中心在全美仅开放了几间州立检测实验室。专家认为，如果不扩大检测范围，人们根本无法得知美国的实际感染病例数量。限制出行、边境封锁和隔离等防控措施阻止了病毒进一步扩散，但随着疫情的地理传播范围持续扩大，这些措施也开始问题频出（McGinley and Johnson）。

目前，科学家们发现，美国出现新冠病例的时间比专家和公共卫生官员此前认为的时间要早好几周，且远早于中国首批新冠病例确诊时间。发表在《临床传染病》杂志上的几篇研究表明，新冠病毒（官方名称为严重急性呼吸系统综合征冠状病毒2, SARS-CoV-2）感染病例在美国出现的时间要早于上述时间。作者表示，"美国可能在2019年12月就出现了新冠病毒感染病例，早于先前确认的时间"。研究证据显示，在卫生官员和公众有所察觉之前，病毒早已在全球悄然扩散。这一发现推翻了之前关于新冠疫情爆发和传播的理论，也表明在1月份发现首例确诊病例之前，美国很可能已经出现了新冠疫情。美国疾控中心分析了美国红十字会在9个州采集的献血样本，研究人员从样本分析结果中得出了以上结论。7389份献血样本中，有106份检测出了新冠病毒抗体。美国疾控中心在2019年12月13日至2020年1月17日期间对血液样本进行了分析。血液样本出现新冠病毒抗体，则表明样本的主人曾感染过这一病毒，从而触发了其体内的免疫反应。早在去年12月13到16日期间，研究人员就从来自加利福尼亚、俄勒冈和华盛顿等地区的39份样本中检测到了新冠病毒。今年1月初，来自康涅狄格、爱荷华、马萨诸塞、密歇根、罗德岛和威斯康星等州的67份样本中也检测出了新冠病毒抗体，那时疫情还未在这些地区大范围扩散。作者表示，尽管有这些发现，但在今年2月底之前，美国不太可能出现大范围的社区感染。"这些结果也显示了血液样本捐献对于新冠病毒监控研究的重要性，"作者说道（Diaz）。

illness. Based on the patient's travel history and symptoms, healthcare professionals suspected this new coronavirus. A clinical specimen was collected and sent to CDC overnight, where laboratory testing yesterday confirmed the diagnosis (CDC).

After a California woman tested positive for coronavirus—the first case of "community transmission" in the US, in which someone is infected in spite of no known link to travel abroad—infectious disease experts expressed concern that the disease was spreading undetected in other parts of the country. Test availability in the US was limited due to strict federal testing criteria (since loosened). As a result, tracking the possible spread of coronavirus in the US was slow due to a lack of reliable testing. A test produced by the Centers for Disease Control and Prevention (CDC) didn't work as expected, and the agency restricted its use until February 26 to only a handful of state labs across the country. Without wider testing, experts believed that it's impossible to know the true number of infected Americans. Containment strategies—such as travel restrictions, border closures, and quarantines helped curtail the spread of coronavirus, but such restrictions become problematic as the geographic spread of the virus expanded (McGinley and Johnson).

Scientists know now that the coronavirus was present in the US weeks earlier than scientists and public health officials previously thought, and before cases in China were publicly identified. Findings published in the journal Clinical Infectious Diseases suggest that the coronavirus, known officially as SARS-CoV-2, had infected people in the US even earlier. "SARS-CoV-2 infections may have been present in the US in December 2019, earlier than previously recognized," the authors said. This discovery added to evidence that the virus was quietly spreading around the world before health officials and the public were aware, disrupting previous thinking of how the illness first emerged and how it has since evolved. It also showed the virus's presence in US communities likely didn't start with the first identified case in January. Researchers came to this conclusion after the CDC analyzed blood donations collected by the American Red Cross from residents in nine states. They found evidence of coronavirus antibodies in 106 out of 7,389 blood donations. The CDC analyzed the blood collected between Dec. 13 and Jan. 17. The presence of antibodies in a person's blood means they were exposed to a virus, in this case the coronavirus, and that their body's immune system triggered a defensive response. Researchers found coronavirus antibodies in 39 samples from California, Oregon, and Washington as early as Dec. 13 to Dec. 16. They also discovered antibodies in 67 samples from Connecticut, Iowa, Massachusetts, Michigan, Rhode Island, and Wisconsin in early January — before widespread outbreaks in those states. Despite the findings, widespread community transmission in the US. was unlikely until late February, the authors said. "These findings also highlight the value of blood donations as a source for conducting SARS-CoV-2 surveillance studies," they said (Diaz).

By the end of February, coronavirus cases were soaring globally. Southeast Asia's foreign ministers met with officials from China and declared their intention to "stay strong!" Yet their hastily called meeting in secretive, socialist Laos suggested not so much resiliency as the need to shore up mutual support. Health experts were widely skeptical of the numbers reported by China's neighbors, and believed the deadly infection was spreading undetected throughout much of Southeast Asia. With infection clusters increasingly sprouting outside of China, many feared these pockets were sustaining the outbreak and pushing the world toward a global pandemic. Strangely absent from the list were Myanmar and Laos, two countries that share borders with China, as well as Brunei, East Timor, and Indonesia—of which the latter had daily, direct flights to the virus epicenter, Wuhan. Every other country in the region — all beneficiaries of Chinese aid, investment, and tourism—had reported cases (Barron).

Around the same time, more than 600 Massachusetts residents who had recently traveled to China quarantined themselves at home while being monitored for the novel coronavirus. The quarantines were voluntary and last 14 days. For the most part, people in America began to stay home. A CDC's warning provided little guidance on what actions people should take to prepare, nor exactly what scenarios to prepare for. It coincided with the news that the Covid-19

截至2月底，全球新冠确诊病例数量仍在持续飙升。东南亚各国的外交部在与中方高层的会晤时，他们一起高喊"加油！"。然而，这些国家在会谈中，社会主义国家老挝表示，与其高喊加油，不如抱团互助。健康专家普遍对中国邻国的确诊病例数据表示怀疑，认为这个致命的传染病毒正在大部分东南亚国家悄然扩散。随着中国境外出现越来越多的感染病例，很多人担心这些"星星之火"会持续燃烧并最终席卷全球。奇怪的是，与中国接壤的缅甸和老挝，以及与疫情的"震中"武汉有直飞航班的文莱、东帝汶和印度尼西亚等国尚未报告确诊病例。其他东南亚国家均报告了新冠确诊病例，这些国家的经济发展都受益于中国的对外援助、投资和游客等（Barron）。

大约在同一时期，马萨诸塞州600多名近期有中国旅行史的居民进行了居家隔离，成为新冠肺炎观察对象。隔离时间为14天，自愿进行。美国大部分地区的人们开始闭门不出。美国疾控中心发布的防疫警告既未提及具体的预防措施，也未说明预防措施的具体应用场景。同时，据新闻报道，意大利疫情爆发，出现300多例感染病例，欧洲的疫情形势首次告急。在这种情况下，爱默生学院取消了前往米兰的交流计划，恩迪科特学院也提出将留美学生接回本国。几百名马萨诸塞州居民进行居家隔离的新闻突出了病毒扩散后人们可能面临的挑战。人们担心，如果疫情爆发，为控制病毒扩散，他们将被迫待在家里。厕纸等家庭必需品被抢购一空。约翰霍普金斯健康安全中心资深学者埃里克·托纳（Eric Toner）博士表示，美国极有可能大规模爆发新冠疫情且情况可能会非常严重。但个体感染新冠的风险很小。托纳说，"新冠病毒对一个健康人的影响可能跟感冒差不多。但其对医疗系统造成的影响堪比严重流感大流行，甚至更具危害性，并且会对老年人和长期看护机构的人群造成威胁。"医院开始推迟择期手术。哥伦比亚大学国家备灾中心主任、健康政策和管理学教授伊文·雷德莱纳（Irwin Redlener）博士提示人们不要过度反应。他强调，现在在家中囤积食品罐头还为时过早，这种做法会"造成不必要的恐慌。"采取过度强硬的措施可能弊大于利。雷德莱纳还说，"如果我们反应过度，可能会给经济和教育带来不良影响，届时情况将非常不妙。"塔夫茨大学弗莱彻学院助理教授、波士顿大学医学院特殊病原体科医学主任纳希德·巴迪利亚（Nahid Bhadelia）曾在非洲埃博拉治疗站工作过，她表示，尽管只有不到0.5%的居民患病，埃博拉疫情仍对西非造成了严重打击。学校和商店关停所带来的影响更为广泛。她说，"这才是疫情真正的可怕之处。它造成的是间接，而非直接影响"（Freyer）。

儿童在新冠肺炎病毒的传播过程中扮演着怎样的角色，是围绕这种新型病毒的众多谜团之一。孩子是无辜受害者，他们是不是被来到家里的病毒感染者感染？或者实际上有一群人在偷偷推动疫情传播？对这些信息的掌握将成为应急响应人员战胜病毒的关键。因为这些信息与政策决策息息相关，而这些政策决策可能会严重影响人们的生活和工作。如果疫情形势恶化，为防止疫情扩散，学校应该停课，而让家长在争抢儿童看护资源和在家带娃之间面临艰难选择吗？长期看护机构应该建议家属不要带孩子前去探望祖父母或其他长辈吗？尽管研究证据表明新冠病毒不会对儿童造成严重影响，但人们有理由相信儿童在病毒传播过程中起到了推波助澜的作用。儿童在流感季节中扮演了极具破坏力的角色。他们会生病，然后将病毒传染给父母、祖父母、老师和看护人员。虽然新冠病毒与流感病毒属于不同的病毒家族，但与同属冠状病毒的非典和中东呼吸综合征病毒相比，新冠病毒的表现与流感更为相似。这让专家怀疑其发病机制是否也与流感相同。学校显然是推动流感大流行的部分原因。一旦新冠疫情在美国和其它发达国家持续蔓延，学校最终会停课。一些初步预测得到了中国提供的数据的证实，这让人放下了心头大石。这些病毒会严重损害老年人的健康。但是，出于某些无法解释的原因，新冠肺炎似乎并不会对儿童的健康造成太大的影响（Branswell and Thielking）。

新冠病毒对老年群体的威胁比对儿童更为致命。全球有5000万人死于1918年流感大流行，其中青少年的死亡率最高。2015至2016年间肆虐巴西的寨卡病毒通过母体入侵胎儿的大脑，对孕妇的影响尤为严重。而新冠病毒似乎对老年群体更具威胁性。到2020年3月，35岁以下的新冠病例非常少见，但40到80岁年龄段的患者死亡率却有所上升。一项针对中国4.5万例确诊病例的调查发现，这些病例中有80%的患者似乎只出现了轻微症状。剩下20%的确诊病例中，患者出现了呼吸困难、肺炎和器官衰竭等中等、严重或危急等不同程度的症状。死亡病例占确诊病例总数的2.3%。2002年，非典疫情在中国爆发，这种疾病由与新冠病毒类似的病毒引起，对60岁以上的老年群体的健康影响最为严重。8个月时间出现了8000多例确诊病例，死亡率接近10%。在中国新冠确诊病例中，1-9岁年龄段病例的比重只有1%，且无死亡病例。10-19岁年龄段的病例比重也是1%。调查发现，70岁年龄段的确诊病例中，死亡病例的比重为8%，80岁以上年龄段的患者死亡率则接近15%。中国疾病预防控制中心的早期数据显示，男性病例比重超过一半，说明男性更易感染病毒。男性确诊病例的死亡率是女性的两倍。男性的高检测率可能是其占确诊病例比重大的原因，但目前的证据还不足以支撑任何结论。也有可能因为中国男性比女性更爱吸烟，导致其更易感染病毒。世界卫生组织2019年的一份调查发现，中国吸烟男性的比例为47.6%，而女性只有1.8%。女性的免疫力也普遍比男性强。心脏疾病、糖尿病和肺部疾病患者更容易罹患严重疾病且死亡率更高。医护人员似乎也面临着一定的风险。截至2020年3月，中国至少有1700名医护人员在治疗患者过程中感染新冠，其中大多数医护感染病例发生在疫情的最初发现省份湖北省。总体来看，近15%的医护确诊病例属于严重或危急病例，5例死亡病例中，包括了34岁的中国眼科医生、新冠疫情的"吹哨人"李文亮。医护人员在提供治疗时没有意识到病人可能会传染自己，没有随时穿戴好防护装备，或者在他们认为安全的环境中，如职工宿舍，被感染却没有意

was gaining strength in Europe for the first time, with an outbreak in Italy affecting more than 300 people. That prompted Emerson College to cancel a trip to Milan and Endicott College to offer to bring the study-abroad students home. The news that hundreds of Massachusetts residents were quarantined at home, however, highlighted the challenges others could face if the virus spreads. People were worried if a coronavirus outbreak occurs, people would be forced to stay home to slow the spread of illness. Family staples such as toilet paper began flying off the shelves. Dr. Eric Toner, a senior scholar with the Johns Hopkins Center for Health Security, said that Covid-19 warned that outbreaks in the United States were likely and could be severe. But the risk to individuals was small. "For an individual who is otherwise healthy, this is probably no more dangerous to you than the flu," Toner said. "But to the health care system this could be really as bad as or worse than a severe flu pandemic and it's a threat to the elderly and people in long term care facilities." Elective surgeries started being postponed. Dr. Irwin Redlener, director of the National Center for Disaster Preparedness and professor health policy and management at Columbia University, cautioned against overreacting. It's too soon to start stockpiling cans of beans in the basement, he asserted; that "creates an unnecessary amount of panic." Taking overly strong measures can do more harm than good. "If we overdo it, the other consequences for the economy and education could be a very unfortunate thing," Redlener said. Dr. Nahid Bhadelia, assistant professor at Tufts University's Fletcher School and medical director of the Special Pathogens Unit at Boston University School of Medicine, has worked in Ebola treatment units in Africa. She noted that Ebola epidemic was devastating to West Africa — even though less than one half of 1% of residents became ill. School and business closings had more far-reaching effects. "That's really what pandemics do," she said. "It's a not a direct impact. It's an indirect impact" (Freyer).

Among the many unknowns about the new virus was the role children played in transmission of the virus that causes Covid-19 disease. Knowing whether kids were innocent bystanders, getting infected if someone brings the virus into their households, or were actually a population that was stealthily driving this epidemic, would give response planners critical ammunition to use in the battle against the virus. At stake were decisions about policies that could be hugely disruptive to families and workplaces. Should schools be closed to slow spread when the virus enters new terrain, forcing parents to scramble for child care alternatives or stay home? Should long-term care facilities discourage families from bringing young children to visit grandparents or other aging relatives? Though the evidence suggested this virus doesn't inflict severe disease on children, there were reasons to believe children were amplifying transmission. It's a role they play to devastating effect during flu season, becoming ill and passing flu viruses on to their parents, grandparents, teachers, and caregivers. While the new virus is from a different viral family, its behavior was more like influenza than its coronavirus cousins, SARS and MERS, making experts wonder if it is doing the same. Flu is clearly driven in part by schools. School closures could become a reality if the US and other advanced countries saw sustained transmission of the virus. Initial predictions, which were backed up by data from China, were reassuring. These viruses were brutal on older adults — particularly the elderly. But for some as yet unexplained reason, children appeared to be spared the worst of the disease (Branswell and Thielking).

Viruses can strike one group more severely than another. The 1918 flu, which claimed 50 million lives worldwide, particularly affected young adults. The Zika outbreak that raged through Brazil in 2015-2016 had an especially devastating effect on pregnant women, attacking the brains of the fetuses they carried. This new coronavirus appeared to get more dangerous with age. There seemed to be this threshold – very few cases were being reported by March 2020 below the age of 35 but people in their 40s to 80s suffered a mortality increase. A study that examined the first 45,000 known cases in China found that 80% of the reported cases appeared to be mild. The other 20% of those diagnosed had moderate, severe, or critical symptoms, including a hard time breathing, pneumonia, and organ failure. About 2.3% of overall infections were lethal. Severe acute respiratory syndrome—commonly

识到。这些情况都使他们更容易成为易感人群。在战斗中倒下对于赢得胜利没有丝毫帮助（Weintraub）。

在这种时刻，重点还是采取防控策略，减缓病毒在全国的传播速度，阻止病毒往境外扩散。如果有确诊患者真的出了国，就要积极追踪密切接触者，并让他们隔离两周。但是，对于何时才能放宽疫情初期开始实施的出行限制，公共卫生专家们持不同意见。有些国家关闭了所有往返中国的航班；美国要求所有曾到过湖北省的公民进行隔离并拒绝任何有中国旅行史的外国公民入境。一些国家还把来自韩国和伊朗的旅客也加入了入境限制名单。这些限制措施取得了一定程度的效果。美国高级卫生官员安东尼・福西（Anthony Fauci）称，“如果我们不采取旅行限制，届时确诊的旅行相关病例会比现在更多。”但许多流行病学家表示，旅行禁令只能为抗疫争取了一点时间，而世卫组织并不建议这种做法。出行限制的代价也很惨重。中国的经济遭到新冠疫情的重创，航空业也深受其害。中国是药品和手机等众多产品的出口大国，国内生产停滞会引发严重的供应链危机。此外，乔治城大学法律中心全球卫生政策专家劳伦斯・戈斯廷（Lawrence Gostin）表示，中国国内的限制措施让很多个体付出了巨大代价（Cohen and Kupferschmidt）。

从最初的爆发开始，新冠疫情改变了科学家就迅速发展的健康危机进行讨论的方式。十年前甚至还没有预印本服务器这个事物，如今科学家们每天都通过预印本服务器发布大量数据，然后在同行评议正式开始之前在Slack和Twitter等平台和媒体上对这些数据进行分析。期刊工作人员加班加点，以极快的速度检查和编辑稿件，随后发表。权威医学期刊《新英格兰医学杂志》（NEJM）曾在一篇探讨新冠疫情的论文提交后48小时内将其发表。许多进化生物学家在预印本和社交媒体平台上分享他们的系统发生树，并对上传到全球共享流感数据倡议组织（GISAID）平台的病毒基因组进行即时分析。这种积极热烈的讨论将科学家之间的合作推上了一个非同寻常的高度，再加上先进的技术支持，科学研究的发展速度较疫情爆发之前更为迅速。人们在疫情爆发的最初两个月内学习总结了大量的新知识，这种情况前所未有。过去疫情爆发时，迟缓的科学研究交流常常阻碍问题解决。为防范竞争对手，研究人员有时会对关键数据严格保密，直到论文被知名同行评议期刊采纳为止。即便研究人员愿意提前分享自己的研究结果，正常情况下，他们也找不到可以分享的平台。通过新兴的在线平台，科学家们可以快速发表最新的数据，并且不管研究结果最终能否发表，他们都能得到一定的积分。截至2020年3月初，已有超过283篇论文发表在预印本资料库，而只有261篇论文在期刊杂志上发表。规模最大的预印本服务器平台包括bioRxiv和medRxiv，每天有约10篇新冠疫情相关论文上传到这两个平台。数据资料如洪水般涌现，给规模有限的运营团队带来了挑战。平台工作人员和外部科学家的主要工作是检查提交的论文并过滤掉伪科学和主观臆测的内容。上传至平台的稿件质量参差不齐。美国国家过敏和传染病研究所所长安东尼・福西（Anthony Fauci）表示，他白天太忙，经常只能大晚上在预印本平台上浏览资料。“快到晚上11、12点了，还有25篇文章没看，”福西说道。“但又不得不看。”不过，有时候，“不知道哪些内容真的可靠，让人感到非常困惑。”记者和普通群众更加难以辨别信息的真假。错误和虚假数据泛滥，一场“信息疫情”正在发生。尽管如此，快速的信息共享还是利大于弊（Kupferschmidt）。

然而，疫情在全球的蔓延趋势似乎开始失控。伊朗全国疫情爆发，波及伊拉克、阿曼和巴林等国。新冠病毒在意大利北部10座城镇迅速扩散之后，当地政府下令封锁了这些地区。一名意大利医生在北欧度假胜地、位于西班牙的特内里费岛确诊感染新冠病毒。奥地利和克罗地亚报告了本国首例新冠确诊病例。与此同时，韩国确诊病例数呈爆发式增长；在对发现新冠确诊病例的邮轮进行隔离检疫后，日本报告了新增病例。新冠病毒那时正无声无息地向更多地区扩散。据伦敦帝国理工学院的模型参数预测，有三分之二的中国输出病例仍未得到检测。然而，世界卫生组织（WHO）仍避免使用“全球大流行”一词来形容正在迅猛发展的病毒危机，还表示这是“在世界部分出现的地区性疫情”。但多位科学家表示，不管怎么称呼都好，遏制病毒传播的窗口期即将关闭。牛津大学流行病学家克里斯托弗・代伊（Christopher Dye）表示，“在我看来，新冠病毒确实已经从中国扩散，且正迅速在更大的范围内传播。我现在更不敢指望能阻止病毒的蔓延了。”美国疾控中心新冠反应行动负责人南希・梅森尼尔博士（Nancy Messonnier）在2月底警告称，新冠疫情对美国人民“日常生活的打击可能会非常沉痛。希望美国民众能够与我们合作，为可能出现的疫情大爆发做好准备”（Cohen and Kupferschmidt）。

全球的政客都将新冠疫情视为敌人，将应对这场全球大流行病描述为一场“战疫”。美国总统唐纳德・特朗普称自己为“战时总统”。纽约州长安德鲁・马克・科莫（Governor Andrew Cuomo）用“军队”来形容医护人员，但很多一线医护人员不赞同这个称呼。随着死亡人数指数增长，数百万人失去工作和生计，“对抗疾病如同进行一场战争，也需要牺牲和战斗”，这个隐喻似乎非常贴切。言语会带来相应的后果，而战争这个词具有沉重的含义。对于打压异议人士并利用公众的恐惧巩固权力的专制政权而言，战争的隐喻非常有用。他们还使用警察和军队力量强制执行隔离、宵禁和其它公共卫生措施。大部分政府已动用了这些力量，很多还总结道，拘捕、罚款和恐吓等惩罚性措施对于保护公共卫生安全非常有必要（Wise）。

真的有必要吗?禁止出行、外出要佩戴口罩、勤洗手以及关停非必要商业活动等旨在保持安全距离的措施确实有必要，但执行的时候可以更加人性化并允许特殊情况的存在，而且如非必要，不应让军队人员参与其中。毕竟，这很有可能是一场抗疫持久战。研究人员已警告称，禁足令和其它社交距离措施可能会断断续续地地持续到2022年。而对一些人而言，要遵守这些规定并不容易。有人甚至都无家可归。对另一些人而言，家里并不安全。在大多数人看来，待在

known as SARS-- was a similar virus that started in China in 2002, also hit people over 60 the hardest. More than 8,000 people contracted the virus over eight months, nearly 10% of whom died. With Covid-19, ages 1-9 accounted for just 1% of all Chinese infections, and none of the deaths. Another 1% were ages 10-19. Of people in their 70s who got the virus, 8% died, the study found, along with nearly 15% of those 80 and older. Early data suggested that men were more vulnerable, as they accounted for just more than half the cases, according to the Chinese Center for Disease Control and Prevention. Infected men died twice as often as infected women. Men might have accounted for more cases because they were tested more often, but the evidence was not strong to make any good conclusions. It was possible that because Chinese men are more likely than women to be smokers, they could be hit harder than women. A World Health Organization study from 2019 found that 47.6% of Chinese men smoke, compared to only 1.8% of Chinese women. Women also generally mount stronger immune responses than men. People with heart problems, diabetes, or lung issues were also at a higher risk for severe disease and death. Health care workers also appeared to be at particular risk. At least 1,700 had become infected by March 2020 while treating patients in China, most in Hubei province where the outbreak began. Overall, nearly 15% of cases among health workers were classified as severe or critical, and five had died, including Li Wenliang, a 34-year-old Chinese ophthalmologist who tried to raise an early warning about the disease. Health care workers were likely to be particularly vulnerable either because they did not realize the person they treated was infectious, did not wear protective gear perfectly with every one of the dozens of patients they treated, or because they were exposed when they thought they were safe, such as in dormitories where they slept. Being run-down from the fight didn't help (Weintraub).

At this point, efforts focused on containment: slowing the spread of the virus within China, keeping it from being exported to other countries, and, when patients do cross borders, aggressively tracing anyone they were in contact with and quarantining those people for two weeks. Public health experts disagreed, however, about how quickly the travel restrictions that marked the first phase of the epidemic should be loosened. Some countries banned all flights to and from China; the United States quarantines anyone who has been in hard-hit Hubei province and refuses entry to foreign nationals if they had been anywhere in China. Several countries also added restrictions against South Korea and Iran. The restrictions worked to some degree. “If we had not put a travel restriction on, we would have had many, many, many more travel-related cases than we have,” Anthony Fauci said. But many epidemiologists claimed that travel bans bought only a little extra time, and WHO didn’t endorse them. The restrictions also come at a steep price. China’s economy had already taken an enormous hit from Covid-19, as has the airline industry. China also exports many products, from pharmaceuticals to cellphones, and manufacturing disruptions caused massive supply chain problems. Furthermore, China’s domestic restrictions came at a huge cost to individuals, says Lawrence Gostin, who specializes in global health policy at Georgetown University Law Center. (Cohen and Kupferschmidt).

From its earliest onslaught, the Covid-19 outbreak transformed how scientists communicated about fast-moving health crises. A torrent of data was released daily by preprint servers that didn’t even exist a decade ago, then dissected on platforms such as Slack and Twitter, and in the media, before formal peer review began. Journal staffers were working overtime to get manuscripts reviewed, edited, and published at record speeds. The venerable New England Journal of Medicine (NEJM) posted one Covid-19 paper within 48 hours of submission. Viral genomes posted on a platform named GISAID were analyzed instantaneously by an assemblage of evolutionary biologists who shared their phylogenetic trees in preprints and on social media. The intense communication catalyzed an unusual level of collaboration among scientists that, combined with scientific advances, was enabling research to move faster than during any previous outbreak. An unprecedented amount of knowledge was generated in the first two months of the outbreak. Sluggish scientific communication has often been a problem during past outbreaks. Researchers sometimes sat on crucial data until a paper was accepted by a high-profile, peer-reviewed journal, because they were

家里是一种无法负担的奢侈。要想在疫情期间拯救生命，不能单纯地“管制不良行为”，还需另谋他法。个人未能遵守防疫规定并不会促使感染率上升，但是，整体的感染情况却反映出社会组织结构的失败。那些没有固定工作的人，以及缺乏防护用品却因为没有带薪病假或是被指派到“关键岗位”而无法待在家里的人，还要奋力保护自己和家人。疗养院、监狱和收容所里的人们还指望着别人来帮助自己降低感染风险。美国的统计数据虽不完整，但也足以说明问题。死亡和确诊病例集中分布在有色人种和贫穷人口居多的社区。据美国疾控中心的数据显示，仅占美国总人口13%的非裔美国人新冠确诊病例的比重达到了整整30%。仅占人口总数18%的西班牙和拉丁裔群体的新冠确诊比重达24%。这种健康不平等的情况并非只在美国出现。在英国，黑人、亚裔和其他少数族裔只占全国总人口的14%，但是，截止2020年4月，这些群体的新冠确诊病例数占全国总病例数的比重却超过了三分之一。甚至在以平等主义著称的瑞典，外来移民居多的贫困社区是新冠确诊率和死亡率最高的地方。鉴于这种健康不平等现象，以及许多地区出现的警察对有色人种和移民社区过度监视和暴力对待的情况，对新冠疫情的军事化响应尤其令人不安。因为这种执法不平等现象的存在，将执法机关用作公共卫生工具可能会造成破坏卫生政策和引发违规行为等意料之外的后果。这种态度可能会对公共卫生造成严重影响。针对利比里亚埃博拉疫情的研究表明，不信任政府的人采取的疾病预防措施更少，也更不愿意服从政府的保持社交距离政策。联合国在4月份发表了一份报告，强调了尊重人权在全球抗击新冠疫情过程中的重要性。这份报告援引最近普遍存在的歧视和过度使用武力的事件并警告称，紧急措施可能会破坏整个疫情应对机制，特别以过度强硬或不恰当的方式采取这些措施时（Wise）。

2020年9月22日，特朗普总统在联合国大会上称新冠病毒为“中国病毒”，这种言论极具攻击性。他要求中国为“向全球释放这场瘟疫”负责。在特朗普发言之后，习近平主席在联合国大会上讲话。他敦促受新冠疫情影响的国家“秉持科学精神……推进国际联防联控，坚决打赢全球疫情阻击战”，并且要“反对政治化、污名化”。截至2020年10月，中国新冠确诊病例已有90604例，死亡病例为4739例，而美国有记录的确诊病例数为7382194例，死亡病例为209382例。英国的人口只有中国的二十分之一，其新冠确诊病例却是中国的5倍，死亡病例则接近中国的十倍（Burki）。

这些数据引出了一个问题：中国是如何控制疫情的？尽管中国是第一个爆发新冠疫情的国家，但是其具备应对疫情的有利条件。中国有集中的疫情应对系统。大多数中国成年人都对非典及其相关的死亡率记忆犹新。社会对疫情爆发后可能出现的情况非常警觉。而疫情只是存在于其他国家的遥远记忆中。中国年迈的父母一般与儿女一起生活，独居的话也一般住在附近。中国只有3%的老年人居住在养老院，而在一些西方国家，养老院已成为主要的感染源。最关键的一点是中国对疫情响应迅速。政府迅速采取了阻断疫情传播的措施。而其他国家，尽管有更多的时间为应对疫情做准备，却迟迟未作出响应，因此错失了控制疫情的良机。武汉实施了长达76天的严厉封锁措施，中断了所有公共交通。不久之后，湖北省内其他城市也实施了类似的措施。全国各地交通枢纽共设立了1.4万个健康检查点。学校推迟开学，人口流动受到严格限制。数十座城市实行家庭户外活动限制，每户只允许一位家庭成员隔几天出门采购生活必需品。仅在数周之内，中国政府就完成了对武汉市内900万人进行新冠病毒检测，还建立了高效的全国性接触追踪系统。相比之下，英国的接触追踪系统在国内疫情爆发后不久便不堪重负。作为全球最大的个人防护设备制造国，中国要扩大医用防护服和外科口罩的生产也相对容易一些。而且，中国人并不排斥戴口罩，对这一措施的遵从率很高。而在美国，尽管病毒肆虐，人们还是拒绝戴口罩。即便到了9月下旬，特朗普总统仍嘲笑乔·拜登戴口罩，称戴口罩是弱者的表现。中国还有装着扬声器的无人机对违反规定的公民进行责备。随后，新华社还发布了这些无人机拍摄的视频片段。3月中旬，在英国宣布实施封锁措施的10天之后，政府还允许举办有15万人参加的赛马活动。8月份，有46万美国人参加了在南达科他州斯特吉斯举办的摩托车拉力赛。2020年2月，武汉新建了3家方舱医院。随后几周还将有13家方舱医院陆续建成。这些医院坐落于体育馆和展馆等公共场地，专门用于隔离有轻度至中度症状的新冠患者。开始出现严重症状的病人会被迅速转移至常规医院。方舱医院设有1.3万张床位。有了这些医院，新冠患者无须在家隔离，因而减少了家庭成员感染的风险。到了3月份，方舱医院已陆续关闭。大约在同一时期，中国的防疫重心已经从控制国内疫情扩散转移至防止境外输入病例造成疫情反扑。所有入境中国的人员都要接受新冠病毒检测并进行隔离。据一项模型研究测算，仅在2月份，中国的公共卫生行动就可能预防了多达400万例感染和5.6万例死亡病例（Burki）。

尽管如此，中国对疫情的响应并不一定具有普适性。伦敦帝国理工学院的Han Fu指出，“由于各国家的医疗体系和疫情曲线各不相同，要照搬别国的防疫措施可能没那么容易。还有诸如政府部门之间的协调和民众对规定的遵从性等因素也会影响响应措施的有效性”。很大程度上还取决于各国对于公民自由的理解。梅奥诊所疫苗研究组主任格雷戈里·波兰（Gregory Poland）表示，“中国人对待呼吸道感染问题的态度非常严肃，愿意接受非药物干预措施，而政府对个人自由的限制力度可能会超出大多数西方国家所能接受的范围……这种‘牺牲小我’的精神根植于中国文化之中；在美国部分地区，极端个人主义让大多数人对新冠疫情的控制措施产生了抵触心理，而中国并没有出现这种情况。”波兰表示，在中国人的观念里，疾病控制属于科学问题。他说，“那些正在试图阻碍美国抗疫行动的反疫苗和反科学运动并没有在中国出现”（Burki）。

中国采取的每项疫情防控措施都非常强硬。毕竟，时间就是生命，能争取多少是多少。以强硬手段迫使人们做正确的事可能不总是正确答案，但是，如果放任不管，其后果

worried competitors might run with them. Even if researchers were willing to share their findings early, there wasn't a natural platform to do so. In this new online system, scientists could post fresh data rapidly and still get some credit, regardless of where the work was ultimately published. By early March 2020, more than 283 papers had already appeared on preprint repositories, compared with 261 published in journals. Two of the largest biomedical preprint servers, bioRxiv and medRxiv, were getting around ten papers each day on some aspect of the novel coronavirus. The deluge challenge for their small teams. Much of that work, done by staff and outside scientists, involves screening the submissions to weed out pseudoscience and opinion pieces. The manuscripts that make it through vary wildly in quality. Anthony Fauci, head of the US National Institute of Allergy and Infectious Diseases, says he's so busy that he often reads preprints late at night. "Eleven o'clock, 12 o'clock comes and you have 25 of these things to read," Fauci says. "You can't ignore them." But sometimes, "It gets a little confusing what you can really believe." It was even harder for journalists and the public at large. Much of the data was becoming part of an "infodemic" of bad information. Still, the benefits of rapid information sharing far outweigh the disadvantages (Kupferschmidt).

Yet, the global Covid-19 march was beginning to look unstoppable. A countrywide outbreak surfaced in Iran, spawning additional cases in Iraq, Oman, and Bahrain. Italy put 10 towns in the north on lockdown after the virus rapidly spread there. An Italian physician carried the virus to the Spanish island of Tenerife, a popular holiday spot for northern Europeans, and Austria and Croatia reported their first cases. Meanwhile, South Korea's outbreak kept growing explosively and Japan reported additional cases in the wake of the botched quarantine of a cruise ship. The virus was spreading stealthily in many more places. A modeling group at Imperial College London estimated that about two-thirds of the cases exported from China have yet to be detected. Yet, the World Health Organization (WHO) still avoided using the word "pandemic" to describe the burgeoning crisis today, instead talking about "epidemics in different parts of the world." But many scientists say that regardless of what it's called, the window for containment was almost certainly shut. "It looks to me like this virus really has escaped from China and is being transmitted quite widely," says Christopher Dye, an epidemiologist at the University of Oxford. "I'm now feeling much more pessimistic that it can be controlled." In the United States, "disruption to everyday life might be severe," Nancy Messonnier, who leads the coronavirus response for the US Centers for Disease Control and Prevention, warned in late February. "We are asking the American public to work with us to prepare for the expectation that this is going to be bad" (Cohen and Kupferschmidt).

Politicians all over the world embraced war metaphors to describe the global pandemic. Covid-19 was the enemy. In the United States, President Donald Trump called himself a "wartime president," and in New York, Governor Andrew Cuomo referred to health-care workers as "troops," even though many frontline health workers object to the characterization. With deaths growing at an exponential rate, and millions having lost jobs and livelihoods, the metaphor may seem to fit: disease, like war, calls for sacrifice and battle. Language has consequences, however, and war is a loaded term. Metaphors of war prove useful to authoritarian regimes that clamp down on dissent and exploit public fear to consolidate power. They also support the use of police and military forces to impose quarantines, curfews, and other public health measures. Most governments have mobilized such forces, and many have concluded that a punitive approach—using arrests, fines, and intimidation—is necessary to protect public health (Wise).

But is it? Physical-distancing measures—such as staying home, wearing masks, washing hands, and closing non-essential businesses—were necessary, but their enforcement could be humane, allow for exceptions, and should not unnecessarily involve armed personnel. After all, the war with Covid-19 is likely to be protracted. Researchers have warned that social-distancing measures such as stay-at-home orders may be necessary—intermittently, one hopes—well into 2022. And these orders are not easy for everyone to obey. Some people don't have homes. For others, home

可能最不堪设想。美国是世界上最富裕的国家，全球20家最大规模的诊断企业有一半是在美国。然而，美国的新冠死亡病例数位居全球第一，其国内的疫情形势还极可能继续恶化。原因很简单：诊断检测率太低。在疫情爆发期间，药物和疫苗也理所当然地受到很多关注。但诊断才是有效阻止病毒传播的第一道防线，尤其是对于新冠肺炎这种可通过无症状感染者传播的疾病。美国和韩国截然不同的抗疫经验表明，疫情得到控制或是演变为一场灾难，关键在于是否做好了病毒检测工作。两国的新冠疫情爆发趋势相似，确诊病例数的增长速度一度不相上下。但是韩国政府迅速采取行动，开辟了一个快速创新和满足测试需求的市场，将其测试能力提高至每天1.5万次，并创建了独特的测试方法。截至3月20日，韩国已进行了30多万次新冠病毒检测，居民检测率超过0.6%，尽管那20家最大的诊断公司都不在韩国。韩国单日新增确诊病例数曾达100例，但两周之后，这个国家迅速压平了新增病例曲线，单日新增量逐渐减少。相比之下，美国政府干预滞后，当地市场只好承担起满足不断增长的需求的责任。截至3月20日，美国的检测量只有约10万次，检测率约为万分之三。新增病例和死亡人数持续上升。总之，韩国政府的迅速干预达到了效果，而美国的自由市场在应对疫情方面却是一场失败。长期以来，全球诊断技术的发展一直由市场主导。这些市场多属于高度专业化领域。但奇怪的是，重大传染病和非传染病，甚至连受到忽视的热带疾病都有诊断市场，全球大流行病却无人问津。政府当然可以弥补市场的不足，但常用的机制仍然需要少量的需求来支撑，大流行病的诊断需求只有在疫情爆发之后才会出现。但我们不能一味依赖受政治和意识形态等因素限制的政府，指望他们能像韩国一样迅速开辟市场。因此，积极开辟市场的方法行不通。不过，各国政府应支持建立全球疫情防范协调平台。通过这个平台牵头筹集资金并指导快速研发、生产和分发大流行病诊断用品（Silva and Braunstein）。

政治和民意调查

新冠疫情几乎波及了全球每个国家。截至本文撰写之日，世界卫生组织已收到216个国家的确诊病例报告，占联合国认可的251个实体的85%以上。但各国政府对疫情的反应各不相同，包括各国与民众共享疾病数据的方式。政府选择性地公开新冠确诊病例数和死亡人数信息，表明“生物权力”技术可能正在发挥作用。法国哲学家米歇尔·福柯在其《1977-1978在法兰西公学院的讲座》中提出了这一概念。他将生物权力定义为“一系列机制，通过这些机制，人类基本生物特征成为政治战略和总体权力战略的目标。”福柯从18世纪末的天花疫苗研发中找到了生物权力的早期案例，那个案例是打着公共健康的旗号以概率计算的方式管理人口的尝试之一。以均衡、恰当的方式应对新冠疫情，意味着政府提供的信息必须完整、有效且可靠。不幸的是，这在多数情况下并没有发生。在审视一些国家对疫情的反应时，应考虑到生物政治因素，包括政府搜集和分享新冠数据的方式。例如，除了作为本国新冠疫情的唯一信息来源之外，俄罗斯政府还极力垄断相关信息的产生和传播。任何未获得“通告许可”而试图搜集和传播新冠疫情数据的人都会当做煽动破坏分子并面临刑事指控。高加索地区的车臣曾出现过叛乱，如今受到中央政府的严格管控。在那里，有一群医生曾试图抱怨对新冠疫情缺乏准备。但他们立即受到“挑衅”指控，并被要求公开道歉。根据政府数据，俄罗斯的新冠死亡率不到1%，是全球新冠死亡率最低的国家之一。而美国报告的新冠死亡率为6%，意大利、法国和英国的新冠死亡率则在14-15%范围内。这个情况只有两种解释：要么是俄罗斯人的免疫系统特别强大，要么就是政府统计死亡人数的方法出了问题。官方承认的新冠确诊病例数与死亡病例之间的差距也许可以从政治角度解释：疫情阻碍了俄罗斯的政治进程。一边公布很高但不一定准确的新冠确诊病例数，同时尽一切可能隐瞒新冠相关的真实死亡人数，这就是普京的策略。一旦这个策略成功，他就能赢得比其他国家领导人更好地应对危机的美名。另一方面，加拿大的数据一眼看去并不会引起多大争议。该国的新冠确诊病例数和死亡率（7.5%）都没有异常高。但这也不能排除生物权力因素从中作梗的可能。加拿大政府选择将比对各省份和辖区新冠数据的程序复杂化。政府的新冠网站上只公布了综合数据而没有死亡病例统计。若想比较各省的抗疫情况，就必须对13个省的官方网站进行调查，而每各省官网报告新冠数据的格式都不尽相同。尽管在联邦和各省都有相应信息获取法案，而且政府可以完全自主决定新冠信息的发布，但获取信息的请求在这个国家也没有太大帮助。也就是说，加拿大通过对信息进行模糊处理实现其生物政治，并希望在缺乏明确信息的情况下，公众可以不加批判地接受政府的行动（Oleinik）。

疫情爆发后不久，中国的盟友就开始自豪地对外讲述中国与新冠病毒的斗争。一位苏丹外交官表示，“世界见证了中国人民在习近平主席的领导下和睦地应对危机，采取前所未有的措施来控制疫情。在中国政府的领导下，中国人民团结一致，向世界证明中国的社会制度是人类历史上最优越的社会制度之一。通过抗击疫情，中国向世界证明，中国的发展和进步不仅是切切实实的，而且还以中国人民与中国共产党之间相互信任作为坚实基础。”他补充道，尽管有多个国家在中国疫情爆发时表达了同情并了伸出援手，但仍有许多传统国际势力利用中国当前的困境进行可鄙的政治宣传。中国的抗疫行动目的是保护生命，而不是幼稚的全球领导权竞争。显然，中国在道义上已经赢得了这场抗疫战争。“可以肯定的是，中国有能力并且能够调动集体力量，有序应对当前和未来的所有挑战。渡过这次载入史册的难关之后，中国必将变得更加强大。中国政府在危机期间的沟通领导模式将成为其他国家效仿的榜样”（Elmansour）。当然，并非所有国家都像中国那样能把握好生物权力的尺度。

在美国，政府机关、大学和媒体是新冠疫情相关信息的传播渠道。疫情数据最终还是来自各级政府的报告，但是这些数据真的准确吗?美国如今是新冠确诊病例和死亡

is not a safe place, and for many, staying home is an unaffordable luxury. Saving lives during this pandemic will require a different approach from simply "policing bad behavior." Individual failures are not driving high rates of infection—rather, the infection reveals structural failures in the manner in which societies are organized. Those whose employment is precarious and who cannot afford to stay home—because they lack paid sick leave or because they have been designated "essential workers" but nonetheless lack protective equipment—struggle to protect themselves and their families. Those in congregate settings, such as nursing homes, prisons, and homeless shelters, depend on others to reduce their risk of infection. The data in the US, although incomplete, tell a clear story. Death and illness are concentrated among people of color and in neighborhoods where a large majority are poor. African Americans account for 13% of the country's population but fully 30% of confirmed Covid-19 cases, according to the CDC. Hispanics and Latinos account for 18% of the population and 24% of confirmed cases. The United States is not alone in recording such health inequities. In the UK, only 14% of the population identifies as black, Asian, or minority ethnic, but this population accounts for more than a third of the country's cases of Covid-19 by April 2020. Even in Sweden, with its egalitarian reputation, poor neighborhoods where the vast majority of residents are immigrants have the highest rates of infection and death. The militarization of the Covid-19 response was particularly troubling in light of these disparities—and in light of the experience many communities of color and immigrants have had of excessive surveillance and violence at the hands of police. Because law enforcement is so differentially received among different people, its use as a tool of public health could have the unintended consequence of undermining health policy and provoking noncompliance. Such attitudes can have serious public health implications. Research from the Ebola epidemic in Liberia showed that those who distrusted government took fewer precautions against the disease and were less compliant with government-mandated social-distancing policies. In April, the United Nations issued a report underlining the importance of respecting human rights in the global struggle against the novel coronavirus. Citing widespread recent incidents of discrimination and excessive use of force, the report warned that emergency measures, especially if applied with a heavy hand or disproportionately, could undermine the entire pandemic response (Wise).

On Sept 22, 2020, President Trump gave a combative address to the UN General Assembly referring to the coronavirus as the "China virus". He demanded that China be held accountable for "unleash[ing] this plague onto the world". Chinese President Xi Jinping, who addressed the General Assembly after Trump, urged nations affected by Covid-19 to "follow the guidance of science... and launch a joint international response to beat this pandemic". He added that "any attempt of politicizing the issue or stigmatization must be rejected". As of October 2020, China had confirmed 90,604 cases of Covid-19 and 4,739 deaths, while the US had registered 7,382,194 cases and 209,382 deaths. The UK has a population 20 times smaller than China, yet it has seen five times as many cases of Covid-19 and almost ten times as many deaths (Burki).

All of which raises the question: How did China manage to wrest control of its pandemic? Despite being the first place to be hit by Covid-19, China was well-placed to tackle the disease. It has a centralized epidemic response system. Most Chinese adults remember SARS and the mortality rate that was associated with it. The society was very alert as to what can happen in a coronavirus outbreak. Other countries did not have such fresh memories of a pandemic. Ageing parents tend to live with their children, or alone but nearby. Only 3% of China's elderly population live in care homes, whereas in several western countries, such facilities have been major sources of infection. The speed of China's response was the crucial factor. They moved quickly to stop transmission. Other countries, even though they had much longer to prepare for the arrival of the virus, delayed their response and that meant they lost control. Wuhan was placed under a strict lockdown that lasted 76 days. Public transport was suspended. Soon afterwards, similar measures were implemented in every city in Hubei province. Across the country, 14,000 health checkpoints were established at public transport hubs. School re-openings after the winter vacation were delayed and population

病例最多的国家。尽管可以用美国面对疫情反应迟钝和缺乏全民医疗保险来解释形成这种局面的原因，但此次新冠危机也涉及诸多政治因素。疫情造成的社会和经济危机是影响2020年美国大选的重要因素。特朗普总统将这场危机归咎于中国，以转移人们对其政府应对疫情不力的注意力。从生物权力的角度来看，大量的感染和死亡病例让民众感到恐慌，缺乏安全感，从而更容易接受特朗普传递的信息（Oleinik）。

美国人持续密切关注全国和当地有关新冠疫情爆发的消息。为此，他们需要通过各种媒体、政府和其他新闻渠道获取信息。但是，接连不断的坏消息新闻会令人心烦意乱，从而产生不良影响。皮尤研究中心（Pew Research Center）在四月下旬进行的一项调查显示，大多数美国受访者表示自己需要从新闻信息轰炸中喘口气，多数受访者表示接连不断的坏消息新闻，让他们感觉更加难受，还有一半受访者表示难以分辨新闻信息的真假。大约十分之九的美国受访者（87%）相当或非常密切地关注新冠疫情的消息，这一比例与上个月大致相当。超过一半的受访民众（56%）表示国家新闻媒体是其获取疫情相关信息的主要来源，这一比例与依靠国家媒体获取疫情信息的公共卫生组织和官员的比例（51%）非常接近。对46%的受访民众而言，当地新闻媒体是其主要的新冠疫情相关信息来源，而有36%的受访者表示，当地和州政府官员是其主要信息来源。约有十分之三的美国成年受访者（31%）表示，唐纳德 · 特朗普总统和白宫新冠疫情特别工作组是其获取疫情相关信息的主要来源。美国人的注意力一直集中在与疫情相关的国家和地方新闻上。有一半的美国受访者表示，疫情相关的消息真假难辨，而49%的受访者认为控制疫情非常容易。还有近三分之二的成年受访者（64%）发现，有些关于新冠病毒的新闻和信息纯属捏造（Mitchell et al.）。

在新闻和信息的快速传播中，出现了各种有关新冠病毒的传言。有些传言缺乏根据，有些纯属推测。而另一些传言则被专家定性为非常危险。皮尤（Pew）针对其中6种有关新冠病毒治疗方法或致病原因的传言进行了调查，以了解这些传言在美国的影响范围。在这6种传言中，美国人对使用抗疟疾药物羟氯喹能治疗病毒这一说法可能最为熟悉：44%的受访者听说过此类消息。十分之三的美国成年受访者听说过很多关于通过输入康复患者的血浆治疗新冠肺炎的消息。但很少有人听说维生素C可以预防新冠肺炎（15%）。有一个广为流传的谣言称，喝一种被称为“神奇矿物质溶液”的漂白水可以治疗新冠肺炎。在此次调查中，只有3%的受访者表示经常听到这个说法。（在特朗普总统于4月23日发表有关使用消毒剂治疗新冠肺炎的评论之前，此项调查已经基本完成。）从更广泛的角度来看，有59%的美国人表示家庭疗法对于严重新冠病例治疗效果不太明显或者根本无效；38%的受访者则表示这些方法有些效果或非常有效。特朗普总统于3月27日签署通过了《新冠病毒援助、救济与经济安全法案》（CARES）法案。这是联邦政府为应对新冠疫情爆发造成的经济衰退而采取的首批举措之一，而美国人对其中的一些细节非常了解。91%的受访者知道该法案为符合条件的美国成年人提供1200美元的救济金，大约一半（51%）的受访者表示该救济计划的金额为2万亿美元或2.5万亿美元，近三分之二（64%）的受访者知道这项法案提高了失业救济金额。尽管如此，还是有人对该项快速推进的立法中可能存在的其他问题表示困惑。有52%的受访者知道该法案不包括针对无证移民的联邦援助，但另外40%的受访者对此不太不确定，而7%的人则认为确实如此。少数美国人（8%）表示该法案包括为国会议员加薪，实际并非如此，54%的受访者则对此表示不确定（Mitchell et al.）。

美国各个政治阵营对待新冠疫情的态度不尽相同。但在共和党内部，不同的消息来源也带来了意见分歧。特朗普和白宫新冠工作小组是皮尤中心在调查中给出的10个新冠信息来源选项之一。共和党和亲共和党的无党派人士主要依赖特朗普和白宫新冠工作小组作为新冠信息来源，这些人群对待疫情的态度在一些方面非常突出。例如，主要依赖特朗普和白宫新冠工作小组作为新冠信息来源的共和党人士中，有89%的人表示美国已经在竭尽所能地控制疫情了，对这一消息来源依赖度较低的共和党人士中，只有59%的人表达了同样的观点。依赖特朗普这一新冠消息来源的共和党人士比未将特朗普作为主要消息来源的同党派人士更可能表达以下言论：疫情的危害被夸大了；特朗普关于疫情的看法是正确的而公共卫生组织是错的。而该调查开展于特朗普检出新冠阳性并入院治疗之前。与其他共和党人士相比，以特朗普和白宫新冠工作小组作为新冠信息主要来源的共和党人更有可能表达以下言论：此次疫情不值得受到如此多的关注。这类受访者中，约三分之二（65%）的人表示新闻机构对新冠疫情过分关注。相比之下，只有55%的其他共和党人表达了此观点。另一个相关问题的调查结果显示，以特朗普作为新冠消息主要来源的共和党人士中，有75%表示疫情的实际危害并没有那么严重，未将特朗普作为主要消息来源的同党派人士中有63%的人表达了这一观点。对于疫情期间政府是否掌握了正确事实这一问题，同党派内也出现了意见分歧。在主要依赖特朗普作为新冠信息来源的共和党人中，有70%的人表示，特朗普及其政府在大部分时候都掌握了正确事实。而其他共和党人中，持相同观点的人则少得多（39%）（Jurkowitz and Mitchell）。

经济影响

尽管难以预测国际金融市场对新冠疫情的影响会作出怎样的反应，但从美国发现首例新冠确诊病例后不久，市场的表现来看，全球将会陷入焦虑。2月下旬，人们的焦虑程度远远超出了对健康的担忧。联合国贸易和发展会议（UNCTAD）全球化和发展战略司司长、报告作者之一理查德 · 科祖尔 · 赖特（Richard Kozul-Wright）坚持认为，为消除恐惧，“政府此时需要针对今年可能发生的更为严重的经济崩溃及时采取防范措施”。他表示，在“世界末日情景”下，

movements were severely curtailed. Dozens of cities implemented family outdoor restrictions, which typically meant that only one member of each household was permitted to leave the home every couple of days to collect necessary supplies. Within weeks, China had managed to test nine million people for Covid in Wuhan. It set up an effective national system of contact tracing. By contrast, the UK's capacity for contact tracing was overwhelmed soon after the pandemic struck the country. As the world's largest manufacturer of personal protective equipment, it was relatively straightforward for China to ramp up production of clinical gowns and surgical masks. Moreover, the Chinese readily adopted mask wearing. Compliance was very high compare to the US. While the virus was surging, people still refused to wear masks. Even in late September, President Trump treated Joe Biden's mask-wearing as a weakness to be ridiculed. Drones equipped with echoing loudspeakers rebuked Chinese citizens who were not following the rules. Then, state-run Xinhua news agency has released footage taken from the drones. In the UK, 150,000 people were permitted to attend a horse racing meet in mid-March, 10 days before the country went into lockdown. In August, 460,000 Americans congregated in Sturgis, South Dakota, for a motorcycle rally. Wuhan opened three so-called Fangcang hospitals in February 2020. Another 13 would appear over the next few weeks. The hospitals were established within public venues such as stadiums and exhibition centers and were used to isolate patients with mild-to-moderate symptoms of Covid-19. Patients who started to show symptoms of severe disease were quickly transferred to conventional hospitals. The network of Fangcang hospitals, which held 13,000 beds, meant that patients with Covid-19 did not have to isolate at home, which reduced the risk of family members becoming infected. By March, the Fangcang hospitals were no longer needed. From around the same time, the focus of China's countermeasures shifted from controlling local transmission to preventing the virus from taking hold as a result of imported cases. Those who entered the country were tested and quarantined. A modelling study calculated that the public health actions undertaken by China between in the month of February alone may have prevented as many as four million infections and 56,000 deaths (Burki).

Still, it does not necessarily follow that China's response to the pandemic is generalizable. “As each country has its own health system and epidemic curve, measures implemented in one country may not be easily replicated by another”, points out Imperial College London's Han Fu. “Other factors such as coordination between government sectors and civil compliance with regulations may also affect the effectiveness of the response”. Much also depends on each nation's conception of civil liberties. Gregory Poland, director of the Vaccine Research Group at the Mayo Clinic said, “In China, you have a combination of a population that takes respiratory infections seriously and is willing to adopt non-pharmaceutical interventions, with a government that can put bigger constraints on individual freedoms than would be considered acceptable in most Western countries... Commitment to the greater good is engrained in the culture; there is not the hyper-individualism that characterizes parts of the US, and has driven most of the resistance to the countermeasures against the coronavirus.” Poland noted that the Chinese accept the notion that disease control is a matter of science. “China does not have the kind of raucous anti-vaccine, anti-science movement that is trying to derail the fight against Covid-19 in the USA”, he said (Burki).

Everything done in China to prevent the spread of coronavirus was done with a heavy hand. It was necessary to waste as little time as possible. A heavy hand to force people to do what is right may not always be the answer, but it was the invisible hand of the free market may have done the most damage. The US is the world's richest country, and home to 10 of the 20 largest diagnostic companies in the world. And yet, it not only has suffered more deaths from Covid-19 than any other country, but also remains highly vulnerable to a continued escalation. The reason is simple: there are not enough diagnostic tests. During a disease outbreak, medicines and vaccines understandably get a lot of attention. But diagnostics are effectively a first line of defense against transmission, particularly for a disease like Covid-19, which can be spread by asymptomatic carriers. As the divergent experiences of the US and South Korea show, testing can be the difference between containment and catastrophe. The Covid-19

今年世界经济仅增长0.5%，届时国内生产总值将遭受“2万亿美元的打击”，并补充道，油价下跌一直“加剧了这种不安情绪和恐慌。”科祖尔 · 赖特还表示，关键是防止形势恶化，例如把全球感染率控制在10万以内，坚决遏制疫情发展，并强调当时仅在四个国家就出现了93%的死亡病例。他补充道，这将是“历史上首个可控的大流行病。最重要的是，不要任由病毒摆布”（UN）。

新冠疫情对全球造成的冲击“无可比拟”，同时中断了全球化经济中的供应和需求环节。就供应链而言，新冠感染会减少劳动力供应，降低生产力；封锁、业务关停和保持社交距离等措施也会造成供应链断裂。在需求方面，裁员、因生病、隔离和失业等原因造成的收入损失以及恶化的经济前景导致家庭消费和企业的投资减少。关于疫情的发展路径、持续时间、规模和影响的极端不确定性形成了恶性循环，削弱了商业和消费者信心，造成财务状况恶化，还导致了失业率攀升而投资活动骤减（Chudik et al.）。

马克 · 赞迪（Mark Zandi）是穆迪公司（Moody's）的首席经济学家。这位深受美国政党重视的分析师一般不喜欢使用夸张的语言。但在3月初，赞迪将疫情可能对经济造成的影响比喻为具有毁灭性的自然灾害——企业会被摧毁，工作岗位会消失，养老金会一分不剩。很显然，经济将遭受沉痛打击。截至2020年5月，美国股市缩水超过三分之一，自2017年特朗普总统上台以来可观的上涨点数全部蒸发。在全国大部分地区紧急实施的保持社交距离措施让几乎所有会吸引人群聚集的业务被迫关停。餐饮业、娱乐业、旅游业和航空业受到重创。许多公共和私人大规模运输系统本就无利可图，如今更是开始面临预算危机。尽管法律要求州和地方政府不得出现赤字，但公共卫生系统的压力以及随之而来的资产负债表很快会让这些机关不堪重负。然而，如同其对卫生医疗系统的连锁反应，新冠病毒对经济的全面打击才刚刚开始显现。据高盛（Goldman Sachs）预测，美国经济第二季度将下滑24%。这一预测数据意味着，这将是自1947年美国政府开始按季度计算本国GDP以来，幅度最大、速度最快的一次经济下滑。在此之前，季度跌幅最大的一次是10%，发生在1958年初，恰好与1957年开始的流感大流行相吻合。据高盛（Goldman Sachs）的预测，共计将有1400万个工作岗位流失。而经济大衰退时期流失的工作岗位约为870万个，而且是在好几年内慢慢流失。这次，一切将发生在一年之内。无论政府提供的数据如何，经济打击的实际情况很有可能被低估。因为失业率的统计只纳入了那些积极寻找工作的人。餐厅关闭后，失业的服务员可能不会重新申请工作。许多失业的酒店工作人员、赌场工作人员、电影院工作人员或其他人失业人群可能也是如此。然而，对新经济的预测最可怕之处在于，这些预测可能太过乐观。据联邦政府的一项抗疫计划估计，疫情可能会持续18个月，并经历“多次起伏”，届时保持社交距离措施会根据实际情况有所延长。在这种暗淡的前景下，唯一的希望就是，联邦政府在缓解经济冲击方面比遏制疫情更加努力。不同于在2008-2009年经济危机期间的表现，美国两党在此次所需的财政应对措施范围方面达成了普遍共识。有人警告称，如果国会不采取行动，失业率可能达到20%，这一惊人比例是自大萧条以来的最高水平。特朗普及其顾问呼吁增加1万亿美元或更多的刺激性支出（Berman）。

在这种困境面前，美国并不孤单。新冠疫情使全球陷入衰退。随着新增病例数急剧上升，全球经济损失也在迅速扩大，各国政府不得不采取更多应对措施。中国是第一个经历疫情冲击的国家。紧随其后的是意大利、西班牙和法国等欧洲国家，其次是确诊病例数增长更快的美国。在许多新兴市场和发展中经济体中，疫情似乎才初现端倪。意大利是欧洲国家中首个受到疫情重创的。意大利政府于3月9日实行全国封锁，以遏制病毒传播。结果，公共场所的人群密集度和用电量急剧下降，尤其是在感染率已经急剧上升的北部地区。疫情对美国经济的冲击速度及其造成影响的严重程度前所未有。在3月的最后两周，美国有将近1000万人申请了失业救济。如此急剧和惊人的失业率增长即使在2009年全球金融危机的顶峰时期也未曾出现。病毒造成的破坏波及新兴市场。在年初表现出小幅波动之后，4月份的采购经理人指数（PMI）显示，多国的制造业产出正在急剧下降，反映出外部需求下滑，国内需求预计将持续萎缩。乐观的一面是，尽管外部需求疲软，但中国的PMI在经历了今年初的急剧下落后，开始逐渐向好。一个地区的二氧化氮浓度能够反映当地的工业和运输活动状况，也能反映化石燃料消费副产品的污染程度。从大气中二氧化氮浓度的每日卫星数据可以看出，中国正在慢慢恢复经济活动。中国的二氧化氮浓度在1月至2月疫情高峰期急剧下降，后面随着新增病例减少，中国逐渐放松了严格的疫情防控措施，二氧化氮浓度又有所上升。尽管中国的复苏进程缓慢，但这表明防控措施能够成功控制疫情并为恢复经济活动铺平道路，令人深受鼓舞。不过，关于新冠疫情未来的发展路径仍存在巨大的不确定性，不能排除疫情在中国和其他国家“死灰复燃”的可能（Bluedorn et al.）。

为阻止病毒进一步传播，各国当局都采取了各种限制措施，在全国和城市内实施包括关闭边界、关闭学校和工作场所以及禁止举办大型聚会等不同程度的限制措施。国际货币基金组织（International Monetary Fund）将这些限制措施称为“大封锁”（Great Lockdown）。“大封锁”使全球大部分经济活动陷入停顿，对企业造成伤害，导致大量失业。这是一场真正的全球危机，没有哪个国家能够幸免。到2020年4月，许多经济学家警告称，全球范围内的封锁措施将导致失业率快速上升。从3月中旬开始的五周内，美国流失了超过2600万个工作岗位。美国3月份的失业率为4.4%，是自2017年8月以来的最高水平。美国不是唯一一个失业率上升的国家。澳大利亚和韩国的失业率也有所上升。一些经济学家警告称，情况可能会进一步恶化。但由于疫情期间采取的封锁措施，许多商店不得不关门，消费者被迫待在家中，两国的零售额急剧下降。尽管亚马逊等线上零售商的销售额激增，也未能阻止总体下滑趋势。经济学家警告称，即使解除封锁措施，消费者也可能不会恢复消费信心。牛津经济

outbreak began on a similar trajectory in both countries, with the number of confirmed cases increasing at a comparable rate. But South Korea's government quickly acted to create a market for rapid innovation and fulfillment of testing demand, boosting its capacity to 15,000 tests per day and establishing unique ways to conduct them. As of March 20, South Korea had carried out more than 300,000 Covid tests—a rate exceeding 6,000 per million inhabitants — despite being home to none of the 20 largest diagnostics companies. Just over two weeks after reaching 100 confirmed cases, the country flattened its curve, with very few — if any — new cases per day. In the US, by contrast, delayed government intervention left markets in charge of meeting accelerating demand. As of March 20, the country had performed roughly 100,000 tests — about 300 per million people. New cases –— and the death toll — continued to rise. Simply put, swift government intervention worked in South Korea, whereas the market's invisible hand failed in the US. Globally, the development of diagnostics has long been left to markets, many of which are highly specialized. But while there are diagnostics markets for major infectious and non-infectious diseases, and even neglected tropical diseases, there is none for pandemic diseases. Governments can of course counteract market deficiencies, but the commonly used mechanisms still require a trace level of demand, which does not exist for pandemic-disease diagnostics until the brink of an outbreak. And national governments, subject as they are to political and ideological constraints, cannot be relied upon always to create markets with the same swiftness demonstrated by South Korea. Reactive market creation is therefore not the way forward. Instead, national governments should support the creation of a global coordinating platform for pandemic preparedness. Such a platform can take the lead in raising and pooling capital to channel toward rapid development, production, and distribution of diagnostics for pandemic diseases (Silva and Braunstein).

Politics and Polls

Covid-19 has affected almost every country around the globe. As of this writing, the World Health Organization has confirmed cases in 216 countries and, a total that represents more than 85% of 251 entities recognized by the United Nations. Yet each government has responded differently to the coronavirus pandemic — including how data on the disease have been shared with each country's citizens. The selectiveness with which governments release information about the number of confirmed cases and the deaths caused by the coronavirus suggest techniques of "bio-power" may be in play. French philosopher Michel Foucault invented the concept of bio-power in his lectures at the College de France in 1977-78. He defined bio-power as a "set of mechanisms through which the basic biological features of the human species became the object of a political strategy, of a general strategy of power." Foucault found an early example of bio-power in the smallpox vaccine developed by the end of the 18th century — one of the first attempts to manage populations in terms of the calculus of probabilities under the banner of public health. A balanced take on Covid-19 and a proper course of action to deal with the pandemic means the information provided by governments must be complete, valid and reliable. Unfortunately, that is not happening in many cases. When examining how some countries have responded to the pandemic, bio-political factors should be considered. This includes how governments are collecting and sharing data about the coronavirus. For example, in addition to being the only source of information about Covid-19, the Russian government also took every effort to protect its monopoly on the production and dissemination of the relevant data. Anyone who attempted to collect and disseminate Covid-19 figures without having a "license to inform" faced criminal charges for being an agent provocateur. A group of medical doctors in Chechnya, the previously rebel region in the Caucasus now under the tight control of the central government, attempted to complain about the lack of preparedness to combat the coronavirus. They were promptly accused of "provocations" and forced to deliver public apologies. According to government data, Russia has one of the lowest Covid mortality rates

研究院（Oxford Economics）的分析师表示，即使中国商业活动逐步重启，中国零售业的"缓慢恢复"仍清晰地反映了这种消费颓势。他们在报告中写道："我们认为，就算在全球范围内取消限制措施，消费者也不太可能立即回到商店。家庭支出的缓慢恢复支撑了这一观点。"在全球范围内，服务业受到的打击更大，交通运输、房地产以及旅游行业的商业活动下降幅度最大。新冠病毒在全球扩散，给已经受到中美贸易战沉重打击的制造商造成更多压力。中国作为亚洲的经济巨人，为众多境外制造商提供其生产必需的材料和零件（也称为"中间产品"）。新冠疫情让这些境外制造商首当其冲。由于中国政府在努力遏制疫情蔓延，中国工厂的停工时间比预期时间更长。随着更多国家实施封锁措施，越来越多的制造企业遭受打击。有些企业被迫暂时关闭，而那些仍坚持运营的企业在获取中间产品和材料时处处受限制。产品需求减少使制造商面临更为的挑战。结果，美国、欧洲和亚洲的工业产量下降。2019年已有所放缓的全球贸易增长，预计到2021年会进一步面临巨大压力。世界贸易组织（WTO）在2020年4月的预测中表示，根据全球经济走势，2020年全球贸易量可能暴跌12.9%或31.9%。"在这两种情景下，所有地区2020年的进出口额都将出现两位数的下降。"新冠疫情对经济活动的打击导致许多机构大幅下调全球经济预期。国际货币基金组织（IMF）的经济评估广受认可，该组织预计2020年全球经济增长将萎缩至3%。预计只有少数几个经济体，例如中国和印度，将在2020年实现增长。国际货币基金组织表示，全球经济在2021年将实现5.8%的增长，"但这并不是全面复苏，因为2021年经济活动水平预计将低于我们在疫情爆发前预测的水平……"2020至2021年疫情期间全球GDP的累计损失可能达约9万亿美元，超过日本和德国的GDP总和（Lee）。

根据经济和平研究所（IEP）于2020年7月发布的新冠疫情及和平指数报告，美国GDP在2020年第一季度同比下滑1.2%，年化下降率为4.8%。欧元区GDP显著下滑3.8%，而中国的工业产量减少了9.8%，相当于34%的年下降率。2020年2月，疫情明显从东亚向更大范围扩散，当时摩根士丹利资本国际（MSCI）世界股票指数下跌34%，表明全球金融市场受到了新冠疫情危机的严重影响。3月份过后，全球股票市场开始复苏，但预计仍会出现下跌。金融市场可能对疫情的影响范围和经济的不稳定性有所误解。此外，经济刺激计划和降息政策促使投资增长。面对危机带来的不确定性，公司债券和政府债券呈现了不同趋势。面临更多风险的私营部门收益率迅速上升，而长期政府债券的收益率则随价格上涨而下降。一些组织发布了预测和估计，以帮助利益相关者了解经济衰退的严重性。国际货币基金组织预计，世界经济将在2020年迅速萎缩3%而在2021年恢复。这一趋势对北美和欧洲主要发达经济体而言是非常严肃的问题。中国和印度的经济预计将不会出现回缩。这些预测的假设条件是：疫情得到控制，贸易冲突迅速得到解决，可用资本持续增加，全球危机得以缓解（Bekmirzaev, Outlook）。

随着经济紧缩，可能会有更多国家削弱对维和行动的支持力度。利比里亚、阿富汗、布隆迪和南苏丹等自身比较脆弱且正在经历内部冲突的国家，非常依赖国际援助。国际援助减少将给这些国家带来不利影响。大多数国家可能会像叙利亚或伊朗那样，难以负担维和行动所需的巨额开销，无法为邻国也门、土耳其和俄罗斯提供类似于真主党民兵的军事援助。金融、运输和商业领域的整体衰退导致全球石油价格下跌。俄罗斯和沙特阿拉伯无法就产量限制达成共识，由此造成的石油供应不足已经让这些市场深受打击。原油价格在2020年4月出现有史以来首次负值。市场迅速崩溃，供应商反而要向购买者付钱，以解决库存过多的问题。所幸的是，受潜在合同条款的限制，这种情况并未持久，石油价格迅速回到正值。但这一反常事件反映出全球范围内的需求萎缩。石油价格的急剧下跌将对以沙特阿拉伯、伊拉克和伊朗等国为代表的中东国家造成不利影响。除非石油价格回升至以前的水平，否则美国页岩油产业可能会面临崩溃。疫情和萎靡不振的石油市场加剧了委内瑞拉的国家安全和人道主义危机，促使哥伦比亚、巴西和其他国家对委内瑞拉实行严格的边境管制措施，导致委内瑞拉人民的处境更加艰难。为缓解疫情造成的经济影响，各国央行降低银行融资利率，以期减少企业和家庭的债务偿还成本。但是，各国利率在新冠疫情爆发前已经处于较低水平，如今不管降低幅度如何，都不足以刺激全球经济增长。巴西、阿根廷、巴基斯坦和委内瑞拉等国可能无力获得足够的资金以帮助其经济复苏，这可能会进一步加剧社会不安和动荡，甚至引发更多暴力冲突。疫情已经引起劳动力市场的混乱。商业活动关停和社交隔离措施导致全球失业率飙升。许多国家的失业率预计会随之上升。疫情爆发之前失业率本就居高不下的国家经历了经济衰退，正处于脆弱状态，失业率却在此时进一步上升。相比之下，长期或短期失业率较低的国家已经适应了疫情的影响，能够更加轻松地将劳动力重新分配至关键行业。全球供应链断裂是疫情危机造成的最严重后果之一，也证明了中国作为众多产品的供应国，对维持全球供应链具有重要作用。日本和印度出台财政政策，鼓励本国企业将其产业链转移出中国。英特尔等芯片制造商宣布将在美国建立更多工厂。中国工业生产在疫情隔离期间遭受的挫折表明，对单一生产地的过度依赖存在巨大风险。全球产业链的"去中国化"趋势将使中国的亚洲邻国成为主要受益者。但是产业链转移并非一日之功，这个过程可能要需要数年甚至数十年的时间（Bekmirzaev, Ramifications）。

新冠疫情对工业的经济打击强度最终取决于制造业企业受危机影响的程度。企业的生产能力，企业在国内外生产网络中的融合程度以及所服务的市场类型，是决定疫情对企业影响程度的重要因素。因此，一些公司甚至国家或地区能够更快响应疫情并对业务进行相应调整，从而减少了疫情对其利润、现金流和员工稳定性的整体冲击。为更好地了解新冠疫情对发展中国家的社会经济影响，联合国工业发展组织（UNIDO）对亚洲9个新兴经济

in the world, less than 1%. (The US reports a 6% mortality rare; Italy, France and the U.K. are in the range of 14-15%). Either the Russians have an exceptionally strong immune system or something is wrong with the way the government counts the deaths. The gap between the number of officially acknowledged Covid-19 cases and deaths may have political explanations: the pandemic interferes with the political agenda in Russia. Putin made the gambit of accepting high (but not necessarily accurate) figures of Covid-19 infections and simultaneously doing everything possible to under-report the true number of Covid-19-related deaths. If successful, he would be able to claim credit for handling the crisis better than other world leaders. On the other hand, Canada's figures do not look controversial at first sight. The country has neither an exceptionally high number of Covid-19 cases nor an exceptionally high mortality rate (7.5%). But that doesn't mean there aren't potentially some elements of bio-power at play. Canada's government chose to complicate the task of comparing the Covid-19 figures across its provinces and territories. The government's Covid website only included the aggregate data and no death statistics. Comparing the responses of each province requires an examination of 13 different provincial websites, which have various formats of reporting the relevant figures. Access-to-information requests are not of great help here either, despite the fact that there are access-to-information acts both at the federal and provincial levels, and the government has full discretion what information concerning the virus to release. This means that in Canada, bio-politics manifests itself through the fuzziness of information and, in the absence of clear information, the public is expected to uncritically accept the actions of their governments (Oleinik).

Shortly after the outbreak began, China's allies described the country's fight against the coronavirus as a story of pride. One Sudanese diplomat said, "The world has witnessed China working under the leadership of President Xi Jinping in harmony and setting unprecedented measures to control the epidemic. Chinese people lining up behind their leadership, providing a good example to the world that the Chinese social system is one of the best in the history of humanity. It was for China to prove to the world through the management of the challenges accrued during the outbreak that its development and advancement to the top of the global system is real and based on a solid foundation of mutual trust between the nation and the leadership of the Communist Party." He added that in spite of all kinds of sympathy and support that China has received when faced with the outbreak, the world has still noticed that many traditional international powers have used the current situation in China as an opportunity for cheap political propaganda. China's battle against coronavirus was a concern for humanity, not a childish global leadership competition. It is obvious that China won the battle against the coronavirus, but on the moral front. "It is a foregone conclusion that China is capable and has the ability to handle all current and future challenges in a collective and organized manner. This hard chapter in Chinese history will definitely make it even much stronger. Their leadership model of communication during crises will become an example to be followed by the rest of the world" (Elmansour). Of course, not all countries are as in control of their bio-power as China is.

In the US, Covid-19 information is disseminated by government agencies, universities, and the media. Various levels of governments remain the ultimate source of the reported figures, but how accurate are those figures? The US now has the most confirmed cases and deaths caused by Covid-19. While this can be explained by a late response to the pandemic and the lack of universal health care coverage, the political stakes in the Covid-19 crisis were also very high. The social and economic crisis caused by the pandemic was a major factor in the 2020 elections. In an effort to shift attention from his administration's response, President Trump indicated China should be blamed for the crisis. The high number of infections and deaths contribute to a feeling of fear and insecurity — which from a bio-power perspective helped Trump sell his message (Oleinik).

Americans continue to pay close attention to news about the coronavirus outbreak both nationally and locally. In doing so, they relied on a broad mix of media, government and other providers of news. But the continuous news churn

体的制造业企业进行了一项调查。这项线上调查于2020年4月至7月期间与参与国政府、商会和其他机构合作进行。调查结果能够从全新的角度审视新冠疫情对国家、行业和企业的独特影响，分析政府和企业的主要疫情应对措施。平均而言，超过一半的受访企业预计利润将大幅下降，五分之一的企业预计将大量裁员。印度尼西亚、蒙古、孟加拉国和阿富汗等国企业的态度最为消极。这些国家中，预计利润将大幅下降且会失去大量工作岗位的企业占比高于区域平均水平。许多柬埔寨和巴基斯坦企业也预期裁员数量将创历史新高，但这些企业的利润预期没有那么消极。越南、马来西亚和泰国企业总体比较乐观。在这些国家中，预计利润和就业机会都将急剧减少的企业占比低于该地区的平均水平。疫情对工业生产的短期经济影响往往反映了政府疫情防控政策的严格程度。疫情防控措施更为严格的国家，其工业活动缩减幅度也更大。企业层面的调查结果也支持这一结论。预期大规模裁员的企业占比与该国疫情防控政策的严格程度呈正相关。根据防控措施的相对严格程度以及将防控措施对就业的预期影响与区域平均水平相比得出的结果，可将九个亚洲国家分成不同类别。据推测，严格防控措施的国家（例如孟加拉国、蒙古和阿富汗）经历了大规模裁员，而防控措施相对宽松的国家（例如马来西亚和越南）的失业率预计较低。有趣的是，有些国家实施了非常严格的防控措施，但其就业率受到的影响却很小（例如泰国，其次是巴基斯坦），而那些防控措施较为宽松的国家（例如印度尼西亚和柬埔寨），其失业率反而更高。这表明疫情防控政策只是影响因素之一，并不能反映整体情况。在疫情对各国制造业企业不同程度的经济影响中，显然还有其他因素在发挥作用。为应对新冠疫情造成的经济衰退，全球的制造企业都需要政府的财政援助和支持。许多政府已经实施了一系列举措，包括调整汇率、平衡国际收支以及货币和财政政策等。联合国工业发展组织一项针对非洲20国政策制定者的调查发现，不同国家已实施了一系列相关政策。税收管制放宽、税收延迟和债务减免等政策措施在调查中出现的频率最高。证据显示，政府在制定新冠疫情应对综合方案时，越来越重视中长期措施的作用。实施中长期措施的目的是重新调整企业发展方向，让企业顺利适应后疫情时代的"新常态"。企业若想从疫情的冲击中恢复，就不能再回到危机出现之前的状态，这就是此类举措的基本原理（Bekmirzaev, Looking）。

疫苗

有些制药企业在2019年新冠疫情爆发之前已经在开展疫苗相关的研究，希望研发出能够迅速抑制大流行病毒毒株的疫苗。如今已有一批新型新冠疫苗正在测试阶段并准备面世，证明制药企业早前的研究取得了成效。国际合作能够推动新冠疫苗快速生产，从而挽救全球人们的生命，其作用非常关键。自新冠疫情爆发以来，世界各地的研究人员一直在努力，希望尽早找到治疗或治愈新冠肺炎的方法，但有些研究成功了，有些失败了。全球各地都需要疫苗。有些国家独立开展新冠疫苗研发，有些国家则达成了研发合作并就疫苗的供应进行了谈判。

耶路撒冷希伯来大学医学院的院长迪娜・本・耶胡达（Dina Ben-Yehuda）表示，如果仅依靠一个国家自身的力量，疫苗很难研发成功。她强调："希望大家不要忘记，只有通过国际合作才能拯救世界。"本・耶胡达对中国公开分享新型冠状病毒相关研究结果的做法表示了赞赏。她表示："中国医生和科学家觉得自己有责任发布一切新冠病毒相关的研究信息，包括一些不利消息。这种做法帮助了全球各地的人们，挽救了许多生命。"中国向全球分享新冠病毒基因的初始资料，以推进各国新冠疫苗研发和治疗工作。本・耶胡达教授认为，全球应该保持这种合作，从而促进全人类福祉。卡普兰医学中心传染病科主任奥伦・齐穆尼（Oren Zimhoni）表示，目前在疫苗研发方面的国际合作比以往任何时候都更加紧密。新冠疫苗的研发约有八个主要方向。齐穆尼表示，全球都在努力研发疫苗，这增加疫苗研发成功的几率。齐穆尼表示："成功研发疫苗是战胜全球疫情的关键。"他认为，进行得如火如荼的疫苗研发，将在六个月内的临床试验中展现成效。希巴医疗中心感染预防控制科主任吉利・雷格夫・约谢（Gili Regev-Yochay）认为，只有疫苗才能阻止全球新冠疫情的蔓延。她表示："目前还没有针对新冠肺炎患者的有效治疗方法，控制全球疫情唯一有效的方法是疫苗。"雷格夫・约谢认为，要研发一种对所有人完全安全的疫苗，以及确保疫苗能够可靠地提供给健康状况各异的人群，这是疫苗研发工作的最大挑战。她还强调："疫苗研发时要非常谨慎，因为这比药物临床试验更为复杂。"许多新冠肺炎患者无明显症状或症状较轻，"因此，我们必须确保不要对这类患者使用任何可能对其身体造成更大伤害的疫苗、药物或化学药品。"雷格夫・约谢说道。国际信息共享有助于研究人员比较不同疫苗的有效性并加快研发进度。据世界卫生组织统计，目前全球有130多种候选新冠疫苗处于研发阶段，其中约有10种已进入临床评估阶段。疫苗研发成功后，为保证全球供应，必须大规模生产，这需要全球合作。这也是疫苗相关的挑战之一。齐穆尼表示："我们需要给全球数十亿人接种疫苗，并且最好赶在冬季到来之前进行接种，以防止出现流感和新冠双重感染的危险后果。"本・耶胡达认为，虽然新冠病毒的影响具有个体差异，但计算医学和国际大数据共享等领域的新技术可以帮助找到针对新冠肺炎感染的个性化治疗方案（Xinhua，Development Requires）。

到7月份，许多国家开始报告其新冠疫苗试验的进展，为仍笼罩在疫情阴霾之下的世界带来了希望。卫生专家呼吁，要以客观、理性和科学的态度看待候选疫苗。至少有24种候选新冠疫苗在今年夏季进入临床评估阶段，另外142种候选疫苗正在进行临床前评估。中国专家在权威医学杂志《柳叶刀》上发表的一项研究显示，2期临床试验证明了其研发的候选新冠疫苗的安全性，且该疫苗能诱导免疫反

had an impact. According to a Pew Research Center survey conducted in late April, the majority of Americans said they needed to take breaks from it, many said the constant news flow it made them feel worse emotionally and half said they found it difficult to sift through what was true and what is not, according to the survey. About nine-in-ten Americans (87%) were following coronavirus news fairly or very closely, a figure roughly on par with the previous month. In getting this news, more than half the public (56%) said national news outlets were a major source, and nearly as many (51%) said this of public health organizations and officials. Local news outlets were a major source of Covid-19 news for 46% of the public, while 36% said state and local elected officials were a major source for them. About three-in-ten US adults (31%) said President Donald Trump and the White House coronavirus task force were a major source of news about the outbreak. Americans were focusing their attention on both national and local news related to the pandemic. Half of Americans said they found it difficult to determine what was true and not true about the outbreak, while 49% say they found that task easy. And close to two-thirds of adults (64%) said they had seen at least some news and information about the coronavirus that seemed completely made up (Mitchell et al.).

Within the rapid flow of news and information has been a stream of claims about Covid-19 – some with spotty evidence, some closer to speculation and still others deemed by experts to be actively dangerous. The Pew survey asked about six of these purported treatments or causes to get a sense of how widely they had reached across the US. Of the six, Americans were most likely to be familiar with the claim that use of the anti-malaria drug hydroxychloroquine could be useful in treating the virus: 44% have heard a lot about this. Three-in-ten US adults had heard a lot about the use of plasma transfusions from recovered patients as a treatment. Fewer heard a lot about vitamin C as a prevention (15%). In the survey, only 3% said they had heard a lot about the widely discredited claim that drinking a form of diluted bleach sometimes called “miracle mineral solution” was a way to treat current cases. (The majority of the survey was completed before President Trump’s comments about using disinfectants to treat the virus on April 23.)

More broadly, 59% of Americans say at-home treatments for serious cases of the coronavirus were not too or not at all effective; 38% say they are somewhat or very effective. Americans did express a fair amount of knowledge about some of the basic elements of one of the first actions taken by the federal government to help limit damage from the economic downturn: the CARES Act, signed into law by President Trump on March 27. About nine-in-ten (91%) knew the bill includes US$1,200 for many American adults, about half (51%) identify the amount of money with the aid package as either US$2 trillion or US$2.5 trillion and nearly two-thirds (64%) knew it increased unemployment benefits. Still, there was confusion about what else might and might not be in the fast-moving legislation. While 52% knew the bill did not include federal aid for undocumented immigrants, another 40% weren’t sure and 7% thought it did. Few Americans (8%) incorrectly said the bill included pay raises for members of Congress, but 54% say they were not sure (Mitchell et al.).

In the US, attitudes about the Covid outbreak differ widely by political party affiliation. But among Republicans, opinions also differ considerably by source of news. Republicans and GOP-leaning independents who relied most on President Donald Trump and his coronavirus task force for news about Covid-19 – one of 10 news sources the Center asked about – stand out in several ways in their attitudes about the outbreak. For example, 89% of Republicans in this group said the US had controlled the outbreak as much as it could have, compared with 59% of Republicans who don’t rely most on Trump and the task force. Republicans who turn to Trump for coronavirus news were also more likely than other Republicans to say the pandemic had been overblown, that Trump was getting the facts about the outbreak right and that public health organizations were not getting the facts right (The poll was fielded before Trump tested positive for the virus and was hospitalized). Republicans who rely most on Trump and the task force for Covid-19 news were more likely than other Republicans to say the outbreak has not merited the attention it has received. About two-thirds in that group (65%) said news organizations were giving Covid-19 too much attention. That compares with 55%

应。江苏省疾病预防控制中心朱凤才教授表示：“与1期临床试验相比，2期临床试验为疫苗在更大范围人群中的安全性和免疫原性提供了进一步的证据，这是评估早期试验阶段疫苗的重要一步，目前正在开展3期临床试验。”。发表在《柳叶刀》杂志上的另一篇论文公布了牛津大学团队研发的ChAdOx1 nCoV-19新冠疫苗1/2期试验结果。研究表明该疫苗没有早期安全问题，并能产生强烈的免疫反应。俄罗斯国防部表示，其已经与加马列亚流行病与微生物学国家研究中心（Gamaleya Scientific Research Institute of Epidemiology and Microbiology）合作完成了有志愿者参与的新冠病毒疫苗临床试验。俄罗斯联邦第一副国防部长Ruslan Khadzhismelovich Tsaikov对莫斯科新闻媒体《论据与真实报》表示：“所有接受了新冠病毒疫苗试验志愿者都感觉良好，无一例外。”德国生物技术公司BioNTech与美国制药公司辉瑞（Pfizer）共同宣布，实验阶段数据表明，他们研发的新冠疫苗是安全的，并且可以诱导患者体内产生抵抗新冠肺炎病毒的免疫应答和高水平T细胞应答。其他国家的研究机构也公布了各自新冠病毒疫苗试验的进展。尽管有关候选新冠疫苗的好消息接连不断，但专家警告称，疫苗研发和临床试验具有不确定性，还存在病毒突变等多种风险和挑战，同时呼吁以客观、理性和科学的态度看待疫苗研发。世卫组织突发卫生事件规划执行主任迈克·莱恩（Michael Ryan）博士表示，目前尚不确定新冠病毒疫苗何时能够真正面世。尽管一些候选疫苗的初步数据向好，但仍无法预测哪种疫苗能够完全取得临床疗效。他补充说，虽然可能在年底前就能验证候选疫苗的有效性，但问题是，研发成功的疫苗可以在多短的时间内实现批量生产。沙特阿拉伯的《中东日报》（Asharq Al-Awsat）最近表示，在得出进一步的试验结果之前，研究人员应避免对某些候选疫苗在临床试验中取得的重大进展表现过于乐观。默克公司首席执行官肯尼斯·弗雷泽（Kenneth Frazier）表示，无法保证研发中的疫苗的有效性（Xinhua, Development Reported）。

世界卫生组织（WHO）总干事谭德塞（Tedros Adhanom Ghebreyesus）博士11月表示：“当前，将疫苗与其他实践检验的公共卫生措施相结合，是结束疫情的真正希望。”谭德塞博士补充道：“但不能高估这项科学成就的重要性。有史以来，疫苗的研发进展从未像今天这般迅速。科学界已制定了新的疫苗研发标准。”他指出，现在国际社会必须制定新的准入标准，因为“疫苗研发的紧迫性必须与公平分配疫苗的紧迫性相匹配”。出于对贫穷和脆弱的国家可能在疫苗争夺战中遭到践踏的担忧，世界卫生组织推出了新冠肺炎工具获取加速器计划（Access to COVID-19 Tools Accelerator），支持全球在研发疫苗、诊断器具和治疗药物方面的努力，并通过“全球新冠疫苗保障机制”（COVAX）与187个国家进行疫苗采购和推出合作，确保所有国家都能以可负担的价格及时获得足够的疫苗。据世界卫生组织负责人透露，当前急需约43亿美元用于支持大规模采购和供给疫苗及检测和治疗物资，明年还需再加238亿美元。他表示：“国际货币基金组织估计，如果能够更快且在更广范围内地提供医疗解决方案，到2025年底，全球收入将累计增加近9万亿美元。”（Xinhua, Real Hope）

到12月初，全球已建立了稳定强大的安全性监测系统，用于确保疫苗的安全性。世界卫生组织免疫接种部门主任凯特·奥布赖恩（Kate O'Brien）在线上新闻发布会上回答关于有些人对接种新冠病毒疫苗犹豫不决时表示，该系统能够实时监测相关数据，“所以，如果疫苗存在任何问题，我们可以对其进行研究和调查，以了解疫苗是否确实存在任何问题。”奥布赖恩还强调，疫苗安全性是监管机构大规模临床试验评估的重要内容。她指出，对接种疫苗的犹豫和有关疫苗的疑问有其合理之处，但人们需要确保其决策所依据的信息有科学基础。她还强调了信息共享和透明度在整个监管过程中的重要性。根据皮尤研究中心（Pew Center）的一项调查，11月下旬美国有意接种新冠病毒疫苗的人的比例由9月的51%上升到60%，这表明人们对研发流程的信心有所增强。但是，即使更多相关信息已公布，仍有约20%的人表示“肯定”不会接种疫苗。美国是受新冠疫情冲击最严重的国家。易索普公司（Ipsos）十月份的一项调查显示，全球所有受访者中只有五分之一的人表示希望在新冠病毒疫苗推出后立即接种。在大多数国家，多数受访者表示希望在疫苗推出几个月后再接种疫苗（Chen）。

2020年，新冠疫情席卷全球。以下内容主要从中国官方媒体的视角，展现世界各地在面对疫情造成的毁灭性打击时的反应。

中国

自一年前中国疫情发生以来，政府就开始向疫苗研发倾斜资源。同时，其他国家的政府也采取类似的措施。大众开始聚焦免疫学、流行病学和病毒学，更多资金被投入，声望和公众兴趣都有所提升。与中国免疫学家、政策制定者和赞助方的沟通交流体现了当前国际政治格局下复杂的疫苗研发状况。科学家、药品研发机构和研究机构都在竞相研发疫苗以战胜新冠病毒。然而，有人却担心步伐过快的代价以及为公司和研究人员匆忙开展疫苗研发工作制定的激励机制。位于马萨诸塞州沃尔瑟姆市的布兰迪斯大学的医学人类学家埃拉娜·尤瑞斯基指出，很多人认为中国“在疫情早期处理不当”，但大家也认为，如果中国研发出疫苗就能拯救全世界并重获清白。她研究中国在全球公共卫生事业发挥的角色，所以接触了一些研究新冠病毒的科学家。科学可以提升中国公众形象的概念已经从根本上融入了政治。科学和学术是中国共产党及其强国使命高度关注和重视的领域。12月，中国冠状病毒工作组宣布，有13种疫苗正在进行临床试验。世界卫生组织的跟踪系统列出了11种中国正在研发的疫苗。其中包括国有企业国药控股研发的两款候选疫苗，一款由天津民营制药公司康希诺生物与军事科学院军事医学研究院联合研发，一款由总部位于北京的科兴生物技术有限公司研发。此外，安徽知飞龙

of other Republicans. On a related question, 75% of Republicans who rely most on Trump and his task force for coronavirus news said the outbreak had been made a bigger deal than it really was, compared with 63% of Republicans who don't rely most on Trump and the task force. Differences also emerge around whether various actors were getting the facts right during the pandemic. Among Republicans who rely most on Trump for coronavirus news, 70% said he and his administration got the facts right almost all or most of the time. Among other Republicans, far fewer (39%) say the same (Jurkowitz and Mitchell).

Economic Ramification

While it was difficult to predict how the international financial markets would react to Covid's impacts, what the markets did suggest shortly after the first Covid case crossed the US shoreline was a world that was extremely anxious. There was a degree of anxiety in late February that was well beyond the health scares. To counter these fears, "Governments need to spend at this point in time to prevent the kind of meltdown that could be even more damaging than the one that is likely to take place over the course of the year," Richard Kozul-Wright, Director, Division on Globalization and Development Strategies at UNCTAD, insisted. One "Doomsday scenario" in which the world economy grew at only 0.5%, would involve "a US$2 trillion hit" to gross domestic product, he said, adding that collapsing oil prices had been "a contributing factor to that growing sense of unease and panic." Kozul-Wright said it was important not to let grim milestones such as passing the infection rate of 100,000 worldwide, sap resolve to contain the disease, stressing that 93% of deaths at that point been in just four countries. It would be "the first pandemic in history that could be controlled. "The bottom line is, we are not at the mercy of the virus," he added (UN).

The Covid-19 pandemic was a global shock 'like no other', involving simultaneous disruptions to both supply and demand in an interconnected world economy. On the supply side, infections reduce labor supply and productivity, while lockdowns, business closures, and social distancing also cause supply disruptions. On the demand side, layoffs and the loss of income (from morbidity, quarantines, and unemployment) and worsened economic prospects reduce household consumption and firms' investment. The extreme uncertainty about the path, duration, magnitude, and impact of the pandemic created a vicious cycle of dampening business and consumer confidence and tightening financial conditions, which lead to job losses and investment (Chudik et al.).

Mark Zandi is the chief economist at Moody's and an analyst highly regarded by both US political parties. He is a man not generally prone to hyperbole. In early March, Zandi immediately reached for the metaphor of a devastating natural disaster to describe the toll that the pandemic would take on commerce—the businesses it would destroy, the jobs it would wipe out, the retirement nest eggs it would crack and shatter. That there will be economic pain was already clear. By May 2020, the stock market lost more than one-third of its value, giving up all of the considerable gains it made since President Donald Trump took office in 2017. The urgent call for social distancing across much of the country forced the closure of just about any business where human beings congregated. The restaurant, live-entertainment, tourist, and airline industries were being crushed. Public and private mass-transit systems—many already unprofitable—began facing budgetary crises. State and local governments, legally required not to run a deficit, would soon be overwhelmed both by the strain on their public-health systems and by the ensuing burden on their balance sheets. Yet the full scope of the economic ramifications of the coronavirus was, like its cascading effect on the health-care system, only just beginning to become apparent. Goldman Sachs was expecting a 24% drop in the second quarter. To put the data in perspective: These second-quarter forecasts would mean the deepest, fastest drop in economic activity since the government began calculating the nation's GDP on a quarterly basis in 1947. Before that, the worst three-month plunge was 10% in early 1958, which happened to coincide with a flu pandemic that began the year before. Under the Goldman Sachs estimate, the jobs gone would total 14 million. By comparison, a rough total of about 8.7 million jobs disappeared in the Great Recession, but those

康生物制药有限公司和中国科学院微生物研究所联合研发一款候选疫苗（Murphy）。

2020年10月，中国在疫苗研发竞赛中作出了大胆的承诺。中国一名卫生部门官员公开承诺将在今年年底提供有效的新冠病毒疫苗。同时，中国承诺会与十几个国家分享疫苗，特别是与中国有密切联系的低收入国家。然而，一些科学家质疑中国是否有能力生产足够的疫苗以兑现承诺，以及与个别国家达成协议是否是确保公平分配疫苗的最佳途径。中国疾病预防控制中心首席生物安全专家武桂珍向中国官方媒体透露，上海医药集团、国药控股和其他集团公司共同研发的两种疫苗将于11月或12月上市。这些疫苗正在阿拉伯联合酋长国、巴林、秘鲁和阿根廷等国进行试验。同月，中国宣布加入由全球疫苗与免疫联盟（Gavi），流行病预防创新联盟（CEPI）和世界卫生组织（WHO）共同领导的全球新冠疫苗保障机制（COVAX），该机制旨在给高危人群和医护人员提供20亿剂疫苗，尤其是贫困国家。约80个自筹资金的富裕国家承诺支持这一倡议，但不包括美国。目前全球约有12种主要候选疫苗处于最后测试阶段，其中有四种由中国疫苗生产商研发。目前还没有疫苗通过能证实其安全有效的三期试验，但这不影响大批人在中国境内和境外根据疫苗紧急使用授权制度接种了中国研发的四种候选疫苗。科学家们表示，隶属于中国卫生部的药品监管机构需要等待有力证明疫苗安全有效的试验数据，才会完全批准疫苗。在邮件回复《自然》杂志采访时，武桂珍指出卫生部在大规模试验的结果出来之前不会批准销售疫苗。她表示在结果出来之前都是未知数。与此同时，国外高度期待中国研发上市有效的疫苗。习近平主席在第73届世卫大会上明确表示，中国新冠疫苗研发完成并投入使用后，将作为全球公共产品，为实现疫苗在发展中国家的可及性和可担负性作出中国贡献。习主席和李克强总理公开承诺会提供疫苗给菲律宾、柬埔寨、缅甸、泰国、越南和老挝，以及非洲和拉美国家。中国疫苗制造商也与接受疫苗测试的国家签订了协议（Cyranoski）。

公众主要担心疫苗接种者会有认为自己已经免疫以致于不再重视疫情防控，这可能导致疫情反扑。疫苗可以预防感染带来的不良后果，但在某些情况下，疫苗本身可能无法预防感染。但对中国那些优先接种实验性疫苗的人来说，这种非传统的方法证明了中国的实力，即政府不仅能控制冠状病毒流行也能保护人民生命安全。中国三家公司研发的四种实验性疫苗在9月底获批用于商业用途之前已开始进行三期人体试验和安全测试。事实上，中国的疫苗早在今年夏天就已部署用于"紧急用途"，易受新冠肺炎感染的人群接种了疫苗，包括一线医护人员和大城市的关键服务人员。科兴生物制品已经在中国沿海的浙江省建立了几个疫苗接种点，每天以400元人民币（60美元）的价格为人们接种几百剂疫苗。其他国家也纷纷效仿。菲律宾声称，在官方试验开始前，已为多达900万人接种科兴生物制品疫苗。巴西圣保罗州对科兴疫苗进行了先进的人体试验，并打算一旦获批就购买该疫苗。然而，在一名受试者试图自杀后，巴西当局在接下来的一个月暂停了试验。郑中伟解释说："紧急使用疫苗是非常必要的手段。批准紧急使用疫苗的决定是在符合世界卫生组织相关规定后，经过层层严格论证和评估后做出的。"全球医疗专家表示，这种推理是有缺陷的。香港大学病毒学家金东雁说："中国没有紧急情况，因为几个月来已经基本没有确诊病例。"此外，疫苗研发还面临其他困境。在极少数情况下，新疫苗产生的抗体可能会产生不良影响。除了健康问题，在没有充分验证数据的情况下推出疫苗还会给中国带来其他问题。近年来，一系列质量丑闻已经让国内不太信任中国制造的药品。如果这些疫苗出了问题，中国制造的药物将会彻底名声扫地。今年10月，中国媒体报道称，海外留学生可以在北京和武汉（疫情首次爆发的港口城市）报名接种中国药控股的冠状病毒疫苗。但第二天申请平台就关闭了，申请者被告知国药控股无法再提供疫苗（Fend and Ruwitch）。

截至2020年11月底，中国已有近100万人接种了仍处于官方测试阶段的紧急新冠疫苗。今年7月，在还未证明疫苗有效的情况下，中国有关部门向包括中国政府官员、学生和出国务工人员在内的部分人群接种了疫苗。国药控股没有具体说明接种了哪种疫苗，但表示这些人已前往全球150多个国家，"未出现一例接种后感染病例。只有个别患者出现了一些轻微的症状。"海外疫苗试验也引发了一些争议，一部分原因是中国当局缺乏沟通。今年8月，巴布亚新几内亚政府拒绝48名中国建筑工人入境，原因是担心他们注射了一种未命名的实验性疫苗。然而，从更大的角度看，中国和俄罗斯等国在未完成全面测试的情况下就开始接种疫苗的决定相当令人担忧。专家警告说，在国际公认的测试和监管方法上走捷径，可能会引发更多民众对冠状病毒疫苗的不信任，并有可能降低有效确保公众安全所需的接种率。中国曾承诺向多个国家提供疫苗，但在优先考虑菲律宾和非洲国家等地区时，这一承诺可能存在矛盾（Davidson）。

尽管中国的疫苗尚未被正式证明安全有效，但官方在紧急使用制度下，给全国各地数千人接种了疫苗。浙江义乌一社区卫生服务中心举办了一次疫苗接种活动。此次活动大获成功，500支疫苗在数小时内就被接种完。其他城市则限制剂量，或要求人们出示行程卡。巨大的需求催生了黄牛产业。黄牛们通常通过倒卖最新款苹果手机或热门的火车票获利，他们的新冠疫苗预约收费高达1500美元。这些疫苗接种者面临着很大的风险。接种无效疫苗的人可能会认为接种疫苗是安全的，于是无端冒险。比如说他们可能无法接种另一种更好的疫苗，因为他们已经接种了疫苗。根据以前的一些案例，未经证明效用的疫苗可能损害健康。同时，疫苗潜在的问题也不常被讨论。《纽约时报》查看了某候选疫苗接种同意书副本，发现其种并未说明该产品仍在测试中。目前还不清楚有多少人已经接种了候选疫苗。地方政府表示他们计划让更多的人接种现有疫苗。中国政府表示会密切关注接种疫苗的人员，但没有透露任何细节。这与美国的情况形成了鲜明的对比。越来越多的民意调查显示，许多美国人不愿意接种新冠病毒疫苗，这可能会影响消除疫情的

losses were spread out over years. This would occur in a single springtime. And whatever data the government produces would likely understate the true reality of the economic hit, because the unemployment rate measures only people who are actively looking for work. Unemployed waiters might not apply for jobs when all the restaurants are closed. Neither, in all likelihood, would many hotel staff, casino workers, theater ushers, or others. Yet what was scariest about the new economic projections was that they were probably too rosy. A federal-government plan to combat the pandemic estimated that it could last 18 months and hit in “multiple waves” that would require some degree of prolonged social distancing. If there was any hope in this dark outlook, it was that the federal government likely had more power to soften the economic blow than it did to contain the virus. And unlike during the last economic crisis, in 2008 and 2009, both parties were in general consensus about the scope of the fiscal response required. With warnings that the unemployment rate could hit a staggering 20% — by far the highest since the Great Depression—if Congress didn’t act. Trump and his advisers called for US$1 trillion or more in stimulus spending (Berman).

America was not alone. The Covid-19 pandemic pushed the entire world into a recession. The economic damage was mounting across all countries, tracking the sharp rise in new infections and containment measures put in place by governments. China was the first country to experience the full force of the disease. European countries such as Italy, Spain, and France were next, followed by the United States where the number of active cases grew even more rapidly. In many emerging market and developing economies, the epidemic appears to be just beginning. In Italy, the first country in Europe to be severely hit, the government imposed a national lockdown on March 9 to contain the spread of the virus. As a result, attendance in public places and electricity use declined dramatically, especially in the northern regions where infection rates have been considerably higher. The economic consequences of the pandemic impacted the United States with unprecedented speed and severity. In the last two weeks in March almost 10 million people applied for unemployment benefits. Such a sharp and staggering increase has never been seen before, not even at the peak of the global financial crisis in 2009. Disruptions caused by the virus rippled through emerging markets. After showing little movement early in the year, April indices from purchasing manager surveys (PMIs) were pointing to sharp slowdowns in manufacturing output in many countries, reflecting drops in external demand and growing expectations of declining domestic demand. On a positive note, China was seeing a modest improvement in its PMI after sharp declines early in the year, despite weak external demand. The modest improvement in economic activity in China was reflected in daily satellite data on nitrogen dioxide concentrations in the local atmosphere—a proxy for industrial and transport activity (but also the density of pollution as a by-product of fossil fuel consumption). After a steep decline from January to February during the acute phase of the pandemic, concentrations increased as new infections fell, allowing China to gradually relax its strict containment measures. The China recovery, albeit limited, was encouraging, suggesting that containment measures could succeed in controlling the epidemic and pave the way for a resumption of economic activity. But there was huge uncertainty about the future path of the pandemic and a resurgence of its spread in China and other countries could not be ruled out (Bluedorn et al.).

To stem further spread of the virus, authorities around the world implemented measures to lock down countries and cities to varying degrees. That included closing borders, shutting schools and workplaces, and limiting large gatherings. Those restrictions, which the International Monetary Fund called the “Great Lockdown,” brought much of global economic activity to a halt, hurting businesses and causing people to lose their jobs. This was a truly a global crisis as no country is spared. By April 2020, many economists warned that lockdown measures around the world would accelerate job losses. More than 26 million jobs were lost over a five-week period starting in mid-March in the US. The country’s unemployment rate of 4.4% in March was the highest since August 2017. The US was not alone in dealing with rising unemployment. Australia and South Korea also registered an uptick in unemployment rates,

进展。《自然》杂志10月份发表的一项全球在线调查显示，当被问及是否会接种一种“经过验证的、安全有效的疫苗”时，中国受访者给出正面回答的比例最高。在中国有一种“大家都有，我也要有”的普遍观念。中国官员解释了接种候选疫苗的原因。中国国家卫生健康委员会高级官员郑中伟表示，鉴于疫情在国外爆发，这一举措是“保护人民生命健康的非常必要的手段”。中国的疫苗研发努力带有民族主义的色彩，许多人对中国有候选疫苗进入最后试验阶段感到高兴（Wee and Chen）。

俄罗斯

随着伊朗新冠肺炎病例激增，伊朗和俄罗斯合作在伊朗生产新冠疫苗。伊朗是中东地区疫情最严重的国家。伊朗驻俄大使卡齐姆 · 贾拉里和俄罗斯直接投资基金首席执行官基里尔 · 德米特里耶夫今年9月在网上举行会议时宣布了伊朗和俄罗斯将合作生产新冠病毒疫苗的消息。贾拉利呼吁两国进一步开展卫生医疗合作。伊拉克公共卫生部门负责人利雅德 · 阿米尔在卫生部新闻稿中表示，“民众的不配合会增加感染人数，卫生部工作停滞不前。因为我们的医疗机构能力有限，死亡人数也在增加。”（Xinhua, Russia Begins）

俄罗斯声称已于2020年8月注册了世界上首个新冠病毒疫苗，尽管美国、中国和土耳其可能比它还早。俄罗斯普京总统在政府成员在线会议上表示：“据我所知，今天上午我国在世界上率先注册了新冠病毒疫苗。”会上，俄卫生部长米哈伊尔 · 穆拉什科表示，俄罗斯发行了世界上第一个新冠病毒疫苗，而其他国家仍在临床试验阶段。穆拉什科表示，疫苗已通过所有必要检查，并且这款新冠病毒疫苗能够形成稳定的免疫力。普京说道：“最重要的是，未来我们可以确保这种疫苗无条件的安全性和有效性。”，同时他感谢参加第一批疫苗研发工作的所有人员。俄罗斯副总理戈利科娃在会议上说，预计在8月底至9月开始生产疫苗，首批接种疫苗的将是医务人员。普京表示他的女儿接种了冠状病毒疫苗后感觉良好。俄罗斯立即开始生产第一批新冠病毒疫苗。俄罗斯总统普京宣布，世界上首个新型冠状病毒的注册疫苗被命名为“卫星V”，以前苏联在1957年发射的太空卫星命名。这款新冠疫苗由俄罗斯“加马列亚”流行病与微生物学国家研究中心研发。卫生部长米哈伊尔 · 穆拉什科说，本国公民接种疫苗后，俄罗斯将向其他国家提供疫苗，并补充说，对疫苗有效性的怀疑是没有根据的（Xinhua, Russia Begins）。

亚洲

6月底，日本开始对新型冠状病毒疫苗进行临床试验。据大阪府知事吉村弘文介绍，此次对大阪市立大学医院的20至30名医务人员进行试验接种，预计10月份试验对象扩大到数百人。今年4月，大阪府、市政府联合大阪大学教授创办的AnGes公司着手研究新冠病毒的治疗药物和疫苗。这种疫苗通过注射基因工程环装状DNA分子，有望能够刺激免疫系统并产生新冠病毒抗体。早期在老鼠身上的试验结果显示抗体有所增加，同时它的安全性也得到验证。森田良一是大阪大学临床基因治疗教授兼AnGes创始人，他指出，大阪大学会分阶段给更多人提供疫苗，同时会确保疫苗能够产生抗体。AnGes的候选疫苗是亚洲最有希望成功的疫苗之一，因为它的研发进展比日本盐野义制药和第一三共制药的进展更快（Wang）。

今年10月，日本厚生劳动省的顾问机构批准了一项政策，宣布向日本所有公众免费提供新冠疫苗，以遏制新冠病毒的传播。由于目前仍不确定疫苗的有效剂量，该政策在现阶段指的是日本公众能免费接种初始剂量。日本尚未决定外籍人士是否享受该政策，尽管大部分外籍人士和日本人一样从事有收入的工作并支付国民健康保险费用。政府希望到2021年中能向全民提供疫苗，预计拨款6714亿日元（64亿美元）。日本政府与英国制药公司阿斯利康达成协议，预计采购1.2亿剂阿斯利康与牛津大学共同研发的新冠疫苗。同样，日本已与美国辉瑞公司和德国BioNTech SE公司就采购1.2亿剂有效疫苗达成协议。此外，日本正和美国莫德纳生物科技公司就购买至少4千万剂疫苗进行协商。日本政府在10月通过了新法案，让全民免费接种新冠疫苗。根据该法案，如果疫苗造成严重的副作用，政府将补偿疫苗供应商；如果接种者出现任何健康问题，政府将给接种者提供免费医疗保健服务。该法案修订了现行的疫苗接种法，此前，日本首相菅义伟在发表其就任后首次施政演说时，承诺政府将确保为全民接种新冠疫苗。菅义伟表示，确认了这批疫苗的安全性且通过临床试验和监管部门批准后，政府预计在2021年上半年为全民接种疫苗。虽然日本政府一直希望本国制药公司能够研发国产疫苗，但迄今为止，本土制药公司的新冠疫苗研发进展还处于临床试验阶段。日本政府在同一天还通过了另一项法案，修订了检疫法律，在明年2月之后继续对进入日本的病毒检测呈阳性的人员实施隔离措施（Xinhua, Japan's Govt）。

印度卫生部长哈什 · 瓦尔丹表示疫苗的推出日期尚未确定，但试验结果将在2021年第一季度明确。“在评估试验结果的同时，我们建议制造商同步进行试生产，以确保人们能够早日接种疫苗。”就在他发表上述言论的两天前，印度疫苗制造商印度血清研究所（SII）表示将暂停原定于9月在印度开始的第三阶段试验。此前，因为其中一名英国试验志愿者出现不明原因的疾病，国际生物制药公司阿斯利康宣布暂停在全球多地临床试验该款疫苗。瓦尔丹指出，政府在进行疫苗人体试验时采取了充分的预防措施：“诸如疫苗安全、成本、公平、冷链要求、生产时间等问题也进行了充分讨论。”瓦尔丹表示，如果有任何“信任赤字”，他会自愿第一个接种该疫苗。然而，他强调，疫苗推出后，一线医护人员、老年人和有并发症的人群应该优先接种疫苗。瓦尔丹说：“如果人们对政府、科学家或疫苗研发有疑虑，那么为了消

with some economists warning that the situation could become far worse. But both countries reported sharp declines in retail sales as lockdown measures during the pandemic forced many stores to shut and kept consumers at home. A surge in online sales reported by some retailers, such as Amazon, failed to stem the overall fall. Economists warned that consumers may not resume spending even after lockdown measures were lifted. That was evident in the "slow improvement" in retail sales in China even after the country allowed a gradual reopening of businesses, said analysts from Oxford Economics. "The slow improvement in household spending underpins our view that, globally, consumers are unlikely to rush back to the shops as soon as restrictions are lifted," they wrote in a report. A broader hit to the services industry was observed globally, with businesses in the transportation, real estate, and travel and tourism sectors experiencing some of the largest declines in activity. Manufacturers, already weighed down by the US-China trade war, once again came under pressure as the coronavirus spreads around the world. The Covid-19 pandemic first hit manufacturers outside China that rely on factories in the Asian economic giant for materials and parts — also known as "intermediate goods" — to make their own products. Chinese factories suspended operations for longer than expected as authorities worked to contain the virus. As more countries impose lockdown measures, a greater number of manufacturing firms were hit. Some were forced to temporarily shut down, while those that remained open faced restrictions in getting their supply of intermediate goods and materials. On top of that, a reduction in demand for goods exacerbated the challenges that manufacturers face. As a result, factories across the US, Europe, and Asia reported declines in output. Global trade, which was already slowing in 2019, was expected to be weighed down into 2021. The World Trade Organization, in its April 2020 forecast, said global trade volume could plummet by 12.9% or 31.9% in 2020 — depending on the trajectory of the global economy "Under both scenarios, all regions will suffer double-digit declines in exports and imports in 2020," the WTO said. The coronavirus pandemic's hit to economic activity has led many institutions to slash their forecasts for the global economy. The International Monetary Fund, whose assessment of the economy is widely followed, expected the global economy to shrink to 3% in 2020. Only a handful of economies — such as China and India — were expected to grow in 2020. While the fund penciled in a rebound of 5.8% growth in 2021, it said that recovery is "only partial as the level of economic activity is projected to remain below the level we had projected for 2021, before the virus hit... The cumulative loss to global GDP over 2020 and 2021 from the pandemic crisis could be around US$9 trillion, greater than the economies of Japan and Germany, combined (Lee).

According to the Covid-19 and Peace report released in July 2020 by the Institute for Economic Peace (IEP), the US GDP fell 1.2% from the prior year in the first quarter of 2020 – an annualized decline of 4.8%. The euro area experienced a significant decline of 3.8%, while China's production decreased by 9.8%, which was equal to an annual rate decrease of 34%. When it became obvious that the contagion would not be constrained to East Asia in February 2020, global financial markets were severely affected by the Covid-19 crisis as evidenced by the Morgan Stanley Capital International (MSCI) World stock index decreasing by 34%. The global stock markets recovered after March, but there were expected to be more downswings. The extent of this epidemic and economic instability may have been misinterpreted by the financial markets. Furthermore, the increased funds for more investment have been the result of the stimulus programs and lowered interest rates. The emergence of different tendencies among corporate and government bonds was a reaction to the uncertainties brought about by the crisis. Since the private sector was confronting more risks there was a swift increase in yields while long-term government bonds saw a decrease in yields along with their prices rising. Several organizations released projections and estimates to help stakeholders gain insight into the severity of the economic recession. The IMF expected rapid economic decline of 3% for the world economy in 2020 and recovery in 2021. The expected decline is serious for North America and Europe's main developed economies along with China and India projecting to not contract. These forecasts are being made under the assumption that the pandemic would be contained, rapidly overcoming trade conflicts and the rising availability of capital to ease the global crisis (Bekmirzaev, Outlook).

除疑虑，我将第一个接种疫苗。不过，我个人认为那些急需疫苗的人（易感人群）应该先接种疫苗，这不包括我。"他还表示，现在谈论疫苗的格还为时过早，疫苗仍在试验中。他说："但印度政府将确保向最需要的人提供疫苗，无论他们是否支付得起。"（Xinua, Vaccine Possible）

印度财政部长西塔拉曼11月宣布，印度政府将拨款1.206亿美元用于研发新冠疫苗，同时她宣布了第三轮经济刺激措施，以促进新冠疫情下印度经济的复苏。截至本文撰写时，印度三种候选新冠疫苗正处于不同的人体临床试验阶段。印度政府还批准了超过20亿美元的财政拨款，以鼓励国内外机构生产高价值药品（Xinhua, India's Finance）。

大洋洲

2020年7月，南澳大利亚州研发的一种候选新冠疫苗通过了第一阶段的测试。澳大利亚弗林德斯大学的研究团队研发的新冠疫苗首次通过第一阶段试验，该疫苗证实具有安全性且在人体会产生免疫反应。在第一阶段试验中，40名志愿者接种了这种名为"Covax-19"的疫苗。生物技术公司Vaxine创始人彼得罗夫斯基说："我们已经证实Covax-19疫苗能诱导人体产生适当的抗体反应。我们现有的数据表明没有受试者出现明显的副作用。我们还获准对感染新冠病毒的受试者进行接种，看疫苗是否能进一步增强他们的免疫力，防止他们二次感染。"彼得罗夫斯基表示，他已经为维多利亚州有感染新冠风险的老年居民接种疫苗。维多利亚州是澳大利亚疫情最严重的地区。据报道，第一阶段试验的40名志愿者中没有人出现明显的副作用或发烧，如果Covax-19通过第二阶段试验，Vaxine将从世界各地招募5万名志愿者进入第三阶段试验（Xinhua, Aussie COVID-19）。

第一阶段临床试验的疫苗接种志愿者得出HIV假阳性结果后，昆士兰大学和CSL公司共研发的新冠疫苗不会进入2/3期临床试验。尽管疫苗产生了有效的抗病毒反应和显示具有较强的安全性，澳大利亚政府还是取消购买超过5000万剂疫苗的协议。昆士兰大学和CSL强调，新冠疫苗不可能导致艾滋病毒感染，参与试验的216人没有出现严重的不良反应。该疫苗的问题源于昆大科学家在其疫苗采用的分子钳中，使用HIV蛋白以稳定新冠病毒。接种疫苗的志愿者产生了HIV抗体，从而导致HIV检测呈阳性，尽管这不会对健康造成影响。然而，由于疫苗面向更大范围的群体但其诱导水平可能会干扰HIV检测，CSL和澳大利亚政府已同意该疫苗研发不会进入2/3期临床试验。CSL首席科学官安德鲁 · 纳什博士说，研究结果"突显了早期疫苗研发失败的风险"。CSL将继续计划生产约3000万剂阿斯利康候选疫苗，首批疫苗计划于2021年初在澳大利亚上市。鉴于昆士兰大学疫苗研发失败，澳洲政府将转而增购2000万剂阿斯利康疫苗并将美国Novavax疫苗的订购量增加至5000万剂。澳大利亚总理斯科特 · 莫里森表示，并非所有候选疫苗都能通过试验，这很正常，政府应对措施的核心目标是确保人民的安全健康（Xinhua, Program Scrapped）。

非洲和中东

今年四月，世界卫生组织总干事谭德塞指出，不要让非洲成为新冠疫苗的"试验场"。不能也不要让非洲成为任何疫苗的"试验场"。全球范围内的疫苗和药物临床试验必须严格遵守相关流程和规定。无论在欧洲、非洲还是世界任何其他地方，临床试验都要遵循同样的程序。"谭德塞说道。一些科学家提出非洲可以成为新冠疫苗的试验场，谭德塞表示该建议"骇人听闻"，他说，"殖民地思想必须要消除"。在一场电视辩论中，两名法国医生被控种族歧视，其中一名医生建议在非洲进行肺结核疫苗试验，以验证其能否能有效对抗新冠病毒。世卫组织总干事对这些"种族主义言论"表示"最强烈的谴责"，称其为"耻辱"，并重申"这不会发生在非洲，也不会发生在其他任何国家。"他强调，"我们要遵守恰当的程序，平等对待所有人。"谭德塞透露，世卫组织预计在本周晚些时候推出有关加速新冠疫苗研发生产的新方案，并建立相应机制以确保疫苗问世后能在全球范围内得到公平分配。他说："除非我们打破产品公平分配的障碍，不然获得疫苗之路将困难重重。必须提前解决人们未来在获取疫苗时可能面临的挑战。"据谭德塞所说，70多个国家加入了世卫组织的"团结试验项目"，加速寻找有效的治疗方法。约有20个机构和公司正在竞相研发疫苗（Xinhua, Africa）。

2020年5月，南非总统西里尔 · 拉马福萨表示，新冠疫苗应该免费公平地提供给所有国家的公民。南非政府支持并资助了几个研究项目，其中一项计划内容为一旦有候选疫苗就在当地生产。拉马福萨说，南非将利用疫苗行业的技术、专业知识、基础设施和组织来生产和分配疫苗（Xinhua, South Africa）。

埃及卫生部宣布，政府在做相关准备，一旦试验证明新冠疫苗有效，将与中国政府合作生产疫苗。埃及的目标是成为非洲大陆新冠疫苗制造中心。埃及卫生和人口部表示，埃及卫生和人口部长哈拉 · 扎耶德七月与中国驻埃及大使廖力强进行会晤，就此事进行了讨论。双方讨论了埃及作为新冠疫苗的国际生产中心之一，与中国合作进行相关实验。扎耶德在埃及疫苗制造商VACSERA公司的总部主持了一场会议，以检查该公司的工厂和生产线生产疫苗的准备情况。卫生部发言人哈立德 · 梅加希德说，扎耶德还检查了该公司基础设施和工厂设备的效率，以确定相关需求和需要解决的障碍。世界卫生组织指出，各大洲至少要有一两个国家生产新冠病毒疫苗（CGTN, Egypt）。

根据世界卫生组织的消息，土耳其总统雷杰普 · 塔伊普 · 埃尔多安表示，今年8月土耳其会成为继美国和中国之后第三个在本国研发新冠疫苗的国家。埃尔多安在

More countries are likely to reduce their peacekeeping commitments as their economies contract. Reduced international aid will also negatively impact countries who are heavily reliant on it such as Liberia, Afghanistan, Burundi and South Sudan that are vulnerable and experiencing conflicts. Most nations would have trouble funding costly initiatives like in Syria or in Iran, assisting militias like Hezbollah for neighboring Yemen, Turkish and Russian assistance. The combined decline in finance, transport and businesses contributed to a decrease in global oil prices. These markets were already adversely affected by an inadequate supply from Russia and Saudi Arabia, which were unable to find consensus on output restrictions. For the first time in memory, the crude oil price became negative in April 2020. The market crashed so quickly that purchasers were being paid to clear surplus inventory by the overstocked suppliers. Thanks to the manner in which potential contracts are written, the negative price was short-lived, and oil prices quickly returned to positive territory. The extraordinary event nonetheless reflected a worldwide deterioration in demand. This dramatic drop in oil prices will have an impact on the Middle East political regimes, especially Saudi Arabia, Iraq and Iran, and may contribute to the collapse of the US shale oil industry unless oil prices rebound to their previous levels. The national security and humanitarian crisis in Venezuela have been aggravated by the pandemic and poor oil markets. This has also contributed to the adoption of strict border controls in Colombia, Brazil and other countries with regard to Venezuela which has resulted in additional difficulties for Venezuelans. Central banks, in an attempt to alleviate the economic effects of this pandemic, cut down funding to the banking sector in hopes of reducing the debt repayment costs for businesses and families. Nevertheless, relatively low levels of interest until Covid-19 would ensure that cuts in levels would not offer global economies enough stimulus. Countries like Brazil, Argentina, Pakistan and Venezuela might not have the ability to get a sufficient amount of loans to help their economies rebound which may result in more unrest, instability and violence. The pandemic has caused chaos on labor markets. As a consequence of business sector shutdowns and social isolation, unemployment levels have grown dramatically worldwide. Consequently, many nations also expected a rise in unemployment. Countries with high unemployment until the pandemic experienced a downturn in their economies, as unemployment rose in a moment of vulnerability. Countries with low degrees of long- or short-term unemployment, by comparison, found absorbing the effects of this pandemic and reassigning their workforce afterwards to vital industries easier. One of the big consequences of the global crisis has been the demonstration of how the world relies on China for the supply chain of many goods. Japan and India are paying businesses to shift production away from the PRC. Chip manufacturers, such as Intel, have committed themselves to the construction of more factories in the United States. China's failure in production during the pandemic quarantine has shown the dangers of overreliance on single manufacturing points. Its Asian neighbors will be the main beneficiaries of the production shift away from the PRC, however this process can take years or even decades to happen as it takes time to switch supply chains (Bekmirzaev, Ramifications).

The economic impact of Covid-19 on the industrial sector ultimately depends on how the crisis affects manufacturing firms. The extent of firms' productive capacities, their degree of integration in domestic and global production networks and the type of market they serve are important factors that determine the extent of the pandemic's impact on firms. Accordingly, some firms (and countries) are better suited to quickly respond and adapt their operations, thus reducing the shock's overall effect on their profits, cash flow and staff. To gain a better understanding of the pandemic's socioeconomic impact on developing countries, UNIDO conducted a survey of manufacturing firms in nine emerging economies in Asia. The survey was conducted online between April and July 2020 in collaboration with governments, business chambers and other agencies in the participating countries. The results obtained promised new insights into the distinct impacts of Covid-19 on countries, industries and firms, as well as into the main responses adopted by governments and firms. On average, over half of the firms surveyed predict a significant fall in profits, and one in five expects massive job cuts. Firms in Indonesia, Mongolia, Bangladesh and

位于西北部科喀艾里省的土耳其科学和技术研究委员会（TUBITAK）卓越中心的揭幕式上说：“土耳其科学和技术研究委员会建立的新冠病毒平台目前正在研究8种不同的疫苗，开展10个药物项目。土耳其与国家、私营部门以及大学合作，在研发新冠病毒疫苗和药物方面取得了重大进展。”埃尔多安指出，两种候选疫苗已经成功完成了动物试验，其中一种疫苗已获得伦理许可，可以进一步进行人体临床试验（Xinhua, Erogan Says）。

据阿联酋官方媒体报道，截至11月底，阿联酋宣布，在该国进行的中国新冠疫苗试验中，有效率达86%。这让人信任中国政府计划在发展中国家推广这种迅速研发出来的疫苗。该报告援引阿联酋卫生和预防部的话，指出这些数据来自包括阿联酋3.1万名志愿者在内的试验。试验发现，该疫苗在预防中重度新冠病毒非常有效，没有严重的安全问题。这为疫苗的全面使用和阿联酋重启经济铺平了道路。阿布扎比官员表示，他们将开始与当地政府合作，“在两周内恢复所有活动”，包括经济、旅游和文化业务，这初步表明疫苗将全面推出。该疫苗的有效率为86%，几乎达到了西方领头者设定的高标准，相关公司也披露了更多细节。中国生物技术集团公司研发的疫苗的有效率高于阿斯利康公司和牛津大学研发的疫苗。中生集团的疫苗可能成为对广大发展中国家更有利的疫苗选择。而辉瑞公司和莫德纳公司的mRNA疫苗的有效率超过90%，但分配对一些国家来说是一个挑战，因为需要速冻设备和运输设备来储存和运输疫苗。而中生集团的疫苗可以在正常的冷藏温度下运输和储存。不同之处在于，中国的疫苗使用灭活新冠病毒激活人类免疫系统以对抗新冠病毒。虽然辉瑞和莫德纳都是依赖新技术的研发商，但相关制造商在中生集团所使用的方法有着数十年的经验。尽管如此，这些灭活疫苗需要多次加强注射才能获得强大的免疫力，而生产则需要处理大量的病毒。理论上，mRNA疫苗的生产速度要快得多，因为生产几百万剂所需的原料量很小（Che and Paton）。

巴林已于11月初开始为一线医务人员接种中国研发的新冠病毒疫苗。该疫苗由中国国有制药公司国药控股研发，目前正在阿联酋、埃及、巴林和约旦进行三期试验。巴林卫生部长法卡·宾特·赛义德·萨利赫说，疫苗的使用符合该国关于在紧急情况下特殊许可的规定。本月中旬，大约有8000人自愿参加巴林的三期临床试验，并接种第二剂疫苗。总部位于阿布扎比的人工智能和云计算公司G42正在中东地区进行疫苗试验。巴林多位部长和高级官员早期在阿联酋和巴林接种了疫苗，包括巴林王储（CD, Bahrain）。

英国

英国政府宣布，英国数千名志愿者参加了美国生物技术公司诺瓦瓦克斯的新冠病毒疫苗的后期试验。目前已有1万人参与了所谓的NVX-CoV2373疫苗的三期临床试验。一半的试验志愿者将接种了疫苗，另一半则注射安慰剂。在此期间，英国每日感染人数急剧上升。尽管这使卫生部忧心忡忡，但英国成为疫苗很好的试验场，因为很多试验志愿者接触过病毒。这是Novavax疫苗三期试验的第一阶段，同时阿斯利康启动新冠病毒疫苗后期试验后，将在英国启动三期试验的第二阶段。诺瓦瓦克斯研发总裁格雷戈里·格伦说：“鉴于英国大量新冠病毒感染并有可能继续传播，我们相信关键的三期临床试验将会迅速展开，并在短期内提供NVXCoV2373疗效相关信息。”NVX-CoV2373通过将携带新冠病毒刺突蛋白的纳米颗粒引入体内，引发免疫反应。这种疫苗还带有一种叫做Matrix-M的佐剂。佐剂是一种药理学成分，当免疫系统被激活时，它能促使机体产生更多抗体。诺瓦瓦克斯公司最初研发的NVX-CoV2373用于流感，并在今年1月新冠疫情爆发时改造该疫苗用于新冠病毒。该疫苗在动物试验和安全性研究中显示出一定的有效性，获得了后期试验的批准。全世界至少有90种候选新冠疫苗在研发中，只有不到12种进入了三期临床试验。包括科兴生物科技、康希诺生物科技和国药控股在内的几家大型中国医疗保健公司都参与了疫苗的研发，这些疫苗已进入后期试验阶段。英国政府购入了6000万剂诺瓦瓦克斯疫苗，该疫苗已由富士胶片合成生物技术公司在英格兰蒂斯托克顿开始生产。富士胶片合成生物技术公司专注为制药公司生产活性成分。英国政府疫苗工作组主席凯特·宾厄姆说：“找到一种适用于英国大多数人口的安全有效疫苗是对付这种杀伤力极强的病毒的最佳方法。虽然社交距离、检测和其他措施可以帮助减少新冠病毒的影响，但战胜它的唯一长期办法是疫苗。人们可以通过国家卫生服务机构登记参加疫苗实验来助力研发进程，登记后会很快收到通知。”其他Novavax研究表示在英国约有25万人登记参加各种新冠疫苗试验。英国商务大臣阿洛克·夏尔马说：“报名参加的人越多，我们就能越快研发出安全有效的疫苗，从而保护人们生命安全。”（McNeice）

英国成为首个批准新冠疫苗的西方国家，这是新冠疫情的一个里程碑时刻，为在全国范围内推广疫苗铺平了道路。辉瑞新冠疫苗的三期临床试验的最终数据分析表明，即使在老年受试者中，该疫苗对预防新冠感染的有效率也达到了95%，并且没有引起严重的安全问题。这意味着英国在批准疫苗的竞赛中抢先于美国和欧盟。迄今为止，新冠疫情已持续数月，全球近150万人因此丧生。BioNTech首席执行官乌古尔·萨欣说：“这是疫情要真正开始结束了。”辉瑞首席执行官艾伯乐称赞此次紧急使用授权是“抗击新冠的一个历史性时刻”。英国已订购4000万剂该疫苗，足够接种2000万人。汉考克表示将从辉瑞位于比利时的疫苗制造中心获得首批80万剂疫苗，2020年底前还会获得“数百万剂”。养老院的老人及其看护者、医护人员和其他易感人群将会优先接种。BioNTech称其疫苗从构思到批准只用了大约11个月的时间，速度超乎寻常。这一过程通常需要数年时间。英国首相鲍里斯·约翰逊称这一消息“太不可思议了”，他说：“我们希望明年春天就能恢复正常，同时也非常有信心我们将取得成功，共同回到正常生活。”英国卫生部表示，批准该疫苗使用是基于“药品和医疗保健产品监管局

Afghanistan are the most pessimistic: the share of firms in those countries anticipating extreme losses in profits and jobs lie above the regional average. A large number of firms in Cambodia and Pakistan also expect record-high layoffs, although they are less pessimistic in terms of profits. Firms in Viet Nam, Malaysia and Thailand tend to be more optimistic in general. The share of firms that expected a sharp decline of both profits and jobs is lower in those countries than the regional average. The pandemic's short-term economic impacts on industrial production tend to reflect the stringency of governments' containment policies. Countries that introduced stricter containment measures also experienced sharper drops in industrial activity. Results at the firm level support this conclusion too. The share of firms anticipating massive layoffs rose with the level of stringency of the country's containment policies. Nine Asian countries can be grouped according to the relative stringency of their containment measures and the expected impact on jobs compared to regional averages. It is assumed that countries that have adopted very stringent measures (e.g. Bangladesh, Mongolia and Afghanistan) experienced massive job cuts, while employment loss in countries with less stringent measures in place is expected to be low (e.g. Malaysia and Viet Nam). Interestingly, some countries have implemented very stringent containment measures but only registered a low impact on jobs (e.g. Thailand and to a lesser extent Pakistan), while countries that adopted less stringent policies recorded high job losses (e.g. Indonesia and Cambodia). This indicates that containment policies may explain part of the story, but certainly to do not tell the entire story. Other factors clearly play a role in the heterogeneous economic impact the pandemic is having on manufacturing firms across countries. To weather the economic downturn caused by Covid-19, manufacturing firms around the globe needed government financial assistance and support. Many governments have already implemented a wide range of policies, including exchange rate adjustments and balance of payment measures, as well as monetary and fiscal policies. A UNIDO survey of policymakers in 20 African countries found that a wide range of policies has been implemented in different countries. Tax deregulation and deferral as well as debt payment relief measures are among the most frequently mentioned policies. Evidence shows that medium- to long-term measures are playing an increasingly important role in the Covid-19 policy mix, with the aim of reorientation of businesses to better prepare them for the 'new normal' in the post-Covid world. The underlying rationale is that recovery from this shock will not allow for a return to pre-crisis business as usual (Bekmirzaev, Looking).

Vaccines

Even before coronavirus broke out in 2019, pharmaceutical companies were working on designs for vaccines they could quickly adapt to a pandemic strain of virus. Their work paid off in some of the new Covid-19 vaccines being tested and prepared for rollout has illustrated. International collaboration was vital to quickly producing a Covid-19 vaccine to save lives worldwide. Since the outbreak of the novel coronavirus, multiple groups of researchers around the world have been working hard to find the cure or treatment as early as possible. Some were more successful than others. Every region needed the vaccine. Some countries tried to make their own while others cooperated and negotiated for their supply.

Dina Ben-Yehuda, dean of the medicine school at Hebrew University of Jerusalem, said one country could hardly achieve success single-handedly in the vaccine development. "We need international collaboration to save the world. And I hope that nobody will forget it," she stressed. Ben-Yehuda praised China for transparency in sharing its research findings regarding the coronavirus that caused the Covid-19 pandemic. "The fact that Chinese physicians and scientists felt a responsibility to publish everything, even the bad results, helped many people around the world and saved lives," said Ben-Yehuda. China shared the initial information about the virus DNA with all other countries so that every one of them could work on vaccines and treatments. This kind of collaboration should continue for the benefit of all humankind, according to the professor. Oren Zimhony MD, head of the infectious diseases unit at Kaplan Medical Center, said the international collaboration now on creating a vaccine is stronger than ever. There are approximately eight

（MHRA）经过数月严格的临床试验和数据透彻分析之后得出的结论，该疫苗符合其严格的安全、质量和有效性标准”。MHRA首席博士琼 · 雷恩坚称“批准过程没有走捷径”。雷恩指出临床试验“重叠”进行是为了更快地取得进展。她补充说：“不同的团队一直在同时地进行试验工作。”BioTech和辉瑞在11月中旬向FDA提交了候选疫苗。美国莫德纳公司的疫苗正在等待包括美国和英国在内的多个国家的批准。该公司预计，到2020年底美国将购入2000万剂疫苗，2021年将达到5亿至10亿剂。英国已获得700万剂莫德纳疫苗，将于2021年春季在欧洲上市。莫德纳也已将其疫苗提交给欧洲EMA，将于1月12日进行审查（Pleitgen）。

北爱尔兰一名90岁妇女接种全球第一针辉瑞/BioNTech新冠疫苗，这是英国大规模疫苗接种项目的试验之一。英国医学协会主席纳格保尔说，首次接种疫苗是抗击新冠的“里程碑时刻”。他补充说：“但我们必须坦诚地认识到，我们的医疗服务机构将面临巨大的后勤挑战。我们需要更多的公共医疗卫生建议，因为这对结束新冠疫情非常重要……所以未来还有很多挑战。”然而，另一种即将使用的疫苗的相关消息就不那么好了。今年早些时候英国政府疫苗工作组曾表示，他们希望到今年年底能生产出大约3000万剂牛津疫苗。据报道，他们建议包装上应印上英国国旗。但现在不足的早期剂量不得不从德国和荷兰进口。新冠疫情应对小组制造部主任伊恩 · 麦卡宾周一在媒体见面会上表示。“英国制造业遇到了一些挑战，所以在交付疫苗剂量方面有一点延迟。”英国政府表示“大多数”高危人群将在2021年前两个月接种疫苗，但没有说明具体日期（Shea）。

欧洲

2020年8月，欧盟和CureVac就购买疫苗完成了试探性磋商。欧盟很快就拟定了合约，代表所有成员国在疫苗安全性和有效性得到验证的情况下首批采购2.25亿剂疫苗。欧盟补充说，CureVac是mRNA疫苗的先驱。mRNA疫苗将脂质纳米颗粒注射入细胞，其原理是利用这种分子作为信息的数据载体，人体就会产生活性物质来对抗各种疾病。CureVac早前获得了欧盟的资助。7月初，欧洲投资银行和CureVac签署了7500万欧元的贷款协议，用于研发和大规模生产疫苗，包括CureVac的候选新冠疫苗。除CureVac外，欧盟还与阿斯利康签署了预售协议，并与赛诺菲-葛兰素史克公司和强生公司公布了“积极措施”。芬兰社会事务和卫生部总干事Paivi Sillanaukee认为委员会的疫苗计划是欧盟代表27个成员国正在谈判的一个新情况。她说，“各国同意这一点，为了确保最佳的谈判立场”（Xinhua, EU Concludes）。

德国卫生部长施潘表示，由于临床试验取得了“令人鼓舞的进展”，已有一种新冠疫苗获得了监管机构的批准，德国各地的疫苗接种中心也于12月中旬开始运作。施潘相信德国将于2020年底或2021年初批准并提供首个新冠病毒疫苗。施潘说：“比起准备好了疫苗但不能马上使用，我更想先准备好疫苗接种中心。”德国BioNTech制药公司和美国辉瑞制药公司向FDA申请紧急批准新冠病毒疫苗。这两家公司完成了候选新冠病毒疫苗的三期临床试验，并宣布该疫苗达到了“该研究的所有主要疗效终点”，有效率为95%。德国政府启动了一项7.5亿欧元（8.925亿美元）的新冠疫苗研发特别计划，为德国BioNTech、CureVac和IDT Biologika等公司提供资金。施潘说：“疫苗是我们摆脱新冠疫情的关键，因此我们要支持多种研发渠道。”他还宣布计划从德国制药公司IDT Biologika购买500万剂疫苗，该公司预计其新冠病毒疫苗将于2021年底获得批准。据施潘称，为了支持IDT Biologika研发生产疫苗，德国政府将提前支付3000万欧元作为总采购价格的一部分（Xinhua, Germany）。

此外，西班牙卫生部长萨尔瓦多 · 伊利亚在11月表示政府计划在2021年为公众接种新冠疫苗。伊利亚称疫苗接种将分三个阶段完成。第一阶段在1月至3月，大约有250万人接种，率先为养老院相关人员和医护人员进行疫苗接种。部长指出第一阶段的疫苗供应将“非常有限”，在3月至6月的第二阶段逐步增加供应，预计第三阶段将大量增加。该国的疫苗接种政策把人群划分为了18个接种群体。接种新冠疫苗遵循逐步有序的原则。伊利亚未详细说明，只说“细节会及时公布”西班牙将获得能为大约8000万人接种的疫苗，尽管该国总人口少于4700万。西班牙政府已通过欧盟疫苗购买计划与阿斯利康、辉瑞、强生、赛诺菲、CureVac和莫德纳就购买疫苗达成协议。西班牙首相佩德罗 · 桑切斯解释说，将在全国设立1.3万个疫苗接种点，目标是在2021年上半年为大部分人口接种疫苗（Xinhua, Spanish Gov't）。

南美洲

阿根廷总统阿尔贝托 · 费尔南德斯表示，在2020年12月至2021年1月期间阿根廷会获得2500万剂俄罗斯新冠疫苗“卫星V”。当地媒体称，阿根廷相关官员访问莫斯科后，与俄罗斯的协议最终敲定。3月3日，阿根廷登记了首例新冠肺炎病例（Xinhua, Argentina to Buy）。费尔南德斯总统周三表示，政府制定了大规模新冠疫苗接种计划，预计在2020年底或2021年头几周启动。费尔南德斯在其办公室发表的一份声明中表示：“我们正在孜孜不倦地工作，目标到今年年底或明年的头几周在阿根廷建立一个大规模疫苗接种系统。”他补充道：“我们3月份会开始使用英国研发的阿斯利康/牛津疫苗。”（Xinhua, Argentina Working）

巴西将于2021年1月启动针对新冠疫情的大规模疫苗接种行动。代理卫生部长爱德华多 · 帕佐埃罗说：“我们正在与疫苗生产商签订合同，预计疫苗将于明年1月开始到达。2021年1月，我们会开始为每个人接种疫苗。”巴西政府与国营的克鲁兹基金会签署了一项协议，该基金会正与牛津大学联合研发疫苗。计划最初将获得1.004亿剂疫苗，为一半人口提供免疫接种。第二批疫苗预计于2021年下半年供应完毕。旅游部长马塞洛 · 阿尔瓦罗 · 安东

main directions taken to work out a vaccine for Covid-19. Such a variety of possibilities increased the odds of finding the right way to the desired result, according to Zimhony. "The major game-changer to overcome this pandemic is vaccine development," Zimhony said, who believes that the first clinical implications of the intense vaccine research will be available in six months. Gili Regev-Yochay, director of the infection prevention control unit at Sheba Medical Center, believes that only a vaccine could stop the global outbreak of the novel coronavirus. "It seems there is no proper treatment for Covid-19 disease patients, and the only effective global cure would be a vaccine," she noted. The biggest challenge in the work, according to Regev-Yochay, is to find a completely safe vaccine for everybody and a reliable way to deliver it to all kinds of people with different health situations. "We need to be very cautious with vaccines. It's much more complicated than clinical trials with the drugs," stressed Regev-Yochay. Many Covid-19 patients don't have symptoms or have mild ones, "so we need to make sure we don't inject them with vaccines, drugs, or chemicals that could do more harm than good," she said. International sharing of information could help researchers compare the effectiveness of different vaccines and speed up the progress of the development. According to the statistics of the World Health Organization, currently more than 130 Covid-19 candidate vaccines are being developed worldwide, with about 10 of them being already in clinical evaluation. Among the vaccine challenges is also its mass production for the use of all of humanity, which calls for global cooperation. "We need to vaccinate billions of people around the globe. Better to do it before the upcoming winter to prevent the dangerous effect of dual infection of influenza and COVID-19," said Zimhony. Ben-Yehuda said she believes new technologies of computational medicine and international sharing of big data could help create personalized medicine for Covid-19 infection, as the virus affects people differently (Xinhua, Development Requires).

By July, many countries started reported development in their Covid-19 vaccine trials, bringing hope to the world amid the still raging pandemic, while health experts called for an objective, rational and scientific attitude towards vaccine candidates. At least 24 Covid-19 candidate vaccines were in clinical evaluation mid-summer 2020, and another 142 were in preclinical evaluation. Chinese experts said in a study published in medical journal The Lancet that a phase 2 trial of a Covid-19 vaccine candidate has found that the vaccine is safe and induces an immune response. "The phase 2 trial adds further evidence on safety and immunogenicity in a large population than the phase 1 trial. This is an important step in evaluating this early-stage experimental vaccine and phase 3 trials are now underway," said Professor Fengcai Zhu from Jiangsu Provincial Center for Disease Control and Prevention, China. A report published also in The Lancet revealed the results of the phase 1/2 trial of the Oxford coronavirus vaccine ChAdOx1 nCoV-19. It indicates no early safety concerns and produces strong immune response. The Russian Defense Ministry said that together with the Gamaleya Scientific Research Institute of Epidemiology and Microbiology, it has successfully completed clinical trials of Covid-19 vaccine with the participation of volunteers. "Without exception, all volunteers, having received immunity from the coronavirus, felt fine," First Deputy Defense Minister of the Russian Federation Ruslan Khadzhismelovich Tsaikov told Moscow's Argumenty i Fakty newspaper. German biotech company BioNTech and US pharmaceutical corporation Pfizer announced that data from their experimental Covid-19 vaccine showed that it was safe, and induced an immune response and high-level T-cell responses against the novel coronavirus in patients. Research institutes in other countries also reported progress in their Covid-19 vaccine trials. Despite the good news on Covid-19 candidate vaccines, experts warned of uncertainties of vaccine development and clinical trials, as well as multiple risks and challenges including virus mutation, while appealing for an objective, rational and scientific attitude towards vaccine research. Dr. Michael Ryan, executive director of the WHO Health Emergencies Program, said that there is no accurate timetable for the delivery of Covid-19 vaccines. Although the preliminary data of some candidate vaccines is quite promising, it is still unpredictable which one is totally clinically effective. While a vaccine candidate might show its effectiveness by year's end, the question is how soon it could be mass produced, he added. Saudi Arabia's Asharq al-Awsat newspaper said recently

尼奥预计疫苗接种后，2021年夏季成为“国内游客流量最大的一个夏季”他预测旅游行业将“强势复苏”（Xinhua, Brazil to Launch）。

在短暂的停顿之后，巴西重启了由北京科兴生物制品有限公司（科兴生物）研发的新冠病毒疫苗的后期试验。11月下旬，巴西卫生监督局表示已收到并充分评估信息，“以恢复疫苗试验”。试验只暂停了不到两天。巴西卫生监督局在一份声明中表示：“需要特别说明的是，暂停试验并不一定意味疫苗的质量、安全性或有效性有问题。”10月末，因一名试验志愿者死亡，巴西卫生监督局暂停了试验。科兴生物品牌管理和公共关系总监刘沛诚周二在一份声明中指出：“科兴将就此事与巴西方面继续保持沟通……我们对疫苗的安全性有信心。”科兴生物与巴西布坦坦研究所合作，布坦坦研究所是一家位于圣保罗的公共研究机构。科兴表示，试验中断是沟通不畅所致。科兴生物表示：“据了解，巴西卫生监督局未能及时收到布坦坦研究所发送的报告，于11月9日紧急暂停临床研究。11月10日，布坦坦研究所与巴西卫生监督局进行了沟通，数据安全监查委员会的报告也于当日提交巴西卫生监督局。”7月3日，巴西卫生监督局批准了CoronaVac的三期临床试验，计划招募9000名新冠患者测试疫苗的安全性和有效性。该疫苗还在印度尼西亚、土耳其和孟加拉国进行试验。此外，布坦坦研究所10月下旬宣布，它已获得巴西卫生监督局的批准进口足够生产4000万剂CoronaVac的原材料。布坦坦研究所在一份新闻稿中表示：“这是在获得可用有效的CoronaVac的重要一步，疫苗只有在获批注册且证明安全有效后才会使用。”巴西卫生监督局在新闻稿中补充说：“暂停和恢复临床试验是临床研究中的常见事件。为了保护试验志愿者的安全，巴西卫生监督局会评估所有目标在注册巴西授权药物的研究。”其他公司的新冠疫苗研发也经历过三期试验停顿。阿斯利康和牛津大学共同研发的AZD-1222的试验于9月暂停试验，随后也在不良反应报告出现后重启。10月，由于一名试验参与者出现不明原因的疾病，强生公司暂停了新冠病毒候选疫苗JNJ-7843635的试验。试验随后重启（Held）。

美国

今年7月，美国食品和药物管理局局长斯蒂芬·哈恩没有说明新冠病毒疫苗提供时间，美国总统唐纳德·特朗普曾表示，可能“完全不用等到年底”就会有疫苗。哈恩表示他无法预测疫苗何时面世，“当下，疫苗研发速度空前。但是，我们向美国人民庄严承诺，我们将根据有关疫苗的数据和科学，对疫苗的安全性和有效性做出判断。”特朗普7月4日在华盛顿发表国庆节讲话时表示，美国很可能完全不用等到年底就能出现治疗方案或疫苗。哈恩称自己对目前新冠病毒疫苗的研发进度表示“谨慎乐观”，并指出“年底或明年初”疫苗可能会研发完成（Xinhua, Refuses）。

今年8月，一种实验性新冠疫苗的三期临床试验第四阶段开始招募成年志愿者。该试验旨在评估杨森制药公司的实验性新冠疫苗JNJ-78436725单次给药后是否能预防有症状的新冠肺炎。大约有6万名志愿者在美国和其他国家近215个临床研究中心参与了此次试验。强生公司旗下的杨森制药公司研发该疫苗，并作为监管机构牵头了临床试验。这是美国新冠疫苗的第四次大规模三期临床试验。其他三个试验分别针对由牛津大学及其附属公司Vaccitech共同研发的候选疫苗AZD1222、美国国家过敏和传染病研究所和莫德纳公司联合研发的候选疫苗mRNA-1273、以及由辉瑞和BioNTech联合研发的候选疫苗BNT162b2。不同于其他候选疫苗，杨森的疫苗以单剂给药。它是一种重组载体疫苗，利用人腺病毒在细胞中表达新冠病毒刺突蛋白。发表在《自然》杂志上的临床前研究结果表明，杨森的疫苗在恒河猴体内诱导中和抗体反应，并在感染新冠病毒后显示出完全或半完全保护作用，防止病毒感染肺部和鼻部。试验的主要目的是确定实验性疫苗单次注射后能否预防中重度新冠肺炎。此外，研究旨在了解该疫苗能否预防需要医疗干预的新冠肺炎，以及能否预防较轻的新冠肺炎病例和无症状新冠病毒感染。一独立数据安全监测委员会将负责监督以确保研究的安全性和合乎伦理道德。传染病研究院主任安东尼·福奇说：“在新冠疫情爆发8个月后，4种候选新冠疫苗在美国进入三期临床试验。这对科学界来说是前所未有的成就。这得益于几十年来疫苗技术的进步，以及政府、产业界和学术界采取的统筹战略合作。”福奇补充说：“我们很可能需要多种新冠疫苗方案来满足全球需求。当下杨森的候选药物已经在早期试验中显示出了希望，如果单次注射后显示出保护作用，可能对控制新冠疫情特别有用。”（Xinhua, Fourth）

继辉瑞11月公布实验性新冠病毒疫苗临床试验得出的强劲有效性数据，生物技术公司莫德纳成为美国第二家疫苗制造商。这意味着部分美国人最早可能在12月下半月能够接种疫苗。莫德纳宣布其疫苗的有效率为94.5%。一周前，辉瑞和德国BioNTech表示分析显示他们的疫苗的有效率超过90%。莫德纳和辉瑞随后向美国食品和药物管理局（FDA）申请疫苗紧急使用批准，这意味着今年年底前至少很可能有两种疫苗获批。美国顶级传染病医生安东尼·福奇博士预计首批新冠病毒疫苗接种将“在12月下旬开始而非上旬”。福奇说：“我认为其他人将在4月底开始接种疫苗，持续到5、6、7月。完成大概需要几个月的时间。”莫德纳预计到年底能往美国运送约2000万剂疫苗。此外，该公司预计到2021年在全球范围内生产5亿至10亿剂疫苗。这两种疫苗都是隔几周分两剂注射，但储存方式存在巨大差异。莫德纳的疫苗需要长期储存在-20°C（-4华氏度），并能在2-8°C（36-46华氏度）环境下保持稳定30天。然而，辉瑞和BioNTech公司的疫苗需要在-70°C（-94华氏度）或温度更低的环境下储存。莫德纳的疫苗可以解冻，并可以在普通冰箱中保存30天。而辉瑞公司的疫苗只能在普通冰箱中保存5天。辉瑞公司表示，他们正在研发粉末状疫苗。粉状疫苗通常用水重新

that researchers should avoid being over-optimistic about the significant progress of some candidate vaccines in clinical trials, and wait for further trial results. Merck CEO Kenneth Frazier said that the effectiveness of developing vaccines cannot be guaranteed (Xinhua, Development Reported).

"There is now real hope that vaccines, in combination with other tried and tested public health measures, will help to end the pandemic," said the WHO Director-General Dr. Tedros Adhanom Ghebreyesus in November. "The significance of this scientific achievement cannot be overstated. No vaccines in history have been developed as rapidly as these. The scientific community has set a new standard for vaccine development," Dr. Tedros added. He pointed out now the international community must set a new standard for access, as "the urgency with which vaccines have been developed must be matched by the same urgency to distribute them fairly". Worried that the poorest and most vulnerable countries would be trampled in the stampede for vaccines, WHO established the Access to Covid-19 Tools Accelerator to support global efforts in developing vaccines, diagnostics and therapeutics, and joined 187 countries in the COVAX facility to collaborate on the procurement and rollout of vaccines, ensuring affordable prices, volumes and timing for all countries. According to the WHO chief, some 4.3 billion US dollars was needed immediately to support the mass procurement and delivery of vaccines, tests and treatments, while additional 23.8 billion dollars will be needed next year. "The International Monetary Fund estimates that if medical solutions can be made available faster and more widely, it could lead to a cumulative increase in global income of almost 9 trillion dollars by the end of 2025," he said (Xinhua, Real Hope).

By early December, a robust and very strong safety monitoring system was in place for vaccines globally to ensure their safety. Kate O'Brien, director of the WHO's Department of Immunization, Vaccines and Biologicals, said the system is capable of looking at relevant data in real time. "So, if there is any concern around the vaccine, we have the ability to look at that and to investigate it and to really understand if there is really any issue," she said during a virtual news conference in reply to a question about hesitancy among some people to take new vaccines for the novel coronavirus. O'Brien emphasized the fact that safety was a critical part of the evidence that is assessed by regulators during large-scale clinical trials. And she noted that vaccine hesitancy and questions about vaccines can be legitimate, but that people need to make sure the information they are basing decisions upon is rooted in science. She also emphasized the importance of sharing information and of transparency throughout the regulatory process. According to a Pew Center survey, people in the United States intent on getting a Covid-19 vaccine rose to 60% in late November, from 51% in September, indicating confidence in research and development processes has increased. Around 20% were "pretty certain" they would not get vaccinated, however, even if there is more information available. The US was the hardest hit country that has been hardest hit by the novel coronavirus. In an Ipsos survey in October, only one in five citizens surveyed globally said they wanted to get a Covid-19 vaccine immediately after one became available. In most countries, many people said they would like to have the vaccine a few months after it is rolled out (Chen).

The following examples, mostly seen through the lens of official Chinese media, demonstrate how different regions from around the world dealt with the devastating blow of the coronavirus pandemic that rocked the world during 2020.

China

Since SARS-CoV-2 was first reported in China almost a year ago, policymakers have swung the weight of the state's resources towards developing a vaccine. Their approach, alongside similar efforts in other countries, has thrown a spotlight on immunology, epidemiology and virology, bringing increased funding, prestige and public interest. Conversations with Chinese immunologists, policymakers and funders reveal a complex picture of science mixed with international politics. Scientists, drug developers and research institutions were racing to tackle the virus. But some were concerned about the cost of rapid progress, and the incentives that have

配置后注射。据报道，粉末状疫苗可在标准冷藏温度下保持效用，并可能在2021年完成。福奇所在的国家过敏和传染病研究所与马萨诸塞州剑桥市的莫纳德公司合作研发该疫苗。今年7月，该公司表示预计在这项研发项目投入约4.1亿美元。为了加快新冠病毒疫苗的研发，联邦政府退出"曲速行动"项目，在8月份与莫德纳签署一份价值15亿美元的合同，以加快生产和交付足够5000万人使用的1亿剂疫苗。另外政府可选择购买最多4亿剂疫苗。辉瑞和莫德纳的疫苗效果类似，因为他们采用类似的技术来激活身体的免疫系统。疫苗携带mRNA，以制造新冠病毒的刺突蛋白基因。注射后身体的免疫系统会产生抗体。如果接种过疫苗的人之后接触到新冠病毒，抗体会随时准备攻击病毒。目前市场上没有使用mRNA的疫苗。福奇谈道："人们一直对mRNA持怀疑态度，这种全新的方法有效吗?我们在试验中没有发现安全问题，疗效也相当不错。辉瑞和莫德纳的疫苗试验结果几乎相同，它基本验证了mRNA的用处。" (Heping)

然而，美国方面的消息却不尽人意。12月，美国公共卫生官员呼吁制药商公布其新冠病毒疫苗副作用的详细信息，此前受试者出现高烧、身体疼痛、头痛和疲劳问题。美国医学协会的桑德拉·弗莱霍弗博士担心因为辉瑞公司和莫德纳公司的疫苗需要分两次注射，如果第一次注射产生了严重的副作用，人们就会放弃注射第二针。弗莱霍弗在与免疫实践咨询委员会的在线会议上说："我们真的需要让患者意识到这并不像在公园里散步那么简单。"免疫实践咨询委员会是为美国疾病控制和预防中心提供建议的医学专家团体（CDC）。"他们要知道他们将注射疫苗，可能会有不良反应，但还得回来注射第二剂。"所有疫苗生产商都表示，接种疫苗的患者可能会出现轻微的新冠症状。但是医生希望生产商进一步解释疫苗对不同病人的具体影响（Robinson）。

加拿大

2020年5月，加拿大正式批准首个新冠疫苗用于临床试验。加拿大总理贾斯廷·特鲁多表示，国家卫生部批准加拿大达尔豪西大学疫苗学中心开始对候选疫苗进行临床试验。特鲁多说："如果疫苗试验成功，我们就可以在国内生产和接种。研发需要时间，而且必须要遵守规定，但这是令人鼓舞的消息。"特鲁多说，加拿大国家研究委员会与潜在疫苗制造商合作，如果试验成功就能够在国内进行生产。据报道，加拿大卫生部迄今批准了33项针对新冠病毒的支持性护理或治疗临床试验。加拿大国家研究委员会宣布与康希诺生物合作，将在加拿大推进候选新冠疫苗的生物加工和临床研发。名为Ad5-nCoV的候选疫苗今年早些时候获得了中国监管机构的批准，康希诺生物得以继续在中国进行人体临床试验。这是迄今为止世界上仅有的几种用于人体初步安全试验的候选疫苗之一，也是首个开始二期人体临床试验的候选疫苗。康希诺生物和加拿大国家研究委员会结合各自的技术和专业知识共同抗击新冠病毒，旨在与加拿大疫苗学中心的加拿大免疫研究网络合作，为将来在加拿大进行临床试验铺平道路。该疫苗已获得加拿大卫生部的批准，康希诺生物目前正在提交临床试验申请。Ad5-nCoV采用中国和加拿大的技术，由北京生物技术研究所和康希诺生物共同研发，使用一种基因工程复制缺陷腺病毒5型载体表达新冠病毒刺突蛋白，该蛋白由加拿大国家研究委员会设计和开发的活细胞培养（Xinhua, Canada Approves）。

加拿大安格斯里德研究所8月份发布的一项调查显示，加拿大人对接种上市的新冠疫苗态度不一。调查显示，46%的受访者表示他们没有保留意见，一旦有疫苗就准备接种。不过，32%的受访者表示他们会先观望。在那些表示会等待接种疫苗的人当中，约76%的人也表示担心疫苗的副作用。相比之下，在那些急于尽快接种疫苗的人之中，只有37%担心疫苗可能产生的副作用。据调查显示，75%的人认为在大多数人接种疫苗之前，社区生活无法恢复正常。也有75%的受访者表示，长期护理中心相关人员应强制接种新冠疫苗。长期护理中心是受新冠疫情影响最严重的地方。约63%的人认为在校人员应该强制接种疫苗（Xinhua, Canada Divided）。

加拿大卫生监管机构去年12月批准了辉瑞的新冠病毒疫苗。加拿大卫生监管机构在官网宣布由美国辉瑞制药公司和德国BioNTech公司联合研发的疫苗获得批准。加拿大卫生部指出："我们的审查过程很严格，因为我们有强大的监督系统，加拿大人民要对此充满信心。一旦疫苗上市，卫生部和公共卫生局将密切监测其安全性，如果发现任何安全问题，我们将毫不犹豫地采取措施。"加拿大当月收到了24.9万剂疫苗，预计到2021年3月将收到400万剂疫苗。卫生部表示，该疫苗适用于16岁及以上人群，但同时指出辉瑞正在对所有年龄段的儿童进行进一步临床试验，适用人群可能会有变化。该疫苗已经得到英国的批准，有关官员说，他们预计美国会在几天内批准该疫苗。加拿大已经购买了2000万剂疫苗，这种疫苗要求每人接种两剂。加拿大·还能选择再购买5600万剂。加拿大卫生部继续审查其他三种候选疫苗，其中包括莫德纳的疫苗。安大略市市长道格·福特说："这对加拿大人民来说是重大好消息，我们将结束新冠疫情。一旦安大略市收到疫苗，我们将马上交付和接种。"（Xinhua, Canada Health） been created for companies and researchers to rush their work. Many people see China “as mishandling the early stages of the epidemic”, but there is a sense that if they come up with a vaccine, then they’re saving the world and can exonerate themselves in the eyes of the public, says Elanah Uretsky, a medical anthropologist at Brandeis University in Waltham, Massachusetts, whose research into China’s global role in public health has brought her into contact with scientists working on Covid-19. The concept that science can boost China’s public image is fundamentally baked into politics. In China, science and academia are of great interest and importance to the ruling party and its mission of strengthening the state. In December, China’s coronavirus task force announced it had 13 vaccines involved in clinical trials, and the World Health Organization’s tracker lists 11 being developed there. Two of those were developed by the state-owned enterprise Sinopharm. A third is being made by the private pharmaceutical company CanSino Biologics in Tianjin, in collaboration with military backed researchers. Beijing-based firm Sinovac Biotech is developing the fourth candidate, and the fifth comes from a collaboration between Anhui Zhifei Longcom Biologic Pharmacy and the Chinese Academy of Sciences’ Institute of Microbiology (Murphy).

China made bold promises in the race for a coronavirus vaccine in October 2020. A Chinese health official publicly pledged that an effective coronavirus vaccine would be available by the end of the year. The country also committed to sharing its vaccines with more than a dozen nations, particularly low-income countries that it has close ties with. Some scientists, however, questioned whether the country would be able to produce enough doses to meet its international commitments, and if deals with individual countries are the best way to ensure equitable vaccine distribution. Wu Guizhen, the chief biosafety expert at China’s Center for Disease Control and Prevention in Beijing, told Chinese state media that two vaccines co-developed by Shanghai pharmaceutical group Sinopharm and other groups would be available in November or December. The vaccines were being tested in countries including the United Arab Emirates, Bahrain, Peru and Argentina. In the same month, China announced that it had joined Covid-19 Vaccine Global Access (COVAX), the collaborative effort by Gavi, the Vaccine Alliance, together with the Coalition for Epidemic Preparedness Innovations (CEPI) and the World Health Organization (WHO), which aimed to provide two billion doses of vaccine to the most vulnerable people and health-care workers especially in poor countries. Some 80 wealthy ‘self-funding’ countries committed to support the initiative, with the notable exception of the US. Chinese vaccine makers developed four of the roughly dozen leading candidate vaccines that are in the final stages of testing worldwide. No vaccine had yet completed the crucial phase III trials that are needed to firmly establish safety and efficacy. But that didn’t stop hundreds of thousands of people in China and abroad being injected with one of the four Chinese vaccine candidates under policies known as emergency-use authorization. Scientists said the country’s drug regulator, which is part of the Ministry of Health, needed to wait for robust trial data that showed the vaccines were safe and effective before granting vaccines full approval. In an e-mail to Nature, Wu said that the health ministry will await the results of large trials before approving them for sale. “Until then, there are still uncertainties,” she said. Outside China, expectations were high that a successful Chinese vaccine would soon be available. China’s leader, Xi Jinping, told the World Health Assembly in May that its vaccines would be a “Global public good”, and the list of countries with which China had promised to share its vaccines continued to grow. Government leaders, including Xi and Premier Li Keqiang, publicly pledged to make Chinese vaccine accessible to the Philippines, Cambodia, Burma, Thailand, Vietnam and Laos, as well as African and Latin American countries. Chinese vaccine makers also had agreements with the countries where vaccines were being tested (Cyranoski).

The primary worry from the general public was that vaccinations would give people who've had them a sense of invincibility that was not warranted – and that could help spread the virus. A vaccine may work to prevent bad outcomes from infection, but it may not prevent infection itself in some cases. But among those in China given preferential access to the experimental vaccine, the unorthodox approach was a sign of China's

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strength — first in controlling a coronavirus epidemic, then in its ability to potentially protect its workers. China's four experimental vaccines developed by three companies started going through phase III human trials and safety testing before they can be approved for commercial use in late September. In reality, their vaccines had already been deployed months earlier in the summer for "emergency use" and shot into the arms of people that China deems vulnerable to Covid-19, including front-line medical workers and critical service providers in large cities. Sinovac had already set up several vaccination sites in China's coastal Zhejiang province where several hundred vaccine doses each day were sold first come first served for about 400 RMB (US$60) in out of pocket costs. Other countries followed suit. The Philippines claimed it vaccinated up to 9 million people with Sinovac's product before the official try started. The Brazilian state of Sao Paolo conducted advanced human trials for Sinovac and intended to buy the vaccine once approved. Brazilian authorities temporarily suspended the trials the following month however after an apparent suicide of one of the trial participants. "Administering the vaccines through emergency use is a very necessary measure," Zheng Zhongwei explained. "The decision to approve emergency use came after rounds and rounds of strict debate and evaluation after relevant World Health Organization regulations were fulfilled." Global health experts said that reasoning was flawed. "There is no emergency in China, because there are basically zero confirmed cases over many months already," Hong Kong University molecular virology researcher Jin Dong-Yan said. There are other risks, too. Antibodies from new vaccines in rare cases can be found to make things worse. Beyond health, rolling out vaccines without all the data raises other risks for China. Already, a string of quality scandals over the years has people inside the country, and out, skittish about made-in-China drugs. If something goes wrong with these vaccines, it would be a disaster. In October, Chinese media reported students studying abroad could sign up for Sinopharm's coronavirus vaccine in Beijing and Wuhan, the port city where the epidemic first began. But the registration platform was taken down the next day, and those who had signed up were notified that Sinopharm could no longer provide the vaccine (Fend and Ruwitch).

By the end of November 2020, almost a million people in China had already taken an emergency Covid-19 vaccine that was still in its official testing phase. Chinese authorities released the vaccine to select groups of people in July including Chinese government officials, students, and workers travelling overseas, before the vaccines had been proven to work. Sinopharm did not specify which of its vaccines had been given, but said the individuals had travelled to more than 150 countries around the world and "there has not been a single case of infection after inoculation". "Only individual patients have had some mild symptoms. The overseas trials caused some controversy, in part because of a lack of communication from Chinese authorities. In August, 48 Chinese construction workers were barred from entry to Papua New Guinea over concerns they had been given an unnamed experimental vaccine. More widely, however, the decision by countries like China and Russia to go ahead with vaccination programs before completing full testing was quite concerning. Experts warned that taking short cuts to internationally accepted approaches to testing and regulation could fuel a wider public mistrust over coronavirus vaccines and potentially reduce the uptake required for effective protection of populations. China had promised to supply multiple countries with its vaccines, delivering potentially conflicting promises to prioritize places such as the Philippines and nations in Africa (Davidson).

Though China's vaccine had not been formally been proved safe or effective, officials injected them into thousands of people across the country, ostensibly under an emergency-use policy. One such campaign was underway in the city of Yiwu in eastern China. The campaign succeeded perhaps too well. Yiwu's 500 doses were consumed within hours. Other cities were limiting doses or asking people to show proof that they were traveling. The overwhelming demand has inspired a cottage industry of scalpers — called "yellow cows" in China, the people who usually score the newest iPhones or hot railway tickets — charging as much as US$1,500 for an appointment. Those users could be taking big risks. People who have taken ineffective vaccines might believe they are safe and engage in risky behavior. They can be barred from

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taking another, better vaccine because they have already been injected. In a few cases in the past, unproven vaccines have caused health risks. The potential problems often go undiscussed. Copies of the vaccination consent forms for one candidate that were reviewed by The New York Times did not specify that the product was still in testing. It is unclear how many people have already received a vaccine candidate. Local governments indicated they planned to make the current vaccines available to more people. Beijing said it kept tabs on those who had been given the vaccines but did not disclosed any details. The contrast with the United States is stark. A growing number of polls showed that many Americans would not take a coronavirus vaccine, which could imperil efforts to stamp out the pandemic. According to a global online survey published in October in the journal Nature, respondents from China gave the highest proportion of positive responses when asked if they would take a “proven, safe and effective vaccine.” In China, there’s this trend of ‘everyone is getting it, so I want it, too. Chinese officials defended making vaccine candidates available. Zheng Zhongwei, a top official at China’s National Health Commission, said that the move was a “very necessary means of protecting peoples’ lives and health,” given outbreaks abroad. China’s drive has taken nationalistic overtones, with many celebrating the fact that the country has candidates in late-stage trials (Wee and Chen).

Russia

Iran and Russia cooperated to produce a Covid-19 vaccine in the Islamic republic as Covid-19 cases in Iran surged. Iran was the hardest-hit country in the Middle East region. The announcement of Iran-Russia cooperation on producing a coronavirus vaccine was made at a September online meeting between Kazem Jalali, Iran's ambassador to Moscow and Kirill Dmitriev, CEO of Russian Direct Investment Fund. Jalali called for further health and medical cooperation between the two countries. "The lack of compliance of the citizens will increase the number of infections and make the ministry to stop at a certain stage because our health institutions have a limited capacity and this will also lead to an increase in deaths," Ryadh Abdul-Amir, head of Iraqi Public Health Department in the Health Ministry, said in a press release (Xinhua, Iran Russia).

Russia claimed to have registered the world's first vaccine against the novel coronavirus in August 2020 though the US, China and Turkey may have beaten them to the punch. Russian President Vladimir Putin claimed, "As far as I know, this morning, for the first time in the world, a vaccine against the new coronavirus infection has been registered," Putin said during an online meeting with the Russian government. Russian Health Minister Mikhail Murashko confirmed at the meeting that the vaccine issued in Russia is the first in the world, while other countries are conducting clinical studies of vaccines under development. Murashko said that the new vaccine, after passing all necessary checks, showed that it forms a stable immunity. "The main thing, of course, is that in the future we can ensure the unconditional safety of this vaccine and its effectiveness," Putin said, congratulating everyone who worked on the drug. Russian Deputy Prime Minister Tatyana Golikova said at the meeting that she expected the production of the vaccine would start at the end of August or the beginning of September and health workers would be the first to be vaccinated. Putin said one of his daughters had been vaccinated against the coronavirus was feeling well afterward Xinhua, Russia First). Russia immediately began production of the first batch of vaccines against Covid-19. Russian President Vladimir Putin announced the world's first registered vaccine against the novel coronavirus was named Sputnik V after the space satellite launched by Moscow in 1957. The vaccine was created by the Gamaleya Scientific Research Institute of Epidemiology and Microbiology, a medical institute located near Moscow. Health Minister Mikhail Murashko said Russia would offer the vaccine to other countries once its own citizens were vaccinated, adding that doubts over the effectiveness of the vaccine are unfounded (Xinhua, Russia Begins).

Asia

Japan started conducting clinical tests of a vaccine for the novel coronavirus in late June.

此页留白

According to Osaka Governor Hirofumi Yoshimura, the test initially targeted 20 to 30 medical workers at Osaka City University Hospital, and was expected to expand to hundreds by October. Starting from April, the prefectural and municipal governments of Osaka as well as AnGes Inc, a startup set up by an Osaka University professor, began working on treatment drugs and vaccines for the coronavirus. By injecting a genetically engineered circular DNA into the body, the envisioned vaccine expected to stimulate the immune system and make antibodies against the coronavirus. Early results from tests in mice showed increased antibody production and had proven its safety. Ryuichi Morishita, a professor of clinical gene therapy at Osaka University and founder of the AnGes, said the university would increase the number of people given the vaccine in stages while working to confirm whether antibodies can be produced. AnGes' candidate was one of Japan's best hopes for a novel coronavirus vaccine as development was further along than others being produced by firms such as Shionogi & Co and Daiichi Sankyo Co (Wang).

In October, the Japanese Health Ministry's advisory body approved a policy to provide all members of the public in Japan with a free dose of vaccine against Covid-19 in a move aimed at tackling the spread of the virus. Amid ongoing uncertainty as to how many doses of a vaccine might need to be administered for it to be effective, the policy refers to, at this stage, the initial dose for the Japanese public. At this point it had yet to be officially decided whether foreign residents in Japan would be covered by the policy, despite the vast majority of foreign residents there in gainful employment paying for the National Health Insurance in the same way as the Japanese. The government said that by the first half of 2021 it hopes to have secured enough vaccines from a budget of 671.4 billion yen (US$6.4 billion) to secure and administer enough vaccines to all members of the public. It agreed with British drug maker AstraZeneca Plc to receive 120 million doses of a potential Covid-19 vaccine being developed with the University of Oxford. Similarly, Japan has agreed with Pfizer Inc and its German partner BioNTech SE to receive 120 million doses of their potential vaccine, providing its development proves successful. Japan was also in negotiations with US firm Moderna Inc for at least 40 million doses of its vaccine candidate (Xinua, Japanese Public). The Japanese government endorsed the bill later in October to make novel coronavirus vaccinations free to all residents here. The bill would also compensate the suppliers of the vaccines should serious side effects be caused and free health care will be offered to recipients of the vaccine should they experience any adverse effects. The bill amended the current vaccination law and came on the heels of Prime Minister Yoshihide Suga in his first policy speech in parliament since taking office, saying that the government would make sure that it secured enough vaccines for all people in Japan. Once their safety has been confirmed pending clinical trials and regulatory approval, Suga said the government aims to secure enough vaccines for all people in Japan in the first half of 2021. While the Japanese government has been hoping that pharmaceutical firms here will be able to develop a homegrown vaccine, so far local drug makers involved in Covid-19 vaccine developments are only in clinical trials. The government also endorsed a separated bill on the same day to revise the quarantine laws so that the isolation measures for people who test positive for the virus upon entry into Japan can be continued after February next year (Xinhua, Japan's Govt).

Indian Health Minister Harsh Vardhan said that no date for launching the Covid-19 vaccine had been fixed yet but it might be ready by the first quarter of 2021. "Efforts are being made to ensure that vaccine manufactures will try to produce these vaccines parallelly so that we don't lose precious time in providing vaccines to the population." His comments came two days after Indian vaccine manufacturer Serum Institute of India (SII) said it would pause Phase 3 trials that were to begin in India in September after international biopharmaceutical company AstraZeneca stopped vaccine trials in four countries as a precautionary measure. The pausing of trials by the pharma giant was linked to a British volunteer showing potentially adverse symptoms. The minister said that the government was taking full precautions in conducting the human trials of the vaccine. "Issues like vaccine security, cost, equity, cold-chain requirements, production timelines, etc. are also being discussed intensely," he said. Vardhan

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said he would volunteer to receive the Covid-19 vaccine first if people have a "trust deficit" on the drug. However, he stressed that frontline health workers, senior citizens and those with comorbidities should be given the vaccine first whenever it becomes available. "If there are doubts over government or around the scientists or over the development of vaccine then to dispel the doubts I will be the first to get vaccinated," the minister said. "However, I personally feel the ones who need it (vulnerable groups) shall be given the vaccine and I am not among those." Vardhan also said it was premature to comment on the price of the vaccine which was still under trial. "But the government of India will assure that the vaccine will be made available to those who need it the most, irrespective of their paying capacity," he said (Xinua, Vaccine Possible).

Indian Minister of Finance and Corporate Affairs Nirmala Sitharaman announced a grant of over US$120.6 million for the research and development of Covid-19 vaccine in November 2020. The announcement came during the spelling out of the third stimulus for the revival of economy in the wake of the ongoing Covid-19 pandemic. At the time of this writing, three Covid-19 vaccine candidates were in different stages of human clinical trials in India. The government also approved over US$2 billion financial outlay to incentivize the global and domestic players to engage in high-value production of pharmaceutical drugs (Xinhua, India's Finance).

Oceania

A Covid-19 candidate vaccine developed in South Australia (SA) cleared the first phase of testing in July 2020. The vaccine developed by Nikolai Petrovsky from Flinders University was the first Australian candidate to pass phase one trials after it was found to be safe and generated an immune response in human subjects. Dubbed "Covax-19," the vaccine was administered to 40 volunteers in the first phase of trials. "We have confirmed that the Covax-19 vaccine can induce ¬appropriate antibody responses in human subjects," said Petrovsky, the founder of biotechnology company Vaxine. We now have preliminary safety data showing there were no significant systemic side-effects in any of the subjects. We also have permission to immunize subjects who have ¬already had Covid-19 to see if we can further boost their immunity and prevent them getting re-infected." Petrovsky said he has offered to dose aged care residents at risk of contracting Covid-19 with his vaccine in Victoria, the hardest-hit state in the country. None of the 40 volunteers in phase one developed significant side-effects or a fever, and if Covax-19 passes phase two, Vaxine would have to enroll up to 50,000 volunteers from around the world for phase three, according to the report (Xinhua, Aussie COVID-19).

An Australian Covid-19 vaccine under development by the University of Queensland (UQ) and local biotech firm CSL will not progress to Phase 2/3 trials after returning false positive HIV test results. Despite eliciting an effective virus response and strong safety profile, a deal for the Australian government to purchase over 50 million doses of the vaccine had been cancelled. UQ and CSL stressed there was no possibility the vaccine causes HIV infection and that 216 people involved in the trial experienced no serious adverse health effects. The issue stems from the use of an HIV protein to stabilize UQ's molecular clamp vaccine. Despite posing no risk to health, the presence of the protein prompts an antibody response which is detectable in HIV tests. However, due to the implications of delivering the vaccine to the broader populations and potential interference with existing HIV testing procedures, CSL and the Australian government agreed vaccine development would not proceed to Phase 2/3 trials. Chief Scientific Officer for CSL Dr. Andrew Nash said the outcome "highlights the risk of failure associated with early vaccine development." CSL will continue with plans to manufacture approximately 30 million doses of the Oxford/AstraZeneca vaccine candidate with first doses planned for release in Australia in early 2021. Following the failure of the UQ vaccine, the Australian government revealed it would commission the manufacture of additional 20 million doses of the Oxford/AstraZeneca and increase access to the US Novavax vaccine to around 50 million doses. Australian Prime Minister Scott Morrison said it was no surprise that not all vaccine candidates made it through the trial

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process and that a commitment to safety and health was central to the government's response (Xinhua, Program Scrapped).

Africa and the Middle East

In April, World Health Organization (WHO) Director-General Tedros Adhanom Ghebreyesus said that Africa would not become testing ground for any vaccines against Covid-19. "Africa cannot and will not be a testing ground for any vaccine. We will follow all the rules to test any vaccine or therapeutics all over the world using exactly the same rule, whether it's in Europe, Africa or wherever," Tedros said. "Appalled" by comments made by some scientists, who said the testing ground for the new vaccines will be Africa, Tedros said "the hangover from a colonial mentality has to stop". Two French doctors have been accused of racism after a TV debate in which one suggested trials in Africa to see if a tuberculosis vaccine would prove effective against coronavirus. While condemning those "racist remarks" in "the strongest terms" and as "a disgrace", the WHO chief reiterated that "this will not happen in Africa, and will not happen elsewhere, in any country." "Proper protocols will be followed and human beings will be treated as human beings... the same way equally," he underlined. Tedros revealed that the WHO would hopefully announce later this week an initiative to accelerate research, development and production of vaccines against Covid-19, as well as designed mechanisms for "equitable distribution" of the vaccines. "We will have a problem while looking for vaccines, unless we break the barriers to equitable distribution of the products," he said, adding "we need to address the challenges to access ahead of time". According to the WHO chief, more than 70 countries joined WHO's Solidarity Trial to accelerate the search for an effective treatment, and at this point about 20 institutions and companies were racing to develop a vaccine (Xinhua, Africa).

In May 2020, South African President Cyril Ramaphosa said any Covid-19 vaccine should be made freely and equitably available to citizens of all countries. The South African government supported and funded several research projects, including a plan to locally manufacture coronavirus vaccines as soon as candidates are available. Ramaphosa said South Africa will use the skills, expertise, infrastructure and organizations within the vaccine industry to produce and distribute the vaccines (Xinhua, South Africa).

Egypt's Health Ministry announced that it had started to prepare for the manufacturing of a Covid-19 vaccine in cooperation with the Chinese government once the vaccine is proved effective in trials. Egypt aimed to become the African continent's center of coronavirus vaccine manufacturing. The Ministry of Health and Population said it discussed with China about that, after a meeting between health minister Hala Zayed and the Chinese Ambassador to Egypt Liao Li Chang in July. The meeting discussed Egypt's participation in conducting experiments as one of the international centers involved in producing coronavirus vaccines in cooperation with China. Zayed chaired a meeting at the headquarters of the Holding Company for Biological Products and Vaccines (VACSERA), an Egypt vaccine manufacturer, to inspect the readiness of the company's factories and production lines to begin producing the vaccine. Health Ministry spokesperson Khaled Megahed said that the minister also checked the efficiency of the company's infrastructure and factory equipment to determine what is needed and identify any obstacles to be resolved. The World Health Organization (WHO) has instructed that at least one or two countries per continent should manufacture Covid-19 vaccine (CGTN, Egypt).

Turkish President Recep Tayyip Erdogan said Turkey become the third country to develop vaccines locally against Covid-19 in August after the United States and China according to the World Health Organization. "The Covid-19 Turkey Platform, founded by the TUBITAK (the Scientific and Technological Research Council of Turkey,) is currently working on eight different vaccines and 10 different medication projects," Erdogan said at the opening ceremony of the TUBITAK Excellence Centers in the northwestern province of Kocaeli. "Collaborating with state and private sectors and universities, Turkey has been making significant progress in developing vaccines and drugs against Covid-19," the Turkish leader added. Erdogan noted that two vaccine candidates have

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successfully completed the animal tests, and one of them has received ethical approval to move on to the clinical trial on humans (Xinhua, Erogan Says).

By late November, the United Arab Emirates announced that China's state-backed coronavirus vaccine protected 86% of people against Covid-19 in trials conducted in that country, state media there reported, giving credence to the quickly developed shot that Beijing planned to distribute around the developing world. The data was from trials that included 31,000 volunteers in the UAE, which found the vaccine was highly effective in preventing moderate and severe cases of Covid-19 and had no serious safety concerns, according to the report that cited the UAE's Ministry of Health and Prevention. That paved the way for full public use of the vaccine and a re-opening of the Gulf nation's economy. In an early sign of how the vaccine could be a game-changer, Abu Dhabi officials said that they would start working with local authorities to "resume all activities within two weeks," including economic, tourism and cultural operations. With an 86% efficacy rate, the vaccine would almost meet the high bar set by Western front-runners, but those companies have disclosed more detail. The protection rate of CNBG's shot is also higher than the results from the vaccine developed by AstraZeneca Plc and the University of Oxford. The CNBG vaccine could become a more favorable option to vaccinate large swathes of the developing world. While mRNA vaccines from Pfizer Inc. and Moderna Inc. showed higher efficacy of more than 90%, those present distribution challenges for some nations as they required deep-freeze facilities and trucks. CNBG's vaccine can be transported and stored at normal refrigerated temperatures. The difference is that the Chinese vaccine uses an inactivated version of the coronavirus to prime human immune systems to fight it. While Pfizer and Moderna are among developers relying on novel technology, manufacturers have decades of experience with the method that the Chinese company is using. Still, those inactivated vaccines can require multiple booster shots to achieve strong immunity, and production means handling large amounts of the virus. In theory, mRNA vaccines should be much faster to manufacture, because they require only tiny volumes of raw material to produce millions of doses (Che and Paton).

Bahrain has started inoculating frontline workers with a Chinese Covid-19 vaccine in early November. The program used a shot developed by Chinese State-owned pharmaceutical company Sinopharm, which is in Phase III trials in the United Arab Emirates, Egypt, Bahrain and Jordan. Bahrain's Health Minister Faeqa bint Saeed Al Saleh said that the use of the vaccine complies with the country's regulations on exceptional licensing in emergency cases. Around 8,000 people volunteered by midmonth in the Phase III trials in Bahrain and received a second dose. Abu Dhabi-based artificial intelligence and cloud computing company Group 42 (G42) handling the trials in the Middle East he vaccine. Several ministers and senior officials received the vaccine early in the program in both the UAE and Bahrain, including Bahrain's crown prince (CD, Bahrain).

Great Britain

Thousands of volunteers in the UK took part in late-stage trials of a Covid-19 vaccination from United States biotechnology company Novavax, the UK government has announced. Ten thousand people have been recruited to the Phase III trial for the so-called NVX-CoV2373 vaccine. Half the volunteers will receive the real treatment, with the remainder being given a placebo. At this time, daily cases of Covid-19 had risen sharply over several weeks in the UK. While this is a concern for the public and health services, it made the nation a good proving ground for the vaccine, as many volunteers were likely to be exposed to the virus. This was the first Phase III study for the Novavax vaccine, and the second Phase III vaccine trial to be initiated in the UK after the commencement of late-stage trials for a Covid-19 inoculation from biotechnology company AstraZeneca. "With a high level of SARS-CoV-2 transmission observed and expected to continue in the UK, we are optimistic that this pivotal Phase III clinical trial will enroll quickly and provide a near-term view of NVXCoV2373's efficacy," said Novavax Research and Development President Gregory Glenn. The NVX-CoV2373 works by introducing nanoparticles into the body that bear spike proteins from the novel coronavirus, eliciting an immune response. The vaccine also delivers an adjuvant called Matrix-M. An adjuvant

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is a pharmacological ingredient that encourages the body to produce more antibodies when the immune system is triggered by the spike proteins. Novavax initially developed the NVX-CoV2373 technology for influenza, and began repurposing the vaccine in January when the pandemic began to take hold. The vaccine gained approval for late-stage trials after showing promise in animal testing and safety studies. Of at least 90 COVID-19 vaccine candidates in development around the world, fewer than one dozen reached Phase III clinical trials. Several major Chinese healthcare companies, including Sinovac Biotech, CanSino Biologics, and Sinopharm, were involved in the development of vaccines that have entered late-stage trials. The UK government secured 60 million doses of the Novavax vaccine, which began manufacturing in Stockton-on-Tees in England by Fujifilm Diosynth Biotechnologies, a company that produces active ingredients for pharmaceutical companies. "Finding a safe and effective vaccine that works for the majority of the UK population is the best way to tackle this devastating disease," said Kate Bingham, chair of the UK government's vaccines taskforce. "Whilst social distancing, testing and other measures can help reduce the impact of coronavirus, the only long-term solution to beating it will be finding a vaccine. One of the ways people can help with that is by signing up to the (National Health Service) Vaccines Registry, so they can be rapidly called." The addition of the Novavax study means that around 250,000 people were registered to take part in various Covid-19 vaccine trials in the UK. "The more people that sign up, the quicker we can find a safe and effective vaccine, defeat this virus and protect millions of lives," said UK Business Secretary Alok Sharma (McNeice).

The UK was the first Western nation to authorize a Covid-19 vaccine, a landmark moment in the coronavirus pandemic that paved the way for the first doses to be rolled out across the country. A final analysis of the Phase 3 trial of the vaccine shows it was 95% effective in preventing infections, even in older adults, and caused no serious safety concerns, Pfizer. The announcement meant the UK vaulted past the US and EU in the race to approve a vaccine, months into a pandemic that has killed almost 1.5 million people worldwide. "We believe it is really the start of the end of the pandemic," BioNTech CEO Ugur Sahin said. Pfizer CEO Albert Bourla hailed the emergency authorization as "a historic moment in the fight against Covid-19." The UK has ordered 40 million doses of the vaccine -- enough to vaccinate 20 million people. Hancock said an initial 800,000 doses would be delivered from Pfizer's facilities in Belgium to the UK, and "many millions" more before the end of 2020. Elderly people in care homes, those who care for them, health workers and other vulnerable people will be top of the priority list. The vaccine has been rolled out at extraordinary speed, from conception to approval in around 11 months, according to BioNTech. The process usually takes years. Prime Minister Boris Johnson called the news "fantastic", saying that "we are no longer resting on the mere hope that we can return to normal next year in the spring, but rather on the sure and certain knowledge that we will succeed, and together reclaim our lives." The UK health department said the approval followed “months of rigorous clinical trials and a thorough analysis of the data" by the Medicines and Healthcare products Regulatory Agency (MHRA), which had "concluded that the vaccine had met its strict standards of safety, quality and effectiveness." MHRA chief Dr. June Raine insisted that "no corners have been cut.” Raine said the clinical trials were "overlapping" to make progress on the process faster. "Separate teams have been working in parallel to deliver this review," she added. BioTech and Pfizer submitted their vaccine candidates to the FDA in mid-November. Another vaccine, from US biotech firm Moderna, is awaiting approval in various countries, including the US and UK. The company expects to have 20 million doses available in the US by the end of 2020 and 500 million to 1 billion in 2021. The UK has secured 7 million doses of Moderna's vaccine, which is set to be available in Europe in spring 2021. Moderna has also submitted its vaccine to the EMA in Europe, which will look at it on January 12 (Pleitgen).

A 90-year-old woman from Northern Ireland became the first person in the world to receive the Pfizer/BioNTech Covid-19 vaccine out of a trial as the UK's mass vaccination program. Chaand Nagpaul, chair of the British Medical Association, said the first vaccination was a "landmark moment" in combating this virus. "But we need

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to be honest in that this is going to pose a huge logistical challenge for our health service," he added. "More public health advice needs to be put our because this really is fundamental to how you treat a viral pandemic... so there are quite a lot of challenges ahead." The news about the other soon-to-be dispensed vaccine, however, was not so good. Earlier this year, the government vaccine task force said it hoped that around 30 million doses of the Oxford vaccine would be made in the UK by the end of the year, and it was reported that they had suggested the packaging should include the union flag. But now the reduced number of early doses will have to be imported from Germany and the Netherlands. "There have been some (UK manufacturing) challenges," said Ian McCubbin, the task force's manufacturing lead, told a media briefing on Monday. "That's why there is a little delay in the delivery of the doses." Downing Street said the "majority" of vulnerable people would be vaccinated in the first two months of 2021, but declined to suggest a more precise figure (Shea).

Europe

The European Union concluded exploratory talks with CureVac to purchase a potential vaccine in August 2020. The Commission quickly had a contractual framework in place for the initial purchase of 225 million doses on behalf of all EU member states, to be supplied once a vaccine has proven to be safe and effective against Covid-19. It added that CureVac pioneers in vaccines based on messenger RNA, transported into cells by lipid nanoparticles. The basic principle is the use of this molecule as a data carrier for information, and the human body would then produce its own active substances to combat various diseases. The company received earlier EU funding. In early July, the European Investment Bank and CureVac signed a 75-million-euro loan agreement for the development and large-scale production of vaccines, including CureVac's vaccine candidate against Covid-19. CureVac was the fourth partner the Commission to be considered. The Commission had also signed an actual advance purchase agreement with AstraZeneca, and published "positive steps" with Sanofi-GSK and Johnson & Johnson. Commenting on the Commission's vaccine plans, Paivi Sillanaukee, a director general at the Finnish Ministry for Social Affairs and Health, said it is a new situation that the EU is negotiating on behalf of all the 27 members. She said, "The countries agreed on this with a view to securing the best possible negotiating position" (Xinhua, EU Concludes).

In light of "encouraging developments" in clinical trials and the regulatory approval of a Covid-19 vaccine, vaccination centers across Germany became operational by mid-December, Minister of Health Jens Spahn. Spahn was confident that a first coronavirus shot could be approved and be available in Germany by the end of 2020 or at the beginning of 2021."I would rather have a vaccination center that is ready to start and is not in operation for a few more days than an approved vaccine that is not used immediately," said Spahn. German pharmaceutical company BioNTech and US company Pfizer applied to the US Food and Drug Administration (FDA) for emergency authorization of their Covid-19 vaccine. The two companies concluded the Phase 3 trial of their Covid-19 vaccine candidate and announced that it met "all of the study's primary efficacy endpoints" and had a vaccine efficacy rate of 95%. The German government launched a special program for the development of a Covid-19 vaccine for 750 million euros (US$892.5 million), funding the German companies BioNTech, CureVac and IDT Biologika. "Vaccines are our key for the way out of the pandemic, so it makes sense to support several approaches," said Spahn. Spahn also announced the planned purchase of 5 million vaccine doses from the German pharmaceutical company IDT Biologika which expects its Covid-19 vaccine to be approved by the end of 2021. In order to support IDT Biologika's effort to build up production capacities, the German government would pay 30 million euros in advance as part of the full purchase price, according to Spahn (Xinhua, Germany).

Also, in November Spain's Health Minister Salvador Illa explained the government's plans to vaccinate the population against Covid-19 in 2021. Illa said the vaccination would be completed in three stages. During the first stage between January and March, around 2.5 million people would receive the vaccine, starting with the

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elderly people and residential care workers, followed by other health workers and dependent people. The minister said that during this period the supply of vaccines would be "very limited", but supply would increase progressively in the second stage between March and June, with a significant increase foreseen for the third stage. The government's vaccination strategy divides the population into 18 groups. People would be vaccinated progressively and "in strict order". Illa did not elaborate, saying only that details "will be announced in a timely manner". Spain will have enough doses to vaccine around 80 million people even though the country's total population is just below 47 million. Madrid has concluded agreements on the purchase of vaccines from AstraZeneca, Pfizer, Johnson & Johnson, Sanofi GSK, CureVac and Moderna through the European Union vaccine purchase plan. Prime Minister Pedro Sanchez explained that vaccinations would be carried out at 13,000 points around the country and that the aim was to vaccinate the majority of the population during the first half of 2021 (Xinhua, Spanish Gov't).

South America

Argentina President Alberto Fernandez said his country obtained 25 million doses of the Russian Covid-19 vaccine "Sputnik V" between December 2020 and January 2021. Local media said the agreement with Russia was finalized after Argentine authorities visited Moscow. Argentina registered its first case of Covid-19 on March 3 (Xinhua, Argentina to Buy). President Fernandez on Wednesday said his government devised a mass vaccination scheme against the novel coronavirus (Covid-19) to be launched by the end of 2020 or first weeks of 2021. "We are working tirelessly so that by the end of the year or the first weeks of the next, Argentina will already have a mass vaccination system in place," Fernandez said in a statement released by his office. Starting in March, "we will be able to count on the AstraZeneca and Oxford vaccine" being developed by the British, he added (Xinhua, Argentina Working).

Brazil launched its mass vaccination drive against the novel coronavirus (Covid-19) in January 2021. "We are signing contracts with those who manufacture the vaccine and the expectation is that the vaccine will reach us starting in January. In January of [2021] we will begin to vaccinate everybody," the acting Minister of Health Eduardo Pazuello said. Brazil's government signed an agreement with the state-run Oswaldo Cruz Foundation (Fiocruz), which is working with the University of Oxford to develop a vaccine. The plan was to initially receive 100.4 million vaccines, which would serve to immunize half the population. A second supply of dosages is expected to be ready in the second half of 2021. Minister of Tourism Marcelo Alvaro Antonio said he expected the availability of a vaccine to make the 2021 summer season "the one with the highest volume of domestic tourism." The sector "will come back strong" from the health crisis, he predicted (Xinhua, Brazil to Launch).

After a brief pause, Brazil restarted late stage trials for CoronaVac, the Covid-19 vaccine candidate developed by China's Sinovac Biotech Ltd. In late November. Anvisa, the Brazilian health regulator, said that it had received and evaluated enough information "to allow the resumption of vaccination". The trials were suspended for less than two days. "It is important to clarify that a suspension does not necessarily mean that the product under investigation lacks quality, safety or efficacy," said the regulator in a statement. Anvisa paused the vaccine trial after reports linked the vaccine to the death of a participant under trial in late October. Pearson Liu, director of brand management and public relations at Sinovac, pointed out in a statement on Tuesday: "Sinovac will continue to communicate with Brazil on this matter... we are confident in the safety of the vaccine," he said. Sinovac worked with its Brazilian development partner, the Butantan Institute, a public research institute based in Sao Paulo. Sinovac said the stoppage in the trial was caused by a miscommunication. "We have learned that Anvisa failed to receive the data sent by Butantan Institute in time, and it urgently suspended the clinical study Nov 9," Sinovac said. "The Butantan Institute communicated with Anvisa on Nov 10, and the report from Data and Safety Monitoring Board was submitted to Anvisa on the same day." Anvisa approved phase III trials for CoronaVac on July 3. The aim was to recruit 9,000 patients to test the safety and efficacy of the vaccine. The

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vaccine is also being tested in Indonesia, Turkey and Bangladesh. The Butantan Institute also announced in late October that it had received Anvisa's approval to import enough raw materials to produce 40 million doses of CoronaVac. "This is another important step towards making CoronaVac available, which will be applied only after Anvisa's approval and registration as soon as the safety and effectiveness results are proven," the Butantan Institute said in a release. Avisa added in its release: "The suspension and resumption of clinical studies are common events in clinical research and all studies aimed at registering medicines that are authorized in the country are previously evaluated by Anvisa in order to preserve the safety of the study volunteers." Trial stoppages are not uncommon in phase III trials for vaccines. The trials for AZD-1222 by AstraZeneca Plc and Oxford University were temporarily paused in September and then restarted, also after reports of adverse effects. Johnson & Johnson paused the trials for its Covid-19 vaccine candidate JNJ-7843635 in October, also due to an unexplained illness in a trial participant. The trial was later restarted (Held).

United States

Commissioner of the US Food and Drug Administration (FDA) Stephen Hahn refused to offer a timeline for COVID-19 vaccine in July, which US President Donald Trump suggested could be available "long before the end of the year." Hahn claimed he could not predict when a vaccine would be available. "We are seeing unprecedented speed for the development of a vaccine. But ... our solemn promise to the American people is that we will make a decision based upon the data and science on a vaccine, with respect to the safety and effectiveness of that vaccine." During a Fourth of July address in Washington, Trump said the country is likely to have a therapeutic and/or vaccine solution long before the end of the year. Hahn said that he was "cautiously optimistic" about current efforts to develop a coronavirus vaccine, pointing to "year's end or early next year" as potential completion dates (Xinhua, Refuses).

A fourth Phase 3 clinical trial evaluating an investigational Covid-19 vaccine began enrolling adult volunteers in August. The trial was designed to evaluate if the investigational Janssen Covid-19 vaccine JNJ-78436725 could prevent symptomatic Covid-19 after a single dose regimen. Around 60,000 volunteers enrolled in the trial at up to nearly 215 clinical research sites in the United States and internationally. The Janssen Pharmaceutical Companies of Johnson & Johnson developed the investigational vaccine, and was leading the clinical trial as regulatory sponsor. It was the fourth large-scale phase 3 clinical trials for a Covid-19 vaccine in the United States. The other three trials were for vaccine candidate AZD1222, co-invented by the University of Oxford and its spin-out company Vaccitech; vaccine candidate mRNA-1273, developed by the US National Institute of Allergy and Infectious Diseases (NIAID) and American biotechnology company Moderna; and vaccine candidate BNT162b2, developed by American biopharmaceutical company Pfizer and German company BioNTech. While the other vaccine candidates require two doses, the Janssen vaccine candidate was studied as a single-dose vaccine. It is a recombinant vector vaccine that uses a human adenovirus to express the SARS-CoV-2 spike protein in cells. Preclinical findings published in Nature showed that the Janssen vaccine induced neutralizing antibody responses in rhesus macaques and provided complete or near-complete protection against virus infection in the lungs and nose following SARS-CoV-2 challenge. The trial was designed primarily to determine if the investigational vaccine could prevent moderate to severe Covid-19 after a single dose. It also aimed to understand if the vaccine could prevent Covid-19 requiring medical intervention and if the vaccine could prevent milder cases of Covid-19 and asymptomatic SARS-CoV-2 infection. An independent Data and Safety Monitoring Board then provided oversight to ensure the safe and ethical conduct of the study. "Four Covid-19 vaccine candidates are in Phase 3 clinical testing in the United States just over eight months after SARS-CoV-2 was identified. This is an unprecedented feat for the scientific community made possible by decades of progress in vaccine technology and a coordinated, strategic approach across government, industry and academia," said NIAID Director Anthony Fauci. "It is likely that multiple Covid-19 vaccine regimens will be required to meet the global need. By this time,

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the Janssen candidate had showed promise in early-stage testing and may be especially useful in controlling the pandemic if shown to be protective after a single dose," Fauci added (Xinhua, Fourth).

With biotech company Moderna becoming the second US drug maker after Pfizer to announce strong data from clinical trials for its experimental Covid-19 vaccine in November, it became inherently clear that some Americans could be immunized as soon as the second half of December. Moderna's announcement that its vaccine was 94.5% effective came a week after pharmaceutical company Pfizer and German technology firm BioNTech said an analysis found their vaccine was more than 90% effective. Moderna and Pfizer then filed with the US Food and Drug Administration (FDA) for emergency use of their vaccines, raising the prospect of at least two approved vaccines before the end of the year. Dr Anthony Fauci, the nation's top infectious diseases doctor, expected the first Covid-19 vaccinations to begin "towards the latter part of December, rather than the early part of December. "I think that everybody else will start to get vaccinated towards the end of April," Fauci said. "And that will go into May, June, July. It will take a couple of months to do." Moderna expected to be able to ship about 20 million vaccine doses in the US by year-end. The company projected it would be to be able to make 500 million to 1 billion doses worldwide in 2021. Both vaccines are given in two doses several weeks apart, but there are major differences in how the vaccines are stored. Moderna's vaccine requires long-term storage at -20 C (-4 F) and is stable for 30 days between 2 to 8 C (36 to 46 F). Pfizer and BioNTech's vaccine, however, requires some of the coldest temperatures of any vaccine under consideration: -70 C (-94 F) or lower. Moderna's vaccine can be thawed and kept in a normal refrigerator for 30 days. Pfizer's vaccine can survive in a normal refrigerator for five days. Pfizer said that it was developing a powder form of the vaccine. Powdered vaccines are often reconstituted with a liquid and then injected. The new powder vaccine would reportedly work for standard refrigeration temperatures and could be ready in 2021. Fauci's agency, the National Institute of Allergy and Infectious Diseases, collaborated with Cambridge, Massachusetts-based Moderna on the development of the vaccine. In July, it said it expected to spend about US$410 million on the effort. The federal Operation Warp Speed project to hasten development of Covid-19 vaccines awarded Moderna a US$1.5 billion contract in August to ramp up manufacturing and deliver 100 million vaccine doses, enough for 50 million people. The government has an option to buy up to 400 million more doses. Pfizer's and Moderna's vaccines have similar results because they use the same technique to activate the body's immune system. The vaccines deliver messenger RNA, or mRNA, which is a genetic recipe for making the spikes that sit atop the coronavirus. Once injected, the body's immune system makes antibodies to the spikes. If a vaccinated person is later exposed to the coronavirus, those antibodies should stand at the ready to attack the virus. No vaccine currently on the market uses mRNA. "There has always been skepticism about mRNA — it's brand new and would it work?" Fauci said. "What we saw in the trials is there was no real safety concern, and the efficacy is quite impressive. We saw nearly identical results (with Pfizer and Moderna) and it almost really validates the mRNA platform" (Heping).

All the news coming out of the US, however, was not good. US public health officials called on drug makers in December to release detailed information on the side effects of their coronavirus vaccines after participants in trials complained of high fever, body aches, headaches and exhaustion. Dr Sandra Fryhofer of the American Medical Association was afraid that as both Pfizer's and Moderna's vaccines needs to be taken in two separate doses that if people have severe side effects with the first shot, that could deter them from getting the second one. "We really need to make patients aware that this is not going to be a walk in the park," Fryhofer said at an online meeting with the Advisory Committee on Immunization Practices (ACIP), a group of medical experts that advise the Centers for Disease Control and Prevention (CDC). "They are going to know they had a vaccine. They are probably not going to feel wonderful. But they've got to come back for that second dose." All of the vaccine makers have said patients could experience mild coronavirus symptoms. But doctors want them to explain further how it could affect different patients (Robinson).

此页留白

Canada

The first Canadian clinical trial for a potential Covid-19 vaccine was officially approved in May 2020. According to Canadian Prime Minister Justin Trudeau, Health Canada gave the Canadian Center for Vaccinology at Dalhousie University the green light by Health Canada to begin clinical trials of the vaccine candidate. "If these vaccine trials are successful we could produce and distribute it here at home," Trudeau said. "Research and development take time, and must be done right, but this is encouraging news." Trudeau said the National Research Council of Canada would work with the manufacturers of the potential vaccine so that it will be able to be manufactured domestically should the trials be successful. Health Canada reportedly authorized 33 clinical trials for supportive care or treatments for Covid-19 to date. National Research Council of Canada announced a collaboration with CanSino Biologics Inc. (CanSinoBIO) to advance bioprocessing and clinical development in Canada of a candidate vaccine against Covid-19. Referred to as Ad5-nCoV, the vaccine candidate received Chinese regulatory approval earlier this year, allowing CanSino Biologics to move ahead with human clinical trials in China. It was one of only a handful of vaccine candidates in the world against Covid-19 so far approved for initial safety testing in humans, and was the first candidate vaccine to begin conducting Phase II human clinical trials. By bringing their respective technologies and expertise together to fight Covid-19, CanSino Biologics and the National Research Council of Canada are aimed to pave the way for future clinical trials in Canada, in collaboration with the Canadian Immunization Research Network at the Canadian Center for Vaccinology. The vaccine was subject to approval by Health Canada, for which CanSinoBIO is in the process of filing a Clinical Trial Application. The Ad5-nCoV was developed using technology from both China and Canada. It was co-developed by the Beijing Institute of Biotechnology (BIB) and CanSino Biologics Inc. using a genetically engineered replication-defective adenovirus type 5 vector to express the SARS-CoV-2 spike protein, which is grown using living cells that were designed and developed at the National Research Council of Canada (Xinhua, Canada Approves).

Canadians showed different attitudes toward getting vaccinated when a Covid-19 vaccine becomes available in the country, according to a survey released in August by the Canadian Angus Reid Institute. The survey showed that 46% of the respondents said they have no reservations and are ready to get a vaccination as soon as it becomes available. However, 32% said they would wait and see. About 76% of those who say they would wait to get the vaccine also said they were worried about side effects. By contrast, only 37% among those who were eager to get vaccinated as soon as possible worried about possible side effects. The survey also showed 75% said they did not feel life in their community would get back to normal until most people are vaccinated. Meanwhile, 75% said that a coronavirus vaccine should be mandatory in long-term care homes, which have been the hardest hit by the Covid-19 pandemic, and for healthcare workers. About 63% say vaccinations should be mandatory in schools (Xinhua, Canada Divided).

Canada's health regulator approved Pfizer's Covid-19 vaccine in December. Health Canada posted on it is website that the vaccine made by US drug maker Pfizer and Germany's BioNTech was authorized. "Canadians can feel confident that the review process was rigorous and that we have strong monitoring systems in place. Health Canada and the Public Health Agency of Canada will closely monitor the safety of the vaccine once it is on the market and will not hesitate to take action if any safety concerns are identified," Health Canada said. Canada is received 249,000 doses that month and expected 4 million doses of the vaccine by March 2021. The department said the vaccine is for use in people 16 years of age or older, but noted Pfizer-BioNTech was running further clinical trials on children of all age groups and that could change. The vaccine already has been approved by the UK and officials have said they expect US approval within days. Canada has purchased 20 million doses of that vaccine, which requires people to receive two doses each, and it has the option to buy 56 million more. Health Canada continued to review three other vaccine candidates, including one from Moderna. Ontario Premier Doug Ford said, "This is phenomenal news for all Canadians as we take the next step toward ending this pandemic. As soon as vaccines

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arrive on Ontario soil, we will be ready to deliver and administer them" (Xinhua, Canada Health).

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1.2 The On-going China-US Trade Conflict

The United States and China have been locked in a trade dispute for more than two years. Between July 2018 and September 2019, the US slapped tariffs of up to 25% on almost all imports from China. The tariffs have had a profound impact. Before the dispute began, 23% of all US imports came from China – more than US$526 billion in 2017 alone, and roughly as much as neighboring Canada and Mexico combined. At the end of 2019, that was down to 18% – a decrease of more than US$26 billion. For US consumers, the dispute has largely meant that they have had to pay higher prices for Chinese products, while for China, it has mainly led to a loss in export value. A look at the biggest Chinese exports to the US confirms that US firms were sourcing substantially fewer cell phones, computers, and furniture from the Asian economic powerhouse at the end of 2019 than at the end of 2017, before the trade war started. In January 2020, the US and China signed the Phase I deal aimed at deescalating trade tensions (Lasowski).

As a candidate in 2016, Donald Trump built his argument for the presidency around his claimed acumen as a dealmaker. As the 2020 election drew nearer, President Trump and his surrogates doubled down on that assertion, including by calling the Phase I agreement the biggest deal ever seen. Despite Trump's insistence that "trade wars are good, and easy to win," the ultimate results of the phase one trade deal between China and the United States — and the trade war that preceded it — significantly hurt the American economy without solving the underlying economic concerns that the trade war was meant to resolve. The effects of the trade war went beyond economics, though. Trump's prioritization on the trade deal and de-prioritization of all other dimensions of the relationship produced a more permissive environment for China to advance its interests abroad and at home, secure in the knowledge that American responses would be muted by a president who was reluctant to risk losing the deal. During the 2016 presidential campaign, a consistent refrain from then-candidate Trump was to point to US trade with China, and the agreements that enabled it, as a primary cause of the loss of US manufacturing jobs and intellectual property. President Trump said China was responsible for "the greatest theft in the history of the world" and lambasted the US trade deficit with China. Building on the image of Donald Trump as the ultimate dealmaker, his campaign released a strategy to reform the US-china trade relationship, in which it pledged to "cut a better deal with China that helps American businesses and workers compete." Trump laid out a four-part plan to secure a better deal with China: declare China a currency manipulator; confront China on intellectual property and forced technology transfer concerns; end China's use of export subsidies and lax labor and environmental standards; and lower America's corporate tax rate to make US manufacturing more competitive. Upon entering office, Trump sought to engage Beijing directly to address structural concerns about China's economic policies. Just three months into his administration, he met with China president Xi Jinping at Mar-a-Largo, where they agreed to establish a 100-Day Action Plan to resolve trade differences. The next month, China agreed to open its economy (slightly) to US firms and services in exchange for greater Chinese access on bilateral trade and US recognition of China's Belt and Road Initiative. Yet follow-on negotiations fizzled as Washington pushed Beijing for more concessions and Beijing rebuffed American pressure. The 100 days concluded in July 2017 with no agreement, no press conference, and no joint statement out of the first meeting of the US-China Comprehensive Economic Dialogue. Trump then argued that unilateral tariffs would shrink the US trade

1.2 中美贸易冲突现况

中美两国陷入贸易争端至今已逾两年。2018年7月至2019年9月间，美国对几乎所有中国进口商品加征高达25%的关税。此举影响重大。在贸易争端开始前，美国的进口商品有23%都来自中国，仅2017年就超过5260亿美元，大致相当于邻国加拿大和墨西哥的总和。而截至2019年底，这一比例降至18%，减少了260多亿美元。对美国消费者而言，贸易争端在很大程度上间接迫使他们以更高的价格购买中国产品，而对中国来说，出口额损失则是主要后果。这一点从中国对美国的主要出口商品即可看出：与贸易战爆发前的2017年底相比，2019年底美国公司从中国这个亚洲经济大国的手机、电脑和家具采购额大大减少。2020年1月，中美两国签署了旨在缓和贸易紧张局势的第一阶段协议（Lasowski）。

在2016年美国总统大选中，唐纳德 · 特朗普作为候选人自称为精明的生意人，以此为自己的总统竞选造势。随着2020年大选的临近，特朗普总统及其代理人更加坚定了贸易战是正确的，并声称第一阶段协议是有史以来最大的一笔交易。尽管特朗普坚称"贸易战是好事，且很容易取得胜利"，但中美第一阶段贸易协议的最终结果，以及过去的贸易战，严重损害了美国经济，而且并未解决贸易战声称要解决的根本经济问题。不过，贸易战的影响超出了经济范畴。特朗普把该贸易协议放在首位，却忽视了两国关系的其他方面，为中国在国内外推动自身利益创造了一个更加宽松的环境，因为中国知道，只要特朗普不愿冒失去这笔交易的风险，那么美国所作出的任何反应都无济于事。2016年总统大选期间，作为总统候选人特朗普一直避免将矛头指向中美贸易，而把矛头指向有关协议，声称它们是导致美国制造业就业岗位和知识产权流失的主要原因。特朗普总统表示，中国对"世界历史上最大的盗窃行为"负有责任，并猛烈抨击美国的对华贸易逆差。为迎合特朗普作为精明的生意人这一形象，其竞选团队公布了一项改革美中贸易关系的战略，承诺"与中国达成一项更好的协议，帮助美国企业和工人提高竞争力"。为确保与中国达成更好的协议，特朗普提出了一个由四部分组成的计划，分别是：宣布中国为货币操纵国；在知识产权和强制技术转让问题上对抗中国；结束中国实施出口补贴和宽松的劳动力和环境标准的做法；降低美国企业税率，使美国制造业更具竞争力。特朗普上任后，开始寻求与中国政府直接接触，以期解决对中国经济政策的结构性担忧。上任仅3个月，他就在海湖庄园与中国国家主席习近平会晤，双方就推进解决贸易分歧的"百日行动计划"达成一致意见。次月，中国同意向美国企业和服务业略微开放经济，作为回报，中国可更大程度地参与双边贸易，同时，美国应当认可中国的"一带一路"倡议。然而，随着美方敦促中方做出更多让步，而中方拒绝接受美方施压，后续谈判以失败告终。该"百日行动计划"于2017年7月结束，至此，此次美中全面经济对话第一次会议未达成任何协议，未召开新闻发布会，也未发表任何联合声明。特朗普随后表示，实施单边关税会缩小美国的对华贸易逆差，并促进企业把制造业就业岗位转移回美国。美国经济增长放缓，商业投资冻结，企业雇佣人数减少。纵观美国全国，大量农民破产，制造业和货运行业已跌至自上次经济衰退以来的最低点。特朗普实施的措施的这些后果，相当于近几年幅度最大的一次增税。虽然中美贸易战也使中国经济遭到重创，但显然还不到甘心向特朗普政府屈服，以满足其重大结构性改革核心要求的程度。事实上，随着贸易战火不断延续，中国方面降低了对其他贸易伙伴的关税，减少了对美国市场的依赖。双方于2020年1月15日宣布的最终协议，与中国方面从一开始就提出的提议极为相似——增加商品采购，承诺加强知识产权保护、改善货币和强制技术转让等问题。而在补贴、国有企业以及中国利用产业政策使本国企业较外国竞争对手更有优势方面，该协议未取得任何进展。金融市场准入方面也未取得实质性进展。第一阶段协议和贸易战一样，严重损害了美国经济，而且在从根本上解决美中贸易关系的结构性失衡问题也未能取得重大进展，最后以失败告终（HassandDenmark）。

紧随其后的新冠疫情也严重扰乱了全球供应链。但自2020年第二季度以来，中国经济得以反弹。中国作为第一批结束封锁措施的主要经济体之一，始终能够向美国等国供其所需，部分原因是医疗卫生用品和设备的出口增加。这得益于美国对外科手套和口罩，以及各类电子产品、汽车零部件等产品提供的多项关税豁免。这些都推动中美贸易回归争端前的水平。但贸易战的影响仍在不断显现。虽然在贸易争端期间，中国进口商品价格上涨，但美国对手机、电脑、灯具或打印机的需求并未停止。因此，美国消费者和制造商转而从其他国家采购需要的产品。对一些人来说，这种贸易转移带来的好处甚至可能超过这场争端造成的负面影响。对于中国以外的新兴经济体而言，这场争端主要产生了积极影响。能够生产与中国产品类似产品的国家似乎成了最大赢家。其中受益最大

deficit with China and cause companies to bring manufacturing jobs back to the United States. US economic growth slowed, business investment froze, and companies didn't hire many people. Across the nation, a lot of farmers went bankrupt, and the manufacturing and freight transportation sectors have hit lows not seen since the last recession. Trump's actions amounted to one of the largest tax increases in years. China also felt economic pain as a result of the trade war, though apparently not enough to capitulate to the Trump administration's core demands for major structural reform. Indeed, as the trade war dragged on, Beijing lowered its tariffs for its other trading partners as it reduced its reliance on US markets. The final deal that both sides announced on January 15, 2020, largely resembled the offer Beijing had put on the table from the start — increased goods purchases plus commitments on improved intellectual property protection, currency, and forced technology transfer. Missing from the deal was any forward movement on subsidies, state-owned enterprises, and China's uses of industrial policy to advantage its own firms over foreign competitors. Progress on market access also proved underwhelming outside of the financial sector. Ultimately, the phase one agreement disappointed because it, along with the trade war, severely damaged the US economy while failing to make significant progress in fundamentally resolving the structural imbalances of the US-China trade relationship (Hass and Denmark).

The pandemic that followed effectively disrupted global supply chains as well. But China's economy has been able to bounce back since the second quarter of 2020. As one of the first major economies to come out of lockdown, it has been able to provide countries like the US with the products they need. Part of this was due to increasing exports of health supplies and equipment. This has been helped by the many tariff exceptions granted by the US concerning products like not only surgical gloves and face masks, but also many electronic items, car parts and others. All this has boosted trade between the US and China almost back to pre-dispute levels. But the effects of the trade war are still playing out. While prices for Chinese imports rose during the dispute, US demand in cell phones, computers, lamps or printers didn't cease. As a result, US consumers and manufacturers are shifting to other countries to get the products they need. For some, the gains from this trade redirection might even outweigh the negative effects of the dispute. For non-China emerging economies, the positive impact dominates. The gain seems to be the largest for countries who can produce similar products to those made in China. Among those who benefited most was US neighbor Mexico: Between 2017 and 2019, the country exported an estimated US$4.7 billion more to the US as a result of the trade dispute. The added billions are especially significant for countries with lower GDPs, like Vietnam, Malaysia or Taiwan. Among them, Vietnam is the clear winner. The additional US$6.4 billion gained during the two years of the conflict is equal to almost twice the country's entire yearly health care spending. One clue for the importance of an exporter is the market share that its products command among all products imported by its trade partner. For example, China used to provide 62% of computers imported by the US. At the end of 2019, that was down to 44%, a loss of more than US$5 billion. But China's loss was Taiwan's and Mexico's gain: They each gained around six percentage points in market shares. By the end of 2019, they provided 10 and 25% of all computers imported by the US, respectively. For Mexico, though, the pandemic disrupted the gains made in the past two years. Imports from Mexico to the US have nosedived; Even fewer products come from Mexico to the US now than before the trade dispute began. But so far, Vietnam and other Southeast Asian economies have been able to hold onto their gains. Some, like Vietnam and Taiwan, have even increased their exports to the US further. That is partly because countries like Vietnam had long started positioning themselves as alternatives to China for foreign manufacturers (Lasowski).

Present state of Agreement

US President Donald Trump started a trade war with China to fix what he's repeatedly blasted as an unfair relationship between the world's two largest economies. But as the president made his case for a second term ahead of November's

的是美国邻国墨西哥：2017年至2019年间，由于中美贸易争端，墨西哥对美出口增加了约47亿美元。对于越南、马来西亚或台湾等GDP较低的国家和地区来说，其对美出口也增加了数十亿美元。其中，越南显然是最大受益者。在过去两年的中美贸易争端中，其出口额增加了64亿美元，基本相当于该国全年医疗保健支出的两倍。判断出口国重要性的一大指标是其产品在贸易伙伴进口所有产品中所占的市场份额。例如，过去美国进口的电脑中有62%来自中国，到2019年底，这一比例降至44%，中国出口损失超过50亿美元。中国大陆出口损失，但中国台湾地区和墨西哥对美出口增长：两地的对美出口市场份额分别增加了约六个百分点。截至2019年底，美国进口的电脑总量中，来自台湾和墨西哥的分别占10%和25%。但是，由于新冠疫情影响，抹去了墨西哥过去两年的对美出口增幅。墨西哥对美国出口额大幅下降；而现如今墨西哥对美国出口产品甚至比中美贸易争端开始前还要少。但到目前为止，越南和其他东南亚经济体仍能维持实现的对美出口增长。越南和台湾等一些国家和地区的对美出口额甚至有所增加。部分原因在于，越南等国于外国制造商而言，一直以来将自己定位为中国产品的替代品出口国（Lasowski）。

中美第一阶段贸易协议现状

美国总统唐纳德·特朗普发起的中美贸易战，声称要修复其一直以来抨击的这两个世界最大的经济体之间的不公平贸易关系。但在11月大选前，特朗普发表连任竞选演讲时，对于这场作为其外交政策基石的贸易战，他并没有什么成绩可以拿出来展示。特朗普承诺削减美国的贸易赤字，但贸易赤字却创下了历史新高。他希望提高美国的对华出口额，但最终并未实现美方的预期。在美国公司最关心的重大结构性问题上，他几乎没有取得任何进展。尽管特朗普承诺要对中国商品征收高额关税以缩小美国贸易逆差，但到2020年8月，美国贸易逆差扩大到超过670亿美元，为14年来的月度最高水平。这还只是粗略估计，特朗普在与中方的争端中将贸易赤字作为中心议题，尽管专家们认为单单贸易赤字并不一定对经济发展不利。即使在疫情爆发前夕，美国贸易逆差仍高于他上任时的水平。相比之下，中国今年在经济上取得了成功，这对美国来说并不是一个好消息。随着经济重启，中国的进出口持续攀升。特朗普政府在2020年伊始与中国签署了美中贸易第一阶段协议。两国同意降低部分关税，美国承诺取消对中国近1600亿美元的商品加征的关税。这是在疫情爆发并冲击全球经济之前。截至今年8月，中国购买美国农产品的量还不到协议中承诺的一半。尽管白宫高级经济顾问拉里.库德洛（LarryKudlow）当月表示，中美贸易关系"不错"，但重新启动休战和未来协议的谈判似乎将无限期推迟。今年1月签署第一阶段协议时，特朗普对该协议表示赞许，称两国正在"纠正过去的错误，为美国工人、农民和家庭创造一个经济上公正且安全的未来"。此后，特朗普重申该协议"进展非常顺利"，但同时，美方在其他方面向中方施压，收紧对华为和TikTok等科技公司的限制，并威胁要采取进一步制裁措施（Disis）。

在过去三年的大部分时间里，特朗普总统的贸易战使世界两大经济体之间的关系长期处于紧张状态。现在看来，两国在今年1月签署的第一阶段贸易协议似乎是美中关系中最持久的部分。2020年7月，中美之间的紧张关系开始因新冠疫情的爆发而升温——特朗普政府指责中国未能控制疫情，同时指控中国从事间谍活动、窃取知识产权和侵犯人权。美国官员随后下令关闭了中国驻休斯敦领事馆，称该领馆外交官参与了经济间谍活动，此举促使中国也下令关闭美国驻成都领事馆。

但与此前中美两国紧张关系加剧后的情况不同，特朗普此次并未威胁要对中国商品征收额外关税或对向美国出口产品的中国公司采取其他惩罚性措施。双方都未威胁终止经过多年艰苦谈判才于2020年1月达成的第一阶段贸易协议。贸易一直以来都是中美关系中最具争议的环节，此时却摇身一变，保持出奇的稳定。其原因多与政治而非外交有关。特朗普政府和中国领导人都为达成第一阶段贸易协议投入了大量时间和政治资本。随着两国之间的紧张局势再次升级，双方似乎都认为，终止协议弊大于利。尽管贸易战让太平洋两岸的企业都苦不堪言，但将两国冲突的焦点集中在纯粹的经济问题上，间接使中美关系保持着一种稳定的状态。随着贸易不再是摩擦的根源，中美紧张关系逐渐蔓延到外交、国家安全和技术领域。美国官员表示，近几个月来，中方的行为变得越来越具有挑衅性，迫使美国乃至澳大利亚、英国、印度等国纷纷采取更强硬的行动。中国一些公众人物将日益紧张的局势归咎于美国民主党和共和党在11月大选前竞相对中国采取的更强硬态度。中国官员和专家认为，最近中美双边关系陷入紧张，是由特朗普政府而非中国政府造成的，对于两国关系中的重重挑战，中国一直在努力各个击破，而不是将这些挑战联系起来以获得优势（Swanso-nandBradsher,OnceaSource）。

在第一阶段协议签署6个月后，两国经济关系成为两国关系恶化的焦点。在当前经济衰退与疫情蔓延的双重打击下，无论由哪方终止该协议都不是明智之举。美国前贸易谈判代表、亚洲协会政策研究所副所长温迪·卡特勒（WendyCutler）称，该协议将使中国官员不必担心加收关税，从而能够专注于经济复苏，同时在美国大选前，中国仍将继续购买美国农产品。卡特勒表示，"至少就目前而言，尽管两国的反对声音与日俱增，但双方都有意愿继续执行该协议"，她补充说，预计中方会对特朗普对微信和TikTok采取的行动表示不满。她还指出，中国今年夏季的美国农产品采购量创新高，说明中国有在履行其在贸易协议中的承诺。在2020年7月被问及即将对第一阶段贸易协议进行半年度评估时，中国外交部发言人赵立坚表示，中国"认真落实协议"。他补充道，新冠肺炎疫

election, he didn't have much to show for a bruising trade battle that has been a cornerstone of his foreign policy. Trump vowed to cut the US trade deficit, but instead it's reached historic highs. He wanted China buy more American products, but that hasn't happened as much as Washington would like. And he's made almost no progress on big structural issues that American companies care most about. Despite Trump's pledge to narrow America's trade deficit by slapping heavy tariffs on Chinese goods, the gap by which imports exceeded exports in August 2020 widened to more than US 67 billion, its highest monthly tally in 14 years. But it's a rough look for Trump, who made the deficit central to his spat with Beijing despite experts arguing that it alone wasn't necessarily a negative for the economy. Even before the pandemic hit, the gap between exports and imports was still higher than when he took office. It also doesn't help the United States that China has found relative economic success this year. The country's exports and imports have been surging as its economy reopens. Trump started off 2020 with a partial US-China trade deal in hand. The two countries agreed to reduce some tariffs and allow Beijing to avoid additional taxes on almost US$160 billion of the country's goods. That was before the pandemic upended the global economy. As of August, China was on pace to purchase less than half of what it had agreed to. And while White House top economic adviser Larry Kudlow said that month that the trade relationship with Beijing was "fine," talks to revisit the temporary truce and hash out future agreements appear to have been postponed indefinitely. Trump praised the Phase I deal when he signed it in January, claiming that the two countries were "righting the wrongs of the past and delivering a future of economic justice and security for American workers, farmers, and families." Since then, Trump reiterated that the deal is "going very well," even as Washington has pressured Beijing on other fronts, tightening the screw on tech companies such as Huawei and TikTok and threatening further sanctions (Disis).

For the better part of three years, President Trump's trade war strained relations between the world's largest economies. Now, the trade pact the two countries signed in January appears to be the most durable part of the US-China relationship. Tensions between the United States and China began flaring up over the coronavirus in July 2020, which the Trump administration accuses China of failing to control, as well as accusations of espionage, intellectual property theft and human rights violations. American officials ordered the closure of China's consulate in Houston, saying that diplomats there had aided in economic espionage, prompting China to order the closure of the American consulate in Chengdu.

But unlike previous moments of heightened tensions between the US and China, Trump did not threaten to impose additional tariffs on Chinese goods or take other steps to punish companies that export their products to America. And neither side has threatened to rip up the initial trade deal they signed in January 2020, which took years of painful negotiations to complete. Trade, long the most contentious part of the US-China relationship, suddenly became an area of surprising stability. The reasons have more to do with politics than diplomacy. Both the Trump administration and Chinese leaders invested time and political capital in reaching the Phase I trade deal. As tensions between the two countries rise again, both sides appear to think they have more to lose from rupturing the agreement than they would gain. As painful as the trade war was for companies on both sides of the Pacific, it provided a strange source of stability for the US-China relationship by focusing the conflict between the countries on purely economic matters. With trade no longer the source of friction, tensions are spilling over into diplomacy, security and technology. American officials say that China's behavior has become increasingly provocative in recent months, prompting tougher action not just from the United States but also Australia, Britain, India and other nations. Some public figures in China blamed increasing tensions on Democrats and Republicans in the US competing to appear tougher on China ahead of the general election in November. Chinese officials and experts argue that recent difficulties in bilateral relations between Washington and Beijing are caused by the Trump administration and not by the Chinese government, which has tried to address different challenges in the relationship individually, rather

情和美国加严对华出口管制等限制措施，对一些商品和服务的进口产生了一定影响。赵立坚表示，“在当前形势下，需要双方共同努力，加强合作，共克时艰”。“中方希望美方停止对中国企业的限制措施和歧视性做法，为落实第一阶段经贸协议创造条件”（SwansonandBradsher,American）。

与此同时，随着中国逐渐从疫情中复苏，中国对美国产品的进口量似乎也在增加。2020年11月，在美国消费需求的推动下，具有政治敏感性的中国贸易顺差飙升至创纪录的754亿美元，出口同比增长21.1%。尽管加征关税尚未取消，但中国对美国的出口增长了46%。出口总额增至2680亿美元，增速高于10月份的11.4%。进口增长5%，增至1926亿美元，高于上月的4.7%。今年3月，中国政府宣布新冠疫情已得到控制，相对较早的经济复苏让中国出口商受益，而当时外国竞争对手仍因防疫措施而面临重重阻碍。凯投宏观公司（CapitalEconomics）的朱利安・埃文斯-普里查德（JulianEvans-Pritchard）在一份报告中表示：“中国11月份出口远超预期。”据有关人士预测，一旦新冠病毒疫苗投入使用，这种激增趋势不太可能持续到2021年。2020年前11个月，中国的全球贸易顺差为4600亿美元，较去年同期增长21.4%，为有记录以来的最高水平之一。对美出口增长519亿美元，进口美国商品146亿美元，增幅33%。中国对美国的贸易顺差同比增长52%，达到373亿美元。根据今年1月签署的第一阶段协议规定，中国承诺将提高对美国大豆、天然气等产品的进口，该协议旨在结束围绕美国对中国科技发展担忧的代价高昂的关税战。虽然中国在今年年初未能兑现这些承诺，但随着需求反弹，中国正在迎头赶上。由于疫情期间出行和产业活动的限制抑制了需求，导致价格走低，因此中国进口量增速高于进口额增速。2020年，由于美国、欧洲和日本的经济活动均呈下降态势，中国有望成为唯一实现增长的主要经济体（Mcdonald）。

事实上，到2020年11月，熬过这场贸易风暴的农民开始思考：“什么贸易战?”以农产品贸易量衡量，中美关系从未像现在这样牢固过。受贸易战和最高政治层公开敌对的影响，中国的养猪户和美国的种植户越发相互依赖。中国现已成为美国大豆和高粱的最大消费国，本季度进口的玉米总量达到空前的1120万吨，比贸易战前增加了近1300%。目前为止双方都似乎表示满意。美国进口农产品为中国养猪户提供了充足的饲料供应，在经历非洲猪瘟爆发导致大豆短缺后，中国的养猪户恢复速度快于预期。与此同时，得益于中国旺盛的需求以及联邦政府对农业的额外补贴，美国的农业利润处于七年来最高点。中国购买了近3000万吨美国大豆，创1991年同期以来新高，占美国总出口销量的57%。高粱（玉米的另一替代品）出口中国销量占到总销量的80%。一度低迷的玉米购买量飙升至近30%。但这种深层次的依赖关系并不牢固。正如贸易战所呈现的那样，这一市场可能会迅速蒸发，专家提醒，任何地缘政治事件都可能导致中国进口再度降温。汤姆・维尔萨克（TomVilsack）曾于2009年至2017年间任美国农业部长，且截至本文撰写时仍为未来拜登政府农业部长之首要人选，他表示，“美国农业须时刻保持谨慎，勿将所有鸡蛋放在中国这一个篮子里”。“我们应该从过去几年中汲取经验教训——美国农业需要保持多样化，确保产品总有销路，避免积压。”目前，中国的农产品购买量如此之大，商人们甚至将苏联时代发生的“粮食大劫掠”相提并论，那是美苏两超级大国之间关系紧张之际的另一场大规模农产品交易。总的来说，美国的出口能力几乎已然耗尽。一边倒支持唐纳德・特朗普连任的美国农业地区，正等着看拜登如何处理与中国的贸易谈判。特朗普的北美和中国贸易协议，以及就新冠疫情实施的农业补贴，维持了美国农业经济的发展。即使中美关系有所改善，中国对美国农作物的需求反映了一系列不稳定的因素：中国疫情后的经济实力，非洲猪瘟复苏带来的意外后果，以及中国自身玉米产量的限制。另一些人则对该贸易协议的意义持怀疑态度。总部位于芝加哥的AgResource咨询公司总裁丹・巴斯（DanBasse）表示，“中国遵守贸易政策并非出于真心，只有在对其有利时才会遵守”。“我认为，无论是否签署了第一阶段协议，中国都会进口同等数量的粮食。”中国从传统意义上两大玉米出口国美国和乌克兰购进了大量玉米，以至于今年的进口量首次超过了世界贸易组织设定的720万吨配额。美国农业部对外农业服务局预计，到2021年，中国的购买量将增加两倍，达到2200万吨。这些预测将为美国农民2021年生长季土地分配决策提供指导。在私下里，美国高管们担心自己处于不利地位。中国密切关注其外汇储备状况，只有国有企业才了解中国的总体需求情况。东北部台风可能对中国的收成造成严重影响，或者如中国农业部长所说，今年或为丰收年。受关税降低影响，玉米购买量也不透明。尽管购买量激增，但贸易战的影响仍挥之不去。关税仍然存在，这是拜登政府最终必须应对的挑战。新总统还需要解决谈判桌上尚待解决的知识产权和商业惯例等问题。这些问题上的任何症结都可能给农业贸易带来压力，中国与澳大利亚的紧张关系再次印证了这一点。中澳紧张关系始于2018年，当时澳大利亚以国家安全为由禁止华为技术有限公司参与建设5G网络，现在两国的紧张关系已像滚雪球一样越滚越大；今年，中国采取行动，停止从澳进口大麦、葡萄酒、糖、龙虾、煤炭和铜矿（Bloomberg）。

中国出口管制新法

中国进出口之所以出现大规模增长，可能是对中国拟于2020年11月底生效的定义宽泛的出口管制法的预先反应，该法将扩大中方对其他国家施加的贸易限制采取的反制手段。该法与《美国出口管理条例》相似，内含一份受管制物品清单，例如敏感科技、军用物品、两用物品，以及有意出口或再出口此类物品的人士的许可证规定。外界普遍认为，这项规定是中国对美国相关行动的回应，

than linking them together for leverage (Swanson and Bradsher, Once a Source).

Six months into the Phase I deal, the economic relationship became the bright spot in an otherwise deteriorating relationship. Amid the current recession and pandemic, it would been foolhardy to rip it up on either end. Wendy Cutler, a former trade negotiator and the vice president of the Asia Society Policy Institute, said that the agreement would allow officials in China to focus on its economic recovery without having to worry about more tariffs, and help American officials keep farmers happy before the election. "At least for now, both sides share an interest in making the agreement work, although the naysayers in both capitals are gaining ground," Cutler said, adding she expected the Chinese side to express displeasure over Mr. Trump's actions against WeChat and TikTok, while also pointing to record agricultural purchases they made this summer as evidence of their commitment to the trade deal. Asked in July 2020 about the imminent half-year review of the phase 1 trade agreement, Zhao Lijian, a Chinese foreign ministry spokesman, said that China had "conscientiously implemented the agreement." He added that the coronavirus epidemic and the tightening of American export controls had undoubtedly had an impact on some imports. "Under the current situation, it is necessary for both parties to work together to strengthen cooperation and overcome difficulties together," Mr. Zhao said. "China hopes that the United States will stop restrictive measures and discriminatory practices against Chinese companies and create conditions for the implementation of the first phase of economic and trade agreements" (Swanson and Bradsher, American).

Meanwhile, as China shakes off the coronavirus, its purchases of American products appeared to be ticking up. China's politically sensitive trade surplus soared to a record US$75.4 billion in November 2020 as exports surged 21.1% over a year earlier, propelled by American consumer demand. Exports to the United States rose 46% despite lingering tariff hikes. Total exports rose to US$268 billion, accelerating from October's 11.4% growth. Imports gained 5% to $192.6 billion, up from the previous month's 4.7%. Chinese exporters have benefited from the economy's relatively early reopening after the Communist Party declared the coronavirus pandemic under control in March while foreign competitors still are hampered by anti-disease controls. "Exports were much stronger than expected in November," said Julian Evans-Pritchard of Capital Economics in a report. Forecasters say that surge is unlikely to last into 2021 once coronavirus vaccines are rolled out. China's global trade surplus for the first 11 months of 2020 was US$460 billion, up 21.4% from this time last year, already one of the highest ever recorded. The trade surplus with the United States swelled 52% over a year earlier to $37.3 billion. Beijing promised to buy more American soybeans, natural gas and other exports as part of the "Phase 1" agreement signed in January and aimed at ending a costly tariff battle over Chinese technology ambitions. China fell behind on meeting those commitments earlier in the year but is catching up as demand rebounds. Chinese imports are growing faster by volume than by value because demand has been chilled by the shutdown of travel and industry, driving prices lower. China is on track to become the only major economy to grow in 2020 while activity in the United States, Europe and Japan falls (Mcdonald).

Indeed, by November 2020 some farmers who were able to weather the storm were asking themselves "What trade war?" Measured by the bushel, the US-China relationship has never been stronger. Through the trade war and open hostilities at the highest political levels, pig farmers in China and crop farmers in the US have become increasingly interdependent. Already America's biggest customer of soybeans and sorghum, for this season China bought an unprecedented 11.2 million metric tons of corn, up nearly 1,300% compared with pre-trade-war purchases. For the moment, both sides seem happy. The American imports have helped China feed its hog herd, which is recovering faster than expected after the African swine fever outbreak created a shortage of the country's most staple protein. Meanwhile, US farm profits are at a seven-year high, riding China's demand and additional support from federal aid to agriculture. China's bought nearly 30 million metric tons of US soybeans, the most for this point in the season since 1991 and 57% of America's export sales. For sorghum, which is also a substitute for corn, China accounts for 80% of sales. Corn

包括限制华为公司，以及随着世界两大国之间科技战愈演愈烈，美国禁止他中国科技公司获取美国技术。《出口管制法》对中国来说可能是一个里程碑，因为这部新法为中国出于国家安全和公共政策原因限制军民两用产品和技术出口提供了首个全面的监管框架。绝大多数主要经济体都早已制定了规范外国出口管控的类似法律和框架，因此中国此举实为填补一个重大空白，迎头赶上其他国家的脚步。新法明确规定，任何国家或地区滥用出口管制措施危害中国国家安全的，中国可以对该国家或者地区对等采取措施，不过"滥用"一词的定义并未明确界定。该法比其他国家的类似立法要宽泛得多，中国政府根据该法能够在出口贸易方面采取激进立场。他表示，例如，根据该法，中国政府可以对被认为威胁到其国家安全或利益的外国公司实施出口限制。中国出口管制新法明确中国将对滥用出口限制措施危害中国国家安全的国家和地区采取对等措施。虽然管制清单尚未公布，但商务部已于2020年8月底公布了最新版《中国禁止出口限制出口技术目录》。这份最新版清单增加了包括激光和无人机在内的20多种技术，需要政府批准才能向海外销售，从这份清单应该可以一窥受管制物项的大致面貌。此外，根据该法，中国将对出口管制清单以外的货物、服务和技术实施临时出口管制，这为中国政府实施限制措施提供了充分的灵活性。对于外国公司销售含受管制技术产品，违反中国出口管制规定，，中国政府是否会采取类似美国采取的惩罚性措施，目前尚不清楚。2017年公布的《出口管制法》草案包含了类似"长臂管辖"的内容，但为避免对中国在全球供应链中的角色产生负面影响，终版中删除了这一内容。对受管制物项的进口商和最终用户的审查也更为严格。出口经营者应当提供最终用途证明文件，有关证明文件由最终用户所在国家和地区政府机构出具。违反该法律的公司或个人可能被没收非法所得，并处违法经营额最高20倍罚款。同时，营业执照和出口许可或被吊销（Leng）。

这部法律并非全新的，而是对"规范核、生物、化学、导弹和军品出口管制"的现有法规的一次更高层次、更全面的更新。这部法律由国务院（中国最高政府机关）和中央军事委员会（中国人民解放军的最高权力机构）的国家出口管制管理部门负责实施，有意出口受管制货物和服务的企业，必须向上述部门申请许可。对于管制清单之外的物项，凡出口经营者"知道或应当知道"可能存在危害中国国家安全和利益的风险，应当根据该法进行操作。政府还可以对清单以外物项采用"临时"出口管制措施，实施期限不超过二年。该法适用于"国家对两用物项、军品、核以及其他与维护国家安全和利益、履行防扩散等国际义务相关的货物、技术、服务等物项的出口管制。"该法中还大致提到与"国家安全和利益"有关的出口，这增加了扩大适用范围的可能性。今年初，特朗普政府试图强迫中国字节跳动公司出售其大热的TikTok应用，作为在美运营之前提条件，对此，中国政府采取行动阻止字节跳动出售TikTok算法，因为这会危害中国国家利益。《出口管制法》草案中只出现了"国家安全"一词。而最终版加入了"国家利益"相关措辞，"为旨在推进与常规防御和安全风险无关的外交政策或产业政策目标的出口管制措施提供了明确的依据。"另外，由出口经营者确定管制清单以外的货物和服务是否属于该法管制物项，这对企业来说都是一个潜在雷区。而且，正如美国国会研究服务处的一份报告所述，这部新法规定，发放出口许可证，"不仅要基于特定的技术、最终用途和最终用户，还要基于实体的'社会信用'评级"。这实际上为中国共产党提供了促进企业遵守党的意识形态和最终目标的又一大法律工具。需要特别指出的是，从地缘政治角度看，最新的《出口管制法》在第48条中明确提到要对其他国家或地区滥用出口管制措施进行反击："任何国家或者地区滥用出口管制措施危害中华人民共和国国家安全和利益的，中华人民共和国可以根据实际情况对该国家或者地区对等采取措施。"该法律还规定了域外管辖权，这意味着中国可能希望利用这部新法，针对美国对中国公司实施贸易限制，报复美国公司，。在特朗普执政期间，美国商务部的"实体清单"日益频繁地被用作对华贸易战的武器。该实体清单为限制美国公司向其销售产品及服务的特定买家清单。2019年5月，美国商务部将华为列入该清单。自那以后，大量中国公司因与中国军方和其他实体有联系而被纳入该清单。目前，美国实体清单包含250多家中国公司——不包括在海外设立的外国子公司（Tiezzi）。

展望未来

中国政府在与前几任美国总统合作时，均已明确表示双方合作关系是基于一定条件的。新任美国总统往往都信心满满地相信自己能够改变美国政策，但几乎都以令人失望告终。奥巴马曾委派了一名特使到访北京，但空手而归。这是在试探新任总统。试探不一定包括一些大动作，但会释放某种信号，比如不回复某些人的电话，而个人性格可以减弱或增强这种回避态度。分析人士称，知名而墨守成规的玩家，即使不受欢迎，也往往会降低热情，削弱机会主义的诱惑。拜登政府内阁候选人都经验老到，包括国务卿候选人安东尼・布林肯（AntonyBlinken），这与特朗普政府为新人转动的"旋转门"形成了鲜明对比。2001年美国间谍飞机被击落，当时许多人认为，这是由一名中国飞行员造成的，而不是中国有意进行的试验，时任美国国务卿科林・鲍威尔（ColinPowell）和美国大使杨洁篪（YangJiechi）通过外交手段解决了这场危机，尽管中国方面在公开场合对这场危机进行大肆宣传。这种关系在9・11袭击后不久，美国寻求联合国的帮助时获得了回报。这表明，即使是对于最棘手的问题，双方也有在外交上达成合作的可能，但也存在很多问题需要克服。大多数美国总统都经受过早期外交政策考验，这可能为他们的任期表现定下基调。1961年，约翰・F・肯尼迪（JohnFKennedy）古巴"猪湾入侵"计划失败，并在维也纳提早与尼基塔・赫鲁晓夫（NikitaKhrushchev）会晤，

purchases, once negligible, rocketed to almost 30%. But the deeper reliance is tenuous. As the trade war showed, that market can quickly evaporate, and experts warn that any number of geopolitical events could end with another chill on Chinese imports. "American agriculture has to be careful of putting too many eggs in the China basket," said Tom Vilsack, who served as Agriculture Secretary from 2009 to 2017 and as of this writing was the top pick to reprise the role under a Biden presidency. "I think the lesson that should be learned from the last couple of years is the need for American agriculture to continue to diversify so there's always somewhere else the products can go, other than the storage bins." For now, purchases are so big that traders are even drawing parallels with the Soviet era's "Great Grain Robbery," another huge agricultural trade at a time of tensions between superpowers. Overall, the US nearly exhausted its export capacity. The farm belt, which voted overwhelmingly for the re-election of Donald Trump, is waiting to see how Biden will approach trade negotiations with China. Trump's North American and Chinese trade deals, plus Covid-linked farm aid, have sustained the agricultural economy. Even if relations improve, China's appetite for American crops reflects a combination of factors that won't remain static: the strength of China's post-Covid economy, the unanticipated consequences of the African swine fever recovery, and the limitations on the country's own corn production. Others are skeptical about the influence of the trade deal. "China doesn't adhere to trade policies because they'd like to, it only happens when there is a need," said Dan Basse, president of Chicago-based consulting firm AgResource. "I think China would have bought the same amount of grain relative to having a phase one agreement or not." China has already bought so much corn from the US and Ukraine, traditionally its biggest supplier, that imports this year exceeded for the first time the 7.2-million-ton quota set by the World Trade Organization. The USDA's Foreign Agriculture Services expects China's purchases to triple to 22 million tons in 2021. Those are the projections that will inform US farmers as they decide how to allocate their land for the 2021 growing season. Behind closed doors, American executives worry that they're at a disadvantage. China closely guards the status of its reserves, and only its state-owned enterprises understand the full scale of the country's demand. Typhoons in the northeast could have done serious damage to the country's harvest or, as its agriculture minister said, this year could see a bumper crop. The amount of corn subject to lower tariffs is also opaque. Despite the jumps in purchases, the scars of the trade war remain. Tariffs are still in place, a challenge the Biden administration will eventually have to deal with. The new president will also have to tackle issues such as intellectual property and business practices, which remain on the table. Any sticking points over any of those issues could stress agricultural trade, as China's tension with Australia is once again making clear. What began in 2018, when Canberra barred Huawei Technologies Co. from building its 5G network on national security concerns, has snowballed; this year, China moved to block imports of barley, wine, sugar, lobster, coal and copper ore (Bloomberg).

China's New Export Control Law

China's blooming imports and exports may have been in anticipation of China's broadly defined export control law that came into effect in late November 2020, expanding Beijing's arsenal of countermeasures to trade restrictions imposed by other countries. The law bears resemblance to US Export Administration Regulations, including a list of controlled items like sensitive technology, military goods, dual-use items that have both civil and military uses, and a license requirement for anyone who intends to export or re-export these goods. The regulation is widely viewed as a response to United States' restrictions on Chinese technology firms like Huawei Technologies Co., which has seen access to American technology severed amid a growing tech war between the world's two largest powers. The Export Control Law may prove to be a milestone for China because this new law provides the country with the first comprehensive regulatory framework for restricting exports of military and dual-use products and technology for national security and public policy reasons. Virtually all major economies already have similar laws and framework to regulate foreign export control practice in place, so China is filling a major gap

这让这位俄罗斯领导人断定肯尼迪性格软弱，并在第二年引发了古巴导弹危机。小布什对美国侦察机在海南岛被中国击落一事大吃一惊。奥巴马因其相信中国主席习近平的保证，容忍中国的南海军事化行动而饱受批评。面对现实吧。最终，美国给中国"送礼"，中国也给美国"送礼"，双方都将寻找自己能获得的任何优势（Magnier）。

虽然到目前为止，特朗普总统针对中国的攻击性言论可能没有带来多少持久的经济利益，但这些攻击仍然改变了这两个经济超级大国之间的关系。尽管候任总统乔·拜登可能会采取相对温和的态度，但由于近年来美国对贸易和大型全球交易的态度已经恶化，他不会对中国放松警惕。与此同时，两党都对中国持怀疑态度，尤其是支持拜登当选的进步派人士。拜登曾投票支持《北美自由贸易协定》（NAFTA），对于这位新总统来说，这个变化相当显著，而他后来表达了对该协定的担忧。他还曾投票支持为中国加入世界贸易组织铺平道路，最终推动了这个亚洲国家迅速崛起，成为制造业超级大国。但特朗普一再指责中方的掠夺性政策摧毁了美国的产业，这成功改变了有关中国的舆论风向，实际上真正迁回美国的公司并不多。与此同时，多年的失业和工厂倒闭让公众对贸易的看法更加强硬，尤其是"铁锈地带"（RustBelt）的关键选举州。工会和左翼团体也对中国抱有敌意，他们支持拜登当选，并将民主党此前对NAFTA等贸易协定的支持视为背叛行为。拜登还可能受到在特朗普政府领导下全球对美国情绪变化的制约。在竞选期间，拜登对特朗普针对中方采取的所谓单边策略表示批评，并表示，美国需要与亚洲和欧洲结盟，以迫使中方在贸易方面遵守规则。他在2019年一场民主党初选辩论中说，"我们不主动制定规则，就会沦为和中国一起制定规则，正因如此，我们需要组织全世界来阻止中国正在实施的不正当行为"。知易行难。与盟友联手遏制中国，是奥巴马政府推动《跨太平洋伙伴关系协定》的动力。该协定由不包含中国的12个环太平洋国家签署，规模庞大。但特朗普一上任就退出了TPP，而且拜登曾表示，如果在劳工和环境保障方面没有显著改善，则不会支持TPP。与此同时，世界上除美国以外的其他国家也在寻求发展。中国和其他14个国家签署了贸易协定——《区域全面经济伙伴关系协定》（Zarroli）。

因此，暂无迹象表明中美贸易战会很快结束。别忘了，特朗普总统在贸易问题上的许多立场以前是民主党而非共和党支持的。特朗普总统的贸易政策很少受到所在共和党反对的原因，除了大多数总统通常能赢得其名义领导的政党的支持之外，是因为世界上许多国家认为中国没有履行其在2001年加入世界贸易组织时作出的承诺，民主党人也是如此认为。毕竟，这就是奥巴马总统促成十几个国家签署《跨太平洋伙伴关系协定》的原因。该协议尚待各国国会批准。特朗普总统上任马上实施的措施之一是退出TPP，而其他国家仍按约定进行。尽管多年来对于二战后成立的国际组织，包括联合国、世贸组织、北约和世卫组织等，以及美国对它们的资金支持，一直存在质疑的声音，但特朗普总统仍通过网络对这些国际组织不断抨击施压，而拥护这些国际组织的国家表示美国的持续参与很重要。中美贸易战大约在两年半前的2018年春天打响，而2017年，美国成为了首个从一个国家进口超过5000亿美元的国家，这个进口量一直保持到2018年。2018年，尽管贸易战已经打响，但美国对华贸易仍呈增长趋势，而且中国连续四年成为美国的第一大贸易伙伴。然而，2019年，特朗普通过全面加征进口关税，对中国加大施压，中对美国出口降至2012年以来的最低水平，全球排名第三，落后于墨西哥和加拿大，这也是自2002年（中国加入世贸组织一年后）以来的最低水平。这在某种程度上也可看作是一种成功。但以上并未考虑2020年的中美贸易形势。中美贸易下降12.57%，低于美国对世界贸易的平均水平13.75%。若出口总值大于进口总值，为贸易盈余，反之，则为贸易赤字。出口额除以贸易总额，得到一个相关但略有不同的数额，即真正意义的"贸易差额"。贸易差额每年，甚至在不同时间，都不会有太大变化。在过去15年的大部分时间里，美国对世界的平均出口额都在40-42%之间浮动。在中国加入世贸组织之前的1999年和2000年这两年时间，世界这两大经济体之间每1美元的贸易中，美国出口占14美分，进口占86美分。到2009年，美国出口比重增至19美分。接下来的八年中有七年为20美分或以上。也就是说，与十年前相比，即使贸易逆差有所增加，但两国贸易的平衡程度仍提高了50%以上，这种状况一直持续到2017年，刚好是在特朗普发动贸易战前夕。这是因为美国对华出口增速（虽不以实际美元计算）高于美国自华进口增速。不过，今年迄今为止，美国对华出口比例为21%，与历史最高水平基本持平，但仍远低于美国平均出口水平。7月份，这一比例回落至18%，但如果按月计算，这个比例可能有些波动，特别是在疫情爆发和经济衰退时期。底线：其影响如下。在贸易战爆发前的八年里，美国的贸易差额一直都是1美元占20美分或以上，但有一年除外。2018年和2019年都低于20美分。我们来预测一下2020年的走势如何（Roberts）。

随着中美贸易关系进展缓慢，两国在其他领域的紧张关系升级，双方相互指责对方是新冠疫情的罪魁祸首，并在新冠疫情应对等问题上处理不当。美方将矛头指向TikTok所有者字节跳动公司，并迫使华为加入这场生存之战。特朗普成功改变了美方对中国的看法。随着议员更深入地考虑两国关系的方方面面，需要采取更为激进的策略，在很大程度上已得到两党的支持。中美贸易冲突在贸易、技术和金融等不同层面的走势可能不尽相同。在这种情况下，随着两国在5G网络、量子计算、人工智能和生物技术领域的竞争愈演愈烈，中美关系或将继续破裂。为争夺这些领域的主导地位，中美两国已经开始"脱钩"，减少合作，限制技术共享，甚至在某些方面切断双边贸易。拜登上任后可能会不得不推行=促进与中国脱钩的政策，不过会按照他自己的治理风格来实行（Disis）。

拜登政府贸易代表拟由对处理中美贸易争端有着丰富经验的老手出任，因此，中国在两国关系中可能面临更

and catching up with what has been done in many other places. The new law explicitly allows China to retaliate against a country that violates export controls and endangers national security, although the definition of abuse is not clearly defined. The regulation would allow Beijing to take radical positions in terms of trade exports as it was much broader than similar legislation in other countries. For instance, the government would be authorized to restrict exports to foreign companies deemed to threaten China's national security or national interests, he said. China's new export control law explicitly allows it to retaliate against a country that violates export restrictions and endangers national security. While the control list is not yet available, the Ministry of Commerce published an expanded list of Chinese technologies restricted for export at the end of August 2020. The updated list, which should give a clue on controlled items, added two dozen technologies, including lasers and drones, that need government approval for sale overseas. The new law also allows Beijing to impose temporary export controls on goods, services and technologies that are not on the official export control list for up to two years, providing the government with ample flexibility to impose restrictions. It is unclear whether Beijing will use US-style to penalize foreign companies that violate Chinese export controls by selling products that consist of restricted technology. A draft version of Beijing's export control law published in 2017 contained something similar to long-arm jurisdiction, but was removed in the final version because of concerns over its negative impact on China's role in the global supply chain. Importers and end users of controlled items also face greater scrutiny. An end use certification document issued by the destination country is a prerequisite to getting an export license. Companies or individuals that break the law could have illegal gains confiscated and be levied with fines of up to 20 times the value of transactions. Business licenses could also be suspended and export permission revoked (Leng).

The law is not entirely new, but a higher-level and more comprehensive update to existing regulations "for the control of nuclear, biological, chemical, missile, and military export[s]." The law is to be administered by the State Export Control Administrative Departments" of both the State Council (China's top governmental body) and the Central Military Commission (the top authority over China's military, the People's Liberation Army), to which companies will have to apply for licenses if they want to export restricted goods and services. The law reserves the right to restrict items not on the control list if the exporter "is or should have been aware" of potential risks to China's national security or national interests. The government can also restrict exports of items not on the list for up to two years using "temporary" export controls. In the law, export controls are defined as applying to "dual-use items, military items, nuclear items and other goods, technologies, services and items relating to the maintenance of national security and national interests, and performance of anti-proliferation and other international obligations." The vague mention of exports related to "national security and national interests" raises the potential for broad application. Already, earlier this year the Chinese government moved to block Chinese company ByteDance from ceding control of the algorithm used to run its popular TikTok app as the Trump administration sought to force a sale as a condition of allowing TikTok to continue to operate in the US. Sharing the algorithm was deemed a threat to China's national interests. The phrase "national security" alone appeared in previous drafts. The addition of "national interests" "provides an explicit basis for export control measures designed to advance foreign policy or industrial policy goals unrelated to conventional defense and security risks." That, combined with placing the onus on exporters to decide if even unlisted products and services require an export license, adds up to a potential minefield for companies. And, as a report from the US Congressional Research Service pointed out, the law allows for the granting of export licenses to be based on "not only the particular technology, end use, and end user, but also an entity's 'social credit' rating." That effectively provides another legal tool for the Chinese Communist Party to coerce businesses' compliance with Party ideology and end goals. Of particular note from a geopolitical perspective, the Export Control Law explicitly mentions striking back at other countries' own export control tactics in article 48: "If any country or region abuses

为复杂的挑战。拜登拟提名华裔美国人、美国众议院税务委员会首席贸易法律顾问戴琦（KatherineTai）接替罗伯特·莱特希泽（RobertLighthizer）出任美国贸易代表办公室主任（USTR）。若提名通过，戴琦将成为首位担任该职位的有色人种女性，也是即将上台的拜登政府中第二位担任内阁级别职位的亚裔美国人。（WuandWong）。

提名经参议院通过后，戴琦将接任这个重要的内阁级别职位，负责执行美国的进口规定并与中国等国的谈判贸易条款。戴琦是亚裔美国人，也将成为首位担任美国贸易代表的有色人种女性。她能说一口流利的普通话。拜登团队推选众议院筹款委员会高级贸易法律顾问戴琦，可能是想表明其有意回归注重多边贸易的贸易策略，以此促进美国的贸易利益，应对来自中国日益激烈的经济竞争。拜登在新闻发布会上表示，即将上台的拜登政府对即将离任的特朗普总统与中方达成的贸易协议进行审查时，戴琦的丰富经验将起到重要作用。拜登过渡团队表示，"她经验丰富，能帮助拜登政府在贸易问题上迅速展开工作，并利用美国的贸易关系，帮助美国从新冠疫情引发的经济危机中恢复过来，继续推行当选总统的有利于美国工人的贸易战略。"虽然比起莱特希泽，戴琦可能更倾向于多边贸易机制，但她出任美国贸易代表并不代表一定会对华采取更强硬立场。她曾表示，对待中国，应采取强有力且更具战略性的措施。前白宫高级贸易谈判代表克里特·威廉姆斯（CleteWillems）表示，"中国的不正当做法是我们这个时代最紧迫的贸易问题，而莱特希泽和戴琦二人在处理这个问题上都拥有丰富的经验"。"戴琦的策略最有可能的不同点，在于她如何通过世贸组织机制和盟国来迫使中国改变其做法。"从2007年到2014年间，戴琦成功在总部位于瑞士日内瓦的世贸组织就中美争端提起诉讼。莱特希泽及其团队对行动迟缓的官僚体制以及中国在世贸组织和世界银行的影响力感到懊恼，因而通常选择绕过世贸组织，以关税形式采取更为直接的策略。作为美国贸易代表办公室中国贸易执法局的前负责人，戴琦曾与欧盟和日本等国积极合作，在世贸组织针对中国提起并赢得诉讼，因此未来很可能会采取类似策略。她普通话流利，可在中美谈判过程中赢得尊重。2020年8月，戴琦呼吁对中国采取不同于莱特希泽多年来的关税战策略，并表示加征进口税实际上是一种防御策略。弗吉尼亚州民主党众议员唐·拜尔（DonBeyer）表示，基于与戴琦在筹款委员会的共事经历，他认为戴琦是美国贸易代表的最佳人选。拜尔在发布会上表示，"她是能够使我国的贸易政策回归理性、帮助世界各地盟友重获尊重的最佳带头人。"筹款委员会主席、麻萨诸塞州民主党人理查德·尼尔（Richard-Neal）也同样这样认为，他说："她在筹款委员会工作期间取得了多项成就，但最重要的是，她在幕后发挥了关键性的作用，使我们顺利完善了《美墨加三国协定》并确保其获得广泛支持并通过"。他补充说道，"在美国努力修复与世界各地伙伴国家的紧张关系、应对来自中国的日益艰巨的挑战之际，戴琦将是我国、我国人民和国家利益的光荣而出色的代表。"（Franck）。

拜登政府上台后，美国与中国及亚洲其他国家的关系的利害关系达到了前所未有的高度。随着中美关系重新调整的可能性增加，前情报官员和外交政策分析人士纷纷猜测，中国方面将如何考验拜登政府的勇气，试探其弱点，抢夺新机遇。人们普遍认为，在经历了四年残酷的贸易战、抨击和相互指责后，中国方面前期会按照以往应对美国总统交接的策略，即放慢步伐，以免给可能出现的路线调整带来负面影响。分析人士表示，中美关系可能也会经历意外事件或误解的考验，比如1999年比尔·克林顿（BillClinton）执政期间美国轰炸中国驻南斯拉夫大使馆，以及乔治·W·布什（GeorgeWBush）执政初期美国侦察机在海南岛附近被击落。在错综复杂的外交试探和博弈中，谁会主动采取行动，降低影响全球经济约3600亿美元美国进口商品的关税，以及哪一方会主动与对方寻求会晤，是检验双方关系的一块试金石。这块试金石可能表明，哪一方遭受的经济和政治打击更大，以及哪一方愿意作出让步。中国方面初期采取的措施可能包括，遏制民族主义的"战狼"外交官，甚至按照第一阶段贸易协议实现2020-2021年810亿美元的农产品采购目标，以削弱中国失信的说法。由于中国的行为偏离了基于规则的国际秩序，拜登如今对待中国的发展比20年前更加谨慎。但他并没有对中国关上大门。这场刀光剑影的中美博弈的另一大关键在于先后顺序，特别是美国新政府是直接与中国方面接触，还是任由目前状况发展下去，最终和同样对中国窃取知识产权和补贴国有企业感到懊恼的其他盟国形成对抗中国的统一战线。中国方面最近采取了明显的先发制人举措，向首尔和东京派出特使，敦促欧洲绕开美国制定自己的发展路线，成为某区域性贸易组织的创始成员国并加入另一贸易组织的兴趣，考虑到特朗普的"美国优先"政策，这两大组织都不包括美国（Magnier）。

对此，拜登需要小心行事。拜登及其顾问团队一致认为，特朗普旨在切断中美经济关系的多项措施是愚蠢的、代价高昂的但具有战略意义。他们表示希望采取更明智的策略，在全球变暖和新冠疫情等问题上与中国合作，同时，在技术领域与中国争夺领导地位，并在不公平贸易等其他问题上与中国对抗。即便拜拜登登中止特朗普的极端策略，它也会急于保持对中国的影响力，以实现其政策目标。新政府将面临来自两党议员的压力。美国商会执行副会长薄迈伦（MyronBrilliant）表示："有关中美关系的这些压力可能会持续相当长一段时间。""毫无疑问，特朗普总统对中国采取了强硬立场，虽然留给候任总统拜登的政治灵活性有限，但预计拜登会在基调、风格和进程上有重大转变。"拜登没有透露过多有关其中美关系计划的细节，仅表示希望和欧洲和日本等美国盟友一道向中国施压，促使其进行经济改革，比如加强知识产权保护。他承诺将投入更多资源，增强美国的制造能力和基础设施，推动科技发展，确保美国在

export control measures to endanger the national security and national interests of the People's Republic of China, the People's Republic of China may, based on the actual situation, take reciprocal measures against that country or region." And the law provides for extraterritorial reach as well, meaning China could seek to use the new law to retaliate against US firms for trade restrictions imposed on Chinese companies by the US government. Under the Trump administration, the Commerce Department's "Entity List" has been used more and more frequently as a weapon in the trade war with China. The Entity List restricts US companies from selling products and services to certain buyers. The Commerce Department added Huawei to the list in May 2019. Since then a spate of Chinese companies have been added for their ties to the Chinese military and other entities. Currently, the US Entity List includes over 250 Chinese companies – not counting foreign subsidiaries established abroad (Tiezzi).

Future Expectations

With past incoming presidents, Beijing has made it patently clear its cooperation was conditional. New presidents tend to be quite bullish about their ability to change American policy, but almost all tend to be disappointed. Obama sent an emissary to Beijing and they came back empty handed. That's a way you can test a new president. It doesn't have to do something dramatic but it sends a signal. Maybe you just won't return their phone calls. Personalities can ease or intensify the parrying. Known, predictable players, even if they are disliked, tend to lower the temperature and blunt the temptation to score opportunistic points, analysts said. Biden's experienced choices, including Antony Blinken as secretary of state, contrast with the revolving door of neophytes seen in the Trump administration. During the 2001 US spy plane downing – the result of a single Chinese pilot rather than an intentional Chinese test, many believe – secretary of state Colin Powell and US ambassador Yang Jiechi worked through diplomatic channels to resolve the crisis, even as Beijing made propaganda hay of it in public. That working relationship paid dividends a short while later when the US sought UN help after the September 11 attack. It showed both sides they could work together diplomatically, even with the hardest problems, however, there are lots of fault lines that can be trampled. Most US presidents weather an early foreign policy test that can set the tone for their tenure. John F Kennedy's failed 1961 Bay of Pigs invasion of Cuba and early meeting with Nikita Khrushchev in Vienna, which led the Russian leader to conclude Kennedy was a pushover, helped fuel the Cuban missile crisis the next year. Bush was taken aback by the Hainan Island spy plane downing. Obama was criticized for appearing weak, allowing China to militarize the South China Sea despite Xi's assurances. Let's face it. In the end, the US is the big prize for China and China is the big prize for the US. Each side is going to be looking for whatever advantage they can get (Magnier).

President Trump's rhetoric against China may have brought few lasting economic benefits so far, but all those attacks still have changed the relationship between the two economic superpowers. And although President-elect Joe Biden will likely set a politer tone, he can ill afford to ease off on China as American attitudes toward trade and big global deals have soured in recent years. Meanwhile, skepticism toward China abounds in both parties, especially among the progressives who helped elect Biden. It's a marked change for an incoming president who voted for the North American Free Trade Agreement, despite later expressing misgivings about it. He also once voted to set the path for China to enter the World Trade Organization, eventually helping fuel the Asian country's incredible rise as a manufacturing superpower. But Trump has successfully shifted the debate on China by repeatedly accusing Beijing of predatory policies that gutted American industries, even if few companies have relocated back to the United States. Meanwhile, years of job losses and factory closures have hardened public views about trade, especially in key electoral states in the Rust Belt. The hostility toward China is shared by unions and left-wing groups that helped elect Biden and see previous Democratic support for trade agreements such as NAFTA as a betrayal. Biden could also be constrained by changes to global sentiment toward the United States under the Trump administration. During the campaign,

电信、人工智能和半导体等领域投入巨资的同时，仍能保持领先中国的优势。拜登上任后马上实施的举措，也可能会受到特朗普卸任前最后几个月执政情况的影响（Swanson）。

2020 : 美国与中国进出口贸易

月份	出口	进口	结余
一月 2020	7,215.3	33,280.6	-26,065.3
二月 2020	6,815.0	22,813.1	-15,998.1
三月 2020	7,971.9	19,805.4	-11,833.5
四月 2020	8,604.7	31,070.8	-22,466.1
五月 2020	9,641.7	36,598.2	-26,956.5
六月 2020	9,242.2	37,639.5	-28,397.2
七月 2020	9,037.0	40,657.3	-31,620.2
八月 2020	11,036.1	40,816.4	-29,780.4
九月 2020	11,536.8	41,208.3	-29,671.6
十月 2020	14,723.0	44,828.0	-30,105.0
总额 2020	**95,823.7**	**348,717.6**	**-252,893.9**

2019 : 美国与中国进出口贸易

月份	出口	进口	结余
一月 2019	7,105.1	41,514.4	-34,409.3
二月 2019	8,083.3	33,154.9	-25,071.6
三月 2019	10,574.9	31,175.6	-20,600.6
四月 2019	7,883.0	34,682.7	-26,799.6
五月 2019	9,069.4	39,173.4	-30,103.9
六月 2019	9,166.7	38,967.6	-29,800.9
七月 2019	8,694.3	41,449.2	-32,754.9
八月 2019	9,415.6	41,151.1	-31,735.5
九月 2019	8,597.3	40,165.5	-31,568.2
十月 2019	8,851.2	40,114.9	-31,263.7
十一月 2019	10,103.3	36,436.6	-26,333.3
十二月 2019	8,903.0	33,665.5	-24,762.6
总额 2019	**106,447.3**	**451,651.4**	**-345,204.2**

2018: 美国与中国进出口贸易

月份	出口	进口	结余
一月 2018	9,910.2	45,749.9	-35,839.7
二月 2018	9,741.8	39,003.6	-29,261.9
三月 2018	12,653.2	38,295.1	-25,641.9
四月 2018	10,510.5	38,269.4	-27,758.9
五月 2018	10,396.6	43,938.7	-33,542.0
六月 2018	10,858.3	44,571.2	-33,712.9
七月 2018	10,156.5	47,087.6	-36,931.1
八月 2018	9,280.9	47,817.5	-38,536.6
九月 2018	9,732.4	49,988.1	-40,255.7
十月 2018	9,187.5	52,170.1	-42,982.6
十一月 2018	8,650.9	46,445.7	-37,794.8
十二月 2018	9,210.5	45,906.3	-36,695.9
总额 2018	**120,289.3**	**539,243.1**	**-418,953.9**

2017: 美国与中国进出口贸易

月份	出口	进口	结余
一月 2017	9,955.5	41,335.6	-31,380.0
二月 2017	9,739.8	32,785.0	-23,045.1
三月 2017	9,720.2	34,162.0	-24,441.8
四月 2017	9,806.5	37,441.9	-27,635.4
五月 2017	9,880.0	41,756.8	-31,876.8
六月 2017	9,718.2	42,258.1	-32,539.9
七月 2017	9,954.1	43,561.1	-33,607.0
八月 2017	10,825.5	45,782.3	-34,956.9
九月 2017	10,896.0	45,405.1	-34,509.1
十月 2017	12,963.2	48,133.1	-35,169.9
十一月 2017	12,908.4	48,104.8	-35,196.4
十二月 2017	13,629.9	44,439.4	-30,809.5
总额 2017	**129,997.2**	**505,165.1**	**-375,167.9**

Biden criticized what he sees as Trump's go-it-alone approach to China and said that the US needs to ally itself with Asia and Europe to force Beijing to play by the rules on trade. "If we don't set the rules, we in fact are going to find ourselves with China setting the rules, and that's why we need to organize the world to stop China to stop the corrupt practices that are under way," he said in a 2019 Democratic debate. That may be easier said than done. Joining with allies to contain Beijing was the impetus for the Obama administration's Trans-Pacific Partnership, a gargantuan trade deal among 12 Pacific-Rim nations that excluded China. But the TPP was scrapped by Trump as soon as he took office, and Biden has said he won't support it without significant improvements in labor and environmental safeguards. Meanwhile, the world has moved on without the United States. China and 14 other countries signed a trade pact of their own, the Regional Comprehensive Economic Partnership (Zarroli).

So, there is no indication the trade war will end anytime soon. Keep in mind that many of President Trump's positions on trade are those previously supported by the Democratic rather than Republican Party. The reason that President Trump has received so little blowback from his own party — beyond the fact that most presidents generally win the support of the parties over which they are the titular head — is that much of the world believes that China has not lived up to the commitments it made when it was granted admission to the World Trade Organization in 2001. That would include many Democrats. That was the reason President Obama had helped cobble together a dozen nations to create the Trans-Pacific Partnership, after all. All that was lacking was congressional approval. One of President Trump's first official acts was to withdraw from TPP. The other nations went ahead, on their own. Although there have been questions over the years about the post-war initiatives and the US's level of financial commitment to them — UN, WTO, NATO, WHO — President Trump has dialed up the pressure on this alphabet soup of global organizations, forcing proponents to argue for the survival of United States' involvement. Enter the US-China trade war in the spring of 2018, about 2 1/2 years ago, one year after the United States would become the first nation to ever import more than $500 billion from one nation — and then do it again the next year. US trade with China actually increased in 2018, even though the trade war had begun, and for the fourth straight year it was the nation's No. 1 trade partner. In 2019, however, Trump ratcheted up the pressure with sweeping import tariffs, and US-China trade fell to its lowest level since 2012 — and fell behind Mexico and Canada to rank third globally, its lowest finish since 2002 — one year after becoming a member of the WTO. That might suggest some success. But that would fail to consider US-China trade in 2020. US-China trade is down 12.57%, which is less than the US average with the world, 13.75%. If you subtract imports from exports, you get the trade surplus — if exports are greater than imports — or deficit. If you divide exports by total trade, you get a related but slightly different measurement, a true "balance of trade." This number doesn't move much from year to year or even over time. The US average with the world has hovered between 40-42% exports for most of the last 15 years. For the two years prior to China's ascension to the WTO, in 1999 and 2000, for every dollar of trade between the world's two largest economies, 14 cents was an export and 86 centsimport. By 2009, it was at 19 cents. For seven of the next eight years, it was 20 cents on the dollar or better. In other words, trade was more than 50% more balanced that it had been within a decade, even as the deficit grew, and it stayed that way until 2017 — right before Trump launched the trade war. That's because US exports to China were growing faster as a percentage though not in actual dollars than US imports from China. The good news here is that, year-to-date, the percentage is 21%, essentially matching the record high — which remains somewhat stubbornly well below the US average. For the month of July, the percentage was back down to 18%, though on a monthly basis, the figure can be a little jumpy, particularly in a pandemic and recession. Bottom line: Here you can see the impact. In the eight years prior to the start of the trade war, the trade balance was 20 cents on the dollar or greater all but one year. It was below that in both 2018 and 2019. Let's see what happens with 2020 (Roberts).

2016: 美国与中国进出口贸易

月份	出口	进口	结余
一月 2016	8,208.9	37,126.4	-28,917.5
二月 2016	8,080.5	36,066.9	-27,986.4
三月 2016	8,925.6	29,812.3	-20,886.8
四月 2016	8,679.7	32,920.2	-24,240.5
五月 2016	8,542.0	37,513.7	-28,971.8
六月 2016	8,845.6	38,539.2	-29,693.6
七月 2016	9,129.7	39,438.9	-30,309.2
八月 2016	9,372.9	43,221.8	-33,848.9
九月 2016	9,521.2	42,020.9	-32,499.8
十月 2016	12,600.0	43,798.1	-31,198.1
十一月 2016	12,044.1	42,602.6	-30,558.5
十二月 2016	11,644.8	39,358.9	-27,714.1
总额 2016	**115,594.8**	**462,420.0**	**-346,825.2**

注：除非另有说明，所有数字均为名义基数上的百万美元，不作季节性调整。数据合计因四舍五入可能导致偏差。该表仅反映有贸易的月份。

来源：美国国家统计局

As progress on the US-China trade relationship languishes, tensions between the two countries have escalated in other areas as they blame each other for starting and mishandling the coronavirus pandemic and other issues. Washington has targeted TikTok owner ByteDance and has forced Huawei into a fight for survival. What Trump has succeeded in doing is changing the way Washington talks about China. The idea that a more aggressive approach is needed has now attracted bipartisan support, for the most part, as lawmakers consider all aspects of the relationship with more scrutiny. The evolution of the US-China trade conflict is likely to vary across a number of dimensions, including trade, technology, and the financial sector. In that scenario, expect the relationship between Washington and Beijing to continue splintering as the two countries fight over 5G networks, quantum computing, artificial intelligence and biotechnology. In vying for dominance in these areas, the US and China have set about decoupling, reducing cooperation, restricting technology sharing, even shutting down trade in some cases. Biden would likely be forced to pursue policies that encourage decoupling, albeit with his own style of governance (Disis).

Beijing may face a more complex challenge in relations with Washington with Biden's top trade appointment set to be an experienced hand in US-China trade disputes. Biden plans to nominate Katherine Tai – a Chinese-American and the trade lawyer for the House of Representatives' chief taxation committee – to succeed Robert Lighthizer as head of the Office of the US Trade Representative (USTR). If confirmed, Tai would be the first woman of color to fill the position and the second Asian-American to take a cabinet-level post in the upcoming Biden administration. (Wu and Wong).

If confirmed by the Senate, Tai would inherit a critical, Cabinet-level position tasked with enforcing America's import rules and brokering trading terms with China and other nations. Tai, who is Asian-American, would also be the first woman of color to serve as the USTR. She is fluent in Mandarin. In choosing Tai, the senior trade lawyer on the House Ways and Means Committee, the Biden team likely signals an intent to return to a more multilateral trade approach to advance US trade interests and confront growing economic competition from China. Biden heralded Tai's experience in a press release as key to important insights while the incoming administration reviews the trade deal outgoing President Donald Trump brokered with Beijing. "Her deep experience will allow the Biden-Harris administration to hit the ground running on trade, and harness the power of our trading relationships to help the US dig out of the COVID-induced economic crisis and pursue the President-elect's vision of a pro-American worker trade strategy," the Biden transition team wrote. Though Tai may favor multilateral enforcement mechanisms more than Lighthizer, her leadership as USTR wouldn't necessarily signal a change to the tougher stance toward China. She has said that China should be addressed forcefully and strategically. "They both also have a long history of dealing with China's unfair practices, the most pressing trade issue of our time," according to former top White House trade negotiator Clete Willems. "Where Katherine's approach is most likely to differ is on how she uses the WTO system and alliances to pressure China to change behavior." From 2007 to 2014, Tai successfully litigated Washington's disputes against Beijing at the WTO, the global trade organization based in Geneva, Switzerland. Lighthizer and his team, frustrated with what they viewed as slow-moving bureaucracy and China's influence at the WTO and World Bank, often opted to work around the WTO and take a more direct approach through tariffs. As the former head of USTR's China trade enforcement, Tai has experience bringing and winning joint WTO disputes against China while partnering with countries like the EU and Japan and is likely to pursue a similar approach. Her fluency in Mandarin would command respect at the negotiating table with China. In August 2020, Tai called for a different approach to China from the years-long tariff war waged by Lighthizer and said the use of import taxes are actually a defensive maneuver. Rep. Don Beyer, D-Va., Tai would be a smart choice for USTR based on their time working together on the Ways and Means Committee. "She is exactly the right kind of cooperative leader to help return rationality to our trade policy and restore the respect of our allies around the world," Beyer said in the release. The committee's chairman, Massachusetts Democrat Richard Neal, offered similar sentiments: "Her

此页留白

time with Ways and Means is filled with many accomplishments, but none greater than the key role she played behind the scenes in our successful work to improve the US-Mexico-Canada Agreement and secure widespread support for its passage," Neal said. "As the United States seeks to repair strained relationships with our partners around the world and address increasingly perilous challenges from China, Katherine will be an honorable and effective representative for this nation, our people, and our interests," he added (Franck).

As the Biden administration takes the reins in Washington, the stakes have never been higher for the US relationship with China and the rest of Asia. As the likelihood of a US-China reset increases, former intelligence officials and foreign policy analysts are gaming how Beijing could test the mettle of the incoming Biden administration for weakness and opportunity. Most expect Beijing to initially take it slow in line with its past approach toward presidential transitions and to avoid jinxing a potential course correction after four brutal years of trade wars, name-calling and recriminations. Unplanned events or misunderstandings also can try the relationship, analysts said, as seen with the US bombing of China's Belgrade embassy in 1999 during the Bill Clinton administration or the downing of a US spy plane off Hainan Island early in George W Bush's presidency. In the complex world of diplomatic probing and gamesmanship, one touchstone will be who takes the initiative on any efforts to reduce tariffs on about US$360 billion in US imports hanging over the global economy and which side travels to the other's capital. This would likely signal which side feels the greatest economic and political pain and is willing to make concessions. Some early signaling on Beijing's part could include the reining in of nationalistic "wolf warrior" diplomats and even meeting 2020-2021 agriculture purchase targets of US$81 billion under the phase one trade deal, to undercut the narrative that it can't be trusted. Joe Biden today is more cautious about China's trajectory than he was 20 years ago because China's behavior has not been consistent with a rules-based international order. But he has not closed the door on China. Another key part of the wary US-China dance will be sequencing, specifically whether the new administration engages directly with Beijing or lets it twist until it forges a common front among allies equally frustrated with China's intellectual property theft and subsidized state-run companies. In apparent preemptive moves, Beijing recently sent envoys to Seoul and Tokyo, urged Europe to chart its own course independent of the US and became a founding member of one regional trade grouping and expressed interest in another, neither of which include the US given Trump's "America First" policies (Magnier).

Biden will need to walk a careful line. He and his advisers view many of Trump's measures, which were aimed at severing ties between the Chinese and American economies, as clumsy, costly and strategic. They say they want to take a smarter approach that combines working with the Chinese on some issues like global warming and the pandemic, while competing with them on technological leadership and confronting them on other issues like unfair trade. Even if Biden departs from Trump's punishing approach, his administration will be eager to maintain leverage over China to accomplish its own policy goals. And the new administration will face pressure from lawmakers in both parties. "This is likely going to be a period of continuing uncertainty on the US-China front," said Myron Brilliant, the executive vice president of the US Chamber of Commerce. "There is no question that President Trump has adopted a tough stance on China, and this probably doesn't give President-elect Biden a lot of political flexibility early on, but we expect a significant departure in tone, style and process." Biden has given few details about his plans for US-China relations, other than saying he wants to recruit American allies such as Europe and Japan to pressure China to make economic reforms, like protecting intellectual property. He has pledged to devote more resources to enhancing American manufacturing capacity, infrastructure and technological development, to ensure the United States retains an edge over China even as it invests huge sums in fields like telecommunications, artificial intelligence and semiconductors. Biden's first moves could also be dictated by Trump's final months (Swanson).

此页留白

2020: U.S. trade in goods with China

Month	Exports	Imports	Balance
January 2020	7,215.3	33,280.6	-26,065.3
February 2020	6,815.0	22,813.1	-15,998.1
March 2020	7,971.9	19,805.4	-11,833.5
April 2020	8,604.7	31,070.8	-22,466.1
May 2020	9,641.7	36,598.2	-26,956.5
June 2020	9,242.2	37,639.5	-28,397.2
July 2020	9,037.0	40,657.3	-31,620.2
August 2020	11,036.1	40,816.4	-29,780.4
September 2020	11,536.8	41,208.3	-29,671.6
October 2020	14,723.0	44,828.0	-30,105.0
TOTAL 2020	**95,823.7**	**348,717.6**	**-252,893.9**

2019: U.S. trade in goods with China

Month	Exports	Imports	Balance
January 2019	7,105.1	41,514.4	-34,409.3
February 2019	8,083.3	33,154.9	-25,071.6
March 2019	10,574.9	31,175.6	-20,600.6
April 2019	7,883.0	34,682.7	-26,799.6
May 2019	9,069.4	39,173.4	-30,103.9
June 2019	9,166.7	38,967.6	-29,800.9
July 2019	8,694.3	41,449.2	-32,754.9
August 2019	9,415.6	41,151.1	-31,735.5
September 2019	8,597.3	40,165.5	-31,568.2
October 2019	8,851.2	40,114.9	-31,263.7
November 2019	10,103.3	36,436.6	-26,333.3
December 2019	8,903.0	33,665.5	-24,762.6
TOTAL 2019	**106,447.3**	**451,651.4**	**-345,204.2**

2018: U.S. trade in goods with China

Month	Exports	Imports	Balance
January 2018	9,910.2	45,749.9	-35,839.7
February 2018	9,741.8	39,003.6	-29,261.9
March 2018	12,653.2	38,295.1	-25,641.9
April 2018	10,510.5	38,269.4	-27,758.9
May 2018	10,396.6	43,938.7	-33,542.0
June 2018	10,858.3	44,571.2	-33,712.9
July 2018	10,156.5	47,087.6	-36,931.1
August 2018	9,280.9	47,817.5	-38,536.6
September 2018	9,732.4	49,988.1	-40,255.7
October 2018	9,187.5	52,170.1	-42,982.6
November 2018	8,650.9	46,445.7	-37,794.8
December 2018	9,210.5	45,906.3	-36,695.9
TOTAL 2018	**120,289.3**	**539,243.1**	**-418,953.9**

2017: U.S. trade in goods with China

Month	Exports	Imports	Balance
January 2017	9,955.5	41,335.6	-31,380.0
February 2017	9,739.8	32,785.0	-23,045.1
March 2017	9,720.2	34,162.0	-24,441.8
April 2017	9,806.5	37,441.9	-27,635.4
May 2017	9,880.0	41,756.8	-31,876.8
June 2017	9,718.2	42,258.1	-32,539.9
July 2017	9,954.1	43,561.1	-33,607.0
August 2017	10,825.5	45,782.3	-34,956.9
September 2017	10,896.0	45,405.1	-34,509.1
October 2017	12,963.2	48,133.1	-35,169.9
November 2017	12,908.4	48,104.8	-35,196.4
December 2017	13,629.9	44,439.4	-30,809.5
TOTAL 2017	**129,997.2**	**505,165.1**	**-375,167.9**

2016: U.S. trade in goods with China

Month	Exports	Imports	Balance
January 2016	8,208.9	37,126.4	-28,917.5
February 2016	8,080.5	36,066.9	-27,986.4
March 2016	8,925.6	29,812.3	-20,886.8
April 2016	8,679.7	32,920.2	-24,240.5
May 2016	8,542.0	37,513.7	-28,971.8
June 2016	8,845.6	38,539.2	-29,693.6
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November 2016	12,044.1	42,602.6	-30,558.5
December 2016	11,644.8	39,358.9	-27,714.1
TOTAL 2016	**115,594.8**	**462,420.0**	**-346,825.2**

NOTE: All figures are in millions of U.S. dollars on a nominal basis, not seasonally adjusted unless otherwise specified. Details may not equal totals due to rounding. Table reflects only those months for which there was trade.

Source: US Census Bureau

此页留白

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此页留白

1.3 The 14th Five-Year Plan- An Overview

The fifth plenum of the Chinese Communist Party (CCP)'s 19th Central Committee wrapped up in Beijing in late October 2020 after a four-day meeting. The semi-annual gathering of China's top leaders had a special task: finalizing the blueprint for the 14th Five-Year Plan, which will set China's economic and social policy vision for the period from 2021-2025. The proposals outlined 60 key points for formulating the 14th Five-Year Plan (2021-2025) for National Economic and Social Development and the Long-Range Objectives Through the Year 2035, which can be separated into three broad areas and 15 parts (CGTN).

The final version of the plan will not be passed until the National People's Congress meets in early 2021, but it is unlikely to differ in substance from the initial blueprint. They released the full text of the post-plenum communique for the public to view. The text contains essential clues about China's trajectory over the next five to fifteen years. The communique was largely triumphant in tone, declaring victory in meeting the goals of the previous Five-Year Plan. There was, however, acknowledgement of some of the problems that China still faces, including persistent (and growing) inequality between rural and urban residents, environmental issues, and, despite a heavy government focus, lack of quality innovation. The new plan aims to tackle those issues. The plan places a heavy emphasis on quality over raw numbers. The blueprint calls for "sustained and healthy" growth marked by "significantly improved quality and efficiency" during the next five-year period. Importantly, there is no specific target for GDP growth, something analysts have long said needs to be dropped if China truly wants to transition away from an obsession with growth at all costs. It is possible that they may still add a soft GDP target to the final version of the 14th Five-Year Plan approved in 2021, but for now the main focus seems to be on GDP per capita instead. The communique set the goal of raising GDP per capita to the level of a moderately developed country – a vague goal that leaves room for flexibility. The communique also pledged to significantly reduce the earnings gaps between rural and urban residents and reiterated a long-standing focus on "new urbanization." Battling the rural-urban development gap has been a goal for the CCP for decades, but very much remains a work in progress. There is also a tantalizing mention of a "breakthrough" on property rights reform. As expected, the summary of the next Five-Year Plan includes references to "dual circulation," a new term coined by Xi Jinping last spring, amid the travails of both COVID-19's global economic disruption and the increasingly hostile economic competition with the US. The phrase suggests a new, inward focus for China's economy moving forward. The "domestic cycle" (meaning internal production and consumption) will be the main focus for the next Five-Year Plan, complemented by the "international cycle" (foreign trade and investment). The communique thus includes numerous references to the need to boost domestic demand, but no specifics on how to actually achieve that goal. Most notably, there is a strong focus on technology and innovation in the communique, in keeping with the growing "tech war" between China and the US. The communique noted that innovation occupies the "core position" in China's modernization drive and pointed to "self-reliance in science and technology as the strategic support for national development." The "core technologies" were not named in the communique, but likely include the same technologies emphasized in other government plans: semiconductors, telecommunications, big data, and artificial intelligence. Notably, the above technology goals are for 2035, not 2025. In addition to the normal

1.3 "十四五"规划概述

10月29日，为期4天的中国共产党第十九届中央委员会第五次全体会议在北京闭幕。在这场半年一次的会议中，中国高层领导人肩负着一项特殊任务：确定"十四五"规划建议，明确2021至2025年国民经济和社会政策的愿景。这些建议为制定国民经济和社会发展第十四个五年规划（2021-2025）和二〇三五年远景目标列出了60个要点，共有十五个部分，可分为三大板块(CGTN)。

2021年初举行的全国人大将通过"十四五"规划的最终版本。最终版《规划》与最初的《建议》在内容上不太可能存在本质区别。会议结束后，十九届五中全会公报全文也随之向社会公布。公报的内容包含了有关中国未来五至十五年的发展规划的关键信息。公报宣布即将完成"十三五"规划目标，全文透露着胜利的喜悦。不过，公报也承认当前中国仍面临着一些问题，例如，城乡居民生活水平的差距日益突出，生态环保任重道远，尽管政府大力支持，创新能力仍不足以适应高质量发展要求。"十四五"规划的目标就是解决这些问题，强调发展的质量而不是只看单纯的数据。《建议》提出，在下一个五年，要在"质量效益明显提升"的基础上实现经济"持续健康发展"。重点是，此次并未提出具体的国内生产总值（GDP）增长目标。分析师早已指出，中国若真心想摆脱不计一切代价的发展模式，就必须放弃制定硬性GDP增长目标。虽然2021年通过的最终版"十四五"规划仍有可能纳入较为灵活的GDP增长目标，但当前的规划似乎重点关注的是人均国内生产总值。公报提出，要将人均国内生产总值提高至中等发达国家水平，这个目标略显模糊，留有许多灵活发挥的空间。公报还表示要显著缩小城乡居民的收入差距，并重申了实现"新型城镇化"的长期目标。中国共产党几十年来一直将缩小城乡发展差距作为工作重点，但要实现这一目标还需继续努力。公报还提到，要在产权制度改革方面取得"重大进展"，这一点令人振奋。去年春天，在新冠疫情造成全球经济动荡和中美关系日益紧张的局势下，习近平总书记在工作讲话中创造性地提出了"双循环"概念，而在下一个五年规划概要中果然也提到了这个概念。这表明，中国将要采用一种向内发展的新型经济模式。"国内循环"表示国内生产和内需，而"国际循环"则意味着对外贸易和投资。下一个五年规划将以发展国内大循环为主，国际循环为辅。因此，公报中多次提到要扩大内需，但并未给出实现这一目标的具体方案。最值得一提的是，公报还强调要推动科技创新，以期在中美日益激烈的"科技竞赛"中取得优势。公报指出，创新在中国现代化建设中处于"核心地位"，要将"科技自立自强作为国家发展的战略支撑"。虽然公报中并未明示，但"核心技术"很可能是指政府的其它规划中所强调的半导体、电信、大数据和人工智能等技术。值得注意的是，上述技术目标属于2035年愿景规划的内容，而非2025年的规划目标。除了制定五年规划以外，本届五中全会还商讨了一份跨越十五年的宏伟蓝图，为中国制定2021至2035年期间的一系列远景目标提出建议(Tiezzi)。

中国始终把五年规划作为重要的政策依托。根据官方表述，"十四五"规划是中国实现2020年全面建成小康社会的目标之后，开启2050年全面建设社会主义现代化国家目标的第一个五年规划。因此，本次五年规划显得格外重要。需要注意的事，这些提议只起指导作用，其内容也主要是一些定性陈述。接下来，国务院的国家发展和改革委员会将依照《建议》的总体方向和策略，组织编制更为具体的"十四五"规划纲领。这份纲领将采纳来自政府其它部门、研究机构和利益相关者的意见，最终形成具体目标和计划。规划纲领草案将在2021年"两会"期间呈交全国人大审批。全国人大通过"十四五"规划纲领之后，政府各部门和各地地方政府会分别提出符合自身情况的具体方案。中国生态环境部将组织编制气候变化相关的规划草案，这是政府首次将这一议题纳入五年规划中。国家能源局预计在2021年"两会"结束后拟定能源和电力产业的规划方案。"十四五"规划提出了2035年要实现的目标。《建议》提出，中国人均国内生产总值到2035年要达到中等发达国家水平。当前对于中等发达国家并无公认的定义。不过，中国专家认为，根据世界银行、国际货币基金组织和经济合作与发展组织对于高收入和发达经济体的分类，人均国内生产总值达到2万至4万美元的国家可称为中等发达国家。有分析显示，由于中国2019年的人均国内生产总值为1万美元，如果想让人均国内生产总值达到上述水平，中国经济必须在未来十五年内保持稳定增长，根据计算方法不同，其增速应达到3.6%、4.8%，甚至5.4%。经济学家普遍认为，要长期保持如此高速的增长绝非易事。有媒体评论，这份看似低调的《建议》实际上为中国未来的经济制定了具体的增长目标。这些提议的背后有强大的动力。考虑到中国的经济规划，《建议》中关于碳排放和生态保护的内容也就不难理解了。《建议》提出，到2035年"中国的碳排放达峰后稳中有降，生态环境根本好转。"通过这种描述，未来"十四五"规划中有关气

Five-Year Plan, the plenum also discussed a more ambitious 15-year blueprint that sets out China's goals through 2035 (Tiezzi).

The drafting of a Five-Year Plan is always important for Chinese policy. In terms of official discourse, the 14th Five-Year Plan will be the first as China moves from its 2020 goal of creating a "moderately prosperous society" towards the 2050 goal of comprehensive socialist modernization. That makes this Five-Year Plan especially important. It should be noted that the proposals are intended to provide guidance only and consist mainly of qualitative statements. Next, the State Council's National Development and Reform Commission will lead the drafting of a more concrete outline of the 14th Five-Year Plan. This will be in accordance with the overall direction and strategy set in the Proposals. It will take on board opinions from other government bodies, research institutes and stakeholders, and ultimately produce specific targets and projects. That draft will be submitted to the National People's Congress (NPC) for approval at 2021's Two Sessions. Once the 14th Five-Year Plan outline is approved by the NPC, government departments and local governments will come up with their own special plans. For the first time this will include a plan on climate change, the drafting of which will be led by the Ministry of Ecology and Environment (MEE). The plans for energy and the power sector, to be drafted by the National Energy Administration, are expected after the 2021 Two Sessions. The plan sets forth goals that reach as far as 2035 in scope. One of the goals set in the Proposals is for per capita GDP to match that of moderately developed nations by 2035. There is no generally accepted definition of such nations but based on classifications from the World Bank, the International Monetary Fund and the Organization for Economic Co-operation and Development on high-income and advanced economies, Chinese experts have interpreted moderately developed nations as having a per-capita GDP of US$20,000 to $40,000. As China's per-capita GDP was US$10,000 in 2019, analysis shows this will require China to maintain steady real growth over the coming 15 years – at an average of 3.6%, 4.8% or even 5.4%, depending on the calculations used. Economists generally hold that maintaining such high growth for that long a period is difficult. The media have commented that while the Proposals may have seemed low-key, in this respect they have set a concrete target for future economic growth. There is a strong push for proposals. The vision in the Proposals for carbon emissions and ecological conservation should be understood in this context of China's economic trajectory. They stipulate that by 2035 "China's carbon emissions will gradually decline in a state of stabilization after peaking, and there will be fundamental ecological and environmental improvements." This wording on economic growth and carbon emissions sets the boundaries for climate and energy targets for the coming period, and particularly for the 14th Five-Year Plan. The need for higher GDP means the next 15 years will continue to see a powerful drive for development and growth that is better quality and more efficient. Meanwhile, the "stable and declining" formulation indicates that no sudden drop in post-peak carbon emissions is expected. Particular attention will be paid to binding targets on carbon intensity, the proportion of non-fossil fuels in the primary energy mix, and coal power capacity, in both the outline of the general 14th Five-Year Plan and the more specific plans. Those targets will have a huge impact on low-carbon and emissions-reduction efforts over the coming five years (Yixiu and Zhe).

The national savings rate remained at 46.2% in 2017, the latest year for which full data are available, more than double the world average of around 20% and higher than that in other high-saving East Asian peers. The decline appears to reflect that the economic structure is upgrading to a more balanced state, which indicates a positive trend. Falling government savings are the main factor behind the decline, but as private sector savings account for a larger proportion of national savings, any further declines in the national savings rate in the future will be mainly triggered by decreases in the private savings rate, especially in the household savings rate. Household savings accounted for 47.3% of national savings in 2017, and the trend of household savings during the 14th Five-Year Plan period (2021-25) will have a decisive impact on the overall changes in national savings. As wages have experienced rapid growth in China over the past decade and are growing faster

候和能源目标的界限得以确立。对更高GDP的追求将成为推动中国经济在未来15年实现高质量和高效发展的强大动力。同时，“稳中有降”表明碳排放达到峰值后不会出现陡然下降的情况。“十四五”规划纲要和具体规划方案都将着重强调碳浓度目标，提高非化石燃料在一次能源消费结构中的比例，调节煤电产能，从而对未来五年的低碳减排行动产生重大影响(Yixiu and Zhe)。

据最近可获得的完全数据显示，中国2017年国民储蓄率为46.2%，而全球的平均储蓄率约为20%，这一比例比全球平均储蓄率高出两倍不止，且超过了储蓄率同样居高的东亚国家。储蓄率的下降反映出经济结构升级至更为平衡的状态，整体趋势向好。虽然政府储蓄率下降是拉低国民储蓄率的主要因素，但由于私营领域的储蓄率在国民储蓄率中的占比更高，未来国民储蓄率的下降主要还是受私营领域，尤其是居民储蓄率下降的影响。中国2017年居民储蓄率占国民储蓄率的47.3%，在2021-2025的“十四五”规划期间，居民储蓄率的变化趋势将对国民储蓄率的整体走向产生决定性的影响。由于中国近十年来的工资水平持续大幅上涨，上涨幅度高于劳动生产率，预计2021-2025年期间居民收入增长将有所放缓，居民储蓄率也将随之下降。新冠疫情仍在持续，在“十四五”规划早期阶段，疫情带来的不确定因素将促进消费增长，从而拉低储蓄率。在此期间，企业储蓄率很可能会迎来小幅上升。随着产业集中程度增强，大型企业的储蓄率增长将带动整体储蓄率上升。这种趋势在2021-2025年期间仍将持续。此外，中美贸易摩擦和新冠疫情等天灾人祸让全球陷入迷惘无措，促使企业更加积极地储蓄以防患于未然。同时，公共储蓄率将继续下降。为应对人口老龄化危机，在养老、医疗保健和相关领域的社会保障支出将持续增长。加上政府的减税和扩张性财政政策，在以上多种因素的驱动下，公共储蓄率将进一步下降。此外，新冠疫情的影响仍未完全消除，也不知疫情何时才能真正结束。后疫情时代的经济复苏过程中难免需要大规模的公共支出，这也是造成公共储蓄减少的因素之一。但是，由于公共储蓄占国民储蓄的比重下降，其对国民储蓄变化带来的边际效益也将持续减弱。除上述因素之外，人口结构的变动将决定未来储蓄率的变化趋势。中国2017年私营领域的储蓄率占国民储蓄率的比重为92.7%，其中企业储蓄和居民储蓄的占比分别为45.4%和47.3%。人口抚养比增长与结构性因素的变化成为决定居民储蓄率变化的两个决定因素。2019年，中国65岁及以上人口占总人口的比重为12.6%，而60岁及以上人口占比为18.1%。此外，人口老龄化将导致抚养比进一步上升。2021-2025年期间，劳动年龄人口总数将进一步减少2500万至3000万，减少幅度远超过“十三五”规划期间的水平。有三种方法可以改善这种情况：第一，中国可以利用其居高的储蓄率作为深厚的财政基础，采取更加积极的财政政策，解决新冠疫情带来的种种问题；第二，为应对新冠疫情对国内经济造成的打击，政府不仅要对深受疫情冲击的中小企业伸出援手，还需制定收入和支出计划，为低收入人群提供基本生活保障；第三，新冠疫情将影响居民和企业的储蓄行为，进一步强化预防性储蓄动机。总之，中国的经济增长模式应与本国储蓄率变化趋势相协调。如果人口红利与旧增长模式无法推动可持续发展，高储蓄率与经济增长之间的纽带也将不再稳固(Fang and Yang)。

中国经济模式转型是“十三五”规划的主要目标。在此基础上，“十四五”规划将进一步推进中国经济模式转型。要集中精力打造市场化、高效和开放的营商环境；进一步提升国家创新能力；形成具有更高附加值的产业链；让更多群众享受共同繁荣的果实；确保经济增长不以环境退化为代价。并非所有GDP增长都有益于社会或有利于长期的经济转型，正因为意识到了这一点，中国才会持续推进更高质量的增长。如今中国正在努力避免曾经的高污染、低薪资生产模式。通过市场化改革，提高经济效率，优化市场环境，开放国内市场，提高国际竞争力，是促进更高质量增长的关键。中国在未来五年将继续加强这一系列改革。中国已大规模开放国内市场，迎接外国投资和竞争。《外商投资法》让外国企业拥有在中国几乎所有行业进行平等竞争的条件。同时，中国也在不断提升科技实力，积极发展尖端技术。提升国家科技实力也顺理成章地成为“十四五”规划的重点。未来五年内，中国将加大国家科研经费支出，鼓励企业积极应用新兴技术。中国将继续将扶贫攻坚作为工作重点，因为全面消除农村贫困人口是实现共同繁荣的重要步骤。在中国开启全面建设社会主义现代化国家的新征程之际，对促进共同繁荣的进一步强调显得尤为必要(Blair)。

编制《规划》，着眼长远

《国民经济和社会发展第十四个五年规划》以推动高质量发展、深化供给侧结构改革和满足人民日益增长的美好生活需要为目标，既有战略性和前瞻性、又有针对性和操作性。李克强总理表示，要坚持人民利益至上，广泛征求意见，凝聚社会共识，让《规划》经得起实践和历史检验。“从全面建成小康社会，到2035年基本实现社会主义现代化，再到2050年全面建成社会主义现代化国家，需要不懈努力和奋斗，”李克强说，并强调要围绕提升发展质量和增进民生福祉，科学构建指标体系、提出具体目标，使《规划》既鼓舞人心又符合实际，经得起实践和历史检验。“在编制《规划》时必须厘清政府与市场的关系，因为人民群众才是实施《规划》的主力军”，李克强总理说，并强调编制《规划》是政府的职责，《规划》的实施应尊重经济规律，发挥市场力量。李克强总理表示，“必须优先解决难题，加强重点领域的改革。必须继续推动简政放权、放管结合、优化服务改革，加快建设市场化、法治化、国际化的营商环境，进一步激发市场活力”。他还指出，实行高水平对外开放，以更多更有力度的开放举措，促进国际合作，实现互利共赢，这一点非常重要。总理要求，《规划》的编制要明确“十四五”发展的支撑举措。必须推出一批与

than labor productivity, it is expected that the growth rate of household income will slow down during 2021-25 and lead to a decline in the household savings rate. The uncertainty caused by the ongoing COVID-19 pandemic will have a smoothing effect on consumption and reduce the savings rate during the early stage of the 14th Five-Year Plan period. The savings rate of enterprises is likely to see a small upward momentum during the period. As industry concentration increases, the savings behavior of large enterprises will bring up the overall level of savings. Such a trend will continue during the 2021-25 period. In addition, global uncertainties brought by woes like Sino-US trade frictions and the COVID-19 pandemic will push firms to save more to mitigate possible operational risks. The public savings rate will continue to drop during the same period. To better cope with the aging population issues, the social security spending on old-age care, healthcare and related areas will continue to rise. Together with moves like tax cuts or expansionary fiscal policies, these will further drive down the public sector savings rate. In addition, the COVID-19 impact on the economy has not been completely digested. How long this pandemic will last remains unknown. The post-epidemic economic recovery, which is always accompanied by massive public spending, will also reduce public savings. But as the share of public savings in national savings falls, its marginal contribution to changes in national savings will become smaller and smaller. Apart from the factors discussed above, demographic changes may determine future declines in savings rates. China's private sector savings rate accounted for 92.7% of national savings in 2017, with 45.4% of corporate savings and 47.3% of household savings. The increase of population dependency ratio and the change in structural factors are the main determinants of the change in residents' savings. In 2019, those aged 65 and over accounted for 12.6% of the total population in China, while those aged 60 and over accounted for 18.1%. Moreover, the aging population issue, in the future, will further boost the dependency ratio. During 2021-25, the number of the working-age group will further decrease by 25 to 30 million, much faster than the pace seen during the 13th Five-Year Plan period. There are a few options to improve matters: First, China's high savings rate is typical and has laid a solid foundation to carry out more proactive fiscal policy to handle the COVID-19 epidemic. Second, to deal with the impact of the COVID-19 epidemic on their national economy, the governments concerned should not only offer a helping hand to the micro and small-sized enterprises hit hard by the virus, but also arrange income-payment plans to safeguard the livelihood of the low-income families. Third, the COVID-19 epidemic will have an impact on the savings behavior of residents and businesses, and the motivation for preventive savings is likely to increase in the future. In conclusion, China should seek a growth pattern that matches the trend of the savings rate. When demographic dividends and the old growth patterns are not leading to sustainable development, the link between high savings rates and economic growth will no longer be strong (Fang and Yang).

The new Five-Year Plan continues to expand on a key goal of the previous plan, that being the transformation of China's economic model. It is necessary to focus on building a market-based, efficient, and open business environment; to further upgrade the country's domestic innovation capabilities; to move industry to higher-value added products; to spread common prosperity among more citizens; and to ensure that growth does not come at the cost of environmental degradation. Not all GDP growth is good for society or beneficial for long-term economic transformation, so China will continue to push toward higher-quality growth. China is seeking to avoid the previous models in which its production was high in pollutants but low in wages for its workers. One critical factor is a long series of market-based reforms that raise economic efficiency by improving the business environment and opening up its domestic markets to world-class competition. This process will be strengthened in the next five years. China has taken big steps to open its markets to foreign competition and investment. The Foreign Investment Law puts foreign firms on an equal footing with Chinese firms in almost all industries. China is also seeking to further its technological prowess to reach the cutting and leading edge. Naturally, the country has to concentrate on pushing its own technological capabilities.

发展、创新和民生相关的工程，尤其要关注教育、医疗、养老、育幼等方面。总理表示，政府必须明确自身和市场的边界，厘清哪些工作应该由政府来谋划和推动，哪些方面需要进一步激发市场活力和社会创造力。他还指出，政府要将编制《规划》作为一项重要任务，要坚持稳中求进，既要立足当前、又要着眼长远(The State Council, "Premier Li: 14th Five-Year Plan Should Stand the Test of Practice and History")。

努力实现自足自立

“十四五”规划的目标是，到2035年实现中国GDP翻一倍，这意味着2021-2035年期间经济要保持约4.4%的年均增长率。据预计，政府将在15年内逐渐调低增长目标，先将前五年的增长率调至约5%，随后在2031至2035年期间继续下调至4%以下，而2011-2015年和2016-2020年期间的增长目标分别为7%和6.5%。这种调整幅度符合中国的长期增长趋势，有助于适应改革发展的需要，同时还能规避刺激过度的风险。中国打造自足的经济体系并不是闭关自守。《规划》提出要实行双向开放金融市场、提升贸易竞争力和促进国际合作等政策。人民币国际化将同资本市场自由化一起重获动力，而且，随着国家对出口的依赖减弱，政府对更加强劲的人民币极有可能会持更为包容的态度。“十四五”规划的目标是到2035年实现半导体和人工智能等关键技术的自立。中国希望大幅提升科技实力，在人工智能、量子信息、集成电路和生物技术等重点领域实现突破。为此，中国很可能加大科研和教育支出，运用结构性政策扶持目标产业(Chang et al.)。

国际影响力

中国正在促进国内市场与国际市场的融合，这种转变具有独特的意义。据新华社报道，在“十四五”规划期间，中国将加速构建一种全新的发展模式，实现国内市场与国际市场相互促进。根据五中全会后发布的公报，国内市场将在这种模式中占据主导地位。根据当前规划，在理想情况下，中国的国内市场会更加强大，经济结构进一步优化，创新能力得到显著提升；届时产业基础将得到升级，产业链现代化水平进一步提高；市场主体更具活力，产权制度改革和要素市场化配置改革将取得重大进展；人民思想道德素质、科学文化素质和身心健康素质将明显提高。中国将持续减少主要污染物的排放，改善自然环境，让生态安全屏障更加牢固，城乡人居环境明显改善；中国将实现更加充分更高质量的就业，让个人收入增长和经济增长基本同步；进一步健全国家的多层次社会保障体系和医疗体系；显著提升政府的行政效率和公信力，提高社会治理特别是基层治理水平(Xinhua, China's Development Targets for 14th Five-Year Plan Period)。

“十四五”规划的编制需要各方利益相关者的努力和紧密合作，需要经过深思熟虑，需要社会各行业人民的参与。这个过程历时近一年。《规划》考虑到了整个国家、各行各业、不同地区和机构的利益和需求。中国东西部区域和城乡地区的发展仍不平衡，贫富差距仍然较大。为解决这个问题，“十四五”规划需要提供详细的行动方案，充分考虑全体人民的利益，努力缩小差距。《规划》以人民为中心，从普通群众的利益出发，着眼于增进人民群众的幸福感和福祉。“十四五”规划的特点在于，它贯穿了过去与未来，延续了此前的改革升级、扩大开放和面向全球的政策，体现了方向的一致性。《规划》立足于国内发展背景，关注持续变化的全球秩序，强调可持续发展。“十四五”规划从实际出发，致力于促进重点产业链的区域协调发展，构建国际新格局。全球经济发展缓慢，国际环境的不确定因素不断增加；全球化遭遇逆流，国际分工经历了巨大调整；地缘政治急剧恶化引发众多无法预测的挑战和公众担忧。而《规划》的目标是建设一个更加全面繁荣的美好社会。当前，虽然国际环境不如往昔友好，但国际合作却更加广泛，为中国的高速发展提供了难得的条件，在这种形势下，编制“十四五”规划的意义更为深远。

美国及其同盟可能会抵制中国的和平崛起，甚至试图遏制和对抗中国的发展，因此，中国的发展道路依旧艰辛。美国正在扩大区域影响力，四处结交同盟以对抗中国。中国已然崛起成为一股新兴的经济和地缘政治大国，其今日的国际角色和对国际作出的贡献已不同往日。中国不仅能发展自身经济，还能促进全球经济的繁荣。而这些都是“十四五”规划必须认真考虑的内容(Awan)。

“一带一路”倡议的影响

“一带一路”倡议（BRI）是一项大型区域互联互通工程，旨在加强中国产业链、供应链和价值链与全球经济的融合。“一带一路”建设的工作重点也是《规划》所体现的重要思想。理想情况下，在新的发展阶段，“十四五”规划和“一带一路”倡议能够相辅相成，中国能够继续为“一带一路”沿线国家提供投资、可持续包容发展和全球公共领域方面的支持。显然，中国未来的社会经济政策和目标将作为“一带一路”倡议的跳板。在大环境下，这项顶层规划有望对中国能源转型和全球气候带来深刻影响，重新确立并巩固全球化继续作为经济发展常态的共识，协调采取共赢策略，促进中国与其他大型区域经济体和工程的融合。当然，这离不开与上海合作组织、东南亚国家联盟、欧亚经济联盟和欧盟的“欧洲投资计划”的合作。与一些评论观点不同，中国的这项新经济蓝图并非照单点菜，并非“适则用之，不适则撤”这么简单。这项规划将支持多边发展，更大程度地协同其他国家的国家发展政策和规划。这必然能够促进全球治理和各大经济体之间的合作，打造共赢局面，实现共同繁荣。至于中国能否成功鼓励中亚、南亚、东南亚、欧洲、中东、非洲和南美洲的各个国家

During the next five years, national research and development spending will increase further and companies will be encouraged to apply many of the new technologies coming online. China is also continuing its priority to advance poverty alleviation, lifting all rural residents living below the current poverty line out of poverty represents a significant step toward common prosperity. It is necessary to further emphasize promoting common prosperity for everyone as China embarks on a journey to fully build a modern socialist country (Blair).

Longevity of the Plan

The 14th Five-Year Plan for National Economic and Social Development should aim to promote high-quality development, deepen supply-side structural reform, meet people's growing need for a better life, and be strategic, forward-looking, targeted, and practical. The plan should put the interests of people first and widely solicit ideas from different groups, especially the public, to stand the test of history and practice, Premier Li Keqiang noted. "It needs unremitting efforts to achieve the goal of building a moderately prosperous society in an all-around way, basically realizing socialist modernization by 2035, and fully building a modern socialist country by 2050," the Premier said, emphasizing the importance of scientifically constructing a system of indexes and setting concrete goals related to improving the quality of development and the well-being of the people to make the plan both inspiring, pragmatic and one to stand the test of history and practice. "The relations between government and the market must be well addressed when making plans because people are the major force to implement the plan," the Premier said, stressing that the government should respect economic law and allow the market to function while shouldering the responsibility of formulating the plan. "The tough issues should be addressed with priority, and reforms in major areas should be strengthened. Efforts to streamline administration, delegate powers, and improve compliance oversight and government service must be continued to speed up building a market-oriented and law-based international business environment and to further energize market players," Premier Li said. He also underlined the importance of a higher level of opening-up with more effective measures in boosting international cooperation and bringing win-win outcomes. The Premier requested clearly identified supporting measures for the plan. A batch of projects featuring economic development, livelihood improvement and innovation should be launched, especially in education, medical treatment, old-age care, and parental care. Above all, the government should keep a sense about the border between itself and the market, bearing clearly in mind what should be planned and carried out by itself and what should further arouse the market vitality and public creativity, said the Premier. He pointed out that it is of great priority for the government to formulate the plan, and the government should seek improvement in stability by focusing on both immediate and long-term interests (The State Council, "Premier Li: 14th Five-Year Plan Should Stand the Test of Practice and History").

Striving for Self-Sufficiency

The plan aims to double China's GDP by 2035, implying an average annual growth rate of about 4.4% from 2021 to 2035. It is expected that the government will gradually lower the growth target over the next 15 years, starting with around 5% growth in the first five years and falling below 4% by 2031-2035 (vs. 7% in 2011-2015 and 6.5% in 2016-2020). This is consistent with China's long-term trend growth and could help accommodate reforms while avoiding the risks of over-stimulus. Building out a self-reliant economy does not mean China will close its doors to the world. The plan pledged to implement policies such as the further two-way opening up of financial markets, strengthening trade competition, and improving international cooperation. The internationalization of the renminbi (RMB) is expected to regain momentum, in tandem with capital-market liberalization, and the government will likely show more tolerance for a stronger RMB (CNY) as the country becomes less export-reliant. The goal is to achieve self-sufficiency in key technologies, such as semiconductors and artificial technology, by 2035. China aims to boost its technology capacity, targeting key industries such as AI, quantum information, integrated circuits, and biotech. China

和跨国企业参与这项即将实施的经济规划，还需拭目以待(Naderi)。

香港特别行政区与乡镇地区的融合

中央财政经济委员会办公室副主任韩文秀指出，在“十四五”规划期间，中央政府将加大力度支持香港“巩固和强化”竞争优势。“(我们会将香港) 建设成为国际创新和科技中心，打造‘一带一路’功能平台。(我们将) 高质量建设粤港澳大湾区，完善有利于港澳居民在内地发展的政策措施。(我们将) 支持港澳同世界各国各地区开展交流合作，”他说。韩文秀表示，只要“全面准确贯彻‘一国两制’方针，加强港澳与内地交流合作，支持港澳更好地融入国家发展大局，(我们就能) 保持香港和澳门特别行政区的长期繁荣稳定。”当然，中国共产党也不会忽视乡镇地区的就业问题。国家发展和改革委员会副主任宁吉喆表示，中国在“十四五”规划期间，会首先强化就业策略，扩大就业支持范围，加强重点群体的就业支持力度，目标是实现更充分、更高质量的就业。中国将通过多种渠道增加乡镇居民的收入，让收入与经济发展相协调。在2021-2025年期间，政府将打造高质量教育体系，优化养老和社会保障体制，多管齐下推动城乡区域收入增长。他还表示，中国将继续制定经济增长的量化目标。为此，国家发展和改革委员会精细计算，提出对应的量化目标和具体指标(Wang et al.)。

全球疫情

新冠疫情对全球经济造成巨大冲击，而中国作为一股重要经济力量，未来有望促进全球经济的复苏。中国发布了《关于制定国民经济和社会发展第十四个五年规划和二〇三五年远景目标的建议》，这份《建议》着重强调了创新驱动、扩大内需和提升发展质量。2020年“读懂中国”国际会议于11月20日在中国广东省广州市召开。此次会议旨在促进中国与世界各国的多方面深度交流，增进彼此的了解。中国的“十四五”规划树立了一个新的发展范例，将为全球带来更多发展机遇，让世界共享繁荣(The State Council, "China's New Five-Year Plan to Boost Post-Pandemic Global Recovery")。

双循环

所以，中国政府提出的“双循环”战略到底指什么？官方说法是，中国将注重发挥国内市场的巨大潜力，依靠不断创新驱动增长。虽然中国愈发注重国内市场和某些领域的自立自强，但习近平主席反复强调，中国将不会完全“闭关锁国”，而是会更加扩大开放。但是，要在自力更生和开放市场之间取得平衡很有难度，对于中国将内循环作为未来发展战略，人们还是存有许多疑虑。那么，中国为何要实施内循环战略呢?内循环战略最早在2020年初提出，当时中美关系不断恶化，中国面临着难以预测的外部环境。对中国而言，瞬息万变的外部环境表明，继续依赖海外需求是不足以维持中国庞大制造业持续运转的。本质上，这是在世界面临重大地缘政治和经济变革的环境下，中国政府为了预防最坏情况出现所提出的防御性战略。新冠疫情暴露了世界各国对于中国制造的关键医疗用品的依赖程度之深，世界各国纷纷决定要加强对于这类关键物品的自给自足程度。同时，美国采取了更激进的措施来与中国“脱钩”，中美两大世界经济体的关系变化加剧了全球向内发展的趋势。那么，内循环战略对中国的国内经济而言意味着什么呢?简而言之，中国的内循环战略旨在充分开拓涵盖14亿消费者的巨大国内市场。中国将继续努力扩大中等收入群体的规模，缩小贫富差距，刺激国内消费。这也意味着中国的生产体制将面临重新定位，更加注重国内需求，而非海外需求。据国务院发展研究中心9月发布的一份报告预测，到2024年，中国人均国内生产总值将达1.4万美元，到2032年，中等收入群体的规模将超过5.6亿人，届时中国的经济规模将超过美国。内循环战略的核心目标在于缓解市场扭曲程度，将劳动力、土地和财政资源配置到生产力更高的领域。中国的内循环战略对其海外贸易经济的意义也是一个值得思考的重要问题。中国最高决策机关中共中央政治局决定，内循环战略将是未来十年经济政策的方向，中国将更加注重内需，但并不会向国际市场关闭大门。为了在科技和经济方面与美国维持长期势均力敌的局面，中国的经济自由化进程也将随之加快，但是，中国的双循环战略也包括降低投资者壁垒，并让中国更有动力与其他国家缔结区域性贸易协定。优先发展内循环也表明了供给侧结构性改革的重要性，有利于刺激国内竞争、促进更高级别对外开放(Tang)。

该发展战略旨在坚持改革开放政策的同时，把创新放在优先位置，作为发展的主要推动力。更加注重国内需求对于维护经济长期稳定也有重要作用。但习近平同时强调，注重内需与对外开放并不冲突，二者更偏向于互补性的战略方针，目的在于促进国内发展，刺激内循环。2035年将是中共“两个一百年”奋斗目标的历史交汇点，据此，中国政府提出了了2035年远景目标。中共中央“十四五”规划标志着中国向第二个百年奋斗目标进军的新起点，将重点放在确保物质和文化的高质量发展。“十四五”规划指出，社会主义现代化离不开繁荣的社会主义文化，因此2035年远景目标的其中一项内容就是建设社会主义现代化强国。此举亦是中国共产党在重申对于满足人民社会文化需求的承诺。中国正经历从中等收入国家到高收入国家的转型，但是中国面临的外部环境却充满了不确定性，具有瞬息万变的特点。双循环是一种新的发展战略提法，旨在确保能够以最灵活的姿态应对难以预测的挑战，通过打造创新的驱动作用，来保证中国能够实现重大突破，巩固其在全球经济中不可或缺的地位。

will likely spend more on R&D and education, and use structural policies to support targeted sectors (Chang et al.).

International Impact

One area that is seeing a unique change is the intertwining of domestic and foreign markets. According to Xinhua, for the 14th Five-Year Plan period, China will speed up fostering a new development pattern where domestic and foreign markets can boost each other, with the domestic market as the mainstay, according to a communique released after the session. Under their current plan, ideally the following will happen: China's domestic market will become stronger, the economic structure will be further improved, and its innovation capacity will be significantly strengthened. The industrial base will be upgraded, and the industrial chain will be further modernized. Market entities will show more vitality, and significant progress will be made in the reforms of the property right system and the market-based allocation of factors of production. Significant improvement is expected to be made in people's intellectual and moral integrity, cultural and scientific qualities, as well as physical and mental health. China will continue reducing emissions of major pollutants and improving the natural environment, make environmental security shields more solid, and greatly improve the urban and rural living environment. China will achieve fuller and higher-quality employment, with personal income growth essentially in step with economic growth. The country's multitiered social security system and health system will be further enhanced. The administrative efficiency and credibility will be significantly strengthened. The country also will step up the level of social governance, especially at the community level (Xinhua, China's Development Targets for 14th Five-Year Plan Period).The 14th Five-Year Plan draws all efforts and close cooperation among stakeholders. People from all social sectors of life were involved in conducting in-depth deliberations. The process took about a year. The plan considers the interests and demands of the entire country, various industries, regions, and institutions. The current disparity between the western and eastern regions, the rich and the poor, and cities and the countryside is still vast, which demands the 14th Five-Year Plan to be more elaborate and fully consider the interests of all people, narrowing down the gap. The focus of this plan is "people," the ordinary people, the welfare and well-being of common people. Consistency is the characteristic of the 14th Five-Year Plan, which serves as a link between past and future, continuing the reforms, opening up, and globalization policies. The plan emphasized sustainable developments while keeping in mind the background of domestic development and drastic adjustment of a rapidly changing global order. The 14th Five-Year Plan is based on on-the-ground facts and seeks regional synergy of key industrial chains and a new global layout. The global economy is slowing down, and international uncertainty is intensifying. Globalization is likely to be reversed, and the international division of labor has undergone significant adjustments. Drastic deterioration of geopolitics has created many unpredictable challenges and public concerns. It is designed to build a more prosperous society in all respects. The formulation of the 14th Five-Year Plan is especially important under current circumstances, where the international environment is not as friendly as it was in the last four decades, when the international community extended more cooperation and enabled environments for rapid developments in China.

The journey ahead might be an uphill task, where the US and its allies might resist China's peaceful rise, and contain China, or counter China. The US is increasing its influence in the region and pulling allies against China. China has emerged as an economic power and geopolitical power and has different dynamics of its role and contribution. China has the potential not only to develop its own economy but also to contribute toward the global economy. The 14th Five-Year Plan has to take all these aspects into serious consideration (Awan).

Impact on the Belt and Road Initiative

Key ideas from the plan are also the policy priorities of the megaregional connectivity project of the Belt and Road Initiative (BRI), which enhances the integration of China's industrial,

就经济发展趋势而言，中国将优先发展科学技术领域，转而确保其在其他相关领域的领导地位。一些观察人士对世界未来发展前景持悲观态度，这种观点也可以理解。但中国共产党对未来数年发展趋势的看法要乐观得多。据某中共代表坦言预测，中美不可能像某些少数派希望的那样真正脱钩。中美之间的经济结构过于互补，无法实现脱钩。实际上，即使在当前世界变化的局势下，2020年三季度，中美贸易依然出现了16%的同比增长，证明这一乐观的预测不无道理。分析"十四五"规划、2035年远景目标和第二个百年目标之时，万万不能忽略在实现这些宏伟目标的道路上中国共产党起到的核心重要作用以及中国执政体制的特质。中国政府称，中国已经实现了第一个百年奋斗目标，取得了令人瞩目的成绩，展望未来，中国正在实现第二个百年奋斗目标的道路上顺利前行。双循环的新发展战略和创新在驱动增长方面的领导作用是中国在战略发展方面的卓越突破，世界其他国家必将纷纷效仿。中国已经证明了自己是一个负责任的全球经济领导者，有义务协助世界从新冠危机中恢复(Korybko)。

根据"十四五"规划中的关键建议，中国必须建设资源节约型经济，以期在新冠疫情结束后实施新的双循环发展战略。以下四项措施将有助于建设资源节约型社会第一、提升数字媒体使用率。自去年一月新冠疫情爆发以来，许多论坛活动都改为以线上形式举办，其中包括许多重要经济研讨会。数字媒体形式符合建设资源节约型社会和践行双循环发展模式的内在要求。许多会议都改为以线上形式召开，有利于降低碳排放以及由于差旅和聚集造成的资源浪费。过去数月期间发生的事件显示，数字接触的形式不仅适合商业及学术场合，也适用于日常生活。第二、中国服务业大整顿。新冠疫情带来的最重大的改变之一就是中国的中等收入群体对于出国消费的态度变得更理智了。2019年，中国人出国消费的金额超过了2万亿元（约合3020亿美元），但是未来很长一段时间，中国人出国消费的习惯将转为国内消费，尤其是在高质量文化、服务、娱乐和深度体验等领域。预计到2025年"十四五"规划收官时，中国人均GDP将达14000美元。在这个过程中，实物类消费占总消费的比重将会持续下降，而服务类消费的比重则将会上升。目前来看，智能供应链受到的关注越来越多。实时订单是基于消费者品味产生的，会与产业链中的杰出生产商直接挂钩，有助于消除生产-市场营销-库存管理这种旧的供应链周期存在的效率低下现象。第三、向新型城镇化发展模式转变。以特大城市圈的城镇化与数字城镇相结合为特点的城镇化2.0将在建设资源节约型社会中起到重要作用。例如，中国开始加快建设以5G网络、新型医疗保健、智能电网、电动汽车充电桩为代表的"新型基础设施"，而非大力投资建设传统公用设施。这将有助于提升经济凝聚效应、缓解城市交通堵塞、空气污染和安全隐患等问题。第四、发展绿色低碳经济。未来十年内，中国的碳排放将会达到峰值，并在2060年实现碳中和。未来五年内，煤炭作为主要能源结构中的消费比重将会降低。中国将开始执行碳交易机制。地方政府和企业在碳排放方面的表现将受到越来越多的关注。碳排放和污染指标或被纳入地方政府的关键考核指标。目前，中国的非化石能源消费比重仅为15%，但是在降低碳排放的过程中，该比重到2025年将被提升至20%左右。风能和光伏等能源行业将继续大步发展，同时，新能源汽车也将维持强劲的发展势头。节能减排过程可能产生的最终结果之一，是发达国家出现的民粹主义浪潮。制定政策容易，执行难；生产力愈发趋向平庸水平；通货膨胀可能会重现。这就是中国寻求实现双循环发展模式和建设资源节约型社会所面临的外部环境。双循环发展模式主要是为了开拓国内市场，同时坚持对外开放，以期维护产业链的稳定、促进产业链不断升级，实现资源节约型经济(Ziqiang)。

双循环发展战略最早是由习近平主席在去年五月提出的，现已确定该战略会在中国第十四个五年规划中占据中心地位。概括而言，双循环是一个两头并重的发展战略，通过国内国际市场相互促进，培养长期、可持续的消费模式，抵御全球环境带来的外部冲击。中国共产党提出了一系列政策，打造更适合、更有助于"扩大国内需求"的供应体系。比如：对于汽车等消费品，国家将推动"由购买管理向使用管理转变"；通过发展无接触交易服务，改善现代流通体系，降低企业流通成本，促进线上线下消费融合，协调城乡消费市场。此外，国内市场产业链各层面以及供应链上下游企业的平衡和协调发展也受到越来越高的关注。投资者需要认识到，目前中国市场仍有很大的投资增长空间；随着国家战略重点向国内倾斜，"在中国、为中国"的投资可能会成为常态，乃至成为许多企业必须选择的发展战略(Dezan Shira & Associates)。

科技进步

"十四五"规划期间（2021年至2025年），中国将致力打造新的增长推动力，鼓励国企发展区域性融合、5G、数字科技等领域，以期打造高质量发展模式。中国政府将推进产业结构调整，增强产业链和供应链的稳定性和竞争力。国家发改委副主任翁杰明表示，此举主要是是为了推动国企在产业链、供应链以及高端制造业中的关键环节布局。发改委表示，除了支持国企实施合并、收购等专业化整合之外，政府还将鼓励国企与私企，尤其是中小企业，建立更多合作关系，来进一步促进国企和私企之间的兼容创新。自2013年以来，央企通过产业基金、股权投资等方式向逾6000家私企投资了逾4000亿元人民币（约合597.6亿美元）。同时，发改委还引导央企加强投后管理，成为积极股东，严格遵循交易监管规定，改善信息披露情况。为了更好地响应政府号召，参与国家协同性区域发展，中国南方电网有限责任公司（简称：南方电网）计划在2022年前投资1700亿元人民币建设珠江三角洲电网工程。南方电网是一家总部位于广州市的央企，主要为广东省、云南省、贵州省和海南省提供电力服务。南方电网希

supply and value chains for global economic circulation. In this new phase of development, the 14th plan and the BRI will ideally balance each other, where China will continue to provide support for BRI partner countries in terms of investment, sustainable and inclusive development, and the global commons. It indicates very strongly that the coming social and economic policies and targets will also act as springboard for the BRI activity. In the prevailing environment, expect the top-level blueprint to have a profound impact on China's energy transition and the world's climate; reset perceptions and cement consensus on globalization as the continuing norm of economic development and growth; coordinate strategies that see common benefit; and cultivate integration with other megaregional entities and projects. Of course, this must be in collaboration with the Shanghai Cooperation Organization, the Association of Southeast Asian Nations, the Eurasian Economic Union, and the European Union's Juncker Plan. Unlike what some critics would like to suggest, the new economic blueprint does not appear to be "à la carte" to pick and choose where it suits and pull back when it does not. This should be enough to hold the view that the coming plan will support multilateral processes to forge greater synergy with other countries' national development policies and plans. It will surely promote global governance and cooperation between major economies for win-win results and common prosperity. It remains to be seen if this will be enough to encourage countries and international businesses from Central Asia, South Asia, Southeast Asia, Europe, the Middle East, Africa and South America to join China's up-and-coming economic plan (Naderi).

Integrating Hong Kong and Rural Regions

Han Wenxiu, deputy director of the Office of the Central Finance and Economic Commission, said the central government would further support Hong Kong to "consolidate and enhance" its competitive advantage over the course of the 14th Five-Year Plan. "[We will] build [Hong Kong] into an international innovation and technology center and create a functional platform for the Belt and Road Initiative. [We will] build the Guangdong-Hong Kong-Macau Greater Bay Area with high quality and improved policies and measures to facilitate the development of Hong Kong and Macau residents in the mainland. [We will] support Hong Kong and Macau to carry out exchanges and cooperation with countries and regions," he said. Han said that as long as "one country, two systems is fully and accurately implemented, exchanges and cooperation between Hong Kong, Macau and the mainland are strengthened, and Hong Kong and Macau's better integration into the overall development of the country is supported, [we will be able to] maintain the long-term prosperity and stability of Hong Kong and Macau." As for employment, the CCP is not ignoring rural areas of China. Ning Jizhe, vice-chairman of the National Development and Reform Commission, said China would first strengthen its employment strategy in the 14th Five-Year Plan period, expanding capacity and improving employment support for key groups, with the aim of achieving more adequate and higher-quality employment. China would increase incomes for urban and rural residents through multiple channels and keep incomes synchronized with economic growth, he said. The next five years – from 2021 to 2025 – will see a multi-pronged push to raise incomes in urban and rural areas – by building a high-quality education system, as well as improving aged care and the social security system, Ning said. Ning said China would continue to set a quantitative target for its economic growth rate, with the National Development and Reform Commission proposing corresponding quantitative targets and specific indicators on the basis of careful calculations (Wang et al.).

Global Pandemic

As the fallout of the COVID-19 pandemic hit hard the global economy, China is expected to play its role as a key engine to rekindle global growth in the future. The country has unveiled proposals for formulating the 14th Five-Year Plan (2021-25) for National Economic and Social Development and the Long-Range Objectives Through the Year 2035, which puts more emphasis on innovation, domestic demand, and the quality of development. The Understanding China Conference 2020 commenced in November 2020 in Guangzhou,

望以该电网工程为据点，于2030年前在粤港澳大湾区建成符合国际标准的智能电网，助力将粤港澳大湾区建设成具有强劲国际城镇凝聚力的地区，一带一路倡议的主要枢纽，粤港澳合作的展示基地，以及宜居、宜业、宜游的优质生活圈。在以国内循环为主、国际国内相互促进的双循环新经济发展模式和对外开放更深更广的背景下，中国邮政集团公司2020年发起了全国邮政"919电商节"，旨在促进中国农村地区电商生态系统建设。中国邮政集团公司也是一家央企，拥有近100万名员工。据中国商务部称，内循环，或者说是生产、分销、消费的内部循环，将成为经济发展的主要据点，而国内市场与国际循环之间的融合将推动商品和资本的双向顺畅流动(Nan)。

据中国科技部的一位高级官员在2020年10月的媒体会议上表示，中国会将量子技术纳入"十四五"规划中的高新技术规划中。在"十四五"规划中，发展自主科技将是重中之重。未来五年，中国将加强前瞻部署和大力发展以智能技术和量子技术为特征的新一代高新技术，争取获得高新技术先发优势。中国将着力解决高质量发展需要与科技创新能力不足的矛盾。过去五年间，中国在建设创新型国家方面取得了重大进展，科技强项重大指标呈现了稳步提升。世界知识产权组织发布的全球创新指数显示，我国排名从2015年的第29位跃升至2020年的第14位。中国的总研发经费支出从1.42万亿元增长到2.21万亿元，研发投入比例（研发投入占GDP的比重）从2.06%增长到2.23%。自2015年以来，中国的基础研究经费增长近一倍，2019年达到了1336亿元。技术市场合同成交额翻了一番，2019年超过2.2万亿元。科技发展在实现高质量发展中发挥了重要作用。比如，移动通信冲破了重重壁垒，实现了跨越式发展，5G技术即将实现全面商业化应用。芯片封装关键设备的发展也取得了重大进展。人工智能、区块链、新能源技术的加速应用也有助于打造新的增长推动力(The State Council, "China to Include Quantum Technology in Its 14th Five-Year Plan")。

水电

"十四五"规划中强调了水电领域的发展。中国将会在雅鲁藏布江流域建设装机容量近6000万千瓦的水电项目。雅鲁藏布江流经西藏，汇入印度和孟加拉国。中国电力建设集团有限公司董事长晏志勇表示，建设该项目的规划对于水电行业来讲是一个"历史性机遇"，不仅有助于实现国家的清洁能源规划，还有助于增强水资源供应安全。中国政府在"十四五"规划中提出要"实施雅鲁藏布江下游水电开发"。晏志勇称，该水电工程项目将有助于西藏自治区的发展，随着水电站的开发，电网、公路的畅通也将使我国与南亚的国际合作更加通畅。反对建设水电站的群体认为，随着三峡项目和长江流域诸多大型水电站的建成，中国境内河流经历了爆发式的建设周期，水电站的数量已经达到饱和状态。中国政府称，国家目前水电装机容量约为350千兆瓦，仅为潜在总容量的一半(Stanway and Xu)。

2035年远景规划

"十三五"规划收官之际，中国再次站在了承上启下的关键转折点，面临着新一个五年规划。虽然"十四五"规划是为了未来五年的发展所设计的，但中国共产党看得比2035年还要更长远。很长一段时间，欠缺创新能力都是中国经济的"阿喀琉斯之踵"。但是，在经年累月的投资和政策支持下，中国经济的体量和智能化程度都在快速发展。过去五年间，中国的全社会研发经费支出从1.42万亿元人民币（约合2142亿美元）增长到2.21万亿元人民币。世界知识产权组织发布的全球创新指数显示，我国排名从2015年的第29位跃升至2020年的第14位。中国希望实现关键领域核心技术的重大突破，并努力在2035年成为全球创新领导者，实现这一目标，还需努力。"十四五"规划重申了创新在国家现代化征途上的"核心地位"，让科技自主自强为国家发展提供战略支持。如前文所述，把科技自主自强提到如此高的地位，不仅将其作为促进国内供应链完善发展的关键，还将其作为发展和国家安全的重要基础来看待，这在历史上还是第一次。为了支持科技创新，中国必须做出更多努力，提出产业发展战略，完善市场体系，鼓励更多企业和个人专注科技创新领域。在不确定性极强的环境下，创新将使企业和宏观经济更有韧性，还将在推动绿色发展方面起到关键作用。促进绿色发展也是中国政府的一个明确目标。"十四五"规划提出，要广泛形成绿色生产生活方式，实现碳排放达峰后稳中有降，生态环境根本好转，美丽中国建设目标基本实现的目标要求。"十四五"规划重申了中国追求更高水平对外开放的决心，更加突出制度型开放，比如，在完善外资管理体制方面，落实"准入前国民待遇加负面清单"管理制度，赋予自贸试验区更大自主决策权。作为国家经济的基石，实体经济将在2035年前的未来一段时间内发挥更大的作用。近年来，中国一直在强调发展实体经济，并不断付诸努力，鼓励贷款向实体经济领域倾斜，抑制炒房现象。据中国人民银行发布的数据显示，2020年前三季度金融机构对实体经济发放的人民币贷款新增16.69万亿元人民币，相较于2019年同期增长了2.79万亿元人民币，接近去年全年水平。"十四五"规划提出，为了进一步振兴实体经济，中国将推动产业基础高级化，产业链现代化，大力发展战略性新兴产业(Xinhua, "To the next March, What to Expect from China's Development Strategies through 2035? - People's Daily Online")。

facilitating multi-faceted and in-depth discussions to enhance mutual understanding between China and the rest of the world. As many observers agreed, China's new development paradigm embodied by the plan will offer more development opportunities and bring shared prosperity to the world (The State Council, "China's New Five-Year Plan to Boost Post-Pandemic Global Recovery").

Dual Circulation

After all of this, what exactly does China's dual circulation strategy mean? Officially, China will look inward to tap the potential of its huge domestic market and rely on indigenous innovation to fuel growth. But despite the increased emphasis on the domestic market and on self-reliance in some sectors, President Xi has said repeatedly that China will not completely close itself off from the outside world, and will instead open up more. There are, however, some concerns that China will take an inward-looking approach to its future development since it is difficult to balance self-reliance with opening up. So, why was China's dual circulation strategy introduced? The strategy was promoted earlier in 2020 as relations with the US continued to deteriorate, making the external environment less predictable for China. This changing environment indicated it would be unsustainable for China to continue relying on overseas demand to keep its vast manufacturing apparatus running. It is essentially a defensive approach by Beijing to prepare for the worst-case scenario as the world undergoes significant geopolitical and economic changes. The coronavirus exposed how dependent the world was on China for critical supplies of medical equipment, with nations around the world vowed to be more self-reliant on such products, amid a push by the US for a sharp decoupling of the world's two largest economies. What does China's dual circulation strategy mean for its domestic economy? In short, China's dual circulation strategy involves tapping into its huge domestic market of 1.4 billion consumers. China will try to increase the size of its middle class and narrow the wealth gap so domestic consumption will increase. It also means China's production system will be repositioned to focus more on demand at home rather than abroad. A report issued in September 2020 by China's Development Research Centre under the State Council, the government's cabinet, predicted that the nation's per capita GDP will reach US$14,000 by 2024, and that the size of China's economy would exceed that of the US by 2032, with at least 560 million middle-income consumers. The core goal is to reduce market distortion and allocate labor, land and financial resources to higher-productive areas. It is also important to consider what China's dual circulation strategy means for its overseas trade economy. China's Politburo, the supreme decision-making body of the ruling Communist Party, decided that the dual circulation strategy will guide economic policies in the decades to come, and while it will lean more on domestic consumption, it will not turn away from the international market. But while the process of economic liberalization should be increased in preparation for a long-term technological and economic rivalry with the US, the dual circulation plan also includes lowering barriers for investors and a motivation to secure regional trade pacts. The priority on domestic circulation has indicated the importance of supply-side structural reform to increase domestic competition and higher-level opening (Tang).

This outlook aims to continue the policies of reform and opening-up while prioritizing innovation as the primary driving force behind development. Increased self-reliance also plays an important role for reasons of long-term economic security, but the leadership reassured everyone that it's not in conflict with the trend of openness, but rather complements in a strategic way by fostering more domestic development and internal circulation. The two centenary goals are converging, with 2035 as the midpoint between these historic moments, hence the long-range objectives that China aims to meet by that year. The 14th Five-Year Plan marks a new starting point towards the second centenary goal and will focus on ensuring high-quality development in the material and cultural spheres. It was significantly noted that socialist modernization is impossible without a thriving socialist culture, hence why one of the goals is to develop what was described as a Great Socialist Society by 2035. This reaffirms the CPC's commitment to the people's social and cultural needs. China is transitioning from a middle-income to a high-income country, yet the external environment

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is characterized by uncertainty and rapid changes. The new development paradigm of dual circulation aims to ensure maximum flexibility for responding to unforeseen challenges, and the driving role of innovation will guarantee that China is able to make significant breakthroughs that see it strengthening its integral role in the global economy. With an eye on economic trends, scientific and technological development will wisely be prioritized above other sectors, thus resulting in China retaining its leadership in these spheres. While some observers are understandably pessimistic about the world's future outlook, the CPC is actually much more optimistic about how everything will unfold across the coming years. One of its representatives powerfully predicted that it'll be impossible to decouple the Chinese and American economies like a fringe minority of people across the world want to see happen. Their economic structures are too complementary for that to happen, and actually, a 16% year-on-year growth in Chinese-American trade was observed in the third quarter of 2020 despite the current global challenges, which grants credence to this optimistic prediction. When analyzing the 14th Five-Year Plan, the Long-Range Objectives Throughout The Year 2035, and the second centenary goal, one must not neglect the core importance of the CPC and the nature of China's governing system for actualizing these ambitions. Looking forward, officials confirmed that China is well on its way to realizing the second centenary goal after impressively accomplishing the first one. The new development paradigm of dual circulation and the leading role of innovation in driving growth are strategic breakthroughs that others across the world will surely follow. China has proven that it is a responsible global economic leader with an obligation to assist the world's recovery from the COVID-19 crisis (Korybko).

Based on the key proposals of the 14th Five-Year Plan, it is necessary for China to achieve a resource-saving economy in order to implement the new dual-circulation development pattern after the COVID-19 pandemic. To build such a society, the following four measures would help. First is an increase in digital media usage. Since the beginning of the COVID-19 epidemic outbreak in late January 2020, many forums, including key economic seminars, have been held online. The digital format is in line with the inherent requirements of building a resource-saving society and the dual-circulation pattern. A lot of meetings can be conducted online, which will reduce carbon emissions as well as wastage of resources caused by business trips and gatherings. Recent months have shown the digital format is suitable not only for business and academic occasions but also for daily life. Second is an overhaul of the service industry in China. One of the most important changes since the epidemic is that the middle-income group has become more rational in consuming overseas. For a long time, the overseas consumption of Chinese people, which hit over 2 trillion RMB (US$302 billion) in 2019, may gradually shift to domestic consumption, especially to high-quality culture, services, and entertainment, as well as in-depth experiences. China's per capita GDP is expected to reach US$14,000 by 2025, which marks the end of the 14th Five-Year Plan period. During this process, the proportion of physical consumption in total consumption will continue to decline, while service consumption will rise. But now, more and more attention is paid to intelligent supply chains. Real-time orders are based on consumer tastes and will connect directly to excellent producers in the industry chain, which will eliminate the inefficiencies in the previous cycle of production, remarketing, and inventory. Third is a movement towards a new form of urbanization. Urbanization 2.0, which is characterized by the combination of urbanization in metropolitan areas and digital cities, will further play an important role in resource conservation. For example, the acceleration of "new infrastructure" construction is represented by 5G networks, new medical care, smart grids, and electric vehicle charging piles, instead of heavy investment in traditional public amenities. This will help improve the economic agglomeration effect and relieve the cities' traffic congestion, air pollution and safety concerns. Fourth is a move to a green low-carbon economy. Within 10 years, carbon emissions will peak, and hit carbon neutrality by 2060. In the next five years, coal power consumption as a proportion of the primary energy sector's fuels will be reduced. The carbon trading mechanism will be activated. The performance evaluation of local governments and the evaluation of corporate performance should get more and more attention. Data on carbon emissions and pollutants may be included in the

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key performance indicators of local governments. During this process, China's nonfossil energy is expected to rise from only 15% of the total energy at present to about 20% in 2025. Energy industries such as wind power and photovoltaics continue to develop significantly while new energy vehicles maintain a vigorous development momentum. The final result of this process may be increasing populism in developed countries. Policies are easy to formulate but difficult to roll back; productivity is increasingly mediocre; and inflation is returning. This is the external background amid which China will seek to achieve a dual circulation pattern and resource-saving economy. The dual circulation pattern is mainly aimed at expanding the domestic market, while at the same time persisting with opening-up, in order to retain the industrial chain, promote the continuous upgrading of it, and achieve a resource-saving economy (Ziqiang).

It is now clear that the dual circulation policy – first proposed by Xi in May – will play a central role in the 14th FYP. In a nutshell, dual circulation policy is a two-pronged development strategy that involves mutual reinforcement of domestic and international markets to spur long-term, sustainable consumption patterns, and to hedge against external shocks within the global environment. The communique indicates a series of forthcoming policies that will create a supply system that is more compatible and conducive to 'expanding domestic demand.' Some examples laid out include: Promoting a system of "managing the purchase behavior to managing the latter usage" for consumer goods such as automobiles; and improving the modern circulation system by developing contactless transaction services, reducing corporate circulation costs, integrating online and offline consumption, and coordinating urban and rural consumer markets. Further, emphasis is placed on balancing and coordinating the internal players in the domestic market (across industries and upstream and downstream of the supply chain). The takeaway for investors here is that there is still a large space for investment growth; as attention shifts to the domestic economy, investing "in China, for China" may become a common refrain and indeed a necessary strategy for many businesses (Dezan Shira & Associates).

Technological Advancements

China will foster new growth drivers in areas of development for regional integration, 5G, and digital technologies in its State-owned enterprises during the 14th Five-Year Plan (2021-25) to create a new pattern of high-quality development. The government will promote the adjustment of the industrial structure and enhance the stability and competitiveness of the industrial and supply chains. This is primarily to promote the deployment of SOEs in key links of the industrial and supply chains, as well as the high-end manufacturing sector, said Weng Jieming, vice-chairman of the SASAC. In addition to supporting selected companies to carry out mergers, acquisitions, and other types of professional integration, the SASAC said SOEs will be encouraged to form more partnerships with private companies – in particular small and medium-sized enterprises – to further boost compatible innovation among them. Through industrial funds, equity purchases, and other methods, central SOEs have invested more than 400 billion RMB (US$59.76 billion) in over 6,000 private companies since 2013. Meanwhile, the SASAC guided central SOEs to reinforce management and become active shareholders after investment, strictly regulate transactions, and promote information disclosure. To better respond to the government's call to participate in the country's coordinated regional development, China Southern Power Grid Co Ltd, which supplies electricity to the Guangxi Zhuang autonomous region and the provinces of Guangdong, Yunnan, Guizhou, and Hainan, plans to invest more than 170 billion RMB in power grid construction in the Pearl River Delta region by 2022. Based on the power grid, the Guangzhou-based central SOE intends to build an international standard smart power grid in the Guangdong-Hong Kong-Macao Greater Bay Area by 2030 and aims to help build the area into a vigorous international urban agglomeration, a main hub of the Belt and Road Initiative, a cooperation demonstration zone between the Chinese mainland, Macao, and Hong Kong, as well as an area ideal for living, traveling, and working. As China's new economic development pattern of dual circulation relies on domestic circulation to drive its international circulation and promotes deeper and wider opening-up, China Post Group Corp, another

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central SOE with nearly 1 million employees, launched a nationwide e-commerce festival to build an e-commerce ecosystem in the country's rural areas in 2020. Domestic circulation, or the internal cycle of production, distribution, and consumption, will be the mainstay of economic development while the domestic market is integrated with international circulation to promote the smooth two-way flow of goods and capital, said the Ministry of Commerce (Nan).

China will include quantum technology as one of the new high techs in its 14th Five-Year Plan (2021-2025), a senior official with the Chinese Ministry of Science and Technology (MOST) said at a press briefing in October 2020. Developing self-reliant technologies is expected to be one of the top priorities in its 14th Five-Year Plan. China will be more forward-looking and vigorously develop the new generation of high techs represented by intelligent and quantum technologies in the next five years, striving to gain first-mover advantages. Efforts should be made to bridge the gap between the demand for high-quality development and insufficient technological innovation capabilities. Over the past five years, China has made significant progress in building an innovative country, with its strengths in science and technology steadily improving in terms of major indicators. In the Global Innovation Index released by the World Intellectual Property Organization (WIPO), China's ranking jumped from 29th in 2015 to 14th in 2020. The country's total expenditure on research and development (R&D) reached 2.21 trillion-RMB, accounting for 2.23% of GDP, up from 1.42 trillion RMB and 2.06% in 2015. The gross expenditure on basic research almost doubled from 2015, reaching 133.6 billion RMB in 2019. The total contract value of technology also doubled, exceeding 2.2 trillion RMB in 2019. Science and technologies have also played a major role in underpinning high-quality development. For example, mobile communications have advanced by leaps and bounds, with 5G entering full commercial application. The development of key equipment for chip packaging has also made important progress. The accelerated application of artificial intelligence, blockchain, and new energy technologies has also helped foster new drivers of growth (The State Council, “China to Include Quantum Technology in Its 14th Five-Year Plan”).

Hydropower

One area from the plan that is already being addressed is hydropower. China could build up to 60 gigawatts (GW) of hydropower capacity on a section of the Brahmaputra river, known as the Yarlung Tsangbo, which flows from Tibet into India and Bangladesh. Yan Zhiyong, chairman of state-owned Power Construction Corporation of China said that plans to dam the river were a “historic opportunity”, and would not only help to meet the country’s clean energy plans but would also strengthen water supply security. As part of the Five-Year Plan, the Chinese government said it would “implement the development of hydropower resources on the lower reaches of the Yarlung Tsangbo river.” Yan said hydropower construction would help to develop Tibet, while the construction of power grids and roads would make cross-border cooperation with South Asian countries “more smooth.” Anti-hydropower groups say China’s rivers are already at saturation point after a dam-building boom that included the construction of the Three Gorges Project and many other giant hydropower plants on the Yangtze and its tributaries. China says its current hydropower capacity of around 350 gigawatts represents only about half of its total potential (Stanway and Xu).

Future Plans, 2035 and Beyond

China is once again at a critical juncture where the current Five-Year Plan is ending and a new one is in the making. Even though this plan is designed for the next five years, the CCP is looking even further to 2035 and beyond. For a long time, lack of innovation has been the "Achilles heel" of China's economy. But with years of investments and policy support, the country is now catching up fast in making its economy both big and smart. In the past five years, the country's social spending on research and development expanded from 1.42 trillion RMB (214.2 billion US dollars) to 2.21 trillion RMB. On the Global Innovation Index rankings, China climbed 15 positions, rising from 29th in 2015 to 14th in 2020. Much more needs to be done as the country eyes major breakthroughs in core technologies in key areas and seeks to become a global leader in innovation by 2035. The development proposals reiterated innovation's "core position" in the

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country's march toward modernization and to make technological self-sufficiency strategic support for national development. As previously stated, technological self-sufficiency is raised to such a position for the first time in history, making it not only the key to accelerating the completion of the domestic supply chain but also an area that will provide an important foundation for development and national security. In order to support technological innovation, more effort must be made in generating industrial strategies, improving the market system, and encouraging more enterprises and people to focus on this area. While innovation will make firms and the broader economy more resilient amid massive uncertainties, it will also play a key role in driving greener growth, also a stated goal for China. Eco-friendly ways of work and life will be advanced to cover all areas of society, carbon emission will steadily decline after reaching a peak and there will be a fundamental improvement in the environment with the goal of building a Beautiful China basically reached, according to the development proposals. The newly released development proposals reaffirmed China's determination on pursuing higher-level opening-up with more emphasis on institutional openness, such as improving the "pre-establishment national treatment plus negative list" management system for foreign investment and granting free trade zones greater decision-making power. As the cornerstone of the national economy, the real economy will play a more prominent role over the coming years through 2035. Over recent years, China has been laying emphasis on the development of the real economy, as evidenced in its consistent efforts to boost lending to the sector and curb housing market speculation. New RMB-denominated loans to the real economy hit 16.69 trillion RMB during the first three quarters, up by 2.79 trillion RMB from 2019 and almost on par with the level registered in the whole year of last year, according to data from the People's Bank of China. To further invigorate the real economy, the country will advance its industrial foundation to a higher level, promote the modernization of its industrial chain and foster emerging industries of strategic importance, according to the development proposals (Xinhua, “To the next March, What to Expect from China’s Development Strategies through 2035? - People’s Daily Online”).

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1.4 Moving Forward From the Challenges of 2020: Innovation and Expert Opinions

2020 was a year of challenges for people all over the globe. Many nations, such as China have gone to great lengths to improve and move beyond the constraints of the year. As Dr. Harley Seyedin, the President of The American Chamber of Commerce in South China, put it in his address to the 2020 China Institute for Reform and Development (CIRD) conference, the key plan for China moving forward is to emphasize innovation and technological self-reliance, modernizing industry, focusing on domestic markets and implementing international openness. Innovation is a vague term, but here it is viewed in the context of economic development. Dr. Seyedin explains that evolutionary economic innovation is the incremental improvement of an existing product, service or business practice that enhances the market competitiveness of the provider of that same product or service over its competitors, whereas revolutionary economic innovation is the conception and execution of a new product, service or business practice that is sufficiently different from those currently existing so as to confer an undeniable competitive advantage on its originator. Dr. Seyedin suggests that in order for a modern economy to see success, it would be best served by making it easier for 'revolutionary economic innovators' to develop, implement and pursue potentially revolutionary ideas. As such, he predicts that this will require a change in approach by the government. This growth and change will not be an overnight process and will take many years of work. China has a large population of brilliant youths who are learning to lead China into the future. For there to be a future to lead, it is important for China to successfully move beyond the challenges of the present. For 2020, those challenges were the economic, political, and social issues that came with the Covid-19 pandemic.

Supporting Vaccine Developers and Overcoming the Pandemic

One aspect of the future that will have to be dealt with globally is how to deal with the Covid-19 pandemic, a problem that China has taken rapid and efficient steps to deal with. China has blazed the way in dealing with the Covid-19 pandemic, taking swift and decisive measures. This is reflected by the faith that the populace has in the vaccines produced in country. Chinese citizens are the most willing to get vaccinated against Covid-19 among people in 15 major economies worldwide, according to a new poll by the World Economic Forum 80% of Chinese surveyed said they somewhat agreed or strongly agreed that they would take the shot if a vaccine for Covid-19 were available to them. China led the countries surveyed, closely followed by Brazil where 78% reported they would take the vaccine. At the bottom of the pack was France with 40% of those surveyed interested in taking the vaccine at the time of polling, while in Russia the figure was 43%. The poll is the first conducted by the World Economic Forum and market research firm Ipsos since vaccinations started being rolled out in several Western countries, following the emergency use approval of a vaccine made by US firm Pfizer and its German partner BioNTech. It also follows the first approval of a Chinese-made vaccine by Sinopharm in the United Arab Emirates and Bahrain. The survey was conducted online in late December. It comes as mass vaccination campaigns are taking shape around the world and vaccine doses are starting to be shipped worldwide – with China featuring some of the fastest development of vaccines in history. Whether the doses can slow the pandemic will depend on a number of factors, including efficacy, global access to doses and how willing people are to take them, experts say. Fortunately, China is preparing for a mass campaign domestically, with plans to

1.4 2020年挑战过后：创新与专家解读

对于全球人民而言，2020年是充满挑战的一年。许多国家，例如中国，在这一年中极力改善现状，希望能走出困境。正如华南美国商会会长哈利 · 赛亚丁（Harley Seyedin）博士在中国（海南）改革发展研究院2020年年会上致辞时所说，中国未来的规划将着重强调创新与科技自立，推动产业现代化，在关注国内市场的同时继续扩大对外开放。“创新”一词语意模糊，但根据语境可将其理解为经济发展方面的创新。赛亚丁博士说，渐进式经济创新是对现有产品、服务和商业实践进行持续改善，从而提升同类产品或服务提供商的市场竞争力，而突破式经济创新指开发与当前市场上的产品和服务完全不同的新产品与服务，或推行全新的商业实践，使创新者确立切实的竞争优势。他表示，为促进现代经济发展，需要为“突破式经济创新者”营造一个良好环境，让它们更好地制定、推行和实现具有突破式潜力的创新理念。因此，他认为政府的方针政策需要有所变化。这种增长和变化不是一夜之间就能见效，而是需要经过多年的努力才能实现。中国年轻人口基数大，优秀的年轻人正在通过学习以引领中国未来的发展。中国只有成功应对当前的种种挑战，才能为未来的发展提供保障。2020年的挑战主要为新冠疫情带来的经济、政治和社会等方面的问题。

支持疫苗研发，抗击新冠疫情

抗击新冠疫情将成为全球性挑战，对此，中国早已展开迅速有效的行动。为应对新冠疫情，中国披荆斩棘，迅速果断地采取了各种措施。普通民众对中国疫苗的信心也反映了这一点。根据世界经济论坛的最新民意调查，在全球15个主要经济体中，中国人民对于接种新冠疫苗的接受度最高。80%的中国受访者表示，新冠疫苗上市后，他们比较愿意或非常愿意接种疫苗。中国的疫苗接受度最高，紧接其后的是巴西，该国有78%的受访者表示愿意接种疫苗。法国的疫苗接受度最低，只有40%的受访者表示有意接种疫苗，而在俄罗斯，这一比例为43%。这项民意调查最初由世界经济论坛和市场研究公司益索普（Ipsos）发起。此前，美国辉瑞制药公司（Pfizer）与德国BioNTech公司联合研发的疫苗获得紧急使用许可，一些西方国家随后开展了疫苗接种行动。而在更早之前，中国国药控股研发的新冠疫苗首次在阿联酋和巴林获批上市。这项调查的发起时间为2020年12月底。大规模疫苗接种活动正在全球展开，疫苗针剂正在运往世界各地，中国创造了史上最快的疫苗研发记录。专家表示，疫苗能否延缓疫情的发展取决于疫苗的有效性、全球疫苗的可及性和人们对疫苗的接受意愿等多重因素。幸好中国正准备在国内开展大规模接种活动。据《南华早报》本月报道，中国计划到2月份春节假期之前对重点高危群体进行疫苗接种，接种人数达5000万人。早在2020年7月，中国已有超过100万人通过紧急使用项目注射了由中国企业科兴生物和国有企业国药集团研制的疫苗，当时疫苗的三期试验数据尚未公布。但中国监管机构尚未批准针对普通人群的疫苗接种。卫生官员在12月19日表示，监管机构正在滚动审查海外临床试验最终阶段后期的数据。这项调查包括了来自美国、韩国、日本、法国、西班牙、德国、加拿大、巴西、南非、澳大利亚、意大利、墨西哥、俄罗斯和英国的受访者。近期的调查显示，各国表示不愿接受新冠疫苗接种的受访者中，有57-80%的人表示，主要是担心疫苗的副作用。70%的中国受访者表示，这个原因“最能说明”他们为何不愿接种疫苗。为减轻公众的担忧，中国卫生部门表示，紧急接种疫苗后只出现了头疼、发热和接种部位疼痛等常见不良反应。近期还向公众保证，相比其他国家研发的疫苗，中国疫苗的不良反应“没那么严重”。因为采用了传统灭活工艺。在疫苗研制的各个阶段和监管机构评估过程中会进行数据采集，而对不良事件进行监控是数据采集工作的关键内容。认为自己不太容易感染新冠肺炎因而对接种疫苗表示犹豫的中国受访者比例远高于其他国家。近三分之一的中国受访者认为这是他们不愿接种疫苗的最主要原因，在英国，这类受访者的比例为25%，仅次于中国。自2020年初遏制了中部城市武汉至少数万例新冠病例的爆发以来，中国已大范围控制了新冠疫情的蔓延。因此，中国民众并不太担心自己会被感染，这也说明了为何有少数人认为自己不需要接种疫苗。中国政府在疫情控制方面的表现可圈可点，也赢得了中国人民的信赖(McCarthy)。

中国国药集团表示，根据期中分析结果，其研发的新冠疫苗的有效率为79.34%。据该公司旗下北京生物制品研究所发布的声明，这款疫苗安全性良好，接种两针后，受试者均产生高滴度抗体，中和抗体阳转率为99.52%。公告称已正式向中国监管机构提交附条件上市申请。这款疫苗正在阿拉伯联合酋长国、巴林、约旦、秘鲁和阿根廷等国进行临床试验。阿联酋卫生部门于12月9日表示，后期临床试验的中期分析结果显示这款疫苗的有效性达86%。这款疫苗早已在阿联酋和巴林获批。这款疫苗与

immunize 50 million people in designated high-risk groups before the Lunar New Year holiday in February. More than a million people have already received shots of vaccines developed by domestic firms Sinovac Biotech and state-owned Sinopharm via an emergency use program launched in July, before phase 3 data for the vaccines was available. But Chinese regulators have yet to approve a vaccine for general use. On December 19, health officials said data from late in final-phase trials overseas was being reviewed by regulators on a rolling basis. The survey also included respondents from the United States, South Korea, Japan, France, Spain, Germany, Canada, Brazil, South Africa, Australia, Italy, Mexico, Russia, and Britain. In every country in the latest survey, 57-80% of those who say they would not take a Covid-19 vaccine cited concerns about side effects as the main reason. In China, 70% of respondents cited this as the reason that “best describes” why they would not take a vaccine. In order to alleviate the public’s concerns China’s health authorities have said their emergency use campaign only showed common adverse effects such as headache, fever and irritation at the shot site, and they have recently looked to assure the public that side effects from the vaccines, which use a traditional inactivated method, are “less severe” than those developed by in other countries. Monitoring for adverse events is a critical part of data collection throughout all stages of vaccine development and the evaluation process by regulators. People surveyed in China were far more likely than respondents in other countries to say their reason for hesitation was because they were not at enough risk of Covid-19. Nearly a third of Chinese respondents cited this as the primary reason that they would not take a vaccine, compared with the next highest group, British respondents, at 25%. China has largely controlled the spread of Covid-19 since it contained an outbreak of cases at least in the tens of thousands earlier in 2020 in the central city of Wuhan. As such, concerns of infection are low among the populace, explaining the small percentage who do not feel the vaccine is necessary for them. China has done an admirable job containing the pandemic and has created confidence in its citizens (McCarthy).

A vaccine developed by China National Pharmaceutical Group (Sinopharm) has been found to be 79.34% effective against Covid-19, according to an interim analysis, the company said. The vaccine was shown to be safe, and participants receiving the two-dose course produced a high level of antibodies against the virus at a rate of 99.52%, according to a statement posted by the company’s subsidiary Beijing Institute of Biological Products – which has also formally submitted an application to China’s regulators for conditional listing. The vaccine is in clinical trials in several countries, including the United Arab Emirates, Bahrain, Jordan, Peru and Argentina. On December 9, UAE health authorities said the vaccine had proven to be 86% effective in an interim analysis of late-stage clinical trials. The vaccine has already been approved in the UAE and Bahrain. The vaccine is among those already in use in China under an emergency use authorization program launched in July 2020. Health authorities earlier this month said they were evaluating data from vaccines that were advanced in final phase trials on a rolling basis, and would release data to the public “in time” after trials were unblinded. Another Chinese firm, Sinovac, has a candidate in human trials in Brazil, Turkey and Indonesia, but reporting of its detailed results were postponed until next month. Turkey’s health authority announced that its trial showed this vaccine to be 91.25% effective, but the finding was based on preliminary results from a small clinical trial and none of the data has been peer reviewed. Shanghai vaccine expert Tao Lina said the efficacy results for the Beijing Institute vaccine was a good result for a new vaccine against a new virus. Industry processes could be improved in time to improve efficacy, he said. He elaborated saying, “The difference in technology means mRNA vaccines will have a higher efficacy than the inactivated vaccines. It is like, one vaccine targets the ammunition in the key point, and the other [targets] all the points, so naturally the effect will be weaker.” Not only has the efficacy of the Beijing Institute’s vaccine surpassed the approval threshold but it has shown excellent safety data, which was an important aspect that needed to be considered in evaluating the different vaccines. “From the published data, the inactivated Covid-19 vaccines have much fewer and lighter adverse events. It is something to be taken into consideration when hundreds of millions of people are to take vaccines,” he said. The State-owned Assets Supervision and Administration Commission, which regulates China National Pharmaceutical Group, the parent company of the Beijing Institute of Biological Products, said that the vaccines should be assessed according to their overall performance and not just a single parameter of efficacy. All of the vaccines approved for emergency use had

其他疫苗纳入了2020年7月实施的紧急使用审批项目，因而早已在中国投入使用。卫生部门于本月初表示，他们正在滚动评估正处于临床试验最终阶段的疫苗数据，并会在试验揭盲后“及时”向社会公布数据。另一家中国企业——科兴生物有一款候选疫苗正在巴西、土耳其和印度尼西亚进行人体试验，但具体试验结果将推迟到下个月公布。土耳其卫生部门上周公布的试验结果表明，这款疫苗的有效性为91.25%，但这一数据是基于一个小规模临床试验的初步结果，且从未经过同行评审。上海疫苗专家陶黎纳（Tao Lina）表示，作为一款对抗新型病毒新疫苗，北京研究所这款疫苗的有效率还算不错。他表示，可以通过及时改善工业生产流程，提高疫苗的有效性。他还说道，“研制技术的差异意味着mRNA疫苗的有效性会高于灭活疫苗。比如，一款疫苗只针对关键靶点，而另一款疫苗则针对所有靶点，所以效果自然会弱一些。”北京研究所研发的疫苗不仅超出了审批标准，还展现了优秀的安全数据，而安全数据是疫苗评估中必须考虑的重要因素。“根据公开数据，灭活新冠疫苗的不良事件报告更少，且症状更轻。在为数以亿计的人们提供疫苗时，必须考虑这个问题，”他说。国药集团是北京生物制品研究所的母公司，由国有资产监督管理委员会（国资委）直接管理。国资委在周三的声明中表示，应根据疫苗的总体表现对疫苗进行评估，而不是只考虑有效性这一个参数。所有获得紧急使用许可的疫苗均能产生高滴度抗体，理论上足以抵抗新冠病毒。国药集团疫苗的优点在于方便运输储存，且产能有保障。公告称，“国药集团研制的灭活新冠疫苗可在2-8摄氏度（35.6-46.4华氏度）条件下运输和保存，能在24个月内保持稳定，具有明显优势。涉及的冷链储运条件符合大多数国家的国情，因此显著提升了疫苗的可及性”。根据该公告，国药集团的武汉和北京设施2021年的产能将达10亿支，与全球其它候选疫苗的产能相匹配（McCarthy and Pinghui）。

重整旗鼓，发展经济

2020年已近尾声，各行各业的专家们正在思考和预测中国的未来将何去何从。在这种过渡时期，通常会出现各种预测模型，用于预测中国等国家的未来发展。菲利普·泰特洛克（Phillip Tetlock）和J. 彼得·斯科布列克（J. Peter Scoblic）等专家和分析师建议使用一种久经检验的投资策略，即多元化策略。首先设置一个与各种场景相关但非常明确的问题集，为每个问题指定基于概率的答案。注意答案是都指向同一个方向，还是分散在各个方向。多元化预测方法指的是：“与将股票组合分散至多个非相干的投资领域以降低风险的原理非常相似，把问题多元化可避免预测者因过度重视可能并不重要的因素，而得出即将发生某一特定场景的错误结论。答案在于制定一个能够尽早提供可预见迹象的问题集，且这些迹象所表明的场景未来极有可能出现，因此能让政策制定者尽快作出明智决策。问题集让分析师能够将未来的可能性拆分成一系列清晰、可预见且短期内能观察到的迹象，而不是从整体层面评估某一长期场景发生的可能性。每个问题不仅要具备特定的问题分析价值，当它们组合作为一个问题集时还要能够体现出多元化，这样每个问题集才能提供最充分的信息，推测未来状况，或推测正在发生的导致未来状况的要素。”2020年夏季，著名的兰德公司（Rand Corporation）就发布了一份基于多元化方式预测到2050年中国发展状态的研究报告。这份报告的标题为《中国的大战略：趋势、轨迹与长期竞争》，提出未来中国可能出现四种情况。第一种情况：完胜的中国；第二种情况：内乱的中国；第三种情况：崛起的中国；第四种情况：停滞的中国。第一种情况最不可能出现，因为得出这种结果的假设条件是，中国没有犯错余地，且从现在到2050年期间没有任何重大危机或严重挫折。第二种情况也不太可能，因为到目前为止的中国领导人，都具备优秀的组织规划能力，善于处理各种危机，在适应和应对多变的形势得心应手。第三和第四种情况是，到2050年，中国的发展最可能是或起或落。崛起的中国或停滞的中国这两种情况最为合理。在第三种情况中，中国总体实现其长期规划目标，而在第四种情况中，中国面对重大挑战，且其重大战略大多以失败告终。这份报告根据这四种情况预测了中美关系的三种发展轨迹：第一，成为平行发展的合作伙伴；第二，相互碰撞的竞争对手；第三，分道扬镳，互不干涉。平行发展的合作伙伴关系预测是对2018年中美关系状态的延续。这种情况最有可能伴随停滞或崛起的中国而出现。中美之间冲突不断的竞争关系最有可能出现在完胜的中国场景中，此时的中国会更加坚定自信。分道扬镳、互不干涉的中美关系最可能出现在内乱的中国场景中，因为在这种情况下，不断涌现的国内问题会让中国焦头烂额。所以，不太可能出现中美经济完全脱钩的情况(Lo)。

中国的经济增长预期非常乐观。分析人士表示，中国2021年的经济增长可能达到9%，且迅速从新冠疫情中恢复有助于在未来十年的后期阶段超越美国，成为全球第一大经济体。但中国的债务水平创历史新高，这引发了人们的担忧，政府很可能因此取消一些致力于抵消新冠疫情冲击的刺激措施。最近几周，人们对中国经济的前景的预期愈加乐观。这个全球第二大经济体凭借强劲的出口增长、政府大举支出和低感染率，引领全球摆脱新冠肺炎的阴影，走向复苏。鉴于中国经济快速恢复，英国智库经济和商业研究中心(Centre for Economics and Business Research)预测，中国将在2028年超越美国，成为全球第一大经济体，比先前预估提早5年。相反，许多国家被迫恢复封锁措施，以控制新冠病毒的传播。根据中国的复苏情况，野村控股（Nomura）和中金公司等众多券商预测，中国2021年的国内生产总值将增长9%。然而，国务院直属、位于北京的中国社会科学院指出，当前中国消费疲软，失业问题依然存在，中小企业仍在困境中挣扎，这些因素很可能成为未来增长的主要障碍。根据近期调整数据，2019年中国经济实现6.0%增长。2020年，疫情导致全

produced high levels of antibodies that could in theory fight off the coronavirus, it said. The Sinopharm vaccine also had the advantage of convenient transport and storage, as well as a guaranteed production capacity. "The inactivated Covid-19 vaccines by Sinopharm can be transported and stored at 2 to 8 degrees Celsius (35.6 to 46.4 Fahrenheit) and remain stable for 24 months, which is an obvious advantage. The cold chain involved fits in what is already available in most countries, therefore significantly increasing the accessibility of the vaccines," the statement said. According to the statement, production capacity of the two Sinopharm facilities in Wuhan and Beijing will reach 1 billion doses in 2021 matching the production capacity of other global vaccine candidates (McCarthy and Pinghui).

Revitalizing and Growing the Economy

As 2020 drew to a close, many experts across countless industries are pondering and projecting where China may go in the future. In times of transition such as this, it is common to see projection models develop to anticipate how nations such as China will develop. Expert and analysts such as Phillip Tetlock and J. Peter Scoblic recommend a time-tested investment strategy: wide diversification. Ask a whole cluster of related but sharply defined questions about each scenario and assign probabilistic answers to each. Look whether the answers point towards the same direction or are all over the place. They break their method down as follows: "Much as diversified stock portfolios spread risk through multiple, uncorrelated investments, the diversity of question clusters prevents forecasters from overweighting a potentially unimportant signpost and mistakenly concluding that a particular scenario is coming to pass. The answer lies in developing clusters of questions that give early, forecastable indications of which envisioned future is likely to emerge, thus allowing policymakers to place smarter bets sooner. Instead of evaluating the likelihood of a long-term scenario as a whole, question clusters allow analysts to break down potential futures into a series of clear and forecastable signposts that are observable in the short run. Questions should be chosen not only for their individual diagnostic value but also for their diversity as a set, so that each cluster provides the greatest amount of information about which imagined future is emerging – or which elements of which envisioned futures are emerging." In the summer of 2020, the famed Rand Corporation published such a study of China in 2050. The study, entitled China's Grand Strategy Trends, Trajectories, and Long-Term Competition outlines four "probabilistic scenarios" for the future of China. First, a world in which China is the only dominant economic power, second, a model in which China implodes, the third and fourth being an ascendent or stagnant China. First, a world in which China is the only dominant economy is least likely because such an outcome presumes little margin for error and the absence of any major crisis or serious setback between now and 2050. Second, an imploding China is not likely because, to date, Chinese leaders have proved to be skilled at organizing and planning, adept at surmounting crises, and deft at adapting and adjusting to changing conditions. Third and fourth is that by 2050, China most likely will have experienced some mixture of successes and failures.The most plausible scenarios would be an ascendant China or a stagnant China. In the former scenario, China will be largely successful in achieving its long-term goals, while, in the latter scenario, China will confront major challenges and will be mostly unsuccessful in implementing its grand strategy. The study then charts three possible outcomes in China-US relations relative to the four scenarios: parallel partners, colliding competitors, or diverging directions. The parallel partners trajectory is a continuation of the state of US-China relations in 2018. This trajectory is most likely to occur with a stagnant China and probably an ascending China. The colliding competitors' trajectory is most likely to manifest in a triumphant China scenario in which Beijing becomes more confident and assertive. The diverging directions trajectory is most likely to occur in an imploding China scenario because Beijing will be preoccupied with mounting domestic problems. So, a complete economic decoupling is unlikely (Lo).

An area of optimism is the projected increase for China's economic growth. China's economic growth could reach as high as 9% in 2021, and its rapid rebound from the coronavirus pandemic may help the economy overtake the US to become the world's largest later this decade. But Beijing is likely to roll back some of its stimulus measures used to offset the coronavirus damage amid concerns over its record-high debt level. Expectations over China's economic outlook have grown more positive in recent weeks, with the world's second-largest economy leading the global recovery from the impact of the coronavirus with its robust export growth, strong government spending and a low infection rate. Given China's rapid rebound, the Centre for Economics and Business Research, a UK think tank, predicts that

国大范围停工，第一季度的增长下降了6.8%。尽管如此，中国仍成为首个走向复苏的主要经济体，2020年第二、三季度的增长率分别为3.2%和4.9%。中国有望成为20国集团唯一在2020年实现正增长的成员，国际货币基金组织（IMF）和世界银行分别预测中国2020年增长率为1.9%和2.0%。由于中国保持强势的复苏态势，且2020年的增长水平较低，相比之下，中国2021年将迎来大幅增长。国际货币基金组织预测中国2021年的GDP增长达8.2%，而经济合作与发展组织（OECD）的预测为8%。世界银行和中国社会科学院的预测较低，均为7.8%。渣打银行在其近期的全球展望报告中预测，中国2021年的GDP将加速实现8%增长；第一季度的同比增幅可能攀升至18%，如此巨大增幅主要是由2020年初的下降导致，而非实际经济活动的结果。2020年初，为拯救受新冠疫情打击的经济，中国频繁推出各种刺激举措，包括发行特别国债以扶持地方政府的基础设施投资和减税降费，促使财政赤字率上升至3.6%，创历史新高。此外，中国人民银行为市场提供额外的流动性支持，下调利息率，还为陷入困境的中小企业提供特殊援助。据中国社会科学院表示，2020年初采取的紧急措施已导致中国第一季度的债务负担率从245.4%飙升至266.4%，中国的监管机构如今对这些措施带来的后果愈发担忧。中国社会科学院预测，随着地方政府债务迅速增长，中国2020年债务负担率将突破275%。专家表示，中国会将财政赤字率目标由2020年的3.6%下调至3%，以确保其处于可控范围(Lee and Zhou)。

鼓励国外投资者投资是刺激中国经济的另一种方法。后疫情时代，国外投资者持续关注中国，寻求商业机会。全球闻名的大型跨国啤酒制造商嘉士伯（Carlsberg）就是其中之一。嘉士伯中国董事总经理李志刚（CK Lee）解释了公司对此的看法。啤酒业务的健康发展有赖于强劲的经济和充满活力的社会环境。嘉士伯最希望看到的是中国的公共政策能够进一步激发经济活力，尤其是进一步刺激国内需求，因为国内需求是促进经济强劲回升的关键。嘉士伯的主要市场和酿造厂大都分布于中国西部，包括重庆、新疆维吾尔自治区、宁夏回族自治区和云南省等。政府在两会的筹备期间发出了在新时期推动西部大开发的新号召，我们自然也会特别关注这个方面。李表示，他们期待更多具体相关政策信息公布。疫情期间，餐厅、酒吧和KTV纷纷关门，现场消费渠道遭到堵塞，对嘉士伯造成了严重的不利影响。嘉士伯中国迅速适应了这种不确定性和持续变化的形势。他们将关注点转移至一些非现场消费渠道，例如在疫情期间依然营业的超市和杂货店。对于那些计划在主要电商平台、外卖平台和新零售渠道拓展业务的企业而言，此次危机也蕴藏着机遇。嘉士伯通过各种努力，包括调整部分市场营销投入等，在这些渠道中争得了一席之地，得以抵消在其它渠道遭受的体量损失，这对他们在中国的长期业务发展大有助益。他们的全部酿造厂都在首批获准复工复产的地方企业名单之列，也都获得了运输批准，可以将啤酒配送至客户手中。随着中国的新冠疫情呈现缓解迹象，在许多国家之中，中国是嘉士伯首个迈入复苏阶段的市场。他们致力于在中国谋求长期发展。他们在2020年继续推进发展计划，开始在四川宜宾和云南大理建设两条罐装啤酒生产线。虽然对2020年的市场趋势有所担忧，但嘉士伯迎来了罐装啤酒销量的大幅增长，原因是更多消费者购买适合家庭消费的罐装啤酒，而不是从现场渠道购买瓶装啤酒。消费者很可能继续加大罐装啤酒的购买力度，逐渐形成一种"新常态"。嘉士伯中国持续投入扩大罐装啤酒产能的举动表明，他们已经准备好把握这次机会，进一步推动业务发展(China Daily)。

中国的技术未来

2020年12月底，中国最高领导人召开了中央经济工作会议，制定了一系列政策，旨在推动中国在持续紧张的中美关系背景下走向自立自强，会议结束时以非同寻常的口吻提到了中国从新冠疫情中复苏的胜利。根据中央经济工作会议结束后发布的一份声明，中国成为全球唯一实现经济正增长的主要经济体，交出了一份"人民满意、世界瞩目、可以载入史册"的答卷。不过，中国领导层同时指出，外部环境存在诸多不确定性，复苏可能存在不平衡、不稳定的风险。2020年的经济目标关注扶贫攻坚和污染防治。2021年的发展规划宣布于政府公布"十四五"规划蓝图的数周后，它似乎更具有战略意义，着重驱动创新、实现供应链自立自足和扩大内需。在提高食品安全、加大反垄断力度、解决住房问题和到2035年达到碳排放峰值等方面也有相应的规划。迈克尔 · 赫森（Michael Hirson）在总部位于美国的欧亚集团（Eurasia Group）担任中国业务主管，他在谈论2020年形势时提到，"今年的中央经济工作会议是2016年以来最为精彩且引人瞩目的，2016年中央经济工作会议正式确立了防范和化解金融风险的方针。今年的会议既没有确立类似方针，也没有转变的政策方向，而是明确了中国的经济和地缘政治议程，明确其为重点工作，这一点非同寻常。中国政府在规划后疫情时代的发展道路时，特别强调要驱动国内创新，减少对美国技术的依赖。"麦格理银行中国经济研究主管胡伟俊（Larry Hu）提到，"所谓的双循环包括了除遏制技术巨头（反垄断）之外的其它内容，暗示了两层含义：自立自足和扩大内需。中国政府采取这种策略是因为他们将中美脱钩视为最重要的长期挑战。因此，中国政府将'安全'和'增长'作为长期发展战略的两大重点，在此基础上确定了八项主要任务。"中国的创新驱动政策包括一项长达10年的研究创新中心建设规划，旨在摆脱对半导体等产品的外部供应依赖，这种依赖是中方在中美技术竞争中的关键弱点。根据政府的数据，虽然中国2019年总体研发支出占GDP的比重上升至2.2%，略低于美国的2.8%，但只有6%的研发支出是用于基础研究，这一比例远低于发达国家15%的平均水平。中国还计划突破技术瓶颈，解决供应链问题，希望借助其"独特优势"减少对美国和其他国家的依赖。中国还将积极考虑加入

China will overtake the United States to become the world's biggest economy in 2028, five years earlier than previously estimated. In contrast, many other countries have been forced to resume lockdown measures to control the spread of the coronavirus. China's recovery has seen a number of brokers, including Nomura and China International Capital Corporation (CICC), predict its gross domestic product (GDP) growth for 2021 will be 9%. However, the Chinese Academy of Social Sciences (CASS), a Beijing-based think affiliated with the State Council, cautioned that weak consumption, unemployment and the ongoing struggle among small to medium-sized companies are likely to be major obstacles to growth going forward. China's economy grew by a recently revised rate of 6.0% in 2019 and then contracted by 6.8% in the first quarter of 2020 after the coronavirus shut down large swathes of the country. It was, however, the first major economy to show a recovery, with growth rates of 3.2% in the second quarter and 4.9% in the third in 2020. China is now expected to be the only Group of 20 nation to show a positive economic growth rate in 2020, predicted to be 1.9% by the International Monetary Fund (IMF) and 2.0% by the World Bank. Its growth rate is expected to increase sharply in 2021 due to both the continued strong recovery and the low 2020 base for comparison. The IMF then expects China's GDP growth to be 8.2% in 2021, while the Organization for Economic Co-operation and Development (OECD) places it at 8%. The World Bank and CASS each project a slightly lower growth rate of 7.8%. In its latest global outlook, Standard Chartered Bank projects China's GDP growth to accelerate to 8% in 2021, adding that year-on-year growth may surge to 18% in the first quarter due largely to the low base following the historic contraction earlier in 2020, rather than real economic activity. To rescue its coronavirus-hit economy earlier in 2020, China unleashed a flurry of stimulus measures, including increasing the issuance of special treasury bonds to fund infrastructure investment by local governments and tax cuts that lifted the fiscal deficit ratio to a record high of 3.6% of GDP. In addition, the People's Bank of China provided extra liquidity to the market, driving down interest rates, while also providing special assistance to struggling small and medium-sized companies. Chinese regulators are increasingly concerned over the fallout from the emergency measures introduced early in 2020, which sent its debt-to-GDP ratio up to 266.4% from 245.4% in the first half of 2020, according to CASS. CASS expects China's debt-to-GDP ratio to hit 275% in 2020, driven by a rapid growth of local government debt. Experts say that China will lower its fiscal deficit target back to 3% from 3.6% in 2020 to keep its leverage under control (Lee and Zhou).

One way that the Chinese economy can be stimulated is by encouraging the foreign market, which continues to look at China for business offers in a post-pandemic world. An excellent example is Carlsberg, a large multi-national beer company, famous across the world. CK Lee, the managing director of Carlsberg China explained his company's views on the subject. The healthy development of the beer business relies on a robust economy and a dynamic society. What Carlsberg most expects is the public policy directions for the country to further revitalize the economy, especially to further stimulate domestic demand, which is essential for a more robust rebound. Most of their key markets and breweries are located in the western region of China, including Chongqing, Xinjiang Uygur autonomous region, Ningxia Hui autonomous region and Yunnan province. It's natural that we have a special interest in the government's renewed rallying call to advance the development of the western regions in the new era, which was just unveiled in the lead-up to the two sessions. Lee says that they look forward to hearing about more information about detailed policies in this regard. During the outbreak, Carlsberg saw dramatic negative impact on on-trade channels as outlets like restaurants, bars and KTVs were closed. Carlsberg China quickly adapted to the uncertain and continuously changing environment. They shifted their focus to some of their off-trade channels, such as supermarkets and groceries, which were still open during lockdown. This crisis also presented itself as an opportunity for businesses to expand their presence on major e-commerce platforms, takeaway platforms and the new retail chains. Carlsberg's efforts, including recalibrating some of their marketing and sales investments, propelled them to gain share in these channels, and help offset volume loss in other channels, contributing to their longer-term business development in China. All of their breweries were among the first batch of local enterprises which obtained reopening permissions, as well as transportation permissions for them to deliver beer to their customers. With COVID-19 in China showing signs of easing, among many other countries, Carlsberg China is the first market entering the recovery phase. They remain committed to their long-term growth in China. They are going ahead with their plan to start building two production lines for can products in Yibin in Sichuan province and Dali in Yunnan province in 2020. Concerning market trends during 2020, Carlsberg saw a significant increase in the volume

由11个国家签署的《全面与进步跨太平洋伙伴关系协定》，而美国在特朗普政府时期退出了这一协定。中国2020年的债务负担率可能较2019年攀升25个百分点，达270%，部分原因是2020年经济刺激措施的实施。政府计划明年放缓信贷增长，使其与名义GDP增长相匹配(Leng)。

中国出口商因新冠疫情危机遭受经济损失，如今它们将目光转向大数据，重新聚焦国内市场，谋求长期出口增长。2020年，大数据应用的持续增长和制造商迅速做出的调整成为反映中国经济走向的关键指标。中国致力于成为大数据分析、人工智能和技术发展的全球中心，也毫不掩饰为此所做的努力。习近平主席明确表示，中国计划到2035年成为人工智能领域的领导者，借助序列数据能力指导制定经济、国家情报和军队等方面的提升策略。魔多情报公司（Mordor Intelligence）发布的一份报告称，中国企业越来越关注发展供应链，充分利用数据和消费者洞察数据。腾讯、阿里巴巴、京东和百度的商业模式就是中国提升数据能力的几个典例。新冠疫情期间，消费者行为产生变化，随之出现了一个有趣的现象：中国的小规模出口商借助阿里巴巴和京东等电子商务巨头的大数据能力，转战国内市场。例如，中国牙刷制造商Tommy Tu正是借助阿里巴巴数据，重新将其产品对准国内市场。年初，出口公司90%的营业额都来自产品出口，但通过上述举措，这一比例下降至60%。出口商利用大量数据资源，以适应持续变化的需求，也为其他国内市场带来了类似的效果。例如，中国的线上杂货市场有望在2020年实现62.9%的增长，而2019年的增长率只有29.2%。封锁期间，消费者减少外出就餐，在家做饭和生活必需品的需求增加，阿里巴巴和京东借助大数据，对这种消费行为变化加以充分利用。分析借助大数据进行的焦点转移，能够帮助预测中国的经济走向。虽然中美竞争已持续多年，但中国在大数据领域具有巨大优势，主要原因有两个。首先，巨大的数据规模有助于了解消费者习惯。中国人口众多，企业云集，因此有更多数据可用。第二，中国迅速响应了持续增长的全球移动技术需求，走在这方面巨大增长的前列，走在市场的前端。另一个例子是5G。华为拥有最多的5G专利，在下一代移动网络的全球标准制定中发挥了核心作用。5G技术能够让设备之间的数据搜集流畅，在分析人类活动方面具有前所未见的潜力，为经济发展提供了无限可能。到2035年，5G价值链有望驱动3.6万亿美元的经济产出，中国预计将贡献其中最大份额，美国则紧随其后。零售商搜集数据，将其与消费趋势、消费兴趣和行为进行对照。过去20年间，这种数据搜集水平已实现了大幅提升。全球疫情爆发加剧了经济的不确定性，使大数据和它带来的多种优势显得更为重要。在大数据所发挥关键作用的其他行业，如果这种增长水平能与之相适应，中国未来经济增长的影响将会显现，创新、经济升级和劳动力市场都将带来连锁效益。此外，抗击新冠疫情的过程中也大量应用了人工智能技术。中国政府将数据融入监测系统，推出了全球最精细的移动追踪应用，还利用人脸识别和热扫描仪识别可能有发热症状或携带病毒的人群。中国发布的报告称，3月1日至4月30日期间，中国的医疗物资出口总值超过了710亿元（约104亿美元）。国外还在实行封锁措施，出口商抓住这一机会，迎来的是需求的大幅增长，而非之前预测的下跌。这种对医疗物资和封锁期间所需商品的需求增长很可能促进了中国医疗卫生行业取得巨大技术进展，以及推动了使用大数据预测未来消费趋势和消费者需求。这些数据表明，高端技术在消费者市场的应用不断加强，也开始应用到军事、监控和政府领域。大数据极有可能成为加速中国国内市场整体转变的催化剂。制造商可以利用电商巨头的分析和动向报告，同时发展国际国内市场，主要大数据公司则专注于满足市场对先进技术日益增长的需求(Merry)。

后疫情时代，技术将驱动变革，尽管围绕这一话题出现了越来越多充满争议的设想，构建未来的始终是社会创新和技术创新，这一点毋庸置疑。人们将技术当成了后疫情时代发展的灵丹妙药。理论学家保罗·戴维（Paul David）将这种现象称为“科技老花眼”，意思是人们倾向于高估短期变化的影响，而低估长期变化的影响。一个丝毫不了解科技发展史的人也能看出，疫情过后，监控、人工智能和算法控制等技术很可能得到更广泛的应用。多数发达国家已经尝试利用技术进行公共卫生管理，这些组织设想很有可能为未来的公共卫生治理树立典范。英国国民医疗服务体系（National Health Service）推出的联系人追踪应用可对用户进行风险评估。一些观察人士提议使用升级版应用，为坚持佩戴口罩、认真遵守社交距离规定的用户提供积分和实益奖励。未来，一种巧妙名目、以信用为基础的社会行动可能会以游戏的形式扎根于自由技术官僚主义国家，这种情况也不是难以想象。同时，国际货币基金组织认为，世界需要“一个新的布雷顿森林体系”，一种与二战后的举措规模相当、旨在重新平衡全球贸易条件的系统性尝试。世界经济论坛（WEF）推行的“大重构”构想旨在协调开展综合性政治和社会行动，以应对当前危机，这个构想的内容不止是战胜新冠疫情那么简单。尽管预测未来一直是强者的专利，但我们可以从未来学的历史中得出一个教训：如果一个人无法想象一个不受控制的世界，那他也不太可能准确预测一个真正由变革所塑造的未来(Anthony and Choo)。

数字扩张

2020年也催生了积极的技术成果，新冠疫情爆发加快了数字革命的进程，中国在其中处于领先地位。从电商直播，到通过线上方式维持业务联系，再到将人工智能应用到制造业，中国企业积极应对新冠疫情带来的挑战，为全球其他国家带来了未来发展的曙光。四月，在许多人还被困家中，为经济发展的前景忧心忡忡之时，一场电商直播吸引了超过200万线上观众，在这场直播中，中国新生代巨星主播以4000万元人民币（约合560万美元）的价格售出了一枚运载火箭发射服务。在全国因疫情封锁

of can beer products, as people shift their purchases towards more can beer products for home consumption instead of consuming bottled beer in on-trade channels. It is likely consumers will continue to buy more can beer products as a part of the "new normal" going forward. Since Carlsberg China has continuously invested in enhancing production capacity for can products, they are ready to leverage this opportunity to further develop their business (China Daily).

China's Technological Future

An economic planning meeting in late December 2020 involving China's top leadership ended on an unusually triumphalist note about the country's recovery from Covid-19 as Beijing set out a series of policies to boost-self-reliance amid its ongoing tensions with the US. The statement released at the end of the Central Economic Work Conference led with the message that China was the only major economy to post positive growth, saying it could "satisfy the people, catch the world's attention and make history." However, the leadership also warned of the risks of an unbalanced and unstable recovery given external uncertainties. While 2020's economic targets focused on the fight against poverty and pollution, the plans for 2021 – announced weeks after the authorities published the blueprint for the latest five-year plan – appear to be more strategic with a focus on boosting innovation, self-reliance in the supply chain and domestic demand. There are also plans to improve food security, strengthen anti-monopoly measures, tackle housing problems and reach peak carbon emissions by 2035. "The CEWC readout this year is the most interesting and notable since 2016, when Xi Jinping used the conference to formally kick off his financial de-risking campaign," Michael Hirson, head of China at the US-based Eurasia Group, wrote in a note regarding 2020. "There is not a similar dominant theme this year or discrete shift in policy, but an unusually clear prioritization and articulation of Xi's economic and geopolitical agenda as Beijing charts its course for the post-pandemic future, particularly boosting domestic innovation and reducing reliance on US technologies." Larry Hu, chief China economist from Macquarie Group, said in a note: "Other than the curb on big tech [anti-monopoly], the rest are all under the so-called dual circulation, which has two implications: self-sufficiency and domestic demand. Beijing adopted such a strategy because it views a decoupling between China and the US as its biggest long-term challenge. "As such, Beijing has set 'security" and 'growth' as the top two priorities under its long-term growth strategy, which underpins the eight major tasks above." Beijing's policies to boost innovation include a 10-year plan to establish research and innovation centers to tackle problems such as its dependence on external supplies of items such as semiconductors, a key weakness in its technological competition with the US. While China's overall expenditure on research and development rose to 2.2% of GDP in 2019 – slightly lower than the 2.8% in the US – just 6% of its R&D expenditure went to basic research, which was much lower than an average of 15% among developed countries, according to government data. It also plans to focus on problems with the supply chain by solving technological "bottlenecks" and focusing on its "unique advantages" to reduce reliance on the US and other countries. China will also actively consider joining the Comprehensive and Progressive Trans-Pacific Partnership Agreement, a trade bloc of 11 countries, which the US withdrew from under the Trump administration. China's debt-to-GDP ratio in 2020 could surge by 25 percentage points to 270% from 2019, partly due to measures to stimulate the economic recovery in 2020. Beijing intends to lower the overall credit growth next year to match nominal GDP growth (Leng).

As the Covid-19 economic crisis takes its toll, Chinese exporters are turning to big data to refocus their efforts in the domestic market and secure long-term export growth. Combined with the growing applications of big data, the rapid changes manufacturers had to make in 2020 give a key indication of what the future holds for the Chinese economy. China's efforts to become the global epicenter of big data analytics, artificial intelligence and technology are no secret. President Xi Jinping has made clear Beijing's plans to become the AI leader by 2035, using sequential data capabilities to guide strategies encompassing the economy, national intelligence, and military enhancements. A report from Mordor Intelligence surmises that Chinese companies are increasingly focusing on developing supply chains to leverage data and consumer insights. Examples of China's plan for enhanced data capabilities can be seen in the business models of Tencent, Alibaba, JD.com and Baidu. Amid the shift in consumer behavior during the Covid-19 pandemic, an interesting development has been smaller Chinese exporters turning to e-commerce giants such as Alibaba and JD.com for their big data capabilities to pivot towards the domestic market. Chinese toothbrush maker Tommy Tu, for example, used Alibaba's trove of data to refocus its products towards

数月的背景下，这实在是一个非同寻常而令人振奋的时刻。疫情对中国经济造成了沉重打击——2020年上半年，国民生产总值同比缩水了1.6%，企业艰难求生。但是，疫情在带来前所未有的挑战的同时，也激励着人们改变做事情的方法。就像过去数次危机一样，新冠疫情危机下人们也在破旧出新，挑战陈规。中国是最早感到疫情冲击的国家，封锁和社交隔离使技术前线变革的进程加快。直播这种通过互联网播出，并经常带有互动性的展示形式迅速成为了中国制造商和企业用以了解消费者心理和吸引消费的新方式。快舟一号甲火箭发射服务包括机身喷涂和观看发射现场等，虽然这次拍卖的盛况可能是昙花一现，但是，电商销售渠道的爆发式增长料将持续不退。据中国商务部发布的数据，2020年一季度全国电商直播超过400万场。相比一月份，二月份使用淘宝直播的商家增长了超过八倍。淘宝直播是中国电商巨头阿里巴巴旗下的直播平台。据行业研究预测，2020年，中国电商直播平台创造的零售额将达到1300亿美元，中国近一半人口通过电商直播购物。电商直播的繁荣同时表明，曾经依赖于面对面销售的企业在努力探索新的销售方式，使用数字渠道来开拓、互动和维护客户。这些努力已见成效。汽车经销商展示豪华汽车内饰，农民推销当地特产，房产中介带客户看房——这一切都可以在通过线上形式完成。据房地产平台贝壳找房称，二月份，中介促成的虚拟带看次数较上个月增长了近35倍。在新冠疫情带来的压力下，不只是销售渠道加快了应用数字技术的步伐，企业也将数字技术融入业务运营和客户互动模式。在中国，面对面会议一直在建立商业关系的过程中发挥着重要作用，但是现在，人情往来也开始广泛地转到线上。三月，某备受欢迎的中资企业通信平台的月均活跃用户数从2019年底的约6500万增长到了约1.77亿。六月，全球最大的贸易展销会之一——广交会（中国进出口商品交易会）首次以24小时无间断直播的形式召开，这是广交会六十年历史上首次以线上形式召开，主办方运用云技术和远程会议技术，为约26000家企业提供了虚拟展位，展品达到180万件，10天内观众数量达到近300万人。疫情阴影笼罩之下，不仅仅是互联网技术开始大放光彩，各行各业也都在加快高科技自动化的进程。武汉是新冠疫情的震中，也是中国的工业枢纽之一，众多制造商落户武汉，包括小米和联想。疫情封锁期间，面对劳动力缺口问题，联想应用了5G、物联网和机器人技术在武汉工厂实现智能制造。高精密度智能机器人与自动化程序相结合，让联想能够在劳动力受限的情况下仍然实现了复工复产。中国政府也坚定鼓励这种发展趋势。多年以来，中国政府经常在经济放缓期间通过加大基础设施建设开支来刺激经济增长，但是这一次政府刺激手段的重点明显不同以往。三月，中国政府启动"新型基础设施建设"，发布了一系列政策来鼓励对于5G网络、工业互联网、数据中心、人工智能、特高压和新能源汽车充电桩等领域的投资。中国各大科技巨头纷纷入局。五月，腾讯宣布将在未来五年内投资5000亿元人民币发展新型数字基础设施领域，如云计算和人工智能。四月，《南华早报》股东阿里巴巴集团宣布将在未来三年投资2000亿元人民币用于云技术相关的新基建。(Wang)

加强数字经济合作，结合地方状况进行数字化转型，对促进全球经济恢复和社会发展至关重要。数字经济的发展极大地改变了中国人的生活方式，改善了全国人民的生活水平。中国在脱贫方面的成就是一个典型案例，展现了数字经济对驱动增长和创新具有不可或缺的作用。比如，在过去，中国成千上万的农民一直面临着本地农产品难以与市场对接的问题。但是，在将农产品推向广阔市场的进程中，电商发挥了显著作用。中国农村电商正蓬勃发展，这表明数字经济的红利不仅是发达国家和大城市才能享受到的。当然，建设全面数字化社会的目标不是一朝一夕就可以实现的。电信基础设施的发展将促进互联网的普及，让成本更低、网速更快、更方便。2019年，全球智能手机渗透率超过了80%，发达国家互联网普及率达86.8%，发展中国家互联网普及率达47%，为全球数字经济合作打下了坚实基础。发展中国家也表现了发展数字经济的意愿，大部分发展中国家都已开始制定政策，发展数字经济。越南、泰国、菲律宾和马来西亚等东南亚国家已明确数字化在促进增长中的优先地位，积极推动数字基础设施建设，完善法律监管框架，鼓励无现金支付系统的发展，升级物流和分销渠道。近年来，中国致力于通过各种方式推动发展中国家之间的国际数字经济合作，在数字基础设施建设、数字贸易平台建设、数字化科研合作和推广远程教育方面积极提供帮助。中国一直在帮助亚非国家促进数字基础设施建设，推动亚非国家的经济社会发展。中国帮助坦桑尼亚建设了国家宽带骨干网项目，使坦桑尼亚的手机资费降低了58%，互联网资费降低了75%。让偏远农村地区也能享受现代通信带来的便利，是一件非常有成就感的事。中国政府致力于创新数字交易环境，帮助中小企业和弱势组织建设跨境电商平台，为清关、仓储、物流和技术运用创造有利条件并提供相关培训。中国已经奠定了参与数字经济国际合作的基础。那么，为了促进数字经济国际合作，中国应当采取哪些措施呢？首先，中国应明确示范项目与受援国的国家政策之间是否契合，侧重发展潜力大、经济效益好、关乎国计民生的项目，医疗保健、教育和农业都是需要进行数字化转型和管理的行业。其次，中国应积极鼓励领军企业走出去，充分发挥私企的技术和管理优势，尤其要支持领军数字化领域企业发挥其在后疫情时代重建社会生活秩序、助力复工复产方面的作用。第三，依靠中国援助的职校技校、人才发展合作项目、奖学金项目和数字企业培训平台，可以积极帮助发展中国家理解和实施数字管理、数字运营等新概念、新方法。第四，中国应增进与联合国、G20、金砖国家等多边国家组织以及相关数字科研机构之间的沟通与合作，推广中国的数字技术、标准和服务，在数字化发展领域与世界各国达成一致，携手为后疫情时代的经济恢复做出贡献。总而言之，数字经济合作是发展中国家推动经济社会发展的有效举措(Zirong)。

the domestic market. This reduced the company's dependence on exports to 60% of revenue, down from 90% earlier in the year. Similar effects can be seen in other domestic markets, with exporters making use of large data resources to adjust to changing demands. China's online grocery market, for example, is predicted to grow by 62.9% in 2020 compared to 29.2% in 2019. Alibaba and JD.com are leveraging big data to take advantage of the increasing shift towards stay-at-home meal preparation and consumer essentials over dining out amid local lockdowns. This shift in focus using big data can help us understand China's economic future. While the US and China have competed for years, there are two main reasons China is in a strong position when it comes to big data. First, its sheer size gives insight into consumer habits. China has more people, more businesses and therefore more data to use. Second, China has rapidly adapted to growing global demand for mobile technology, putting itself at the forefront of markets on the cusp of huge growth. One example is 5G. Huawei has played a central role in setting the standard for next-generation mobile networks globally and holds the most patents for 5G. The technology, enabling seamless data collection between devices with unprecedented potential for insights into human activity, has boundless possibilities for economic growth. By 2035, the 5G value chain is expected to drive US$3.6 trillion of economic output, of which China is predicted to contribute the most in gross output followed by the US. The past two decades have seen huge advancements in the level of data collected by retailers to collate consumer trends, interests and behavior. The importance of big data and its multitude of benefits have been magnified by the economic uncertainty during the global pandemic. If this level of growth is matched in other industries in which big data is set to play a pivotal role, the potential impact of China's economic growth in the future is clear, with innovation, economic upgrades and the labor market all delivering knock-on benefits. In addition, the vast applications of AI can be seen in the fight against Covid-19. By integrating data into surveillance, the Chinese government has rolled out some of the most sophisticated track and trace mobile app capabilities in the world, along with facial recognition and thermal scanners to identify those who may have a fever and be carrying the virus China reports that its total export value of medical supplies between March 1 and April 30 exceeded 71 billion RMB (US$10.4 billion). Exporters have capitalized on overseas lockdowns and seen a surge in demand rather than the predicted fall. This surge in demand for medical supplies and lockdown goods is likely to expand to encompass China's huge advancements in technology within the health care industry, as well as using big data to predict trends and consumer demands for the future. The figures suggest a greater focus on using high-end technology in consumer markets and expanding to encompass military, surveillance and government applications. There is every possibility that big data could be the catalyst for a shift in the Chinese domestic market altogether. Manufacturers could adopt a two-pronged approach to target both international and domestic consumers using insights and trends from e-commerce giants, with the main players in big data shifting to meet the rising demand for advanced technology (Merry).

While it is no surprise that provocative visions of the post-pandemic future, in which technology is the driver of change, are popping up, the future is always as much a social invention as a technological one. People are viewing technology as the panacea in a post-Covid world. This is a phenomenon the theorist Paul David termed "technological presbyopia", that is the human tendency to overestimate change in the short term but underestimate change over the longer term. One does not need to be a historian of technology to see that one lasting legacy of the pandemic is likely to be even greater use of surveillance, artificial intelligence and algorithmic control. The majority of developed nations have used technology to try and manage public health, and it is probable these organizational assumptions will set future paradigms of governance. In Britain, the National Health Service's contact tracing app assigns risk scores to users. Some observers have proposed the use of enhanced apps that award points and benefits to users who assiduously wear masks and practice social distancing. It is not unthinkable that in the future, a subtly branded social credit-inspired initiative, perhaps presented in the form of a game, could take root in liberal technocratic states. Meanwhile, the International Monetary Fund has argued that the world needs "a new Bretton Woods", a systematic attempt to rebalance the terms of global trade similar in scale to the initiatives that followed World War II. The World Economic Forum (WEF) has promoted the idea of "the great reset", an attempt to coordinate a comprehensive political and social response to the current crisis that goes far beyond seeing off Covid-19. While predicting the future has always been the preserve of the powerful, one lesson from the history of futurology is that if a person can't imagine a world where they're not in control, then they've only a slim chance of predicting a future

制造业的未来

香港中文大学研究全球经济网络领域的著名学者吴靖指出，关于世界各国是否已经变得过度依赖中国制造业，各界一直争论不下，虽然新冠疫情再度引发了相关讨论，但中国仍将在全球供应链中占据重要地位。吴靖是香港中文大学商学院决策科学与企业经济学系副教授。他表示，疫情导致全国工厂在农历新年后持续停工停产，这可能会促使有能力涉足全球供应链的企业把它们的制造基地拓展到其他国家，以便更稳健地进行风险管理。数十年来，对全球制造商而言，中国一直是零部件供应大国。但是，即使国内新增感染病例逐渐减少，国内工厂仍一直未能迅速恢复正常产能。原因主要包括：封锁措施解除后，交通运输恢复很慢，从而造成了劳动力缺口，企业纷纷致力于确保充分的防护措施预防工人感染，上游供应商则出现了零部件缺口的问题。据非营利机构美国供应链管理协会（Institute for Supply Management）于2020年夏季进行的一项调查显示，75%的受访美国企业称其供应链因疫情而断裂，六分之一（或16%）的受访美国企业已将营收目标调低5.6%（平均值）。据媒体报道，作为中国最大的贸易伙伴之一，日本推出了一项总额高达1万亿美元的财政刺激政策，并从中划拨了22亿美元，用以支持在华日企将其制造业产能从中国迁回日本。吴靖表示，可以预见，疫情会让各国政府更加重视供应链安全在国家安全中的重要性，促使各国增强自身能力，防范外国制造业带来的风险敞口。吴靖称："日本、美国等国将会重新考虑哪些产品可以从海外进口，又应该针对哪些产品推行相关政策鼓励建立国内产能，这不足为奇。从风险管理的角度来看，在接近市场的地方生产医疗用品等关键产品，以确保需求突然增长之时能够迅速反应，这也是合理的。"他指出，日本文化尤其向来注重风险管理。吴靖预计日本将会把一些对国内市场至关重要的零部件产能迁回国内，或者迁至离日本更近的中国沿海地区。至于那些主要销往海外市场，尤其是中国市场的产品，日企则可能会把产能保留在中国。然而，为了适应全球采购态度的转变，中国必须改变其依赖价格优势的战略思维，提升其在价值链中的位置，脱离依赖廉价劳动力的低成本制造业定位，理解在当前贸易壁垒的背景下，外国客户对供应链韧性和安全的战略考量，努力打造强大的国际品牌。供应链震荡已经波及全球，关键问题在于，疫情是否预示着全球化时代开始走向终结？对此，吴靖表示，疫情揭露了过度依赖国外采购（或离岸经营）的企业模式所隐含的缺陷。可以预见，更多企业会试图将产能迁回所在地，或更接近消费者的地方。他补充道，在新的全球化时代，中国应坚持实施由出口贸易到海外投资的转型，鼓励国内企业进行海外收购或在海外市场开设分公司，实现生产本地化，参与海外市场竞争(Wu)。

一个独特的行业正冉冉兴起，那就是植物基肉制造业。植物基肉行业的发展为亚洲（尤其是中国）的农作物生产商带来了巨大商机。产业趋势从工业化动物农业转向其他领域，将会有助于中国应对气候变化带来的威胁。植物基肉的原料主要是大豆和小麦，这种"素肉"在中国已经流传千年，目标客户主要是佛教徒，因为他们戒食荤腥。但是，越来越多品牌开始不再将客户局限于素食主义者，创新菜式，融合新原料和风味，打造专门针对肉食爱好者的产品。这种2.0版本的植物基肉力图重现真肉的风味、口感和外观，大受消费者欢迎。这种新一代植物基肉已经开始出现在肯德基、必胜客、麦当劳、汉堡王和星巴克的亚洲精选菜单当中，而这只是冰山一角。即使这一年来全球食品体系面临了巨大的压力和不确定性，亚太地区专业从事植物基肉等替代蛋白业务的企业仍筹得了逾2.3亿美元资金来助力业务发展。这种趋势为中国等农业强国带来了巨大契机。产业趋势从工业化动物农业转向其他领域，将会有助于中国应对气候变化带来的威胁，实现产业转型，发展更具可持续性的食品生产形式。中国地大物博，能够生产大量生产植物基肉所需的主要原料，如大米、小麦、土豆和豌豆等农作物。但是，营养豆类和谷物的生产种植继续落后。这些粮食也有着作为替代蛋白的巨大前景。小米、小扁豆等农作物适合生长在干旱环境中，因此非常适合在水资源紧缺的中国种植。尤其是小米，将能够促进中国干旱地区的农业发展。除传统农作物之外，猴头菇等创新食材的生产可能也会扩大，菌菇类农作物无需可耕地就能培育，口感与真肉非常贴近，而且中国市场已经意识到了菌菇的营养价值。中国已经正在扩大加工蛋白的生产规模，如从农作物中提取的蛋白，然后出口植物基蛋白分离物和浓缩物。比如，豌豆蛋白就是Beyond Burger、Beyond Meat推出的许多大热新潮植物基食品的主要原料。2017年，从事豌豆蛋白加工业务的中国企业共有7家，合计年产能为67453吨。截至2019年底，该指标已经增长超过两倍，达146313吨。若中国保持这样的植物蛋白发展速度，同时尝试从更多种农作物中提取植物蛋白，那么中国将会有望主导全球植物蛋白市场。中国政府官员已经认识到了扩大肉类替代品生产规模的潜在益处。中国食品科学技术学会理事长孟素荷表示："植物基肉在中国市场的发展和推广不仅代表着市场契机，还是改善中国人民膳食结构和解决环保、社会问题的有效方式。"消费者开始接纳以豌豆、小扁豆等多种植物为基底的动物肉替代品，这对中国在遏制自然资源消耗方面的努力有诸多益处。传统动物农业体系本来就存在效率不高等固有问题，会给当地和全球造成生态环境破坏。以鸡肉加工为例，喂养肉鸡需要用到植物饲料，每投入含九卡路里的植物饲料，仅能收获含一卡路里的鸡肉。许多占据领军地位的食品生产商，包括嘉吉、雀巢等市值数十亿美元的全球品牌，正在逐步抛弃通过动物产出粮食的农业模式，而探索直接把植物做成肉的创新方法。政府已经采取行动，促进先进农业技术的推广，实施税收优惠政策来鼓励针对可持续农业的投资。政府出台了许多明智的决策，再加上中国已有与其作为全球最大消费市场相匹配的基础设施体系，这一切都为国内食品生产商和企业领袖抓住植物基肉所带来的巨大发展契

shaped by genuinely transformative change (Anthony and Choo).

Digital Expansion

An optimistic technological outcome of 2020 is the fact that Coronavirus has sped up the digital revolution, with China leading the way. From live-streaming sales to building lasting business relationships online to adopting AI in manufacturing, Chinese companies have risen to the challenge of the pandemic and offer the rest of the world a glimpse of the future. In April, when many were still stuck at home and worried about a gloomy economic future, over 2 million online viewers logged on to watch one of China's new generation of live-streaming superstars auction a rocket launch for 40 million RMB (US$5.6 million). It was an unusual but uplifting moment during the height of the months-long nationwide lockdown amid Covid-19. The epidemic has taken a heavy toll on the Chinese economy – gross domestic product contracted 1.6% year on year in the first half of 2020 – and businesses continue to struggle. But while Covid-19 poses unprecedented challenges, it has also created powerful incentives to do things differently. Like other major crises, the pandemic has challenged old assumptions and shattered long-established routines. In China, where the shock of the pandemic was first felt, lockdowns and social distancing have accelerated change at the technology frontier. Live-streaming – live, sometimes interactive, broadcasting over the internet – has quickly become the dominant new path as manufacturers and companies in China look for fresh ways to reach consumers' hearts and wallets. While the auction of the Kuaizhou-1A rocket launch, which offered the buyer the chance to have the rocket painted and access to the launch, is likely to be a one-off, the explosive growth of live-streaming as a sales channel is here to stay. According to China's Ministry of Commerce, there were more than 4 million live-streaming sessions in the first quarter of 2020. More than eight times as many merchants were using Taobao Live, a live-streaming arm of China's e-commerce giant, in February compared to January 2020. Industry research believe retail sales via China's live-streaming platforms reached about US$130 billion in 2020, with potentially almost half of China's population becoming live-streaming customers. Live streaming is symptomatic of how businesses that have traditionally relied on face-to-face selling have been exploring new ways to use digital channels to find, engage and retain customers. And it has worked: auto dealers showcase the interiors of luxury cars; rural farmers promote their local produce and real-estate agents are providing tours of apartments – all online. The property platform Beike said agent-facilitated viewings on its virtual-reality showroom in February increased by almost 35 times compared with the previous month. Under the pressure of Covid-19, it is not just sales channels that have accelerated their adoption of digital technology, but also business operations and engagement models. In a country where face-to-face meetings have traditionally played a key role in building business relationships, networking has also largely moved online. One popular Chinese enterprise communication platform has seen its monthly active users rise from about 65 million at the end of 2019 to roughly 177 million in March. In June, one of the world's largest trade networking events, the Canton Fair (the China Import and Export Fair) went online with a 24/7 live stream for the first time in its six-decade history, using cloud and conferencing technologies to virtually accommodate the roughly 26,000 companies, 1.8 million products, and almost 3 million visitors in 10 days. But it is not just internet-based technology that has seen its star rise during the Covid-19 gloom: industry is accelerating the process of hi-tech automation. Wuhan, once the epicenter of the pandemic, is also one of China's industrial hubs, home to manufacturers such as Xiaomi and Lenovo. The latter, for example, has used 5G, internet of things and robotics to enable intelligent manufacturing in its Wuhan plant in the face of the labor shortage during the lockdown. High-precision intelligent robots, coupled with automated processes, have allowed the company to resume production despite the limitations on its human workforce. The government is keen to encourage this trend. For years it has used infrastructure spending to stimulate the economy during slowdowns, but this round of stimulus has seen an important shift in emphasis. In March, Beijing launched a "New Infrastructure" campaign, with policies designed to encourage investments into sectors including 5G networks, industrial internet, data centers, artificial intelligence, ultra-high voltage and new-energy vehicle charging stations. Chinese tech giants have bought into the initiative. In May, Tencent pledged to invest 500 billion RMB over five years in new digital infrastructure areas such as cloud computing and artificial intelligence. Alibaba, which owns the Post, said in April it would invest 200 billion RMB in its cloud infrastructure over three years (Wang).

机打好了基础，只要他们具备足够的前瞻性思维，能够抓住这个契机。

全球合作

虽然面临着许多国内挑战，中国仍然非常关注促进全球合作和发展。十一月，中国在上海举办了第三届世界顶尖科学家论坛，全球最顶级的学者和经济学家云集，探讨疫情期间和后疫情时代全球实现恢复和发展的可行方案。专家认为，新冠疫情促进了数字化生产的进程，但将不会扭转经济全球化的趋势。在为期三天的论坛期间，来自世界各地的140名科学奖项得主，包括61名诺贝尔奖得主和30余名中国学者以线下出席或网络连线的方式参与了讨论和交流，话题涵盖多个科研领域，包括量子物理、人脑科学和生物医药等。与会科研人士对该论坛的成功举办表示了肯定，他们说，这有助于疫情期间维护世界科研交流渠道顺畅。2006年诺贝尔化学奖得主、美国生物化学专家Roger Kornberg通过视频连线的方式参加了该论坛，他表示："中国可能是唯一一个有能力举办这种活动的国家。将137位顶尖科学家、不同领域的科研奖项得主，还有大量其他与会人员和年轻人齐聚一堂，从流程安排上来看是非常困难的，的确是几乎无法办成的。然而，中国主办方努力办成了这场活动，还办得相当成功。"鉴于当今世界面临着严峻的全球经济局势，该论坛涵盖了一场经济专题峰会，邀请到了四位诺贝尔经济学奖得主以线上形式出席了会议，探讨全球经济面临的挑战。2010年诺贝尔经济学奖得主、伦敦经济学院教授Christopher Pissarides表示，新冠疫情的长期影响将改变工作形态和全球经济结构。他表示，疫情已经加快了自动化和数字化的进程，降低了对于人力劳动力的依赖，使就业机会的增长陷入了停滞，尤其是涉及人际互动的服务业，所以在不远的将来，失业率将会增加。随着在家办公和远程办公的日益普及，未来就业市场将更看重数字技术专长，员工可能需要终生学习新的数字技能。Pissarides称，一些新的元素也会变得更加重要，比如进行线上交易和提供健康环境的能力。他表示，自动化进程加快的趋势再也不会逆转，服务业的就业机会仅在疫情结束后才可能实现缓慢恢复，用人单位需要考虑对员工进行再培训，帮助员工适应后疫情时代的就业市场。2004年诺贝尔经济学奖得主、挪威经济学家Finn Kydland则提出，贫富差距扩大也是一个与自动化进程加快相关的重大问题。他指出，经济下行并没有对所有领域都造成不利影响，疫情对低收入、低技能人群的打击比高收入人群要沉重得多。Kydland称，在贫富悬殊扩大的背景下，许多欧洲国家试图通过给予大部分受损行业直接补贴的方式维持就业水平，但这种措施代价高昂，不可持续。2013年诺贝尔经济学奖得主、美国经济学家Lars Peter Hansen指出，政府应确保资金的可得性，并确保资金分配到位，适当地流向家庭和中小企业的手中，以支持他们回归正常生活，因为这类群体对未来就业形势有着关键影响。Hansen称，对第二波疫情的应对完全是一个有关治疗感染和维持经济活动的权衡问题。他表示，如果政府选择实施封锁措施，那么经济结构和经济发展将不可避免地受到影响，与政府在应对第一波疫情时的经验没什么关系。他补充道，世界经济仍处于"非常困难的阶段"(Yangfei)。

中国近期实现的一项重大进展是签订了中欧投资协定，这对中国在全球经济未来的地位有着极大影响。去年十二月，欧盟和中国的领导人终于完成了漫长的协商谈判，成功签订中欧投资协定。这对中方而言是一次外交胜利。中国政府对欧盟作出了"前所未有的承诺"，承诺保证营商环境的确定性和可预测性，并放宽欧洲企业的市场准入，允许其进入限制重重的中国市场。中国国家主席习近平同欧盟委员会主席乌苏拉 · 冯德莱恩、欧洲理事会主席夏尔 · 米歇尔等多位重量级人物举行了视频会晤，正式宣布中欧投资协定的相关谈判圆满完成。德国总理安吉拉 · 默克尔和法国总统埃马纽埃尔 · 马克龙也出席了视频会议。据中国国家通讯社新华社报导，中欧双方领导人共同宣布协谈已如期完成。习近平强调，中欧投资协定展现了中方推进高水平对外开放的决心和信心。据新华社援引习近平所言称，该协定将为欧盟企业带来"更大的市场准入、更高水平的营商环境、更有力的制度保障、更光明的合作前景"。据欧盟媒体报导，中欧投资协定具有非常重大的经济意义，建立了双方在可持续发展原则指导下、以价值为基础的投资关系。生效后，该协定将有助于重新平衡欧盟和中国之间的贸易投资关系。中国承诺将对欧盟投资者提供前所未有的高水平市场准入，为欧方企业的运营提供确定性和可预测性。欧盟表示，该协定明确中资国企有义务禁止强制技术转让等不公平行为，提高财政补贴的透明程度，这将"极大改善"欧盟投资者在中国的公平竞争环境。欧盟方面称："在就该协定进行谈判的同时，欧盟还重申了其对中国的期望，要求中国参与世界贸易组织（WTO）关于产业补贴的磋商。欧盟领导人还强调，必须扩大欧盟贸易商在农业、食品、数字、高科技等行业的市场准入，解决钢铁、铝业等传统行业的产能过剩问题。"参与谈判的各方代表肯定了德国作为欧盟轮值理事国在谈判中发挥的积极作用，尤其是德国总理默克尔的卓越贡献，她特别重视中欧关系，对中欧谈判给予了全力支持。据《南华早报》报导，中欧贸易协定将是中国有史以来与第三国签订的"最富有雄心"的协定，将为欧洲企业提供更好的市场准入，允许进入中国的新能源汽车、私营医疗服务和云技术服务市场。该协定还包含针对中资国企以及国企补贴透明度的相关监管条款。欧盟主席冯德莱恩称，该协定是"欧盟对华关系的重要里程碑"。她表示，"该协定将为欧盟投资者提供前所未有的中国市场准入，让我们的企业能够实现增长和创造就业。"该协定还包含中国对可持续发展、透明度和反歧视等原则做出的有力承诺(Lau and Wu)。

Strengthening cooperation on the digital economy and transforming China's digital experience in accordance with local conditions is essential to boost economic recovery and social growth across the world. The digital growth has dramatically altered Chinese people's lifestyles and improved livelihoods nationwide. China's accomplishment in poverty alleviation is a classic example of the indispensable role the digital economy can play in driving and innovating for growth. For example, in the past, hundreds of millions of farmers in China faced difficulties linking local products with markets. However, e-commerce has done wonders in giving agricultural products access to bigger markets. Rural e-commerce is now booming in China, showing that the dividends from the digital economy are not limited to developed countries or metropolises. However, the building of an all-round digital society cannot be accomplished overnight. The development of telecommunications infrastructure will boost the popularization of the internet in a cheaper, faster and more convenient manner. In 2019, the global smartphone penetration rate exceeded 80%, and the internet usage rate reached 86.8% in developed countries and 47% in developing ones, laying a solid foundation for global digital cooperation. As for developing countries' willingness, most countries have begun to carry out plans to develop the digital economy. Southeast Asian countries, such as Vietnam, Thailand, the Philippines and Malaysia, have clearly listed digitization as the priority for growth, actively promoted the building of digital infrastructure, improved the regulatory legal framework, encouraged cashless payment systems and upgraded logistics and distribution. In recent years, China has injected impetus into international digital cooperation among developing countries in a variety of ways, including assisting the building of digital infrastructure, building digital trading platforms, conducting digital scientific research cooperation and promoting distance education. China has assisted Asian and African countries in building digital infrastructure in the past, providing new momentum for their economic and social development. China's aid to Tanzania's national broadband backbone network project reduced the country's telephone tariffs by 58% and internet tariffs by 75%. It is satisfying to witness remote rural areas enjoying the convenience of modern communications. In the field of innovating digital trade environment, China helps small and medium-sized enterprises and disadvantaged groups to build cross-border e-commerce platforms, and offers favorable conditions and training in customs clearance, warehousing, logistics, and technological usage. China has also laid the foundation for participating in digital international cooperation. But, this raises the question, what can be done to improve it? First, China should identify demonstration projects in accordance with the recipient countries' national policies, by focusing on livelihood-related projects that have great potential and economic power. Medical care, education and agriculture are all in need of digital transformation and management. Second, China should actively encourage pioneering companies to go overseas, and give full play to the technical and management advantages of the private sector, especially supporting leading digital companies to play the key role in restoring social life and helping restart work in the post-pandemic era. Third, relying on China-assisted vocational and technical schools, human resource development cooperation projects, scholarship projects and digital enterprise training platforms, China can actively help developing countries understand and accept the new concepts and methods in digital management and operation. Fourth, China should strengthen dialogue and cooperation with multilateral organizations, such as the United Nations, G20, BRICS as well as related digital scientific research institutions, so as to promote China's digital technology, standards and services, reach a consensus on digital development, and join hands to contribute to the post-pandemic recovery. To sum up, digital growth cooperation offers developing countries a proven way to promote their economic and social development (Zirong).

Future of Manufacturing

China is expected to maintain a prominent role in global supply chains despite the COVID-19 pandemic, which has renewed discussions about whether countries around the world have become too reliant on Chinese manufacturing, according to Jing Wu, one of The Chinese University of Hong Kong's (CUHK) leading researchers on global economic networks. Jing Wu, Assistant Professor at CUHK Business School's Department of Decision Sciences and Managerial Economics, acknowledges that the pandemic, which resulted in an extended shutdown of factories across China following Lunar New Year, may lead firms which operate global supply chains to diversify their manufacturing base in addition to China as part of a stronger focus on risk management. For decades, China has provided the bulk of components to manufacturers around the world. But even after new infections tapered off within its borders, factories have been slow to

推进中欧关系的同时，中国也十分注重继续支持欧洲在亚洲地区的盟友。例如，中国承诺将与新加坡共同对抗新冠病毒，并加强在公共卫生领域的合作，两国政府官员都认为加强合作对于应对未来危机至关重要。在新加坡副总理王瑞杰和中国副总理韩正的主持下，中新双边合作联合委员会（JCBC）年会以线上形式召开，两国官员在会上探讨了从气候变化到重新开放边界等诸多问题。会议期间，两国签订了10项合作备忘录与协定，这是一个"里程碑式的数字"，超过了2019年年会期间签订的9项协定。分析人士称，两国达成了10项之多的协定，反映了中国这一亚洲最大经济体与新加坡之间的关系在经历了2016年和2017年的分裂之后再度修好。其中两项协定与公共卫生领域相关。新加坡卫生部与中国卫健委达成协定，两国将加强传染性和非传染性疾病防控、健康促进和基础医疗服务的合作。两国还更新了2013年签署的一份合作备忘录，继续让两国研究员到彼此的疾病防控医疗机构进行交换。这些协定不单单局限于抗击新冠疫情。两国官员认为，未来还可能会出现新的疫情，因此建立中新合作平台，让两国能够继续合作、共同应对，是非常重要的。以上协定还包含一家新加坡生物制药企业与中国-新加坡苏州工业园区签订的协议，协议双方将在产品商业化等领域展开合作。中国-新加坡苏州工业园区是两国合作开发的项目。前述协议还将促进江苏省自由贸易试验区的发展，让新加坡的公共卫生领域企业有机会将业务拓展至海外市场。从后疫情时代医疗技术发展的角度来看，相关会谈益处良多，而事实上，产生的益处不止于此。中国实实在在地展现了其与邻国精诚合作的意愿，尤其是在中新两国近年来关系紧张的背景下(Xinghui and Sim)。

即使面临着新冠疫情带来的诸多挑战，中国国家主席习近平仍然在亚太经济合作组织论坛上重申了对于一带一路倡议的承诺。这是国际政策非常重要的一部分，值得关注。然而，有分析人士指出，出于对国内债务水平的担忧，同时为了确保未来资金的可持续性，中国可能还是需要缩减海外贷款规模。在国内债务水平升高的背景下，人们对于海外投资可持续性的意见存在分裂。作为世界第二大经济体，中国的经济增长已因疫情影响而显著放缓，国内债务负担日益沉重，人们不禁要问，中国未来数年会否放缓对国际事务的参与，尤其是对一带一路倡议项目的资金支持会否生变?2013年，习近平访问哈萨克斯坦时首次提出了"丝绸之路经济带"倡议，后发展为宏大的"一带一路"倡议，该倡议提出，要通过建设一系列的铁路、道路和海路基础设施项目，实现亚欧非三大洲70余个国家的互联互通，打造新时代的丝绸之路。中国政府的目标在于提升区域互联互通，促进经济融合，从而扩大中国的经济和政治影响力。分析人士称，虽然中国不会完全放弃资金支持项目，但其可能会缩减海外贷款的规模，这既是出于国内形势的需要，也是为了确保未来的贷款具有可持续性。据世界银行2019年测算，2013年至2018年间，一带一路倡议相关项目的投资金额约为5000亿美元，惠及50个发展中国家。其中，约3000亿美元的投资是由国家出资或由国家担保的贷款。据国际金融研究所十一月发布的一份报告显示，2020年三季度，中国非金融企业债务已飙升至国民生产总值的165%以上，2019年同期该指标为150%。中国的债务增长幅度不仅是新兴经济体中最高的，甚至已经超过了所有发达市场。2020年三季度，中国家庭、政府和非金融企业领域的债务总量已飙升至国民生产总值的近290%，2019年同期为255%。为避免重复计算，该指标不包括金融机构的债务。国际金融研究所总部位于华盛顿，是一个全球性金融业协会。国际金融研究所可持续性研究发展研究主管Emre Tiftik表示，中国尚有能力增加对一带一路倡议相关项目的贷款敞口，近期债务水平上升的水平，不太可能会让中国改变政策。但他也表示，中国将更加关注相关资金流动的可持续性。2020年，由于受到疫情影响，中国缩减了参与一带一路倡议相关项目的规模，新合同的数量和新项目的金额都有所下降。据中国商务部发布的数据显示，2020年前九个月，中国企业与一带一路沿线61个国家新签订合同的数量同比下降了29%。中国商务部未公布十月份新签订合同的数量，但数据显示，2020年一月到十月，新合同的金额同比下降了17.5%。自2008年以来，中国的整体国内债务水平一直处于增长状态，年均涨幅约为20%，比国民生产总值的增长要快得多。自2016年起，中国加大力度降低债务水平，控制金融风险。为此，央行颁布了一项降杠杆的计划，但截至2020年，由于经济受到疫情打击，该计划收效甚微，国内债务水平不降反升。中国的外债水平也有所提升，据外汇监管机构十月份发布的数据显示，截至六月份，中国外债总量为2.13万亿美元，较2019年底增长了751亿美元，增长率3.7%。外债增加的部分原因是中国推动收购海外资产。但是，中国外汇管理局称，中国目前的外债水平"处于合理区间"，外债风险"基本可控"。经济咨询机构荣鼎集团助理董事Agatha Kratz表示，一带一路相关贷款只是中国整体贷款资产组合中的一小部分，中国国家开发银行和中国进出口银行都有足够的政治支持，可以承担相关成本，也就是说，真正的问题在于"中国是否还想（继续提供大量贷款）?"她补充道，国开行可能不太会继续提供大量海外贷款，因为国开行一边要推动中国实现全球商业外交援助的目标，一边要新增国内贷款、促进国内经济的发展，两相冲突，难以取舍(Zhou)。

resume their normal production capacity. This has been blamed on a number of challenges including a shortage of labor due to the slow recovery of transportation links post lockdown, as companies scramble to ensure adequate protection for the workers against infection, and a shortage of parts from upstream suppliers. A survey in the summer of 2020 of companies in the US by the non-profit Institute for Supply Management reported 75% of respondents said their supply chain had been disrupted due to the coronavirus, with one in six, or 16%, having already revised their revenue guidance down by an average of 5.6%. It also comes amid reports that Japan, one of China's biggest trade partners, has earmarked US$2.2 billion of its record US$1 trillion stimulus package to help its manufacturers shift. It is not unexpected that, as a result of the pandemic, national governments may become more aware of the importance of supply chain security in national security concerns and strengthen themselves against their exposure to foreign manufacturing risks. It is no surprise that Japan, the US and other countries would want to reconsider which products can be purchased from abroad and which products should be encouraged by policies to build local production capacity. From a risk management perspective, it makes sense to produce essentials such as medical supplies close to the market, just-in-time when demand surges. Japanese culture in particular has traditionally focused on risk management. Some essential parts produced for the Japanese market will be brought home or to coastal areas in China which are closer to Japan. For the products that are sold to the overseas market, especially in China, their production is expected to remain in China. However, to help it adapt to changing attitudes in global sourcing, China needs to change its strategic thinking on price advantage to continue moving up the value chain away from low-cost manufacturing reliant on cheap labor, understand the strategic considerations of foreign customers on supply chain resiliency and security under trade barriers, and strive to establish strong international brands. Given that the global supply chain shock has since spread around the world, a crucial question is whether the pandemic spells the beginning of the end for the current age of globalization? Prof. Wu notes that COVID-19 has disclosed disadvantages related to relying too much on sourcing, or off-shoring. It makes sense that more companies may try to produce their products locally, or closer to consumers. In the new era of Globalization, China should keep transforming from export trade to overseas investment, encouraging its firms to acquire or open foreign subsidiaries, produce local and participate in overseas market competition (Wu).

One unique industry that is emerging as a global but local industry is the manufacturing of plant-based meat. The growth of plant-based meat presents a great opportunity for crop producers in Asia, especially China. A shift away from industrial animal agriculture could also help the country combat the threat of climate change. Plant-based meat, made primarily from soy and wheat, has existed in China for centuries, mostly catering to Buddhists who seek to avoid eating animals. But, increasingly, brands are diversifying their recipes by incorporating new ingredients and flavors to create products aimed squarely at meat eaters, not vegetarians. This 2.0 version of plant-based meat is designed to replicate the taste, texture and appearance of animal meat, and consumers cannot get enough. This new generation of plant-based meat has now begun to appear on select Asian menus at KFC, Pizza Hut, McDonald's, Burger King, and Starbucks – and that is just the tip of the iceberg. Even during a year when the global food system is under extraordinary strain and uncertainty, Asia-Pacific-based companies focused on alternative proteins like plant-based meat have raised more than US$230 million in funding to accelerate their growth. This presents an enormous opportunity for agricultural powerhouses like China. This shift away from industrial animal agriculture also has the potential to help the nation combat the threat of climate change by transitioning towards more sustainable forms of food production. Thanks to its diverse landscape, China already produces large volumes of prominent ingredients for plant-based meat, including rice, wheat, potatoes and peas. And yet, cultivation of nutritious pulses and grains, which also show tremendous promise as alternative protein sources, continues to lag behind. Crops like millet and lentil, for example, can be cultivated in more arid landscapes, making them sensible options for China, given the nation's water scarcity. Millet, in particular, could open up drier regions of the country to agriculture. Thinking beyond traditional crops, production of an innovative ingredient like lion's mane mushroom could also be expanded, as it does not require typical arable land and there is already a market awareness in China of the health benefits of this mushroom with a naturally meat-like texture. One major area where China is already scaling up is the production of processed protein, such as protein extracted from crops and exported as plant-based protein isolates and concentrates. Pea protein, for example, is a central ingredient in many of the hottest new plant-based foods, such as the Beyond Burger from Beyond Meat. In 2017, there were seven producers in China processing protein from peas, with a total capacity of 67,453 tons per year.

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By the end of 2019, that capacity had more than doubled, to 146,313 tons. If China continues on this trajectory and expands its protein extraction capacity to a wider array of crops, the nation will dominate the global market. Government leaders have signaled that they understand the potential benefits of ramping up production of alternatives to animal meat. Suhe Meng, head of the Chinese Institute of Food Science and Technology, has said: "The development and implementation of plant-based meat in China is not only a market opportunity, but also an effective way to improve the food structure of Chinese residents and solve environmental and social problems." Consumers' embrace of meats made from a diverse range of plants like peas and lentils, instead of animals, carries many advantages for China's efforts to mitigate natural-resource depletion. Conventional animal agriculture is an inherently inefficient system that contributes to ecological devastation at both a local and global scale. Producing meat from chickens, for example, requires feeding nine calories of plants to an animal, to get only one calorie back in the form of meat. Instead of funneling crops through animals, many leading food producers – including multibillion-dollar global brands like Cargill and Nestlé – are increasingly looking at innovative ways to make meat from plants directly. National government leaders have already taken action to accelerate the spread of advanced farming technologies and used preferential tax rates to encourage investment in sustainable forms of agriculture. These wise decisions – when combined with an infrastructure system that is already connected to the world's largest consumer markets – have laid the groundwork for local food producers and business leaders to capitalize on the massive opportunity that plant-based meat presents, if they are forward-thinking enough to seize it.

Global Cooperation

Despite the challenges facing China on the domestic front, it is still keeping a strong focus on fostering global cooperation and growth. As such, China hosted the third World Laureates Forum in Shanghai in 2020, a panel of some of the greatest academics and economists in the world, to discuss global options for continuing forward during and after the pandemic. The COVID-19 pandemic has accelerated digitalization of production processes but will not reverse economic globalization, experts concluded. The three-day forum, gathered nearly 140 world scientific award winners, including 61 Nobel Prize laureates and more than 30 Chinese academicians, to discuss, in person and virtually, a wide range of scientific frontiers, including quantum physics, brain science and biomedicine. Scientists praised the successful event, saying it helped maintain a smooth channel for international scientific communications during the pandemic. "China is probably the only country able to host such an event," said Roger Kornberg, a biochemist from the United States who won the Nobel Prize in chemistry in 2006 and addressed the forum via video link. "The challenges of bringing together 137 laureates of various prizes as well as a very large number of other participants and young people is a logistical nightmare and really almost impossible to accomplish. And yet, the leaders of this effort in China have succeeded and done a brilliant job." Facing the grim global economic climate, the event included a sub-forum that brought four winners of the Nobel Memorial Prize in Economic Sciences together via an online conference to address the issue of economic challenges. Christopher Pissarides, a professor at the London School of Economics who won the economics prize in 2010, said the long-term implications of COVID-19 will reshape work arrangements and global economic structures. It has already accelerated automation and digitalization, reducing reliance on human labor and halting job creation in services, especially those involving person-to-person interactions, and will lead to more job losses in the near future. With more work done at home or remotely, the future job market will give more weight to expertise in digital technologies and probably require workers to engage in lifelong learning of new digital techniques. New elements, such as the ability to trade online and provide healthy environments, will also become important, Pissarides said. As the acceleration of automation will never be reversed, and job creation in services may come back only very slowly after the end of the pandemic. Employers will need to consider retraining employees with skills that are more adaptable to the post-COVID job market. Another big issue related to increasing automation is the widening of the gap between the rich and the poor, said Norwegian economist Finn Kydland, who won the 2004 economics prize. The economic downturn has not affected all sectors, and the pandemic has hit people with low wages and low skills much harder than those earning high incomes, he said. Faced with such a disparity, Kydland said many European countries have simply given direct subsidies to the most affected industries to try to maintain employment, but such measures are very expensive and not sustainable. Governments should

此页留白

also make sure capital is available and well-distributed to families and small and medium-sized businesses to support their return to normal activity because they will play a key role in future employment, said US economist Lars Peter Hansen, who won the economics prize in 2013. Hansen said the response to the second wave of the pandemic is all about the trade-off between treating the disease and maintaining economic activities. When a government opts for a lockdown, the economic structure and development will inevitably be affected, irrespective of the government's experience in dealing with the first outbreak, he said, adding that the world economy is still at a "very difficult stage" (Yangfei).

A major recent development that will have great impact on China's global future is the recent investment pact between the European Union and China. European Union and Chinese leaders concluded their marathon negotiations for a landmark investment pact in late 2020, handing Beijing a major diplomatic win. Beijing has had to make what the EU called an "unprecedented commitment" to provide commercial certainty and predictability, with wide access for an array of European companies to the hitherto heavily restricted Chinese market. The talks were formally concluded during a video call hosted by Chinese President Xi Jinping, featuring many powerful figures such as European Commission President Ursula von der Leyen and European Council President Charles Michel. German Chancellor Angela Merkel and French President Emmanuel Macron also took part. Xinhua, the Chinese state news agency, said that leaders from both sides jointly announced the conclusion of negotiations as scheduled. Xi said that the agreement "shows China's determination and confidence in fostering high-level external openness". The deal would provide EU businesses with "bigger market access, more forceful systemic safeguards and a brighter future for cooperation.". According to a release from the EU, this agreement is of major economic significance and also binds the parties into a values-based investment relationship grounded in sustainable development principles. Once in effect, the agreement will help rebalance the trade and investment relationship between the EU and China. China has committed to an unprecedented level of market access for EU investors, giving European businesses certainty and predictability for their operations. The deal would "significantly improve" the playing field for EU investors by laying down clear obligations for Chinese state-owned enterprises, prohibiting forced technology transfers and other distortive practices, and enhancing transparency of subsidies, the EU said. "Looking beyond the negotiations, the EU reiterated its expectation that China will engage in negotiations on industrial subsidies in the WTO [World Trade Organization]," it said. "The EU leaders also emphasized the need to improve market access for EU traders in sectors such as agri-food and digital, and to address overcapacity in traditional sectors such as steel and aluminum as well as in high tech. Participants welcomed the active role of the German presidency of the council, and of Chancellor Angela Merkel in particular, who has put special emphasis on EU-China relations and fully supported the EU negotiation with China. The deal, "the most ambitious" China has ever had, according to documents viewed by the South China Morning Post, will offer European businesses better access to China's markets in new-energy vehicles, private health care and cloud services. It will also deliver on terms to regulate China's state-owned enterprises and transparency on subsidies. Calling the agreement "an important landmark in our relationship with China", von der Leyen said in a statement: "It will provide unprecedented access to the Chinese market for European investors, enabling our businesses to grow and create jobs. It will also commit China to ambitious principles on sustainability, transparency, and non-discrimination (Lau and Wu).

As it grows its relations with Europe, it is important for China to continue to support their allies in Asia. An example of this is its pledge to work with Singapore to enhance cooperation on public health well beyond the Covid-19 pandemic, with officials saying the pact was vital to dealing with future crises. Taking part in the annual meeting of the Joint Council of Bilateral Cooperation (JCBC), officials led by Singapore's Deputy Prime Minister Heng Swee Keat and the Chinese Vice-Premier Han Zheng discussed a range of issues from climate change to the reopening of borders. During the virtual meeting, the two countries signed a "landmark number" of 10 accords – higher than the nine agreements signed in 2019. Analysts said the number of agreements reflected balmy ties between Asia's biggest economy and Singapore – a far cry from the friction between them in 2016 and 2017. Two of the agreements were to do with public health. Singapore's Ministry of Health struck a pact with its Chinese counterpart, the National Health Commission, to prevent and control communicable and noncommunicable diseases and cooperate on health promotion and primary health care. The countries also renewed a 2013 memorandum of understanding that allows health researchers to

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work at institutions involved in disease prevention and control. These agreements would be useful well beyond the Covid-19 pandemic. Officials recognize that there will be new pandemics so it is important to establish this collaboration platform between Singapore and China so they can continue to cooperate and develop responses. Among the agreements struck was a pact for biomedical companies from Singapore and the Suzhou Industrial Park in China – a joint development between the two countries – to cooperate in areas such as commercialization of products. That pact will also facilitate the testing of new concepts in a free-trade zone in Jiangsu province, giving Singapore firms from the sector the chance to spread their wings beyond their home market. While these talks are beneficial from the perspective of medical and technological growth in a post-Covid world, the benefit extends far beyond that. It shows that China is indeed willing to work with its neighbors, especially in light of the tensions between it and Singapore in recent years (Xinghui and Sim).

An important area of global policy to note is that despite the challenges of the pandemic, President Xi Jinping reaffirmed China's commitment to his Belt and Road Initiative at the Asia-Pacific Economic Cooperation (Apec) forum. However, China may need to cut back on overseas lending due to domestic debt concerns and to also ensure future funding is sustainable as opinions are split over the sustainability of such investment amid a backdrop of rising debt at home. However, as growth in the world's second largest economy has slowed and as the domestic debt burden has risen due to the coronavirus pandemic, questions have been raised whether China will have to slow its international engagements in the next few years, in particular its financing of Belt and Road projects. This ambitious Belt and Road plan, first introduced by Xi during his 2013 visit to Kazakhstan when it was initially called One Belt, One Road, involves connecting more than 70 countries on the continents of Asia, Europe and Africa via a series of rail, road and sea infrastructure projects, thus forming a New Silk Road. The goal for Beijing is to promote regional connections and economic integration, thereby expanding China's economic and political influence. And while China will by no means abandon funding projects, it may cut back on lending, both due to domestic needs and moves to make sure future lending is sustainable, analysts said. The World Bank estimated in 2019 that around US$500 billion was invested in Belt and Road projects in 50 developing countries between 2013 and 2018. Of that amount, about US$300 billion was estimated to have been financed via public and publicly guaranteed debt. Non-financial corporate debt in China rose to over 165% of its gross domestic product (GDP) in the third quarter of 2020, from 150% of GDP in the same quarter 2019, according to a report released by the Institute of International Finance (IIF) in November. The growth of debt is not only the highest among emerging economies but has also already outpaced all developed markets as well. Total Chinese debt across household, government and non-financial corporate sectors rose to nearly 290% of GDP – excluding financial debt to avoid the potential for double counting – in the third quarter, up from 255% a year earlier, according to the Washington-based IIF, the association of global financial firms. Emre Tiftik, head of sustainability research at the IIF, said China has the capacity to increase exposure to Belt and Road countries, so the recent rise in debt levels is unlikely to change China's policies. However, the IIF believes China will place more emphasis on the sustainability of related financial flows, he added. China's engagement in Belt and Road projects has shrunk during 2020 in terms of both the number of new contracts and in the total new project value due to the coronavirus. The number of new contracts signed by Chinese firms in the first nine months of 2020 in 61 countries "along the Belt and Road" dropped by 29% compared to the same period in 2019, according to data from China's Ministry of Commerce. It did not provide an update for the number of contracts signed in October, but the data showed the value of contracts from January to October 2020 shrank by 17.5% year on year. China's overall domestic debt level has been growing at an average annual rate of around 20% since 2008, faster than its GDP growth. The country has increased its effort to reduce its debt pile since 2016 to curb financial risks under a deleveraging campaign led by the central bank, but progress was thrown into reverse in 2020 because of the impact of the coronavirus on the economy. China's external debt has also grown, partly because of the country's push to acquire foreign assets, and stood at US$2.13 trillion by the end of June 2020, up US$75.1 billion, or 3.7%, from the end of 2019. But the scale of foreign debt is "reasonable" and the risk from foreign debt is "generally controllable", said China's State Administration of Foreign Exchange. Agatha Kratz, an associate director at economic consultancy Rhodium Group, said Belt and Road loans are just a small part of China's overall lending portfolio, and both the China Development Bank and the Export Import Bank have enough political backing to bear the cost, meaning the real question is "if the country still wants to [continue massive lending]?" She added that the

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China Development Bank may have less of an appetite to continue strong foreign lending as it is struggling between its conflicting objectives of supporting China's global commercial diplomacy and the Chinese economy with new domestic loans (Zhou).

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1.5 A New President's Agenda

Since taking office as the 46th president, it's clear Joe Biden agenda has focused on the challenges at home. His slogan to "Build Back Better" was centered around handling the coronavirus pandemic, rebooting the US economy, and tackling systemic racism and economic inequality. But the challenges facing the US and the world will not wait. From Latin America to East Africa, nuclear-capable rogue states to revanchist regional powers, the Biden administration is sure to face foreign policy crises as it tries to address those domestic issues "The preponderance of the focus will have to be internal," president of the Council on Foreign Relations Richard Haass said. "The president is going to walk into a really demanding situation domestically and internationally, and my instincts are ... he has got to deal with repair work, rather than think of it as a major innovation phase" (Finnegan). Sooner rather than later, much of Biden's international attention will be directed at China.

If Biden talked about China in 2020 like he did back in 2000, he might have lost the election. He has long been a supporter of trade liberalization. In 2000, then-Sen. Joe Biden joined with 82 other senators and the Clinton administration in normalizing trade relations with China. It was a crucial step in allowing China to join the World Trade Organization. Labor unions like the Teamsters and the United Auto Workers hated this and mounted a feverish campaign against it. They feared that lowering trade barriers with China would flood the US with cheap Chinese products and kill jobs. But Biden and others argued that it would promote economic growth and peace and help convince China to play by international rules. Shortly afterward, Biden became chairman of the Senate Foreign Relations Committee and flew to China for one of his first big diplomacy trips. Standing in front of a group of reporters in Shanghai, Biden declared, "China is not our enemy. There's nothing inevitable about China and the US not being as cooperative as other nations" (Rosalsky). As a senator he also voted for NAFTA and China's entry into the WTO. As vice president, Biden championed the TPP (McBride).

Now, three fourths of Americans have an unfavorable view of the country — up from about a third in the early 2000s. China, which has an economy 12 times larger than it was in 2000, is now an economic powerhouse. Trade with China may have slashed costs for American consumers and created countless new jobs in various sectors, but — as organized labor warned back in 2000 — it also destroyed huge numbers of blue-collar jobs. Economists David Autyor, David Dorn and Gordon Hanson estimate that China's joining the WTO killed about 2.4 million American jobs, including about a million in manufacturing (Rosalsky).

To gain credibility in negotiations with China and other nations, it is important that actions of the Biden administration be based on decisions which can be supported by accurate statistics. It is evident that much of the actions of Trump administration were not based on accurate statistics. President George Herbert Walker Bush's son, Neil Bush in a 2018 Washington Post opinion piece pointed to a 2011 study by the Federal Reserve Bank of San Francisco showing while 70% of the US 2017 GDP was made of Americans Personal Consumer Expenditure, only 1.2% of that actually went to China. This was in stark contrast to the widely held public belief that the figure may have been as high as 60-90%. It is hard to imagine that millions of American jobs have gone to China if China only receives 1.2% of the average annual American personal consumer expenditure.

1.5 新总统的议程

就任以来，美国第46任总统乔·拜登显然将其议程重点放在了解决国内问题上。“重建得更好（Build Back Better）”这一口号就是围绕着新冠疫情、重启美国经济、解决系统性种族主义和经济不平等等问题而提出的。但美国和世界面临的挑战随时会发生。从拉丁美洲到东非，从有核能力的流氓国家到区域内复仇势力，拜登政府在试图解决这些国内问题时，势必会面临来自这些国家的外交政策危机。“重点必须放在国内。”美国外交关系协会主席理查德·哈斯说到，“总统目前在国内和国际上都面临着急迫的挑战，我的直觉是……他需要做的是修复，而不是把主要精力放在创新上”。（Finnegan）拜登的国际政策重心迟早会直接指向中国。

如果2020年，拜登还在像20年前那样谈论中国，那他不会赢得大选。长期以来，他一直是贸易自由化的支持者。2000年，时任参议员拜登与其他82位参议员和克林顿政府一道，促成了对华贸易关系正常化。这是允许中国加入世界贸易组织的关键一步。卡车司机工会（Teamsters）和全美汽车工人联合会（United Auto Workers）等工会对此深恶痛绝，并一度发起过狂热的反对运动。他们担心，降低与中国的贸易壁垒将让廉价的中国产品充斥美国市场，并减少美国的就业机会。但拜登等人认为，这将促进经济增长与和平，并有助于让中国遵守国际规则。不久之后，拜登就任美国参议院外交关系委员会主席，并飞往中国进行他的首次大型外交访问。在上海记者前，拜登宣称：“中国不是我们的敌人。但中美两国之间的合作可能会不如其他国家之间那么密切”。（Rosalsky）作为参议员，他还曾投票支持北美自由贸易协定和中国加入世贸组织。任副总统时，拜登也支持跨太平洋伙伴关系协定。（McBride）

现在，四分之三的美国人对中国持负面看法，而在本世纪初，这一比例约为三分之一。中国已经是一个经济强国，其目前的经济规模是2000年的12倍。与中国的贸易可能削减了美国消费者的成本，并在各行各业都创造了无数新就业机会。但正如2000年工会工人的警告所称，与中国的贸易也减少了大量蓝领工作岗位。据经济学家大卫·奥迪（David Autyor）、大卫·多恩（David Dorn）和戈登·汉森（Gordon Hanson）估计，中国加入世贸组织导致约240万美国人失业，其中制造业失业工人约100万。（Rosalsky）

在与中国等国家的谈判中，如果拜登政府想建立信誉，其行动必须建立在基于准确统计数据的决策上。很明显，特朗普政府的许多行动并不是基于准确统计数据做出的。2018年，老布什的儿子小布什在《华盛顿邮报》发表的一篇评论文章中指出，据旧金山联邦储备银行2011年的一项研究显示，尽管2017年美国国内生产总值的70%来自美国人的个人消费支出，但实际上其中只有1.2%流向了中国。这与普遍认为的60-90%相差甚远。如果仅有1.2%的美国年均个人消费支出流向了中国，却有数百万的工作机会从美国流向了中国，这实在难以想象。（Bush）

美中贸易全国委员会（USCBC）委托进行的一项研究显示，特朗普与中国发起的贸易战导致美国就业岗位峰值减少24.5万，但双方逐步降低关税的举措也将创造了新的就业岗位，预计到2025年将新增14.5万个就业岗位。美中贸易全国委员会是代表在华经商的美国大公司的组织。该委员会称，牛津经济研究院的研究发现可能还会有“进一步升级的情况”，预估全球两个最大经济体的显著脱钩在未来五年可能会造成美国国内生产总值缩水1.6万亿美元。这将导致2022年美国减少73.2万个就业岗位，2025年减少32万个就业岗位。这份研究报告发布的几天后，候任总统拜登即将上任，并开始对美国贸易政策进行重要分析，包括就特朗普征收的惩罚性关税与民主国家盟友进行磋商。拜登曾表示，他不计划立即改变特朗普的关税政策，并且他还将与盟友一同向中国施压，要求中国改变其贸易行为。长期支持特朗普改变中国贸易和技术转让政策的美中贸易全国委员会主席克雷格·艾伦（Craig Allen）表示，该组织必须解释清楚选择实行这些政策将对中美关系产生何种影响。艾伦说到：“就关税而言，我们需要清楚认识到这些政策将会造成何种经济影响，这非常重要”。研究估计，在美国，对华出口业务涉及120万个就业岗位，有19.7万人直接受聘于中国跨国公司，且2019年美国公司在华投资达1050亿美元。研究报告称：“预计在未来十年中国将推动全球约三分之一的经济增长，保持中国市场对美国企业的全球成功越来越重要。”（Reuters，US-China Trade）

此外，2017年美国19.39万亿美元的国内生产总值中，个人消费支出占比约70%，这一比例和六年前基本一致。六年前，旧金山联邦储备银行发布了一份名为《中国制造在美情况》的报告。2011年的研究显示，88.5%的个

A study commissioned by the US-China Business Council (USCBC) showed that President Donald Trump's trade war with China caused a peak loss of 245,000 US jobs, but a gradual scaling back of tariffs on both sides would boost growth and lead to an additional 145,000 jobs by 2025 The group, which represents major American companies doing business in China, said the study by Oxford Economics also includes an "escalation scenario" which estimates a significant decoupling of the world's two largest economies could shrink US GDP by US$1.6 trillion over the next five years. This could result in 732,000 fewer US jobs in 2022 and 320,000 fewer jobs by 2025. The study was released just days before then President-elect Joe Biden was set to take office and begin a major analysis of US trade policy including consultations with democratic allies over punitive US tariffs imposed by Trump. Biden has said he plans no immediate changes to Trump's tariffs, but said he will work with allies to pressure China to change its trade behavior. USCBC President Craig Allen, who has been supportive of Trump's efforts to change China's trade and technology transfer policies, said it was important that the group articulate the consequences of policy choices in the US-China relationship. "In the case of the tariffs, it's very important that we understand the full economic cost of these choices," Allen said. The study estimates that US exports to China support 1.2 million American jobs and that Chinese multinational companies directly employ 197,000 Americans, while US companies invested US$105 billion in China in 2019. "With China forecast to drive around one-third of global growth over the next decade, maintaining market access to China is increasingly essential for US businesses' global success," the study said (Reuters, US-China Trade).

Furthermore, American personal consumer spending accounted for about 70% of the US's 2017 US$19.39 trillion GDP. That percentage was unchanged from six years earlier, when the Federal Reserve Bank of San Francisco issued a report called "The US Content of 'Made in China.'" The 2011 study showed that 88.5% of American consumer spending was on items made in the US. The San Francisco Fed's report also found that 55% of the content of goods labeled "Made in China" reflected US-added value and content. "Although globalization is widely recognized these days," the study said the US economy actually remains relatively closed. The vast majority of goods and services sold in the US is produced in the US. As the 2017 "deficit with China was pegged at less than 2% of US GDP — there was no need for alarm. Assuming a GDP of US$1,000, a 2% trade deficit would mean someone had sold us US$20 more in goods than we sold to them. And we would have received quality merchandise for that US$20" (Bush).

US-China relations sharply deteriorated in 2020, after three years of steadily declining under the Trump administration. Beijing and Washington traded blame over the coronavirus pandemic, remained locked in a trade war and competed over 5G networks and other technologies among other issues. President Biden will have to grapple with all these challenges from day one in office. That being said, the Biden administration will have the luxury of deciding how much to retain of what the Trump team has built. Some decisions, such as whether to maintain tariffs on US$370 billion worth of Chinese goods, will be challenging. The tariffs have hurt the US economy, but they have also given the US economic leverage. Moreover, unwinding them too quickly will leave the new administration open to accusations of being soft on China. Other moves, including reviving the Quadrilateral Security Dialogue with Australia, India, and Japan and sanctioning officials and companies suspected of various misdoings, are likely here to stay. Some efforts, such as the aggressive prosecution of those involved in Chinese influence activities in the US, could be maintained but tempered significantly. The Biden administration could realize some quick wins by filling in the gaping holes the Trump team has created by abandoning traditional sources of US leverage and influence. Rejoining international institutions and agreements, partnering with European allies, strengthening the US, and reconstructing the US-China diplomatic framework are likely all on Biden's agenda. But realizing the benefits and rectifying the mistakes of the Trump administration's China policy is good only for the first one hundred days. The true test for the Biden administration is what it will do about China in the remaining 1,360 (Economy).

人消费支出用于购买美国制造的商品。旧金山联储的报告还发现，55%标有“中国制造”的商品内容反映了美国的附加值和内容。“尽管众所周知全球化已是大势所趋。”该研究称，“但美国经济实际上仍然相对封闭。”美国销售的绝大多数商品和服务都是在美国生产的。由于2017年“对华赤字仅占不到美国国内生产总值的2%，所以美国没必要惊慌失措。如果国内生产总值为1000美元，那么2%的贸易逆差意味着别人卖给我们的商品比我们卖给他们的要多20美元。但是多花这20美元，我们就能收到优质的商品”。(Bush)

2020年，即特朗普政府执政三年后，中美关系急剧恶化。中美在新冠疫情问题上互相指责，两国贸易战仍未停止，并在5G网络等其他技术展开竞争。拜登总统从上任第一天起就必须应对所有这些挑战。这就是说，拜登政府将有权决定保留特朗普团队已经实施的政策应该保留多少。某些决策将会带来挑战，如对价值3700亿美元的中国商品是否继续征收额外关税。关税损害了美国经济，但也给了美国带来了经济杠杆。此外，过快取消额外关税措施将使新政府面临对中国软弱的指责。其他举措，包括恢复与澳大利亚、印度和日本的四方安全对话、制裁涉嫌各种不当行为的官员和公司等，都可能继续维持。另外一些举措，如对参与中国增强在美影响力活动的人员大举进行的起诉，可能不会撤销，但会大大缓和。此外，特朗普团队此前放弃美国杠杆和传统影响力的行为造成了一些巨大漏洞，拜登政府可以通过填补这些漏洞快速创造政绩。重新加入国际机构和协定、与欧盟合作、强化美国自身建设、重建美中外交框架，这些都可能是拜登接下来的议程。但是，纠正特朗普政府对华政策带来的好处，只是拜登上任头一百天才有的好事。对拜登政府来说，真正的考验是他们在剩下的1360天中如何对待中国。(Economy)

中国

特朗普总统颠覆性的“美国优先（America First）”议程在贸易政策上最为突出，他对中国发起贸易战，对美国盟友征收额外关税，并重新谈判主要贸易协定。参选期间，拜登抨击了特朗普的做法，但同样抨击了中国的不正当行为，并批评了无限制的全球化。他提出的“中产阶级外交政策”明确，要先实现大规模国内投资，然后再进行新的贸易谈判。特朗普政府与中国的谈判最终达成了第一阶段协议，中国政府承诺再购买价值2000亿美元的美国农产品。尽管总体贸易逆差已达到14年来的最高水平，但对华双边贸易逆差保持稳定。与此同时，在民主党与共和党就更强有力的劳工和环境条款进行谈判后，《美墨加三国协议》在国会获得了两党广泛支持并通过。竞选总统期间，拜登试图在特朗普贸易战政策和盲目接受自由贸易之间寻找新的方法。他抨击了特朗普单干的做法，认为美国必须在现有国际体系内就贸易问题“制定规则”。拜登在中国问题上的一些言论与特朗普相呼应，呼吁对中国的贸易欺诈行为进行“积极”的报复。主要区别在于，拜登承诺将联合欧盟等美国盟友共同对抗中国。但由于拜登没有承诺终止对欧盟产品的现有额外关税，这也可能是一个问题。最近的中欧投资条约也可能破坏美国与欧盟的协调关系。根据拜登提出的口号，拜登政府将制定对中等收入家庭有利的外交政策。拜登认为，全球化加剧了不平等，加速了非工业化，并且未能提高美国的生产率。因此，拜登承诺将把重点放在国内优先事项上，以提高美国的竞争力，包括在能源、教育和基础设施方面投资数万亿美元，实施“购买美国商品”政策、联邦政策向国内生产商倾斜，加强工人的议价能力等。美国外交关系协会的爱德华·奥尔登表示，“迄今为止，贸易谈判的首要目的是为美国公司争取商机，其次是为美国消费者降低商品价格。”“目前的架构无法提升中产阶级的水平。优先事项将完全不同”。拜登需要做许多决策。拜登称，他不会立即取消特朗普对中国的征收的额外关税，他认为美国目前需要保持对中国施压。但是，所有这一切都面临着贸易促进授权在2021年7月即将到期的情况。贸易促进授权赋予了白宫扩大贸易谈判的快速立法权。如果不能继续拥有贸易促进授权，任何新协议都可能难以在国会顺利通过。(McBride)

尽管所有利益相关者都呼吁进一步开放中国市场，而且中国已经宣称计划进一步开放中国市场，但中国经济的开放程度可能已经远远超出人们的想象。香港大学教授、前哈佛商学院教授迈克尔·恩赖特（Michael Enright）对外资企业对中国经济使用外商直接投资、员工支出和其他因素的影响进行了长达16个月的研究。结果表明，中国外商投资企业平均产出占中国国内生产总值的33%，提供了27%的工作岗位。鉴于外商投资企业主要集中在中国的东部和南部，它们对中国东部城市和南部城市经济的影响远超人们的想象。例如，在上海，外商投资企业占其工业总产值的67%，占上海生产总值的三分之一，提供了三分之一的工作岗位。外商投资企业占上海高新技术产值的90%，带来了三分之一的税收。在南方城市深圳，外商投资企业占其生产产值的50%，提供了一半的工作岗位。通过外商直接投资，重庆的电脑生产量在6年内从零增长到世界总产量的三分之一。值得注意的是，在中国进行外商直接投资能让其生产总值得到更高的回报。例如，每100万美元的美国外商直接投资，逐年累计能转化为1.8亿美元的中国国内生产总值。(Enright)

在美国，新冠疫情与国内政治局势进一步扩大了中美分歧。特朗普总统声称中国应该为新冠疫情负责，并指责世界卫生组织是中国的傀儡，企图通过这种方式将美国公众的注意力从国内新冠病例猛增和乔治·弗洛伊德死亡引发的抗议活动转移开来。将中国视为新冠疫情的罪魁祸首，加上全球供应链的中断，一些美国政客开始要求与中国决裂。谣言和误导言论双管齐下让有关疫情起

China

President Donald J. Trump's disruptive America First agenda was nowhere on greater display than in the realm of trade policy, where he launched a trade war with China, imposed tariffs on US allies, and renegotiated major trade agreements. As a candidate, President Joe Biden slammed Trump's approach but likewise hammered China's unfair practices and criticized unrestrained globalization. His "foreign policy for the middle class" promises no new trade talks until Washington undertakes massive domestic investments. Talks with China eventually resulted in a Phase I deal in which Beijing pledged to buy an additional US$200 billion worth of US agricultural products. The bilateral trade deficit with China has held steady, even as the overall trade deficit has reached a 14-year high. The USMCA, meanwhile, passed with broad bipartisan support in Congress after Democrats negotiated stronger labor and environmental provisions. During his presidential campaign, Biden sought to chart a course somewhere between Trump's trade wars and an uncritical acceptance of free trade. He hammered Trump's go-it-alone approach, arguing that Washington must "write the rules of the road" on trade within the existing international system. Some of Biden's rhetoric on China echoes Trump's, calling for "aggressive" retaliation against Beijing's trade cheating. The main difference is that Biden promises to unite with US allies, such as the EU, in a common front against China. But with Biden making no promises on ending the existing tariffs on EU products, that could be a challenge. A recent EU-China investment treaty could also undermine Washington's coordination with Brussels. This is Biden's slogan for an approach to foreign affairs that will purportedly measure any policy by what it does for middle-income families. The approach argues that globalization has increased inequality, accelerated deindustrialization, and failed to boost US productivity. As a result, Biden promises to focus on domestic priorities to boost US competitiveness, including by investing trillions of dollars into energy, education, and infrastructure; implementing federal "Buy American" policies to favor domestic producers; and strengthening workers' bargaining power. "Until now, trade negotiations were aimed at securing business opportunities for US companies first, and to a lesser extent, to lower prices for US consumers," explains CFR's Edward Alden. "There is no concept of lifting the middle class in the current structure. It will be a different set of priorities." Biden will have many decisions to make. He says he won't immediately lift Trump's China tariffs, arguing that Washington needs to keep its leverage with Beijing for now. Looming over all of this is the July 2021 expiration of Trade Promotion Authority, or fast-track legislation that gives the White House expanded trade negotiating powers. If TPA is not renewed, any new deals could face an uphill battle in Congress (McBride).

While all stakeholders call for further opening up of the Chinese market and China has announced that it plans to do so, China's economy may already be far more open than believed. A 16 months study by Professor Michael Enright of the University of Hong Kong (former faculty at the Harvard Business School) on the impact of foreign invested enterprises on China's economy using FDI, spending by employees and some other factors shows that on the average, across China foreign invested enterprises (FIEs) produce 33% of China's GDP and 27% of employment. Given the fact that FIEs are primarily concentrated on the east and southern costs of China, their impact on the economies of eastern and southern cities is far greater than believed. For example, in Shanghai FIEs account for 67% of its industrial output, one third of Shanghai GDP and one third of Shanghai employment. FIEs account for 90% of Shanghai's high-tech output and one third of its taxes. In the southern city of Shenzhen FIEs account for 50% of its GDP and 50% of its employment. Chongqing went from producing zero to one third of the world computers in 6 years through FDI. It is important to note that FDI dollars invested in China translate into higher returns in terms of GDP. For example, every one million US dollars of American FDI translate in $180 million dollars of Chinese GDP, year after year (Enright).

In the US, the coronavirus pandemic has intertwined with domestic politics to set it and China further apart. President Trump sought to deflect domestic attention away from spiking COVID-19 cases and protests triggered by

源的阴谋论迅速传开，加剧了两国关系的不确定性。与此同时，这场疫情也导致对中国持负面看法的美国人比例大幅上升。皮尤研究中心（Pew Research Center）2020年10月的一项调查发现，73%的美国人对中国持负面看法，这是2005年以来的历史最高。中国政府成功迅速遏制了病毒传播，加上中美外交纷争，加强了中国的民族主义和反美主义。中国官方媒体把美国描绘成一个日益衰退的敌对力量。美国在全球卫生领导方面的明显失败和对中国的欺凌，让思想自由的中国精英认为，中国应该采取行动，降低与美国相互依赖带来的风险。2020年5月，中国公众对美国的看法明显比一年前更为负面。（Huang）

中国希望拜登担任总统期间，美国能够缓和在贸易、技术等方面的冲突。但任何转变都可能只是形式转变，而非实质性转变，因为美国各政治派别对中国的失望情绪都在日益加重。共和党议员、民主党议员和他们的选民似乎都不同意对中国采取更为温和的态度。即将上任的拜登毫不含糊地否认了特朗普政府的"美国优先"的新孤立主义，但他仍然承诺美国将"领导世界，而不是退缩"。中国拥有世界上最大的海军，已经成为世界第二大经济体，这些是拜登希望"恢复美国的全球地位"面临的主要挑战。因此，他的外交政策能否成功在很大程度上取决于他如何应对来自中国的挑战。作为总统，拜登的目标不仅是防止尚在襁褓的中美"新冷战"演变成灾难性的全球冲突，也包括遏制这个亚洲大国增强地区影响力和全球影响力。（Mcdonald）

与特朗普政府相比，拜登政府可能会实施更稳定、更连贯的中国政策。稳定的对华态度将给微妙而紧张的中美关系带来更多的稳定性。但更稳定并不意味着软弱，因为现在美国两党都认为中国是一个战略竞争对手。事实上，尽管中国可能很快就会意识到其将面对行为更加可预测的对话者，但也不应该期待这些人的立场会柔和。美国的外交政策是总统的特权，因此外交政策相比国内政策受更少的立法约束。这二十年间，虽然拜登仍在努力寻求一些合作，但其态度已经从谨慎乐观观变为谴责，这如同中美关系的变化弧线，两国关系已经恶化到进入一个极不稳定、一触即发的状态。特朗普总统对美国政坛建制派在中国问题上的做法进行谴责，认为他们造成了失败的时候，而作为建制派代表的拜登并未失去他曾经的参与热情。根据拜登的政策声明和对其助手的采访，拜登这些天说的不是改变中国，而是恢复美国。他们说，美国必须重新成为自由价值观和经济创新的领导者，这将使美国有资格团结志同道合的国家共同约束中国。（Bear）

缔盟

中国正在努力向前。与所有崛起的国家一样，中国面临的首个挑战是重塑周边环境，确保自身利益。中国实现这些目标的方式破坏了既定区域体系的重要规则。这种行为，加上中国习惯使用经济施压，好比最近针对澳大利亚的举措，意味着不少组织的原则都面临风险。第二个挑战更加难以想象，因为它来自美国，现有体系的最初设计师和长期拥护者。尽管特朗普政府的亚洲专家为减轻损失做出了坚定的努力，但特朗普本人却几乎对地区操作体系的每一个元素都进行施压。他敦促日韩等盟国重新谈判美军基地和驻军费用分摊协议，并威胁说，如果他对新条款不满意，美国将彻底撤军。印度-太平洋地区的这两项举措之间需要保持平衡。特朗普还缺席多场区域性多边进程和经济谈判，放任中国改写规则内容和合法性核心规则。中国的自信加上美国的矛盾，让这一地区陷入动荡。如今的印度-太平洋地区如同曾经的战前欧洲，失去了平衡，秩序正在瓦解，也没有明确的联盟解决这一问题。如果拜登政府想要维护为目前带来和平和空前繁荣的地区运作体系，那么首先就需要依次应对这些变化趋势。（Campbell和Doshi）

长期以来，中国通过市场准入和其他壁垒，以高度战略性但有限的方式，处理他们与世界经济的相互依存关系。在需要外国技术或竞争的领域（如高铁和金融）进行选择性耦合，在保留领域保持独立（通常为国有企业）。在过去15年多的时间里，中国领导人还提出了广泛的产业政策，试图在关键技术上自力更生，在高附加值产业上谋求主导地位。众所周知，"中国制造2025"计划提出在十项战略性技术上超越全球竞争对手，这正是中国为其后起企业所创造的深入人心、覆盖面广的保护体系的明显写照。与中国进行附带条件的挂钩、庞大的国家援助机构、甚至覆盖全国冠军企业的保护主义、以及其在背离经济合作与发展组织（OECD）准则和原则的过程中找到的自信，正是这些事情共同推动了当前与中国相关的"相互依存危机"。特朗普政府或许是导火索，但即便没有这根导火索，中国制造的火药桶最终也必将点燃。当前，事情处在转折点，拜登政府可能不会那么刻薄，不会对全球经济秩序造成太大的破坏。但是，公众舆论对中国态度的巨大转变，以及华盛顿两党日益形成的共识，即认为中国是一个处于不同轨道上的战略竞争对手，意味着事态不太可能向"全球化"的方向发展。不幸的是，对这场"相互依存危机"，中国的回应似乎是在加速推动其自主进程。欧洲在华企业报告称，这一举措与过去不同，也更加激进。正如2020年12月中央经济工作会议总结指出的那样，中国2021年的两大优先事项是：1）强化科技力量，健全新型举国体制；2）增强产业链供应链自主可控能力。因此，无论是市场的进一步开放还是与中国进一步"挂钩"，中国做出何种行动都将取决于该举措是否支持这两个目标（Amela等）。

基辛格在《重建的世界》（A World Restored）一书中写道："历史告诉我们如果缺乏能够抵抗侵略的实际保障，任何秩序都是不安全的，权力平衡是这一历史教训的经典表达"（Kissinger）。这一结论是基辛格在观察19世纪的欧洲时得到的，但在今天同样适用。看看如今印太地区

George Floyd's killing by contending that China should be held accountable for the pandemic and accusing the World Health Organization (WHO) of being Beijing's puppet. The perception of China as the culprit of the pandemic and disruptions to global supply chains have led some US politicians to demand a decoupling from China. Conspiracy theories about the origins of the outbreak, which were encouraged by disinformation and misinformation efforts from both sides, intensified uncertainty between the two nations. At the same time, the pandemic has led to a significant increase in the proportion of American people with a negative view of China. An October 2020 Pew Research Center survey found that 73% of Americans view China negatively, the highest level since 2005. In China, the government's ability to rapidly contain the virus's spread, in conjunction with the US-China diplomatic row, has solidified nationalism and anti-Americanism. Chinese state media outlets have portrayed the US as a diminishing and hostile power. Washington's perceived failure in global health leadership and bullying of Beijing have convinced even liberal-minded elites in China that the country should move to reduce the risks associated with interdependence with the US. The Chinese public's views toward the US in May 2020 were significantly more negative than they were a year earlier (Huang).

Chinese leaders hope Washington will tone down conflicts over trade, technology during Biden presidency. But any shift is likely to be in style, not substance, as frustration with Beijing increases across the American political spectrum. Both Republican and Democratic lawmakers and their constituents seem disinclined to adopt a softer approach toward China. In an unequivocal repudiation of the Trump administration's "America First" neo-isolationism, the incoming Biden has promised to "lead the world, not retreat from it". Boasting the world's largest navy and second-largest economy, China represents the primary challenge to Biden's hopes to "reassert [America's] role in the world". The success of his foreign policy will thus largely depend on how he handles the China challenge. As president, Biden will not only be aiming to prevent the brewing "New Cold War" between the US and China from transforming into a catastrophic global conflict, but also keep the Asian powerhouse's desire for increased regional and global influence in check (Mcdonald).

A Biden White House is likely to oversee a steadier and more coherent China policy than the Trump administration. A consistent approach will bring more stability to a delicate and difficult relationship. But a more stable approach does not mean a soft one, since there is now a bipartisan recognition in the US that China is a strategic competitor. Indeed, while Beijing may appreciate soon having a more predictable set of interlocutors, it should not expect them to be more pliable. US foreign policy is the prerogative of the president and therefore less constrained than domestic policy by the legislative branch. Biden's 20-year road from wary optimism to condemnation — while still straining for some cooperation — is emblematic of the arc of US-China relations, which have deteriorated to an unstable, potentially explosive state. But as former president Donald Trump denounces what he describes as failures by the Washington establishment on China, Biden, an avatar of that establishment, is not recanting his past enthusiasm for engagement. Biden speaks these days not of transforming China but of restoring the US, according to his policy statements and interviews with his aides. They say the US must regain its role as a leader of liberal values and economic innovation, and that will give Washington the standing to rally like-minded nations to constrain China (Bear).

Creating Allies

China has its work cut out for it. Like any rising state, China's first challenge is to reshape its surroundings and secure deference to its interests. The way Beijing has pursued these goals undermines important precepts of the established regional system. This behavior, combined with China's preference for economic coercion, most recently directed against Australia, means that many of the order's organizing principles are at risk. The second challenge is more surprising because it comes from the original architect and longtime sponsor of the present system—the US. Despite determined efforts by the Trump administration's Asia experts

的局势，这样的警告极富先见之明。中国日益增长的实质力量确实破坏了该地区微妙的平衡，并助长了中国的领土冒险主义。如果不加以制止，中国的行为可能会结束该地区长期以来的和平局势。

印太地区的合法性不仅仅是一个国际政治和安全问题。该地区的贸易、技术和跨国合作也至关重要。在政治和安全领域，加强当前秩序的合法性需要他国参与，至少需要美国参与，以加强和已摇摆不定的盟友之间的联系、跳过地区峰会、避免经济接触以及避免跨国合作。面对中国日益增长的影响力，这一新姿态将赋予美国更强的地区影响力，并赋予印太国家更多权力。在经济领域，加强当前秩序意味着即便中国在经济上胡萝卜加大棒大法日益老练，该体系也能继续为其成员国带来实质利益。与战前欧洲强调国界和政治承认的谈判不同，印太谈判将不可避免地将围绕供应链、标准、投资制度和贸易协定展开。此外，中国通过"一带一路"倡议提供基础设施融资，美国应探索提供替代融资和技术援助的方式。在谈判中，中国在这一秩序中扮演的角色将是最复杂的一环。尽管印太国家在中国崛起之际寻求美国帮助维护其独立自主，但它们也意识到，将中国排除在亚洲充满活力的未来之外既不现实，也不会带来丝毫好处。该地区的国家也不想被迫在两个超级大国之间做出"选择"。更好的解决方案是，美国及其伙伴说服中国，让中国相信，围绕以下几条基本要求形成竞争激烈但和平的地区环境是有利的：北京在地区秩序中有一席之地，北京在地区主要组织中有成员资格，遵守规则前提下的可预测商业环境，以及在气候、基础设施和新冠大流行等问题上达成合作。迄今为止，中国的认同对该地区的成功发展发挥了核心作用。在未来的岁月里，它仍将继续发挥重要作用。(Campbell和Doshi)

同时，中国习近平主席不会按下暂停键，给拜登更多的时间和空间形成中国事务组、集结盟友、制定战略。习近平主席在贸易和投资方面肯定不会这么做。2020年11月美国大选后不久，包括中国在内的15个亚洲国家签署了《区域全面经济伙伴关系协定》(RCEP)。这项由中国促成、推动多年才达成的协议，既涉及柬埔寨等与中国关系密切的伙伴国家，也包括澳大利亚和日本等与中国关系冷淡的国家。总的来说，《区域全面经济伙伴关系协定》将创造世界上人口最多的自由贸易区，并将世界上几个最大的经济体，如中国、日本和韩国连接在一起。它向投资者发出了一个重要信号，表明该地区仍致力于多边贸易一体化。此外，由于过去四年美国一直缺席区域经济一体化，在特朗普政府上任初期《退出跨太平洋伙伴关系协定》后，达成《区域全面经济伙伴关系协定》对中国来说是一个宣传手段。《区域全面经济伙伴关系协定》的签署表明，拜登政府要扭转特朗普过去四年在"美国优先"政策指导下摒弃多边主义的政治方向，可能比先前想象的更困难。康奈尔大学经济与贸易政策教授、国际货币基金组织中国部门前负责人埃斯瓦·普拉萨(Eswar Prasad)提到："该贸易协定将使签署国的经济与中国经济联系变得更加紧密，并且随着时间的推移，这一协定会把这些国家拉进中国经济和政治的发展轨道"。与此同时，中国也在迅速采取行动，提升关键技术特别是半导体的研发能力。很明显，习近平认为2021年，也就是中国共产党成立的一百周年，可能是他2013年上台以来最重要的一年。他认为未来的十年是决定性的。(Kempe)

尾声

拜登和习近平都知道，中美两国需要找到处理竞争的长期方法。不过，如果两国领导人希望让两国关系更为平稳，留给他们的时间已经不多了。虽然原因不同，但他们两位肯定都想要过去几年逐步升级的紧张局势先停一停。拜登面临着一系列令人望而生畏的国内优先事项——遏制肆虐的新冠疫情、弥合两极分裂的国家、推动经济复苏。拜登还认为，在与中国的任何战略较量中，美国要想获胜，必须首先重建内部实力、在国外寻找志同道合的强大盟友结成联盟，这是需要花时间的。习近平同样认为中美竞争是一场旷日持久的斗争。由于中国领导人认为，中国具有强劲的经济增长潜力，竞争局势将逐渐对中国有利，因此他们更愿意在中国处于弱势地位时，暂时缓和与美国的冲突。而且，双方似乎都认为，保持关系平衡的方法是在竞争与合作之间找到平衡点。拜登和他的主要外交政策顾问希望两国在气候变化、核不扩散和大流行病等问题上能达成合作，尽管在国家安全、贸易和人权问题上存在激烈竞争。与此同时，中国外交部长王毅提议，两国应将双边事务分成三类：可以合作的领域、可以通过对话解决的分歧和必须管控的冲突。然而，任何可能促成中美双方达成妥协的机会都可能是转瞬即逝的。考虑到定义中美关系的事项是互相关联的，而两国之间信任又如此薄弱，如果中美两国未能迅速让双边关系稳定下来，那么崩溃几乎是必然的。如果想要抓住机会，中美两国首先需要设定竞争的边界，形成符合现实的未来合作蓝图。这将需要拜登和习近平都承担一定的政治风险。首项任务应该是恢复高层沟通渠道。外交重组将有助于制定近期行动计划，使双边关系恢复基本稳定。另外一个迫切任务则是恢复过去一年中断的文化交流，历史上看，文化交流为两国关系平衡提供了重要的基础保障。首先，中国应允许在2020年被驱逐的美国记者返回中国，并放宽相关报道限制。同样的，美国应该取消对在美中国记者的同等限制。就拜登政府而言，应该对特朗普政府在执政期间、美国日渐衰弱的日子里采取的各项措施进行彻底审查，并考虑暂停、修改或取消那些效用未知、难以实施的措施。采取这些措施将使两位领导人都会损失一定的政治资本。希望中美关系能一帆风顺，不要因为关系紧张而让两国付出更大代价。(Pei)

如果要迎接中国崛起带来的挑战，那么拜登必须带领美国发展成为一个更好、更强大、更团结的国家。他必

to mitigate the damage, President Donald Trump himself strained virtually every element of the region's operating system. He pressed allies such as Japan and South Korea to renegotiate cost-sharing agreements for US bases and troops and threatened to withdraw forces entirely if he was unsatisfied with the new terms. Both moves undermined alliances the Indo-Pacific needs to remain balanced. Trump was also generally absent from regional multilateral processes and economic negotiations, ceding ground for China to rewrite rules central to the order's content and legitimacy. This combination of Chinese assertiveness and US ambivalence has left the region in flux. The contemporary Indo-Pacific feels like prewar Europe—drifting out of balance, its order fraying, and with no obvious coalition to address the problem. If the Biden administration wants to preserve the regional operating system that has generated peace and unprecedented prosperity, it needs to begin by addressing each of these trends in turn (Campbell and Doshi).

Through market access and other barriers, China has long managed its interdependence with the world economy in a highly strategic and limited manner: selective coupling where it needed foreign technology or competition—such as in high-speed rail and the financial sector respectively—and remaining uncoupled in sectors reserved for China's, often state-owned, national champions. For more than 15 years, China's leaders have also advanced extensive industrial policies in an attempt to develop self-reliance in critical technologies and seek dominance in high-value-added industries. The now infamous China Manufacturing 2025 (CM2025) initiative, which aims to substitute global competitors in ten strategic technologies, was just the most visible expression of a deeply engrained and extensive support system that protects China's rising stars. It is this blend of China's conditional coupling, a vast state-aid apparatus and protectionism extended to national champions, and Beijing's new-found self-confidence in its non-convergence with Organization for Economic Co-operation and Development (OECD) norms and principles that is driving the current 'crisis of interdependence' with China. The Trump Administration may have provided the spark, but the powder keg China had created was bound to ignite eventually. Things are now at a turning point. A Biden Administration will likely be less caustic and create fewer disruptions within the global economic order. But the massive shift in public opinion towards China, as well as a growing bipartisan consensus in Washington to consider China a strategic competitor on a divergent trajectory, means things are unlikely to result in 'globalization renewed'. Unfortunately, China's response to this 'crisis of interdependence' seems to be a redoubling of its drive to build self-reliance, and European companies in China report that this drive is different and more radical than in the past. As the December 2020 Central Economic Work Conference summaries noted, China's top two priorities for 2021 are: 1) to build scientific and technological strength, with a call for a "new type of whole-of-nation system"; and 2) developing greater autonomy and control in industrial supply-chains. Any further market opening and deeper 'coupling' with China will therefore be conditional upon whether doing so supports these two goals (Amela et al.).

"The balance of power," Kissinger writes in A World Restored, "is the classic expression of the lesson of history that no order is safe without physical safeguards against aggression" (Kissinger). Kissinger observed this dynamic in nineteenth-century Europe, but it applies equally well today. Applied to the Indo-Pacific, such a warning is prescient: China's growing material power has indeed destabilized the region's delicate balance and emboldened Beijing's territorial adventurism. Left unchecked, Chinese behavior could end the region's long peace.

Legitimacy in the Indo-Pacific is not only a matter of international politics and security. Trade, technology, and transnational cooperation are also vital. In the political and security realm, bolstering the present order's legitimacy will, at minimum, require serious US reengagement: an end to shaking down allies, skipping regional summits, avoiding economic engagement, and shunning transnational cooperation. This new posture will give the US a greater regional role and empower Indo-Pacific states in the face of China's growing clout. In the economic realm, strengthening the present order means ensuring the system continues to deliver material benefits for its

须与更多友邦就中国问题达成共识，尤其是那些既觉得中国的价值主张有说服力、又为中国的国家实力而感到焦虑的国家。他还想说服尚抱怀疑态度的中国相信，美国政府以中国为中心的活动反映了对中国的尊重，而非敌意，这也可能是一种令人愉快的达成妥协的方式。哈佛商学院高级讲师安迪・泽莱克（Andy Zelleke）表示，中美两国都必须认识到，立即“获胜”是不可能的。中国有理由相信，权力发展轨迹将会对中国有利，而不是对美国有利，所以美国首先必须使权力平衡可持续地对自己有利——国内实现复苏，国际上与有能力、有贡献的国家结成联盟。也就是说，美国应该始终清楚，尽管美国的核心政策是遏制中国在亚洲和全球的影响力，但最终美国会坦然地接受中国已经成为超级大国。中国能接受这个结局吗?这与中国的理想相差甚远。但乐观地看，美国有限的遏制措施将会为中国在未来成为世界最大经济体留出空间（可能存在一些差距），同时使得中国在大部分技术简单行业中获得合理的市场份额，虽然可能达不到中国制造2025计划预计的领军地位。但是，拜登将要领导的是一个分裂的美国。拜登政府将不得不与来自不同选区的参议员和代表合作，做出妥协，以便达成协议，让美国能面对21世纪的种种挑战，包括与中国的战略竞争。这可能带来混乱，并且具有挑战性，而且不会是线性发展的。但这不是一个新故事，而是一个非常古老的故事。中国着眼实现长远目标。但长远来看，美国今天面临大量国内外挑战，包括对其民主体制的挑战。美国的民主不是软弱的根源，而是力量的源泉。（Zelleke） members, even as China grows more sophisticated in its use of economic carrots and sticks. In contrast to prewar Europe's negotiations, which emphasized borders and political recognition, those in the Indo-Pacific will inevitably revolve around supply chains, standards, investment regimes, and trade agreements. Moreover, as China provides infrastructure financing through the Belt and Road Initiative, the US should develop ways to provide alternative financing and technical assistance. Negotiating Beijing's role in this order is the most complex element of the overall endeavor. Although Indo-Pacific states seek US help to preserve their autonomy in the face of China's rise, they realize it is neither practical nor profitable to exclude Beijing from Asia's vibrant future. Nor do the region's states want to be forced to "choose" between the two superpowers. A better solution would be for the US and its partners to persuade China that there are benefits to a competitive but peaceful region organized around a few essential requirements: a place for Beijing in the regional order; Chinese membership in the order's primary institutions; a predictable commercial environment if the country plays by the rules; and opportunities to jointly benefit from collaboration on climate, infrastructure, and the COVID-19 pandemic. Marginal buy-in from China has played a central role in the region's success thus far. It will remain important in the years ahead (Campbell and Doshi).

Meanwhile, China President Xi Jinping isn't willing to hit the pause button to provide President Biden time and space to assemble his China team, reach out to allies, and frame his strategy. President Xi certainly won't do so on trade and investment. Shortly after the US election in November 2020, 15 Asian states, including China, signed the Regional Comprehensive Economic Partnership (RCEP). The deal, midwifed by China and promoted for years by Beijing, includes both close Chinese partners like Cambodia as well as countries with cold relations with Beijing, like Australia and Japan. Overall, RCEP will create the most populous trade area in the world, and it joins together several of the largest economies in the world, like China, Japan, and South Korea. It provides a major signal to investors that the region is still committed to multilateral trade integration. In addition, with the US absent from regional economic integration for the past four years, after the Trump administration pulled out of the Trans-Pacific Partnership (TPP) early in its term, RCEP is a publicity coup for Beijing. The signing of the RCEP indicates that it may be more difficult than previously thought for a Biden Administration to reverse course on four years of President Donald Trump's "America First" withdrawal from multilateralism. "The trade pact more closely ties the economic fortunes of the signatory countries to that of China and will over time pull these countries deeper into the economic and political orbit of China," says Eswar Prasad, a professor of economics and trade policy at Cornell University and the former head of the International Monetary Fund's China Division. Meanwhile, President Xi is also moving rapidly to gain greater self-sufficiency in developing key technologies, particularly semiconductors. It's clear that he regards 2021, the centenary of the Chinese Communist Party, as perhaps the most important year since he came to power in 2013. He regards the decade ahead as decisive (Kempe).

Endgame

Biden and China's Xi Jinping know their nations need to find a way to manage their rivalry over the long-term. If the two leaders are to put the relationship on a more even keel, though, they don't have much time. For different reasons, each of them would surely welcome a pause in the steady escalation of tensions that has marked the past few years. Biden faces a daunting list of domestic priorities — containing a rampaging pandemic, healing a polarized nation and reviving the economy. He also believes that to prevail in any strategic contest with China, the US must first rebuild its strength at home and forge a strong coalition of like-minded allies abroad, which will take time. Xi similarly views the US-China rivalry as a protracted struggle. And, since Chinese leaders think the balance of power will gradually favor China due to its strong economic growth potential, they'd prefer to de-escalate conflict with the US for now, when China is in a weaker position. The way to maintain an equilibrium in relations, both seem to agree, is to balance competition and cooperation. Biden and his key

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foreign policy advisers hope to collaborate with China on issues such as climate change, nuclear non-proliferation and pandemics, even as they confront Beijing vigorously on national security, trade and human rights. Meanwhile, Chinese Foreign Minister Wang Yi has proposed that the two countries sort their bilateral issues into three buckets: areas in which they can cooperate, disagreements that might be solved by dialogue, and conflicts which they must manage and control. Any chance Biden and Xi have of establishing such a modus vivendi, however, is likely to be fleeting. Given how intertwined the major issues defining US-China relations are and how little trust there is between them, a breakdown is virtually guaranteed if they don't steady relations quickly. To have any chance, the US and China first need to set the boundaries of their competition and build realistic expectations for cooperation. That'll require both Biden and Xi to take some political risks. The first task should be to restore high-level channels of communication. Diplomatic reengagement should help in developing a near-term action plan to restore a basic level of stability to bilateral relations. Also urgently needed is a restoration of the cultural exchanges severed in the past year, which have traditionally provided much-needed ballast to the relationship. For starters, China must welcome back American journalists expelled in 2020 and allow them to report with fewer restrictions. The US should reciprocate by removing equivalent restrictions on Chinese journalists working in the US. For its part, the Biden administration should undertake a thorough review of the steps taken in the waning days of the Trump administration and consider suspending, modifying or reversing measures that are of questionable utility and difficult to implement. Taking such steps would cost each leader a moderate amount of political capital. Avoiding them in hopes that the relationship will stumble along regardless could cost the US and China far more (Pei).

Biden must lead the US to become a better, stronger, and more united version of itself if it is to meet the challenge that China's rise presents. He will have to reach a meeting of minds about China with more partner nations — for whom, generally, China offers compelling value propositions along with the anxieties its power provokes. And he'll want to persuade a skeptical Beijing that his administration's China-focused activities reflect respect, not animosity, and could be the pathway to an agreeable modus vivendi. According to Harvard Business School senior lecturer Andy Zelleke, China and the US must both recognize that "winning" decisively isn't possible. Because Beijing has reason to believe the trajectories of power likely favor it, not Washington, it's essential that the US first put the power balance sustainably in its favor — by revitalizing itself at home, and by coalition with capable, contributing partners. That said, the US should be clear throughout that the end game is one where China — while denied hegemony in Asia and globally, as a matter of core US policy — would be peacefully accepted as a superpower. Could China accept this endgame? It would fall far short of the ideal. But a glass half full view would be that this limited containment effort would make room for China's almost certainly developing, over time, the world's biggest economy, perhaps by a large margin, along with very healthy market share in many of the most technologically advanced industries — though short of Made in China 2025's aspiration to dominance. However, Biden will lead a divided US. His administration will have to work with senators and representatives from diverse constituencies and make compromises in order to strike deals that equip the county to confront the challenges of the 21st century, including its strategic rivalry with China. It will be messy and challenging, and progress will not be linear. But this is not a new story—it is a very old one. Chinese leaders pride themselves on taking a long view. The US faces plenty of foreign and domestic challenges today, including in its democratic institutions. But in the long view, its democracy is not a source of weakness; it is a source of strength (Zelleke).

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1.6 Strategy for a Tech-driven GBA

**Courtesy of EY*

Highlights

With innovation and technology being one of the main pillars in Greater Bay Area development, a recent deep dive by the China government on the characteristics of the industry should provide an important glimpse into the supportive policies to come.

We note that while tangible deliverables such as the number of enterprises engaging in R&D and patent applications reported solid increase in the past five years, a "soft environment" such as manpower and an innovative ecosystem is also catching up.

While Shenzhen remains a clear leader in innovation and technology, the progress of the other eight cities varied. In terms of the soft environment, nevertheless, we note that the Hong Kong's comparative advantages in capital financing and academic research could provide a boost for the whole region. Its traditional industries also present opportunities for catch up through technology upgrades.

The 14th Five Year Plan blueprint released in November confirmed technology and innovation as a top priority in China's 2021-2025 development agenda. With Shenzhen as its engine, the Greater Bay Area strives to become an "international technology center" by 2025. As Shenzhen reaches a new stage of reform, the government will take a multi-pronged approach to eliminate market barriers, upgrade digital infrastructure, open to foreign investors, enable transparent and effective financing models, and expand its talent reserve, to keep the area as a national leader in high-quality development.

1. A deep dive into innovation and tech industry in the GBA

The Greater Bay Area (GBA) was picked as a national champion for innovation and technology development by the Central Government. Specifically, the Outline Development Plan ("the Outline") for the Guangdong-Hong Kong-Macao Greater Bay Area (GBA), released in February 2019, stated that the GBA is going to be shaped into an international technology and innovation hub that:

1. strengthens fundamental research
2. attracts international talent
3. enhances connectivity between cities
4. expands new pillars and existing industries with comparative advantage[1]

In the one-year anniversary of the Outline, the region has made steady progress with ambitious implementation plan laid out, such as Shenzhen's new designation as a national demonstration area[2].

In order to closely monitor the development, the Guangdong Bureau of Statistics was commissioned to study the characteristics of the technology sector in the nine GBA cities in the Mainland in depth[3]. In our view, the exercise reflects the dedication of the regional leaders to pin down the key areas

1 *Guangdong-Hong Kong-Macau Greater Bay Area – From connectivity to integration,* EY report, 2019

2 *The Shenzhen demonstration area - Showcasing China's formula for high-quality growth,* EY report, 2020

3 *stats.gd.gov.cn/attachment/0/384/384305/2853067.pdf*

1.6 大湾区科技驱动发展战略

此节由安永提供

报告重点

由于创新和科技已成为大湾区发展的主要支柱之一，中国政府最近对科技行业的特征进行了深入研究，应该可以窥见即将出台的扶持政策的方向。

我们注意到研发企业和专利申请数量等具体成果在过去五年中稳步增长，同时人力和创新生态系统等"软环境"也在迎头赶上。

显然，深圳仍然是创新科技的领导者，但其他八个内地城市也取得了不同程度的进步。就软环境而言，我们注意到香港在资本融资和学术研究方面的比较优势可助力大湾区整体水平提升。此外，它的传统产业也提供了通过技术升级实现追赶的机会。

于十一月初公布的十四五规划蓝图中，中央确认了以推动科技创新发展作为中国2021至2025年间的主要发展目标。其中，以深圳为核心引擎的大湾区力争在2025年前建成"国际科技创新中心"。随着深圳的改革历程踏进下一个四十年，政府将采用多管齐下的方法，强调消除对市场动态变化的障碍，改善数字基础设施，向外国投资者开放市场，建立透明和可用的市场融资模式，以及扩充合适的人才储备，使粤港澳大湾区继续成为中国经济高质量发展的中心。

1. 深入调研大湾区创新科技行业

大湾区被中央政府定为全国创新科技发展的桥头堡。具体来说，2019年2月发布的《粤港澳大湾区发展规划纲要》（以下简称《纲要》）指出，将大湾区建设成为国际科技创新中心：

1. 加强基础研究
2. 吸引国际人才
3. 加强区内互联互通
4. 拓展新的支柱产业和具有比较优势的现有产业[1]

在《纲要》推出一周年之际，大湾区建设稳步推进，制定了宏伟的实施计划，例如深圳被再次委以重任，将建设国家示范区[2]。

为了密切关注发展情况，广东省统计局受委任对大湾区九个内地城市的科技行业特色进行了深入研究[3]。我们认为，这项工作反映了区内领导人致力确定区内创新及科技发展的主要领域。因此，后续可针对研究中提出的主要意见跟进推出扶持性措施。

1 *Guangdong-Hong Kong-Macau Greater Bay Area – From connectivity to integration*（《粤港澳大湾区——从连通走向融合》），安永研究报告，2019

2 The Shenzhen demonstration area - Showcasing China' s formula for high-quality growth（《深圳先行示范区——中国高质量发展模式的里程碑》），安永研究报告，2020

3 stats.gd.gov.cn/attachment/0/384/384305

in innovation and technology development in the region. Key observations made in the study, as such, may be followed up with supportive measures in the pipeline.

Enterprises demonstrated strong commitments, with government support

The index showed that the GBA's technology development is boosted especially by the rapid increase in the number of enterprises engaging in R&D and the output of R&D in terms of patents

2. Robust growth of the area as a national champion

Remarkable growth in innovation and technology development in the region

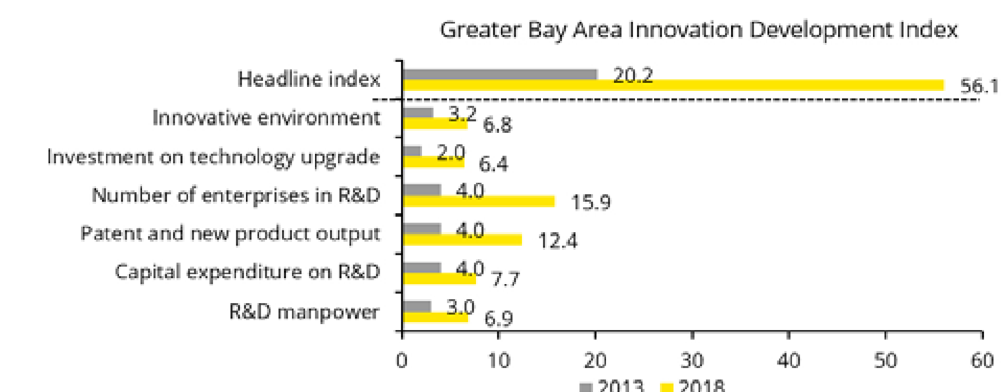
The Guangdong Bureau used a quantitative approach to evaluate the innovation and technology development in the region. Based on the National Bureau of Statistics' methodology, it created the GBA innovation development index based on six areas on research and development (R&D): the number of enterprises engaging in R&D, patent and new product output, R&D manpower, enterprise capital expenditure on R&D, investment on technology upgrade, and an innovative environment. Not surprisingly, the index showed that the market environment for innovation development in the nine GBA cities in the Mainland nearly tripled between 2013 and 2018, suggesting remarkable breakthroughs.

The GBA innovation development index has six categories and 11 components

Category	Component
R&D manpower	R&D personnel per 10,000 employed workers
Enterprise capital expenditure on R&D	R&D expenditure as % of total VAI from industrial enterprises above designated size
Patent and new product output	New product as % of total production by industrial enterprises above designated size
	Patent applied per 10,000 inhabitant
	Patent granted per 10,000 inhabitants
Number of enterprises engaging in R&D	Number of enterprises with designated R&D personnel
	Enterprise engaging in R&D as a % of total industrial enterprises above designated size
	Number of designated high-tech enterprise
Investment on technology upgrade	Investment on industrial technology upgrade
Innovative environment	Local government spending on technology as % of total expenditure
	University graduate per 10,000 inhabitants

Source: Guangdong Bureau of Statistics

Significant improvement in innovation development especially in tangible categories



Source: Guangdong Bureau of Statistics

2. 地区经济增长稳健，领跑全国

区内创新科技发展成效显著

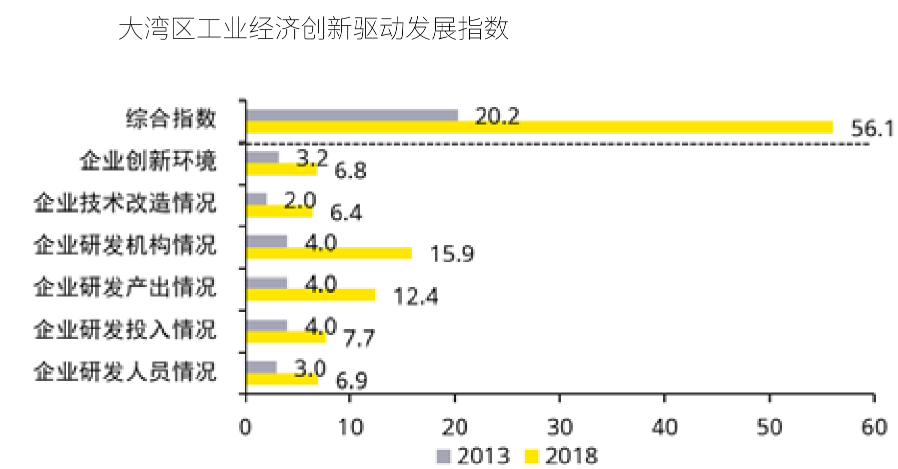
广东省统计局采用定量方法对区内的创新及科技发展进行了评估。它根据国家统计局的方法，基于六个研发领域创建了大湾区工业企业创新驱动发展评价指标体系，包含：企业研发人员情况、企业研发投入情况、企业研发产出情况、企业研发机构情况、企业技术改造情况和企业创新环境等六个维度。不出所料，指数显示，在2013年至2018年期间，大湾区九个内地城市的创新驱动发展综合指数增长近两倍，这表明创新取得了显著突破。

大湾区工业企业创新驱动发展评价指标体系

一级指标	二级指标
企业研发人员情况	每万从业人员研发人员数量（人/万人）
企业研发投入情况	规模以上工业企业研发经费占工业增加值比重（%）
企业研发产出情况	新产品产值占规模以上工业总产值比重（%）
	发明专利申请量及授权量：
	每万人发明专利申请量（个/万人）
	每万人发明专利授权量（个/万人）
企业研发机构情况	有研发机构的企业数（个）
	规模以上工业企业有 R&D 活动的企业比例（%）
	高新企业数（家）
企业技术改造情况	工业技术改造投资额（万元）
企业创新环境	地方公共财政支出中科学技术支出占总财政支出比例（%）
	每万人大学生人数（人/万人）

资料来源：广东省统计局

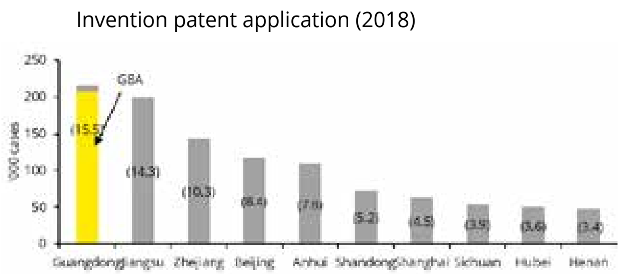
创新驱动发展，特别是有形类别创新驱动发展成效显著



资料来源：广东省统计局

and new products, both of which have more than tripled. Indeed, Guangdong (mainly the GBA cities) led the whole country in terms of international Patent Cooperation Treaty (PCT) patent applications, with 24,700 or over 40% of national total in 2019[4]. Meanwhile, the nine GBA cities in the Mainland are collectively home to around 20.5% of China businesses that have R&D facilities, against an overall share of 13.2% in 2018.

The GBA is a national leader in patent application



Note: Share of national total in bracket
Source: Wind, Guangdong Bureau of Statistics

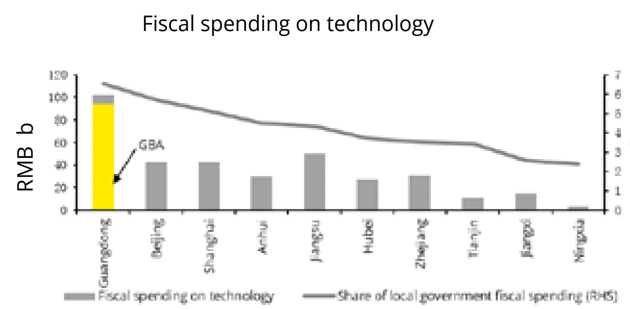
It suggested strong enterprise sponsorships that are in line with favorable policies since the launch of the National Intellectual Property Strategy in 2008[5], as well as the ambitious national and regional targets on patent applications and ownership[6]. For example, internet companies in the region are actively investing through their corporate venture capital, amid government incentives on patent application. Also, the government introduced venture capital (VC) funding promotion policies, such as co-financing for private VC funds from local government funds[7]. As a result, China's VC market expanded to become the world's second largest with strong presence in Shenzhen[8].

Soft environment such as talent supply lags behind

Meanwhile, the study also showed that the soft environment for GBA's innovation and technology development continued to lag. Compared to more tangible achievements above, R&D manpower, enterprise capital expenditure on R&D, and the innovative environment have increased albeit at less pronounced pace. It may suggest room for further improvement in terms of the availability of R&D talent, the share of R&D funding as a share of value-added of industry (VAI), and the share of R&D funding in local government finances.

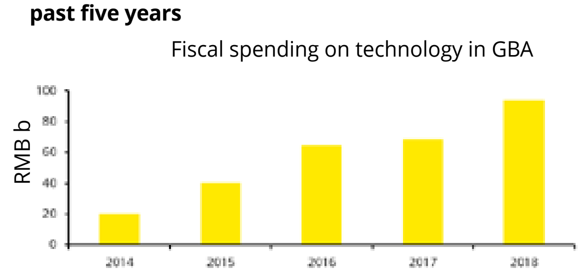
It is important to note that the lag comes from exceedingly strong growth in enterprise commitment rather than a lack of progress in these areas. In terms of the share of local government spending on technology development, the GBA is a strong national leader with 4 of the top 10 cities coming from this region. It comes amid a four-fold increase in spending in the past five years, to close to RMB90b in 2018 from around RMB20b in 2014. Corporate R&D spending by industrial enterprises, meanwhile, also increased to 7.2% of total VAI in 2018 from 5.7% in 2014.

The GBA is also a national leader in fiscal technology spending



Source: Wind

GBA fiscal tech spending has more than quadrupled in the past five years



Source: Wind

Nevertheless, the divergent trends do reveal the challenge to institutionalize innovation after the

4 www.sipo.gov.cn/zscqgz/1145388.htm
5 www.gov.cn/zwgk/2008-06/10/content_1012269.ht
6 www.sz.gov.cn/zfgb/2017/gb991/content/post_4999118.html
7 www.rieti.go.jp/jp/publications/pdp/18p012.pdf
8 pitchbook.com/media/press-releases/china-became-second-largest-venture-capital-market-by-total-capital-invested-in-2018-according-to-pitchbook-report

在政府的支持下，企业展示出坚定的承诺

指数显示，大湾区科技发展的主要推动因素是企业研发机构迅速增加，企业研发产出，包括专利和新产品的研发产出均增长两倍以上。确实，广东（主要是大湾区城市）在国际专利合作条约（PCT）专利申请方面居全国首位，2019年达到2.47万件，占全国专利申请总量的40%以上[4]。与此同时，在拥有研发设施的中国企业中，约20.5%位于大湾区九个内地城市，而2018年这一比例为13.2%。

大湾区专利申请数量领跑全国

注：括号中数字为占全国总量的比重
资料来源：万得、广东省统计局

这表明企业的投入参与与自2008年国家知识产权战略启动以来的优惠政策[5]，以及在专利申请和所有权方面的积极的国家和地区目标相契合[6]。例如，在政府鼓励专利申请的背景下，区内互联网公司正积极地通过企业风险资本进行投资。此外，政府还推出了风险投资（VC）融资促进政策，如地方政府基金为私人风险投资基金提供联合融资[7]。如今，中国已经成为全球第二大风险投资市场，深圳表现抢眼[8]。

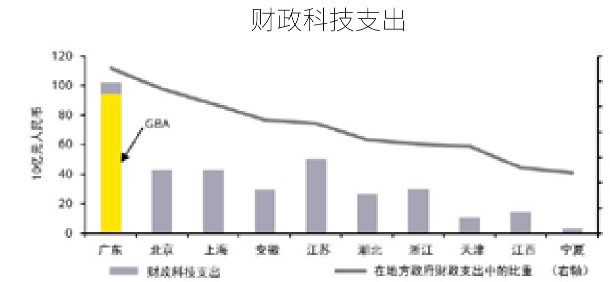
人才供给等软环境滞后

同时，研究还显示，大湾区创新及科技发展的软环境仍然相对滞后。虽然企业研发人员情况、企业研发投入情况和企业创新环境指数均有所增长，但与上述显著成就相比，增速较缓。这可能意味着，在研发人才获得、研发资金在工业增加值（VAI）中的份额以及研发资金在地方政府财政中的份额方面，还有进一步提升的空间。

值得注意的是，滞后的原因是企业承诺的增长过于强劲，而并非这些领域未取得进展。就地方政府在技术开发方面的支出份额而言，大湾区领跑全国，排名前10的城市中，有4个来自大湾区。在过去五年中，大湾区财政科技支出增长了三倍，从2014年的约200亿元人民币增加到2018年的近900亿元人民币。与此同时，规模以上工业企业研发投入在规模以上工业增加值中的比重也从2014年的5.7%增至2018年的7.2%。

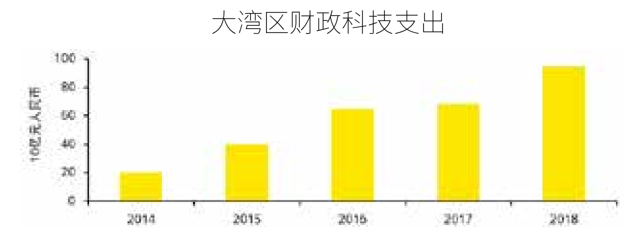
4 www.sipo.gov.cn/zscqgz/1145388.htm
5 www.gov.cn/zwgk/2008-06/10/content_1012269.htm
6 www.sz.gov.cn/zfgb/2017/gb991/content/post_4999118.html
7 www.rieti.go.jp/jp/publications/pdp/18p012.pdf
8 pitchbook.com/media/press-releases/china-became-second-largest-venture-capital-market-by-total-capital-invested-in-2018-according-to-pitchbook-report

创新驱动发展，特别是有形类别创新驱动发展成效显著



资料来源：万得

大湾区过去五年财政科技支出增长三倍有余



资料来源：万得

然而，不同的趋势的确暴露出在达成容易实现的目标之后所面临的创新制度化挑战。这个过程以科技企业的进步为基础，为创新驱动发展提供了基石[9]。这需要通过在适当领域发展新人才和资深人才网络，逐步创建一个生态系统。网络内的人才应被鼓励积极寻求相互合作的机会。日子有功，人才网络中累积的想法会形成内生力量，进而吸引更多的技术、劳动力和资本资源。

9 hbr.org/2012/12/how-to-create-an-innovation-ec low hanging fruits are picked. Building upon the progress of tech enterprises, the process functions a lot like a coral reef[9].It calls for the gradual creation of an ecosystem by accumulated networks of both new and veteran talent in the right field. Individuals in the network should be encouraged to mix together in productive ways. Over time, ideas emerging in the network of talent find endogenous support for development, which could in turn attract more technical, labor, and capital resources.

Box 1 | The innovative ecosystem in the GBA

Health care sector in the GBA ecosystem

The evolution of the innovation ecosystem in the GBA is taking place rapidly. This is the synergy that comes from the collaboration of diverse entities that pertains to the creation of new products and services.

As an example, a multinational pharmaceutical company has recently invited top market leaders and experts across industries such as communication technology giants, health care providers, insurance companies, property developers and non-governmental organizations in the GBA to create a new structure of working together, with an objective to disrupt the business model of the life sciences and health care industry.

Digital platform to generate real-time, multilateral exchange of information

Traditionally, the health care sector takes on a dispersed network with hospital being the main connection point with patients. It not only leads to an imbalance of information between the hospital and other components within the health care sector, the isolated data and incompatible documentation are also prone to human errors and long processing time.

The proposed new structure starts with seeking to enable information sharing within the health care sector through the agreement with a consortium of involved parties, with patients' consent. It is then combined with big data collected from wearable technology, online medical consultations, insurance policies, patient representative organizations, and other demographic and consumer analytics.

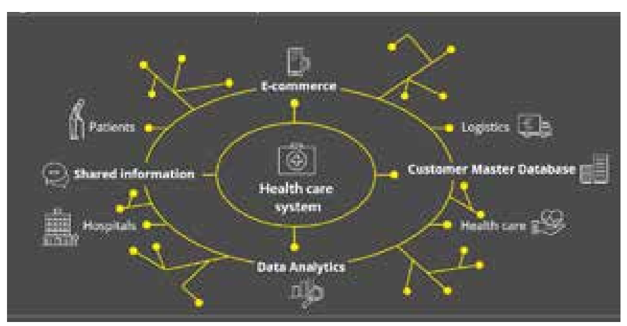
Deliver better patient experience through the ecosystem

Data sharing allows for more astute examination that will be useful for: 1) global sourcing and distribution of medication; 2) improvement in the quality of traditional and online health care; 3) pharmaceutical research and drug safety monitoring; 4) research in patient welfare and consumer behavior; 5) further development in the Internet of Things (IoT) and next-generation wearable technology; and 6) the basis for more industry innovation and incubation programs.

Presence of hard environment factors spurs the ecosystem development

As this example illustrates, an ecosystem would not be possible without the presence of diverse entities that are collaborative and interdependent in the early stage. The creation of "hard environment" – presence of enterprises engaging in R&D – a natural first step to create such innovative ecosystem may be considered. The other factors in the ecosystem, including manpower, capital, and idea, will only flourish once the hard environment has taken root.

A digitalized and interconnected health care system



Source: EY

Three innovation leaders in the GBA

By location, Shenzhen and Zhuhai are leaders among the nine GBA cities in the Mainland with the

9 *hbr.org/2012/12/how-to-create-an-innovation-ec*

专栏 1 | 大湾区创新生态系统

大湾区生态系统中的医疗保健行业

大湾区创新生态系统正在迅速演变。这是来自与打造新产品和服务有关的不同实体合作产生的协同效应。

举例来说，某跨国制药公司最近邀请了大湾区部分行业的市场领导者和专家，包括通信技术行业巨头、医疗保健服务提供商、保险公司、房地产开发商和非政府组织，共同创建新的合作架构，旨在颠覆生命科学和医疗保健行业的商业模式。

打造多边信息实时交换数字平台

传统上，医疗保健行业呈现出放射状布局，医院是与患者的主要连接点。这不仅会导致医院与医疗保健行业其他部门之间的信息不平衡，数据孤立和文档不兼容还容易造成人为错误和处理时间延长。

拟议的新结构首先要寻求在患者同意的情况下，通过与相关各方达成协议，在医疗保健领域实现信息共享，然后将其与从可穿戴技术、在线医疗咨询、保单、患者代表组织以及其他人口统计和消费者分析中收集的大数据结合在一起。

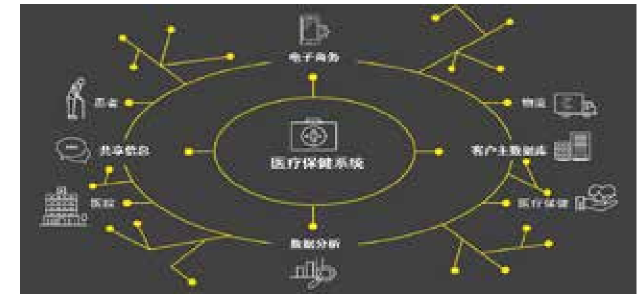
通过生态系统提供更好的患者体验

数据共享可以使检查更加敏锐，这将有助于：1）全球药物采购和分销；2）提升传统和在线医疗质量；3）药品研究和药物安全监测；4）研究患者福利和消费者行为；5）物联网（IoT）和下一代可穿戴技术的进一步发展；和 6）为更多行业创新和孵化计划提供基础。

硬环境因素促进生态系统发展

正如这个例子所示，如果没有早期阶段协作和互助的各种实体，那么生态系统就不可能存在。可以考虑将创建"硬环境"— 研发企业，作为创建创新生态系统的第一步。只有建好硬环境，生态系统中的其他因素，包括人力、资本和创意，才能得到大力提升。

数字化互联的医疗保健系统



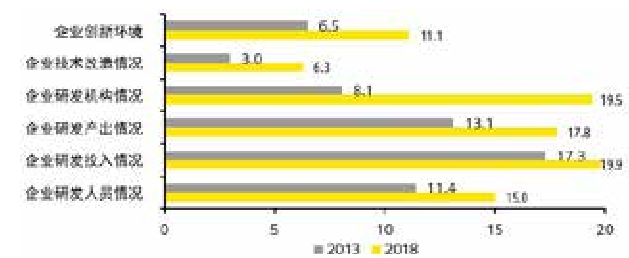
资料来源：安永

大湾区三个城市在创新领域处领先地位

深圳和珠海在大湾区九个内地城市中处于领先地位，创新发展指数最高；其次是东莞，从2013年排名倒数的三个城市之一，跃升为领先城市之一，进步最为显著。深圳在企业研发投入方面的得分名列前茅，这反映出深圳民营科技企业发展迅猛。此外，深圳还拥有强大的研发人力资源和优越的创新环境，这与其作为中国科技中心以及大湾区创新领域明显领先的形象相契合。

深圳科技进步具有创新环境优越、劳动力供给充足的特点

工业经济创新驱动发展指数（深圳）



资料来源：广东省统计局

珠海也是"科技成熟"的经济体之一，拥有强大的研发人员和优越的创新环境，但深圳的重点是电子和通信设备，而珠海则更专注于生物医药行业。近年来，珠海的工业增加值增速在区内处于领先地位，官方的目标是2020年产业规模达到800 – 1,000亿元人民币。

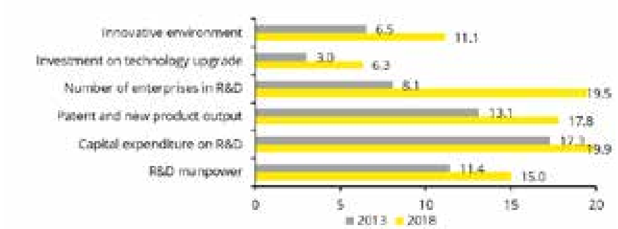
与此同时，东莞在创新及科技发展方面起步相对较晚，但其2018年在企业研发产出方面的得分几乎与深圳持平。这一进程始于2012年，当时政府发起了一系列举措，对工业部门作为加工贸易中心的传统角色进行升级。这些举措包括税收减免、研发补贴、研讨会和展览，以支持该市科技型民营中小企业发展[10]。

10 *news.southcn.com/gd/content/2020-01/17/content_190084453.htm*

highest readings in the innovation development index, followed by Dongguan, which showed the most improvement from being one of the last three cities in 2013 to one of the leaders. Shenzhen stands out in having one of the highest scores in enterprise capital expenditure on R&D, reflecting its massive private sector in the technology sector. The city also has strong R&D manpower and an innovative environment, consistent with its profile as China's technology hub and the obvious leader in the GBA in terms of innovation.

Shenzhen's technological progress is characterized with a strong innovative environment and labor supply

Innovation Development Index (Shenzhen)



Source: Guangdong Bureau of Statistics

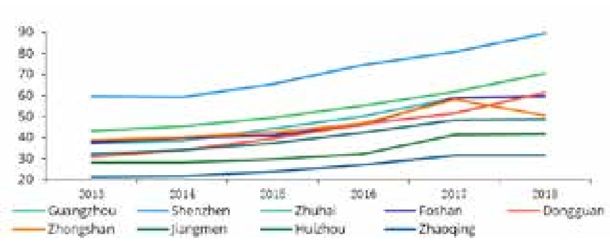
Zhuhai also has one of the more "tech-ready" economy with strong R&D manpower and an innovative environment, but while Shenzhen's focus is on electronics and communication equipment, it is more specialized on the biomedical industry. With an official target for the size of the industry to reach RMB80-100b in 2020, Zhuhai's VAI growth has been one of the leaders in the region in recent years.

Dongguan, meanwhile, has a relatively late start in innovation and technology development but its 2018 score in patent and new product output was almost as strong as Shenzhen. The process began in 2012 with government-led initiatives to upgrade the industrial sector from its traditional role as a hub for processing trade. The initiatives included tax concessions, R&D subsidies, seminars and exhibitions to support the city's community of mainly private and smaller enterprises in technology[10].

10 *news.southcn.com/gd/content/2020-01/17/content_190084453.htm*

Divergence expanded with Shenzhen, Zhuhai and Dongguan as leaders

Greater Bay Area Innovation Development Index

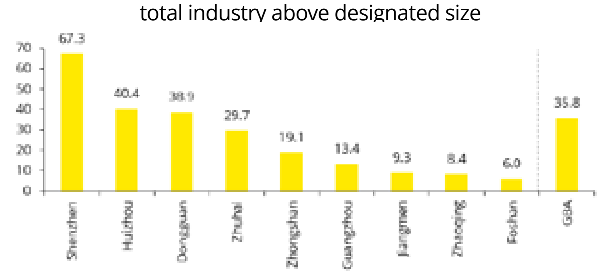


Source: Guangdong Bureau of Statistics

Among the nine mainland cities in the GBA, however, the study found that the divergence in industrial development actually widened between 2013 and 2018, with Shenzhen being the obvious leader. As a whole, the VAI of high-tech industry amounted to 35.8% of total VAI in 2018, with only Shenzhen reaching the official target at 50%. The traditional manufacturing hub of Guangzhou and Foshan, in particular, have been flagged for needing more improvement in innovation and technology development.

Most of the cities in the region still fall short of meeting the technology growth target

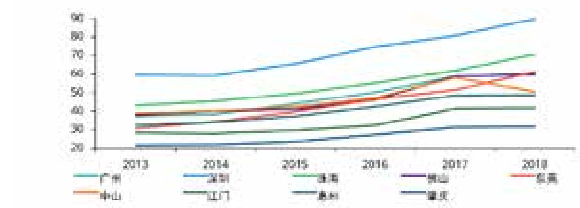
High-tech industry as a percentage of total industry above designated size



Source: Guangdong Bureau of Statistics

以深圳、珠海和东莞为龙头，发展差异扩大

大湾区工业经济创新驱动发展指数

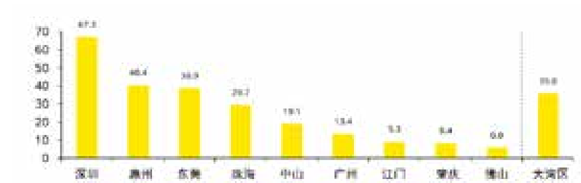


资料来源：广东省统计局

然而，研究发现，在大湾区的九个内地城市中，工业发展差异实际上在2013年至2018年之间扩大，其中深圳明显处于领先地位。总体而言，2018年高技术制造业增加值占规模以上工业增加值的35.8%，只有深圳达到50%的官方目标，特别是广州和佛山的传统制造业中心已经被标记为需要在创新及科技发展方面需要更多的改进。

区内大部分城市仍未实现科技发展目标

高技术制造业增加值占规模以上工业增加值的比重



资料来源：广东省统计局

3. 香港和澳门发挥协作作用

作为高度专业化的经济体，香港和澳门几乎没有科技相关产业，因此未被纳入研究范围，但研究显示，香港经济的相对优势可以与区内其余城市的科技相关产业发展，特别是在科技软环境方面开展协作。

工业增加值占香港和澳门GDP比重分别仅为2.2% 和 1.1%

工业增加值 (VAI)

资料来源：广东省统计局、万得

根据上海市信息中心发布的《全球科技创新中心评估报告》，2020年香港整体创新能力排名第15位，深圳第27位，广州第46位。鉴于香港缺乏工业产业，因而排名主要基于香港在基础研究方面的比较优势，包括学术刊物的引用次数、大学的国际排名、科学研究的认可度，以及科研机构的质量。来自香港的大学人才可以满足大湾区对科技人才的需求。

部分城市在《全球科技创新中心评估报告》中的排名

城市	排名（2020）
北京	7
上海	12
香港	15
深圳	27
广州	46
台北	50
杭州	64
南京	77
成都	88
武汉	92

资料来源：上海市信息中心

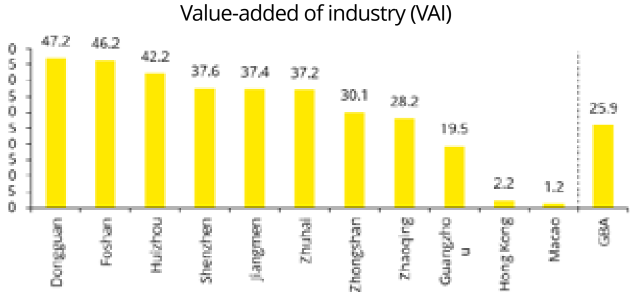
科技企业亦可进入香港金融市场，以进一步扩大在研发方面的投资。具体来说，2020年5月发布的《关于金融支持粤港澳大湾区建设的意见》[11]指出，支持港澳私募基金参与粤港澳大湾区创新型企业融资，鼓励符合条件

11 *www.pbc.gov.cn/goutongjiaoliu/113456/113469/4023428/index.html*

3. The collaborative roles of Hong Kong and Macao

As highly specialized economies with little tech-related industries, Hong Kong and Macao are not included in the study, but the study also revealed ways that the relative strong suits of Hong Kong's economy could collaborate with the tech-related industrial development in the rest of the area, especially in terms of its soft technology environment.

Industrial VAI accounts for only 2.2 % and 1.1% of Hong Kong and Macao's economies respectively



Source: Guangdong Bureau of Statistics, Wind

According to the Global Scientific And Technological Innovation Centers Evaluation Report by the Shanghai Information Center, Hong Kong is in the 15th place compared to Shenzhen's 27th and Guangzhou's 46th in 2020 in terms of overall innovativeness. Although Hong Kong lacks an industrial sector, its position comes predominantly from the city's comparative advantage in fundamental research, including the number of academic publication citation, the international ranking of its universities, the recognition of its scientific research, and the quality of its scientific research facilities. The talent generated from the universities in Hong Kong could feed the demand for technology talent in the GBA.

Ranking of cities in the Global Scientific And Technological Innovation Centers Evaluation Report

Cities	Ranking (2020)
Beijing	7
Shanghai	12
Hong Kong	15
Shenzhen	27
Guangzhou	46
Taipei	50
Hangzhou	64
Nanjing	77
Chengdu	88
Wuhan	92

Source: Shanghai Information Center

The technology enterprise may also tap into the financial market in Hong Kong to further expand its investment on R&D. Specifically, in the Opinion on Financial Support for the Construction of the Guangdong-Hong Kong-Macao Greater Bay Area[11], which was released in May 2020, private equity funds in Hong Kong and Macao are encouraged to participate in cross-border financing arrangements for innovative enterprises within the GBA, while qualified innovative enterprises are encouraged to list in Hong Kong. Institutional investors in Hong Kong and Macao are also allowed to participate in private equity investment funds and venture capital funds in the GBA through Qualified Foreign Limited Partners (QFLPs).

Box 2 | Artificial intelligence in the real estate industry

Investment on technology upgradeAnother

key aspect for innovation development is on the technology upgrade of existing business sectors. Rather than considering innovation and technology as a detached concept, they can disrupt existing business practices and generate new value through revised paradigms and efficiency improvements. They can fit right into the core of the decision-making process in the traditional sectors.

11 *www.pbc.gov.cn/goutongjiaoliu/113456/113469/4023428/index.html*

的创新型企业赴港澳融资、上市；允许港澳机构投资者通过合格境外有限合伙人（QFLP）参与投资粤港澳大湾区内地私募股权投资基金和创业投资企业（基金）。

专栏 2 | 房地产行业中的人工智能

技术升级投资

创新驱动发展的另一个关键方面是现有商业部门的技术升级。这不是将创新和技术视为一个独立的概念，而是通过修改模式和提高效率，来颠覆现有的商业惯例并创造新的价值，可以恰当地融入传统部门的核心决策过程。

利用人工智能优化预算和预测

举例来说，一家总部位于香港的国际企业集团，拥有多元化的市场领先业务组合，需要简化其房地产业务中有关资源如何分配以及如何改进收入预测的复杂决策。

我们创建了一个强大的人工智能（AI）和机器学习（ML）模型，该模型最大限度地吸收数据点，从宏观因素（如经济增长预测）到微观因素（如新公交站点的定位）。然后，模型算法在数据中爬行，识别有意义的模式，生成更可靠的预测，并最终转化为盈利能力的提高。

人工智能如何帮助制定预算和预测

资料来源：安永

了解后疫情时代的世界

上述流程在快速变化的世界中，比如新冠肺炎疫情期间，尤为重要。人工智能模型的透明度和客观性有助于高级管理层在市场不确定性显著上升、企业迫切需要排除干扰的情况下进行战略决策。此外，该流程还能够根据不同的标准，及时生成考量周全的预算和预测场景，从而显著减少所使用的时间和人力。这有助于在一些重要问题上，如土地购买预算和租金调整等，提前做出应对。

模型基础架构的适用性

虽然只要具备合适的人力，可以在任何领域投资进行技术升级，但是在效率提升能够为其带来益处的传统产业领域，投资进行技术升级的需求强劲。正如上述流程最初应用于香港的房地产业一样，该模型基础构架预计也将适用于能够从创新推动生产率提高中获益的其他行业，不仅限于大湾区其他城市，也包括世界其他地区。

AI to optimize budgeting and forecasting

An example is how a Hong Kong based international conglomerate with a diversified portfolio of market leading businesses needs to simplify complex decisions of their real estate business around how resources should be allocated and how to improve revenue projections.

We created a robust artificial intelligence (AI) and machine learning (ML) model that takes in as much data points as possible, from macro factors such as economic growth projections to micro considerations such as the positioning of new bus stops. The model algorithm then crawls through the data to identify meaningful patterns that help to generate more reliable forecasts that can ultimately be translated into increased profitability.

Understanding the post-pandemic world

The process is particularly useful in a fast-changing world such as during the COVID-19 outbreak. The transparency and objectivity of the AI model helps the strategic decision making of the senior management at a time of significantly reduced market visibility, when the demand for staying above the market noise is strong. It is also able to significantly reduce time and labor consumption as it produces well-considered scenarios in budgeting and forecasting based on different criterions in a timely manner. It helps to answer important questions such as land purchase budgets and rent adjustments ahead of the market.

Adaptability of the model infrastructure

While investment in technology upgrade can be done anywhere with the right manpower, its demand thrives where traditional industries could benefit from improvements in efficiency. Just as the process is initially applied in the real estate sector in Hong Kong, the model infrastructure is expected to apply to other sectors not only in the rest of the GBA cities but also the rest of the world, where innovation can help propel productivity gains.

How AI helps budgeting and forecasting

Source: EY

4. 十四五规划支持粤港澳大湾区形成国际科技创新中心

在深圳经济特区建立40周年庆祝大会的讲话中[12]，习近平主席肯定了过去40年深圳经济发展取得的巨大成就，同时强调深圳作为大湾区的核心引擎作用。深圳和大湾区将携手上海和长三角地区，成为中国新一轮市场改革内循环与资本、人才和技术外循环的"双循环"战略的对接区。

与此同时，中共中央办公厅、国务院办公厅印发了《深圳建设中国特色社会主义先行示范区综合改革试点实施方案（2020—2025年）》[13]。为在五年内将深圳建成中国特色社会主义先行示范区，该方案赋予深圳在重点领域和关键环节改革上更多自主权，因而需要对现行法律、法规和政策进行近100项修订。作为十四五规划的一部分，以深圳为核心引擎的大湾区力争到2025年成为"国际科技创新中心"[14]，我们相信这些举措将对该地区创新生态系统的发展产生深远影响。

全面深化深圳科技发展

12 cpc.people.com.cn/n1/2020/1015/c64094-31892362.html
13 politics.people.com.cn/gb/n1/2020/1012/c1001-31887540.html
14 www.xinhuanet.com/politics/2020-11/03/c_1126693293.htm

1. 政府：实体和监管基础设施实现突破

现代化基础设施促进科技产业发展： 实现这一目标需要政府、企业家、金融部门和技术人才的协同配合。就政府而言，不仅要鼓励专利申请、奖励拥有研发设施的企业，还要为科技及其相关行业蓬勃发展提供所需的现代化基础设施（例如5G通信网络）。

完善法律保护和诉讼制度： 深圳将完善知识产权法律保护体系、涉外商事纠纷诉讼管辖制度以及国际法律服务与协调机制，健全国际行业和标准组织管理，成为市场开放的标杆城市。该方案承诺推进破产制度和机制的综合配套改革，试行破产预重整制度，完善自然人破产制度。

支持可用土地增效的改革： 深圳将在土地管理制度上获得更大的灵活性，以为其发展提供更多的土地。具体来说，将国务院可以授权的永久基本农田以外的农用地转为建设用地审批事项委托深圳市政府批准，完善一二级市场联动的土地市场服务监管体系。试点实行土地二级市场预告登记转让制度。

赋予地方政府更多空间开展改革试点工作： 该方案还赋予了深圳市政府更大的自主权，从而使其可以更加有效地促进产业发展。除了加强问责制和简化程序外，方案赋予深圳在干部和机构管理、统筹使用各类编制资源等方面更大自主权，支持深圳扩宽经济特区立法空间，在新兴领域加强立法探索，依法制定经济特区法规规章。

2. 金融市场：促进中国经济改革

支持深圳在推进人民币国际化方面先行先试： 方案提出将采取大胆举措，开放深圳的资本市场，以优化资源配置。其中包括开展本外币合一跨境资金池业务试点，支持符合条件的在深境内企业赴境外上市融资，支持符合条件的外资金融机构在深圳依法发起设立证券公司、基金管理公司，支持符合条件的外资机构在深圳依法合规获取支付业务许可证。这些举措将推进深圳在中国金融市场和人民币国际化方面的先行先试。

推进深圳股票市场发展： 建立新三板挂牌公司转板上市机制将有助新兴创新企业获得资金，提升对投资者的吸引力。同时，试点创新企业境内发行股票或存托凭证（CDR），将使得境外上市的中国科技公司也可以在国内上市。此外，深圳上市股票股指期货的推出，将有助于丰富市场上的金融衍生产品，提高深圳资本市场对国内外投资者的吸引力。

4. GBA as an "international technology center" in the Five Year Plan

In his speech to commemorate the 40th anniversary of Shenzhen as a Special Economic Zone [12], President Xi Jinping not only recognized the city's remarkable progress in economic development over the past 40 years, but also highlighted the role of Shenzhen as the engine in GBA. Together with Shanghai and the Yangtze River Delta, Shenzhen and the GBA will be the focal points of the dual circulation strategy where new domestic market reforms meet with the external circulation of capital, talent and technology.

The speech was accompanied with a "Comprehensive Reform Pilot Implementation Plan" [13] that was released jointly by the Central Committee and the State Council for Shenzhen. To be achieved in five years, the plan will lead to nearly 100 revisions in existing laws, regulations and policies, as it will grant Shenzhen greater autonomy in key reforms. We believe these points will have profound implications on the innovative ecosystem development in the region, as the GBA strives to become an "international technology and innovation center" [14] by 2025 as part of the 14th Five Year Plan (14FYP) .

Four-pronged approach to deepen Shenzhen's technology development

12 cpc.people.com.cn/n1/2020/1015/c64094-31892362.html
13 politics.people.com.cn/gb/n1/2020/1012/c1001-31887540.html
14 www.xinhuanet.com/politics/2020-11/03/c_1126693293.htm

1. Government: Breakthroughs in physical and regulatory infrastructure

Modern infrastructure enables the development of technology industry: To achieve this, keen participation of the government, entrepreneurs, the financial sector and technology talent are all required. For the government's part, efforts will not only be on encouraging patent applications and rewarding businesses with R&D facilities, but also on providing modern infrastructure (such as 5G communication network) for the technology sector and various related industries to thrive.

Improvements in legal protection and litigation regime: The city will become a benchmark city for market opening with the measures bringing improvements to the legal protection system of intellectual property, the litigation jurisdiction system of foreign commercial disputes and the international legal service and coordination mechanisms, and the management of international industry and standards organizations. The plan also pledged to expand the bankruptcy reform in Shenzhen to pilot bankruptcy pre-reorganization systems, simplify business deregistration, and improve the bankruptcy system for natural persons.

Land reform for more efficient allocation of usable land: Shenzhen will be given more flexibility to manage its land system, in order to provide more land for its expansion. Specifically, it is entrusted with the approval on the conversion of agricultural land (except for permanent farmland) to construction land, which was previously handled by the State Council. Flexible use of the existing land resources will be explored in the secondary transaction system and the supervision mechanism will also be improved.

More leeway for local government to pilot its own reforms: The reform plan also gives more autonomy to the Shenzhen government, so that it can become more efficient in facilitating industry development. In addition to increased accountability and simplified procedures, Shenzhen is allowed to adopt an incentive system to reward high-performing government workers, retain central government professionals in the workforce of the city government, and make full use of the legislative power of the SEZ to explore further market reforms.

为科技突破提供融资支持：深圳资本市场发展的重点将是助力中国的科技发展，并奖励创新方面的突破。方案提出，优化私募基金市场准入环境，探索优化创业投资企业市场准入和发展环境，旨在将深圳建成国际创业与融资中心。此外，方案还提出，实施知识产权交易评估系统，成立金融科技创新平台，推动数字人民币的研发应用和国际合作。

3. 民营部门：产业发展实现突破

放松管制，促进市场平稳运行：十四五规划蓝图将民营部门定位为中国科技发展的孵化器，同时放松管制将支持市场 的平稳运行。在全国的标准上，进一步放宽深圳的市场准入清单，放宽能源、电信、公用事业、交通运输、教育等领域市场准入，同时进一步放宽前沿技术领域的外商投 资准入限制。

完善数据产权和市场交易制度：该方案正式确认数据是可交易的商品和重要的生产要素，并承诺研究论证设立数据交易市场或依托现有交易场所开展数据交易，同时支持建设粤港澳大湾区数据平台，探索数据产权保护和利用新机制，建立数据隐私保护制度，试点推进政府数据开放共享。

4. 劳动力：人才储备实现突破

培养本土人才：可以说，大湾区科技创新发展的最大瓶颈是人才短缺，主要体现在两个方面：研发人员在劳动力人口中的占比和大学毕业生的集中度。作为十四五规划国家行动的一部分，中国将深化人才发展体制机制改革，致力于为中国的科技发展培养更多的顶级人才，包括健全以创新能力、质量、实效、贡献为导向的科技人才评价体系，引进国际学者和人才和支持发展高水平研究型大学。

建立具有国际竞争力的引才用才制度：深圳将聚天下英才而用之，建立具有国际竞争力的引才用才制度，包括优化外国人来华工作许可和工作类居留许可审批流程，制定投资创业优惠政策，建立高度便利化的境外专业人才（金融、税务、建筑和规划）执业制度。

2. Financial market: Facilitating China's economic reforms

Leader in RMB internationalization: The measures will take bold steps to liberalize Shenzhen's capital market to optimize resources allocation. It includes a pilot scheme for the integration of domestic and foreign currencies for cross-border fund pools, the RMB-denominated offshore bond-issuing mechanisms of the local government, permission for qualified foreign financial institutions to establish securities companies and fund management companies in Shenzhen, and support for eligible foreign institutions to obtain payment service business licenses. Together, these measures will facilitate Shenzhen's leading position in China's financial market and the internationalization of the RMB.

Facilitating the development of the Shenzhen stock market: The establishment a mechanism to transfer from China's "new third board" equity market to ChiNext will help burgeoning innovative firms gain access to capital and boost attractiveness to investors. In addition, companies will be allowed to issue shares or Chinese Depositary Receipts (CDRs), which allow Chinese tech companies listing overseas to also list on mainland China. Introduction of stock index futures of Shenzhen-listed shares, meanwhile, will help enrich the financial derivative products in the market and boost the attraction of the Shenzhen capital market to both domestic and international investors.

Fundraising for technology breakthroughs: A focus in Shenzhen's capital market development will be to fund China's technology development and reward the breakthroughs in innovation. According to the plan, market access for private equity (PE) funds and venture capital (VC) enterprises will be improved, with the aim for Shenzhen to become an international start-up fundraising center. A valuation system will be implemented to enable trading of intellectual property. A FinTech innovation platform will be established, and the research, development and international cooperation with respect to digital RMB will be encouraged.

3. Private sector: Breakthroughs in industry development

Deregulation to promote smooth running of the market: The 14FYP blueprint positioned the private sector as the incubator of China's technology development, and pro-business policies and deregulation will support smooth running of the market. Further to the national standard, a list of special measures for Shenzhen will be formulated to relax market access in the sectors of energy, telecommunications, public utilities, transportation, and education and others. Restrictions on foreign investment in cutting edge technology will also be relaxed.

Data property right and market trading system: Formally recognizing data as a tradable commodity and an important factor of production, the plan also pledged to explore the possibility of establishing a data trading market, possibly at one of the existing trading platforms. It will also support the construction of a cross-border big data center in the GBA. Mechanisms relevant to the protection, utilization, sharing and trading of data property rights will be established and improved.

4. The workforce: Breakthroughs in the talent pool

Nurturing homegrown talent: Arguably the biggest bottleneck in innovation and technology development in the GBA is the shortage of talent both in terms of the share of R&D personnel in the labor force and the concentration of university graduates. As part of a national drive in the 14FYP, reforms will be launched to nurture more top-level talent to contribute to China's technology development. They include a talent appraisal system in the academia that links renumeration to marketability of scientific research, recruitment of international scholars and resources, and additional resources to the development of "high-level research-oriented" universities.

Internationally competitive recruitment system: Meanwhile, Shenzhen will focus on identifying and recruiting talent from around the world. An internationally competitive talent recruitment system will be established to include expedited working and residence permits approval, favorable policies in investment and entrepreneurship, and recognition of professional qualifications in finance, tax, architecture, and planning.

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1.7 A Milestone in Legal Development: China Promulgates a *Civil Code*

**Courtesy of Anderson & Anderson LLP*

Introduction

After thousands of years without a civil code, China National People's Congress (NPC) adopted China's first *civil code* on May 28, 2020 with 2879 votes in favor, 2 against, and 5 abstentions. The Code went into effect on January 1, 2021.

This first civil code incorporates existing civil laws, such as those protecting the right to residence and the right to privacy, along with regulations in some new areas of law, such as privacy of personal data online and virtual property protection.

Various Chinese media including CGTN have promoted the civil code "as a landmark achievement of China's efforts to widely promote the rule of law, at a time when Chinese society is experiencing a major transformation in its development. Updating the legislation that the rule of law relies on is an important step in the modernization of the national governance system and improving its capacity to respond to the country's needs. As one of the most important laws on the protection of individual rights and interests, the civil code will give a major boost to the level of social fairness and justice in China."

Our legal legend and leading Chinese law expert, Dr. David Buxbaum and his team at the law firm of Anderson and Anderson, LLP have conducted analysis of this new civil code which are presented in the following pages. Dr. Buxbaum has been practicing law in China for the past 48 years and his contributions to the advancement of the legal system in China have been enormous.

A. Introduction

From the Qin dynasty to the Qing dynasty, a period of about 2000 years, China was governed by traditional Chinese law, a system that influenced law in Japan, Korea and Vietnam, the longest successful legal system in history, which came to an end with the Xinhai Revolution of 1911. Even before the Revolution, the Qing government began a program of modernizing traditional Chinese law and various persons, such as the outstanding legal scholar, Shen Jiaben, were instrumental in bringing about change in traditional law. During the Republican period, until 1st October 1949, many new laws were drafted and some implemented. However, on 1st October 1949, China abolished all previous laws and regulations and commenced development of a new legal system. This new system, based in large part on Soviet law, progressed until 1957, developing draft legislation, legal journals such as *Zhengfa Yanjiu* (Study of Politics and Law) and enacting the *Marriage Law* of 1950 and a reasonable Constitution in 1954.[1] However, these developments came to a dramatic end in the late fifties during the Anti-Rightist Movement and the Great Leap Forward, which was a great leap backwards for legal development. Not until 1976 with the end of the Cultural Revolution and indeed more properly until 1978, did the legal institutions begin to recover. Prior thereto, except for regulations for State Owned Enterprises ("SOE"), the only publicly promulgated laws were the *Marriage Law* of 1950, the Counter-Revolutionary Regulations and a poor quality Constitution.

1 See David C. Buxbaum, Preliminary Trends in the Development of the Legal Institutions of Communist China and the Nature of the Criminal Law, International and Comparative Law Quarterly (1962), lead article for the year, reprinted in Government of Communist China, Chandler, San Francisco in 1966.

1.7 一个法制发展里程碑：中国颁布《民法典》

本节由安以恩律师事务所提供

引言

全国人民代表大会于2020年5月28日通过了《中华人民共和国民法典》，这是新中国第一部以法典命名的法律。该民法典以2879票赞成，2票反对和5票弃权获得通过，且于2021年1月1日生效。

该民法典囊括了现有的民法，包括保护居住权和隐私权的法律，以及法律新领域的法规，例如网络个人数据隐私和虚拟财产保护。

在中国社会正经历着重大变革之际，包括中国国际电视台在内的各大中国媒体，都宣称该民法典为中国广泛推动法治建设的标志性成就。法制建设依赖于立法更新，这是推动国家治理体系现代化和提高其响应国家需求的能力的重要一步。作为保护个人权益最重要的法律之一，《中华人民共和国民法典》将极大地促进中国的社会公平和正义。

我们的法律传奇人物和中国法律的权威专家David Buxbaum博士及其安與恩办事处的团队对这一新的民法典进行了分析，分析内容将在本书中所呈现。Buxbaum博士在中国从事法律工作已有48年，他为中国法律制度的发展做出了巨大贡献。

一、 前言

从秦朝到清朝近两千多年，中国一直使用中国传统法律制度，对日本、韩国和越南等有着深远影响。自古以来，这个历史悠久、富有成果的传统法律制度，终于在1911年辛亥革命走到了尽头。即便在辛亥革命前，清政府也开始了一系列对传统中国法律现代化的措施，沈家本等众多杰出法学家对传统法律的改变起重要作用。在民国时期至1949年10月1日间，多部新法律出台并实施。但1949年10月1日新中国成立，废除原有的所有法律法规，开始新的法律制度发展。这个新的制度在1957年前大部分在苏联法律的基础上发展、起草、立法，如《政法研究》法律周刊、1950年颁布《婚姻法》，1954年颁布《宪法》。[1]但立法的进程在上世纪五十年代后期遭到了"左倾""大跃进"的挫折，法制发展止步不前。直到1976年文革结束后，尤其是在1978年后，法制进程才步入重启阶段。此前，除了对国有企业的规定外，就只有1950年《婚姻法》、《惩治反革命条例》和未完善的《宪法》。

中国从公元前221年的秦朝至公元1911年间就已经有法典，但并非民法典。[2]尽管传统法律制度有光辉的成果，但现代中国在制定民法典的过程中也没有参考传统法律实践。实质上，中国吸取了古代罗马民法典的概念，融入了当代中国法律的具体特色。民法典这一概念起源于古代罗马法中，查士丁尼皇帝在公元约529年下令编纂的《罗马民法大全》，其中包括《查士丁尼法学总论》《查士丁尼学说汇编》《查士丁尼法典》《查士丁尼新敕令》四种法律文献在内的法律汇编。《罗马民法大全》实质上处理关于人、物、行为的私有法，特别是《查士丁尼法学总论》

1 见包恒《共产主义中国司法机构的主要发展趋势与刑法本质》，国际与比较法季刊（1962年），年度重要文章，中国共产主义政府重印，昶德勒，三藩市，1966年

2 长期以来，外国人认为中国在古代没有民法和民事诉讼。实际上，中国在古代有许多重要的民法和民事诉讼。见包恒《1789-1985年淡水、新竹基层审判中民事程序及实践的若干方面》（《亚洲研究》1971年月刊第三十期第255页）。该文章分析了在清朝地方官府档案中可以发现，地方官员处理的三分之一案例都是民事诉讼。我的这篇文章引起很大反响，并在中国再版。另外，古代庭审处以的一些刑罚，如枷刑，在外国人看来，中国法律很残忍且不成熟。后来从台湾大学的杰出学者戴炎辉教授、最重要的是政法大学张晋藩教授及其学生的研究中，我们可以了解到古代中国法律源远流长、博大精深。

While China had codes of law from the time of Qin dynasty, 221 BCE, until 1911 CE, but this was not a civil code.[2] Yet modern China did not consider any of the traditional legal practices when developing a civil code, despite the outstanding success of the traditional legal system. In essence, China adapted a contemporary version of the Roman *Civil Code*, as modified by specific characteristics of contemporary Chinese law. The concept of a civil code originates from ancient Roman law, where the Emperor Justinian enacted the C*orpus Juris Civilis*, on or about 529 CE, which included the *Institutes*, *Digest*, *Codex* and *Novels*. The *Corpus Juris Civilis* essentially deals with private law about persons, things and actions. The *Institutes* particularly influenced the categories of modern legal thought in Europe. For example in France, in 1803-4 by enactment of the *Code Civil*. As the *Institutes* started book one, part three with the laws regarding persons, so the *Civil Code* of China, book one, chapter two commences with the law about persons. The *Civil Code* of Mongolia, similar to European codes, chapter three refers to citizens and chapter four about juristic persons.

1. Statutory Law

While many developing states, such as Mongolia in 2002, adapted a comprehensive civil code, based on borrowing large part of other nation's code, China proceeded in its own way by enacting piecemeal legislation, while working on a civil code, which went through many unsuccessful drafts. For example, in 1979, the third time a civil code was considered, China had just commenced a historical era of reform and opening, therefore, the promulgation of the *Civil Code* was delayed for emphasis on other matters. China thus decided to enact separate statutes for civil law matters, then gradually accumulate, summarize and improve these statutes, and finally formulate a *Civil Code*.[3] Therefore, China enacted the amended *Marriage Law* of 1980, *Succession Law* of 1985, *General Principles of the Civil Law* of 1986, *Guarantee Law* of 1995, *Contract Law* of 1999, *Law of Property Rights* of 2007 and the *Tort Liability Law* of 2009. In March 2015, the Legislative Affairs Commission of the Standing Committee of the National People's Congress officially launched the compilation of a *Civil Code*. Over five years, after ten Standing Committee meetings and two national congresses, the *Civil Code* was finally completed. On 28th May 2020, the Third Session of the 13th National People's Congress adopted the *Civil Code of the People's Republic of China*, as a specific manifestation of the civil rights granted by the *Constitution of the People's Republic of China*. For example, the *Constitution*, Article 13 provides, the lawful private property of citizens may not be encroached upon; the state protects by law the right of citizens to own private property and the right to inherit private property. The *Constitution* Article 49 also provides, marriage, the family and mother and child are protected by the state.

China's *Civil Code* largely organizes existing civil laws, rather than creating entirely new civil law, although new civil law is promulgated in the *Civil Code*. There are also provisions for new situations. There are excellent additions to civil law, such as the section on personality rights, which properly organizes and enhances the rights of persons to their names and images, to be free from harassment and defamation and in another section to acquire property. Prior to the publication of the *Civil Code*, there existed 32 civil and commercial laws in force in China, but 9 of them, including the *Marriage Law*, the Succession Law, the *General Principles of the Civil Law*, the

2 For a very long time, foreigners thought that China did not have civil law and civil litigation during the traditional period. In fact, there was substantial civil law and civil litigation in China during the traditional period. See David C. Buxbaum, Some Aspects of Civil Procedure and Practice at the Trial Level in Tanshui and Hsinchu from 1789 to 1895, Volume XXX Journal of Asian Studies, p. 255 (1971). This article analyzes a Qing dynasty magistrate's archive and found that about one third of the cases handled by this magistrate were civil proceedings. This article has been called a seminal article and has been reprinted in China. Additionally, because of certain punishments administered by the traditional courts, such as the cangue, foreign persons assume that traditional Chinese law was cruel and unsophisticated. Thanks to the outstanding scholarship of Professor Dai Yanhui of Taiwan University; and most importantly the work of Professor Zhang Jinfan of Zhengfa University and his many students, we now know the traditional Chinese legal system was among the most sophisticated and clearly the most enduring legal system in world history.

3 Mao Zedong, On Practice, 1937. This treatise by Mao Zedong is very influential in Chinese government proceedings. For example, the Code of Civil Procedure in modern China was used by the courts even before it was promulgated and based on that experience, revised and then promulgated.

影响了欧洲现代法律思想，如1803年至1804年间颁布的《法国民法典》。《查士丁尼法学总论》作为四册之首，以第三部分的与人的相关法律规定为开篇，《中国民法典》同样也以人的法律规定为第二章。《蒙古民法典》，类似欧洲的法典，在第三章对公民作出规定，第四章对法人作出规定。

1. 成文法

许多发展中国家，如蒙古在2020年借用其他国家的民法典，通过了全面的民法典。但中国根据自身的情况，在颁布单行法律的同时进行民法典的制定工作，曾经先后多次启动民法制定工作而未能取得成果。例如1979年第三次尝试启动民法起草工作，但由于刚进入改革开放历史新时期，由于其他原因，民法典的制订被搁置。中国决定先制定民事单行法律，然后逐步积累、总结、提高，最后制订《民法典》。[3]中国于1980年修改《婚姻法》，1985年发布《继承法》，1986年发布《民法通则》，1995年发布《担保法》，1999年发布《合同法》，2007年发布《物权法》，2009年发布《侵权责任法》……多部民事法律法规相继通过并实施。全国人大常委会法制工作委员会于2015年3月正式启动民法典编纂工作。历时五年，历经十次常委会会议、两次全国人代会的审议，《民法典》最终完成。2020年5月28日，十三届全国人大三次会议通过了《中华人民共和国民法典》，是《中华人民共和国宪法》赋予的公民民事权利的具体体现。例如，《宪法》第十三条规定，公民的合法的私有财产不受侵犯。国家依照法律规定保护公民的私有财产权和继承权。《宪法》第四十九条规定，婚姻、家庭、母亲和儿童受国家的保护。

尽管中国的《民事典》颁布了新的民事法律，但《民法典》很大程度上是对现行的民事法律进行整理，而不是制定全新的民事法律，同时还对于出现的新情况做出新规定，甚至还有对民事法律的很好补充，例如人权部分，整理并加强了姓名和形象的人权，保护其受到骚扰和诋毁。另一个就是获取财产部分，在《民事典》颁布之前，我国现行有效的民事商事法律共有32部。其中，《婚姻法》、《继承法》、《民法通则》、《收养法》、《担保法》、《合同法》、《物权法》、《侵权责任法》、《民法总则》等9部法律的内容都已纳入《民事典》中，所以不再保留，将随同《民事典》的施行而同步废止。其他23部法律将继续保留，与《民事典》并行实施。

2. 司法解释

中国，作为大陆法系国家，极大程度上依靠成文法。尽管如此，除了国家立法机关制定和修改法律法规，司法机构出具司法解释[4]和指导性案例[5]，针对法律法规进行解释和运用，解决司法实践中出现具体事项。司法机关，特别是最高人民法院的举措，对法院有约束作用，正如全国人大立法所起的作用。因此，中国拥有一套法典与法规共存的、纳入司法解释和指导性案例的体系，全面涵盖了中国法律。

a. 法典、法规及司法解释的协调问题

中国国家主席习近平提出，要及时完善相关民事司法解释，使之同民法典及有关法律规定和精神保持一致，统一民事法律适用标准[6]。为此，最高人民法院全面启动对现行有效的591件司法解释及139件指导性案例、公报案例进行全面清理，推进新的司法解释制定工作，确保《民法典》统一正确实施。

最高人民法院清理司法解释的基本原则："第一，属于应当废止的，经最高人民法院审判委员会审议后公布废止清单；第二，属于简单修改的，修改完成提交最高人民法院审判委员会审议后全文公布，于2021年1月1日实施。主要包括两种形式：一是需要对引用的法律名称、条文序号、个别文字作出修改；二是还需要修改个别条文表述，或者废止个别条文；第三，属于重大修改的，即不但需要修改司法解释名称，还需要同时对条文进行大规模修改，或对同一类多个司法解释进行合并修改，比如《物权法》《合同法》《担保法》《婚姻法》等的司法解释等。这类司法解释需要在清理完成的前提下制定修订计划，分期分批完成；第四，属于应当保留的，即与《民法典》规定不冲突的司法解释，2021年1月1日继续生效适用。例如，《最高人民法院关于适用〈中华人民共和国合同法〉若干问题的解释(二)》第二十八条规定，"当事人依照合同法第一百一十四条第二款的规定，请求人民法院增加违约金的，增加后的违约金数额以不超过实际损失额为限。增加违约金以后，当事人又请求对方赔偿损失的，人民法院不予支持。"《合同法》第一百一十四条对照《民法典》第五百八十五条，仅修改部分，具体意思没有改变，因此，在最高院没有出台新的司法解释或发出废止通知前，该司法解释条款仍然有效；第五，涉及到与其他法律衔接适用

3 毛泽东1937年发表的著作《实践论》对中国政府有着深远影响。例如，现代中国的《民事诉讼法》在正式颁布前已适用于法院，并根据实际经验进行修订，最后形成这部法律。

4 最高人民法院的司法解释权最早源于1979年7月5日发布的《人民法院组织法》第三十三条规定，"最高人民法院对于在审判过程中如何具体应用法律、法令的问题，进行解释。"后来，1981年6月10日通过的《全国人民代表大会常务委员会关于加强法律解释工作的决议》二、凡属于法院审判工作中具体应用法律、法令的问题，由最高人民法院进行解释。凡属于检察院检察工作中具体应用法律、法令的问题，由最高人民检察院进行解释。最高人民法院和最高人民检察院的解释如果有原则性的分歧，报请全国人民代表大会常务委员会解释或决定。

5 2018年10月26日修订的《人民法院组织法》第十八条规定"最高人民法院可以对属于审判工作中具体应用法律的问题进行解释。最高人民法院可以发布指导性案例。"该条法律定义了指导性案例。

6 习近平2020年5月29日在十九届中央政治局第二十次集体学习时的讲话

Adoption Law, the *Guarantee Law*, the *Contract Law*, the *Law of Property Rights*, the *Tort Liability Law* and the *General Provisions of the Civil Law*, have been incorporated into the *Civil Code*. Therefore, these nine laws will cease to be in effect when the *Civil Code* takes effect. The other 23 laws will remain effective, with the *Civil Code*.

2. Judicial Interpretations

China, as a country with a civil law system, depends largely on codified law. Nevertheless, aside from the laws and regulations of the national legislative organs, the judicial authorities issue judicial interpretations and explanation of the law[4] and specify leading cases[5]. The actions of the judicial institution, particularly the Supreme People's Court's, is binding on the courts just as if it was legislation from the National People's Congress. Therefore, China has a mixed system of codes and statutes; together with judicial interpretations and leading cases, which comprehensively encompass the law in China.

a. Problems of Harmonizing Codes, Statutes and Judicial Interpretations

Recently, Xi Jinping, China's Chairman, required that relevant civil judicial interpretations be promptly improved to be consistent with the *Civil Code* the relevant laws and be unified with the standards for application of civil law.[6] Therefore, the Supreme People's Court has launched a comprehensive "cleaning-up" of the 591 judicial interpretations in force and 139 guidance cases and public cases, and promoted the formulation of new judicial interpretations, which will ensure the unified and correct implementation of the *Civil Code*.

4 The Right of Judicial Interpretation of the Supreme People's Court can be dated back to the Article 33 of the Law on the Organization of the People's Courts published on 5th July 1979, which provided that "the Supreme People's Court gives interpretation on questions concerning specific application of laws and decrees in judicial proceedings." Later, the Resolution of the Standing Committee of the National People's Congress Providing an Improved Interpretation of the Law (passed on 10th June 1981). Article 2 reads, "Interpretation of questions involving the specific application of laws and decrees in court trials shall be provided by the Supreme People's Court. Interpretation of questions involving the specific application of laws and decrees in the procuratorial work of the procuratorates shall be provided by the Supreme People's Procuratorate. If the interpretations provided by the Supreme People's Court and the Supreme People's Procuratorate have discrepancies in principle, they shall be submitted to the Standing Committee of the National People's Congress for interpretation or decision."

5 The Law on the Organization of the People's Courts (amended on 26th October 2018), Article 18 provides that "The Supreme People's Court may provide interpretations on specific application of law related to trials. The Supreme People's Court may issue leading cases." This provision defines the leading cases.

The Supreme People's Court provided basic principles for "cleaning up" judicial interpretations: "First, the interpretations that shall be revoked will be subject to a revocation list to be published upon the review of the Judicial Committee of the Supreme People's Court. Second, the interpretations that require simple revision will be submitted to the Judicial Committee of the Supreme People's Court, and after review of the Judicial Committee of the Supreme People's Court, they will be published and implemented as of 1st January 2021. There are mainly two types of revisions: (1) revisions on quoted legal names, article numbers, specific characters; and (2) revisions on expressions of certain articles, or removal of certain articles. Third, for the interpretations that require material modifications, not only their names will be changed, but also their articles will undergo massive modifications, or they will be incorporated in several judicial interpretations under the same category, such as the judicial interpretations of the *Property Law*, *Contract Law*, *Guarantee Law* and *Marriage Law*. These judicial interpretations shall be put in the agenda of revision after the "cleaning up" is complete, and will be revised on schedule. Fourth, the interpretations that shall remain, namely those that do not conflict with the *Civil Code*, will continue to be effective and applicable. For example, the *Interpretation of the Supreme People's Court on Issues of Application of the Contract Law (II)*, Article 28, provides that "where a party requests the people's court to increase liquidated damages pursuant to the *Contract Law*, Article 114(2), the increased liquidated damages shall not exceed the amount of actual losses. If a party makes another request to the other party for compensation for losses after liquidated damages have been increased, the people's court will not sustain this second request." The *Civil Code*, Article 585,

6 Speech on 20th collective study session of the 19th CPC Central Committee's Political Bureau on 29th May 2020

的司法解释，如果其他法律正在或者将要修订的，不宜急于修改，而等该法律修改颁布后再相应进行司法解释修改，如与公司法相关的个别司法解释条款。[7]"

关于这一点，2020年12月30日，最高人民法院公布了对法律规定的原有解释全面清理情况，与民法典规定一致的共364件，未作修改、继续适用；对标民法典，需要对名称和部分条款进行修改的共111件，经修改颁布后自2021年1月1日施行；废止的司法解释116件将会失效。

修改的111件司法解释及相关规范性文件包括民事类27件、商事类29件、知识产权类18件、诉讼类19件以及执行类18件。

直接废止的116件司法解释中有24件在废止的同时制定相应司法解释，3件废止后根据新的实践需要，及时制定相应的司法解释。

同时，最高人民法院一并发布了与民法典配套的第一批共7件新的司法解释，于2021年1月1日于民法典同步施行，涉及民法典时间效力[8]、担保[9]、物权[10]、婚姻家庭[11]、继承[12]、建筑工程合同[13]和劳动争议[14]。

《民法典》对原来的九部法律作出修改，原则上纳入《民法典》，并对《民法典》生效后的法律行为进行规制。《最高人民法院关于适用<中华人民共和国民法典>时间效力的若干规定》规定，"民法典施行后的法律事实引起的民事纠纷案件，适用民法典的规定。民法典施行前的法律事实引起的民事纠纷案件，适用当时的法律、司法解释的规定，但是法律、司法解释另有规定的除外。"[15]但是，《立法法》第九十三条规定"法律、行政法规、地方性法规、自治条例和单行条例、规章不溯及既往，但为了更好地保护公民、法人和其他组织的权利和利益而作的特别规定除外。" 此种所谓"有利溯及"在刑法的适用上表现为"从旧兼从轻"，但民法的适用上，却没有一个统一的规则，需要根据具体情况具体分析，看适用《民法典》更有利于当事人合法权益的保护还是适用当时的法律更有利于

7 最高人民法院研究室副主任郭锋在2020年11月27日"《民法典》适用重大问题研讨会"上发表的题为"民法典实施与司法解释清理和制定工作"演讲

8《最高人民法院关于适用<中华人民共和国民法典>时间效力的若干规定》

9《最高人民法院关于适用<中华人民共和国民法典>有关担保制度的解释》

10《最高人民法院关于适用<中华人民共和国民法典>物权编的解释（一）》

11《最高人民法院关于适用<中华人民共和国民法典>婚姻家庭编的解释（一）》

12《最高人民法院关于适用<中华人民共和国民法典>继承编的解释（一）》

13《最高人民法院关于审理建设工程施工合同纠纷案件适用法律问题的解释（一）》

14《最高人民法院关于审理劳动争议案件适用法律问题的解释（一）》

15《最高人民法院关于适用<中华人民共和国民法典>时间效力的若干规定》第一条

当事人权益的保护。例如，《最高人民法院关于适用<中华人民共和国民法典>时间效力的若干规定》规定，"民法典施行前成立的合同，适用当时的法律、司法解释的规定合同无效而适用民法典的规定合同有效的，适用民法典的相关规定。" [16]" 民法典施行前订立的合同，提供格式条款一方未履行提示或者说明义务，涉及格式条款效力认定的，适用民法典第四百九十六条的规定。"[17]

二、《民法典》概括介绍

《民事典》共7编1260条，各编依次为总则、物权、合同、人格权、婚姻家庭、继承、侵权责任，以及附则，总字数达106600余字。民法典规定的内容包括民事活动必须遵循的基本原则、民事主体制度、监护制度、民事权利制度、民事法律行为和代理制度、民事责任制度、诉讼时效制度、物权制度、合同制度、担保制度、人格权保护制度、婚姻家庭制度、收养制度、继承制度、侵权责任制度等。

本文首先探讨除纳入《民法典》外的新加入《民法典》法律规定。[18]

三、具体制度创新

1. 合同编

《民法典》合同编共有526条[19]。《民法典》在通则部分增加了强制缔约制度、预约合同制度、格式条款制度等，而分则部分在现行合同法规定的买卖合同、租赁合同、借款合同、运输合同等15种典型合同的基础上，《民法典》增加规定了保证合同、保理合同、物业服务合同、合伙合同等4种典型合同。本文先探讨强制缔约制度、预约合同制度及格式条款制度，然后对这些合同进行具体分析。

a. 强制缔约制度

强制缔约制度建立的主要目的是保护弱势群体的利益，但由于强制缔约制度违反了合同的自愿性原则，必须在法律法规限定明确规定的情形下才能使用。基于此，合同编规定，依照法律、行政法规的规定负有发出要约义务的当事人，应当及时发出合理的要约。依照法律、行政法规的规定负有作出承诺义务的当事人，不得拒绝对方合理的订立合同要求。

16《最高人民法院关于适用<中华人民共和国民法典>时间效力的若干规定》第八条

17《最高人民法院关于适用<中华人民共和国民法典>时间效力的若干规定》第九条

18 杜月秋，孙政 编，《民法典条文对照与重点解读》，法律出版社，北京 2020 年

19 与现行《合同法》相比，增加了136条，删除了37条，修改了153条

corresponding to the *Contract Law*, Article 114, only revised a part of this, while the actual meaning has not changed. Therefore, prior to the notice of publications of the new judicial interpretation or the revocation, such judicial interpretation remains valid. Fifth, if the interpretations involve other related laws that are or will be amended, they will be revised after the amendment of the laws, such as certain judicial interpretations related to the *Company Law*.[7]"

In this regard, on 30th December 2020, the Supreme People's Court announced the comprehensive "cleaning up" of its prior explanation of laws. 364 items consistent with the provisions of the *Civil Code* have not been modified and will continue to be applicable; 111 items required changes of some provisions in accordance with the *Civil Code*, will come into force on 1st January 2021 after being revised and promulgated; and 116 judicial interpretations will be cancelled.

The 111 revised judicial interpretations include 27 related to civil matters, 29 related to commercial matters, 18 related to intellectual property, 19 related to litigation and 18 related to enforcement.

Of the 116 judicial interpretations that were cancelled, 24 of them have new corresponding judicial interpretations at the time of abolishment, and 3 of them will have new corresponding judicial interpretations in time.

At the same time, the Supreme People's Court issued 7 new judicial interpretations supporting the *Civil Code*, which will be implemented simultaneously with the *Civil Code* on 1st January 2021, involving the statute of limitations[8], guarantees[9], property rights[10], marriage and family[11], inheritance[12], construction contracts[13] and labor disputes[14].

The *Civil Code* amended nine prior laws, which were incorporated in the *Code*, after implementation and effect, in principle, and regulate legal behavior after the *Civil Code* comes into effect. *Several Provisions of the Supreme People's Court on the Application of the Statute of Limitations in the Civil Code of the People's Republic of China* provides that: "civil disputes arising from legal facts after the implementation of the *Civil Code* shall apply the provisions of the *Civil Code*. Civil disputes arising from legal facts before the implementation of the *Civil Code*, shall apply the provisions of the laws and judicial interpretations then in force, unless otherwise provided by the laws and judicial interpretations."[15] However, the *Legislation Law*, Article 93 states that "laws, administrative regulations, local regulations, autonomous regulations, separate regulations and rules shall not be retroactive, except for the special provisions developed for the better protection of the rights and interests of citizens, legal persons and other organizations." This so called "favorable retroactivity" will show up in the "doctrine of observing old laws and new ones with lighter punishment" in the application of criminal law. However, in the application of civil law, there is no unified regulations regarding "favorable retroactivity" will depend on the specific situations and on whether the *Civil Code* or the laws then in force are more beneficial for protection of a party's rights and interests. *Several Provisions of the Supreme People's Court on the Application of the Statute of Limitations in the Civil Code of the People's Republic of China* provides that "if a contract concluded before the implementation of the *Civil Code* that was considered to be invalid

7 The Speech titled Implementation of the Civil Code and the Cleaning up and Draft of Judicial Interpretation made by Ren Guofeng, Deputy Director of the Research Office of the Supreme People's Court, at the seminar regarding the major issues on application of the Civil Code, on 27th November 2020

8 Several Provisions of the Supreme People's Court on the Application of Statute of Limitations in the Civil Code of the People's Republic of China

9 Interpretation of the Supreme People's Court on the Application of the Guarantee System in the Civil Code of the People's Republic of China

10 Interpretation of the Supreme People's Court on the Application of the Property Rights Chapter in the Civil Code of the People's Republic of China (1)

11 Interpretation of the Supreme People's Court on the Application of Marriage and Family Chapter in the Civil Code of the People's Republic of China

12 Interpretation of the Supreme People's Court on the Application of the Inheritance Chapter of the Civil Code of the People's Republic of China (1)

13 Interpretation of the Supreme People's Court on the Application of Law in Review of Construction Contract Disputes (1)

14 Interpretation of the Supreme People's Court on the Application of Law in Review of Labor Dispute Cases (1)

15 Several Provisions of the Supreme People's Court on the Application of the Statute of Limitations in the Civil Code of the People's Republic of China, Article 1

当事人负有强制缔约义务的情形主要有两种：

i. 公共服务企业的强制缔约义务。为保障人民的基本生活需要，合同编的电、水、气、热力合同规定，向社会公众供电、水、天然气、热力的提供者，不得拒绝使用人合理的订立合同要求[20]。运输合同规定，从事公共运输的承运人不得拒绝旅客、托运人通常、合理的运输要求[21]，及

ii. 完成国家订货任务的强制缔约义务。国家根据抢险救灾、疫情防控等需要下达国家订货任务、指令性任务的，有关民事主体应当依照有关法律、行政法规规定的权利义务订立合同[22]。例如，在这次新冠病毒疫情期间，为了保证防疫物资的紧急供应，保护社会公众的生命健康，国家可以向生产防护服或者呼吸机的企业下达强制订货任务，强制订立这类买卖合同，原则上企业不得拒绝订立这类合同。

b. 预约合同制度

预约合同是指当事人双方约定在未来一定期限内订立合同的协议，是广泛采用的一种合同的订立方式，如认购书、订购书、商品房预订协议书等。

原先的《合同法》未对预约合同做出规定，但在《买卖合同司法解释》[23]第二条规定"当事人签订认购书、订购书、预订书、意向书、备忘录等预约合同，约定在将来一定期限内订立买卖合同，一方不履行订立买卖合同的义务，对方请求该不履行方承担预约合同违约责任或者要求解除预约合同并主张损害赔偿的，人民法院应予支持。"《民法典》合同编将预约合同制度的范围从买卖合同扩大到所有的合同，规定了当事人约定在将来一定期限内订立合同的认购书、订购书、预订书等，构成预约合同。当事人一方不履行预约合同约定的订立合同义务的，对方可以请求其承担预约合同的违约责任。

c. 格式条款制度

《民法典》扩大了格式条款提示和说明义务的适用范围。采用格式条款的一方除了需要提示原来《合同法》规定的提示免除或者限制责任的条款外，对所有与对方有重大利害关系的条款都应当履行提示和说明义务。什么是重大利害关系条款?《民法典》第四百七十条规定了合同一般应包括的条款。一般来说，该条列举的标的、数量、质量、价款或者报酬、履行期限、地点和方式、违约责任、解决争议的方法等条款均属于与对方有重大利害关系的条款。个别法律中也要重大利害关系条款的规定，例如，消费合同中经营者应当以显著方式提请消费者注意商品或者服务的数量和质量、价款或者费用、履行期限和方式、安全注意事项和风险警示、售后服务、民事责任等[24]。

提供格式条款的一方未履行提示和说明义务的，相对方有权主张该格式条款不成为合同内容的一部分，而非原先《合同法》的撤销。

d. 保证合同

《物权法》实施后，《担保法》大部分条款失效，仅剩"保证"部分仍然沿用《担保法》。《民法典》将《担保法》内关于"保证"的条款并入合同编。

《担保法》规定当事人对保证方式没有约定或者约定不明确的，按照连带责任保证承担保证责任[25]。但是《民法典》完全颠覆了该原有的规定，规定没有约定或者约定不明确的，按照一般保证承担责任[26]，即保证人仅对其份额承担责任，不承担连带责任。责任份额没有约定的，平均分配。连带保证责任的保证人没有先诉抗辩权，即债务人没有履行债务的情况下，债权人就可以要求保证人承担保证责任，无需向法院起诉或向仲裁机构申请仲裁。如果保证人承担一般保证责任，则需要在债务人不能履行债务的情况下，才承担保证责任。例如，保证人承担一般保证责任时，债务人不履行债务，债权人不能如同承担连带保证责任一样直接向保证人要求承担保证责任，而必须先向法院起诉或向仲裁庭申请仲裁，法院判决或者仲裁裁决后，债权人向法院申请执行，债务人仍不能履行债务时，债权人才有权要求保证人承担责任。债权人直接要求保证人承担责任的，保证人可以先诉抗辩权进行抗辩，拒绝承担责任。

一般保证人在主合同纠纷未经法院审判或者仲裁，并就债务人财产依法强制执行仍不能履行债务前有权拒绝承担保证责任，但是具有三种例外情形[27]。与原先的《担保法》相比，《民法典》增加了一种例外情形，即债权人有证据证明债务人的财产不足以履行全部债务或者丧失履行债务能力[28]。基于上述特点，最高院公布的《最高人民法院关于适用<中华人民共和国民法典>有关担保制度的解释》进一步细化规范保证合同的具体适用。例如，除非出现《民法典》第六百八十七条第二款规定的四种情形之一，法院不支持债权人申请对一般保证人的财产进行保全。一般保证中，债权人不能仅起诉保证人，必须将保证人和债务人列为共同被告，否则，法院将驳回债权人的起诉。[29]

该司法解释还将进一步规范了一般保证的诉讼时效。2000年，出台的《最高人民法院关于适用<中华人民共

20 《民法典》第六百四十八条和第六百五十六条

21 《民法典》第八百一十条

22 《民法典》第四百九十四条

23 《买卖合同司法解释》的全称为《最高人民法院关于审理买卖合同纠纷案件适用法律问题的解释》

24 《消费者权益保护法》第二十六条第一款

25 《担保法》第十九条

26 《民法典》第六百八十六条

27 《担保法》第十七条

28 《民法典》第六百八十七条

29 《最高人民法院关于适用<中华人民共和国民法典>有关担保制度的解释》第二十六条

pursuant to the provisions of the laws and judicial interpretations then in force, but is considered to be valid pursuant to the *Civil Code*, shall apply the relevant provisions in the *Civil Code*. "[16] "A contract concluded before the implementation of the *Civil Code*, where the party providing the standard terms fails to perform the obligation of reminder or explanation, which involves the determination of the validity of the standard terms, shall apply the *Civil Code*, Article 469."[17]

B. Overview of the Civil Code

The *Civil Code* consists of 7 chapters and 1260 articles, divided into general provisions, property rights, contracts, personality rights, marriage and family, inheritance, tort liability, and by-laws, with totally over 106,600 words. The *Civil Code* includes basic principles binding civil activities, civil subjects, guardianship, civil authorities, civil legal acts and agency, civil responsibility, statutes of limitation, property rights, contracts, guarantees, protection of personality rights, marriage and family, adoption, inheritance and tort liability, etc.

We shall initially discuss selected new provisions of law that have been added to the *Civil Code*, beyond the provisions of the nine laws that were incorporated into the *Civil Code*.[18]

C. Innovation of Specific Systems

1. Contracts

There are 526 articles in the chapter on contracts in the *Civil Code*[19]. In the general provisions, the *Civil Code* has added the mandatory contract system, the preliminary contract system and the standard clause system, while in specific provisions, in addition to the 15 typical contracts,

16 Several Provisions of the Supreme People's Court on the Application of the Statute of Limitations in the Civil Code of the People's Republic of China, Article 8
17 Several Provisions of the Supreme People's Court on the Application of the Statute of Limitations in the Civil Code of the People's Republic of China, Article 9
18 Comparison and Key Interpretation of Civil Code Provisions, by Du Yueqiu and Sun Zheng, Law Press China, Beijing 2020
19 Compared to the Contract Law, 136 articles are added, 37 are removed, and 153 are amended.

such as purchase and sales contracts, lease contracts, loan contracts and transportation contracts provided in the current *Contract Law*, the *Civil Code* adds 4 more typical contracts: guarantee contracts, factoring contracts, property service contracts and partnership contracts. We shall discuss these contracts after we deal with the mandatory contract system, the preliminary contract system and the standard clause system.

a. Mandatory Contract System

The mandatory contract system primarily aims to protect the interests of disadvantaged groups. However, since the mandatory contract system violates the principle of freedom of contract, the use of such system must be subject to limiting conditions specified by laws and regulations. Therefore, it provides that a party obliged to make an offer under laws and administrative regulations shall, in a timely manner, make a reasonable offer. A party obliged to accept an offer under laws and administrative regulations shall not reject a reasonable offer from the other party.

Parties are obliged to enter into contracts in two main circumstances:

i. that such party is a public service company with obligations of mandatory contract. In order to ensure people’s basic living requirements, this chapter of contract provides that the suppliers of electricity, water, gas and heat to the public shall not reject a user's reasonable request for contracting.[20] An article regarding transportation contracts states that a carrier engaged in public transportation shall not refuse the normal and reasonable carriage request of a passenger or consignor;[21] and

ii. that such party has a mandatory obligation to enter into a contract to undertake national orders. When the State issues national orders and directive tasks in an emergency for disaster relief, epidemic prevention and control, the relevant civil subjects shall conclude contracts in accordance with the rights and obligations set forth in relevant laws and administrative regulations.[22]

20 Civil Code, Article 648 and Article 656
21 Civil Code, Article 810
22 Civil Code, Article 494

和国担保法<若干问题的解释》第34条规定，“一般保证的债权人在保证期间届满前对债务人提起诉讼或者申请仲裁的，从判决或者仲裁裁决生效之日起，开始计算保证合同的诉讼时效。”但是该条司法解释存在矛盾之处，按照一般保证的先后顺序，在债权人未对主债务人申请强制执行且未能清偿之前，一般保证人均可以拒绝履行保证责任。若按照2000年公布的司法解释，保证合同的诉讼时效从判决或者仲裁裁决生效之日起开始计算，明显对债权人不公平。而该司法解释修改了该规定，规定“人民法院作出终结本次执行程序裁定，或者依照民事诉讼法第二百五十七条第三项、第五项的规定作出终结执行裁定的，自裁定送达债权人之日起开始计算。人民法院自收到申请执行书之日起一年内未作出前项裁定的，自人民法院收到申请执行书满一年之日起开始计算，但是保证人有证据证明债务人仍有财产可供执行的除外。”[30]

e. 保理合同

保理合同是应收账款的债权人将应收账款转让给保理人，保理人提供资金支持以及应收账款管理、催收服务、付款担保等服务的合同，是企业融资的一种手段。《民法典》合同编设专章规定了保理合同，对保理合同的概念、内容和形式、虚构应收账款的保理、保理人发出转让通知、有追索权保理、无追索权保理和多重保理等内容作了规定。

《民法典》规定，应收账款债权人与债务人虚构应收账款作为转让标的，与保理人订立保理合同的，应收账款债务人不得以应收账款不存在为由对抗保理人，但是保理人明知虚构的除外[31]。该规定的法理依据在于“通谋虚伪表示无效不得对抗善意第三人”，但是，需要注意应收账款债权人与债务人之间通谋虚伪表示的效果必须是达到了制造本不存在的权利外观的程度，而且保理人善意无过失。

如果保理人明知基础合同虚假，则保理人对债权人的融资行为将被定性为借贷，保理人只能要求债权人还本付息，而无权向债务人主张权利。

《民法典》规定，保理人向应收账款债务人发出应收账款转让通知的，应当表明保理人身份并附有必要凭证[32]。《民法典》第五百四十六条沿袭了《合同法》第百十条规定，债权人转让债权，未通知债务人的，该转让对债务人不发生效力。在保理合同中额外增加保理人通知债务人的规定，在承认其通知效力的同时，规定保理人应当表明保理人身份并附有必要凭证以供债务人审核，以此保护债务人的利益。

30 《最高人民法院关于适用<中华人民共和国民法典>有关担保制度的解释》第二十八条
31 《民法典》第七百六十三条
32 《民法典》第七百六十四条

同时，《民法典》还规定了应收账款债权人与债务人无正当理由变更或协商基础合同不得对抗保理人，有追索权保理中保理人行使请求权的选择权，无追索权保理业务中保理人权利范围，应收账款订立多重保理合同情形下保理人权利顺位等。

《最高人民法院关于适用<中华人民共和国民法典>有关担保制度的解释》进一步细化如何处理同一应收账款同时存在保理和应收账款质押的情形[33]。若同一应收账款同时存在保理、应收账款质押，当事人的优先顺序与同一应收账款订立多重保理合同时保理人的优先顺序一致：已经登记的优先于未登记的；若均登记，登记在先的优先于登记在后的；若均未登记，转让通知最先到达应收账款债务人的保理人优先[34]。

f. 合伙合同

中国的合伙法律制度是由《民法典》的总则编、合同编和《合伙企业法》分别调整。总则编规定了合伙企业属于非法人组织，不具有法人资格，但是可以以自己的名义从事民事活动[35]。合同编调整民事合伙法律关系，侧重合伙的内部关系，属于处理合伙法律关系的一般规定。《合伙企业法》则全面规定了合伙企业内外部关系规则，是对商事合伙的特别规定。

《民法典》规定合伙合同终止前，合伙人不得分割合伙财产[36]。合伙财产作为共有财产，是由合伙人共同管理和使用。但是本章是对合伙的一般规定，《合伙企业法》对商事合伙有特别规定，从其规定，即合伙企业清算前不得分割合伙财产[37]。

《民法典》第九百七十条在《民法通则》第三十四条规定基础上，全面细致地规定合伙事务执行。一是合伙事务决定，以一致同意为原则，合同另有约定为例外；二是合伙事务原则上应当由全体合伙人共同执行；三是确定委托合伙人执行合伙事务制度；四是新增合伙人异议制度，执行合伙事务的合伙人认为其他合伙人执行不当，可能损害合伙利益的，可以提出异议，其他合伙人应当暂停该项合伙事务执行。值得注意的是，“异议”是指对其他合伙人执行的具体行为表示反对，而不是对其他合伙人的执行事项不满。对于是否应当停止该项事务的执行，由全体合伙人一致决定。异议制度原本规定在《合伙企业法》第二十九条[38]，但《民法典》将其范围拓展至所有的合伙。

33 《最高人民法院关于适用<中华人民共和国民法典>有关担保制度的解释》第六十六条
34 《民法典》第七百六十八条
35 《民法典》第一百零二条
36 《民法典》第九百六十九条第二款
37 《合伙企业法》第二十一条第一款
38 《合伙企业法》第二十九条规定“合伙人分别执行合伙事务的，执行事务合伙人可以对其他合伙人执行的事务提出异议。提出异议时，应当暂停该项事务的执行。如果发生争议，

For example, during the outbreak of Covid-19, in order to ensure the emergency supply of epidemic prevention materials and safeguard the public lives and health, the State may issue mandatory orders to companies that manufacture protective clothing or ventilators and force them to enter into such purchase and sale contracts. In principle, companies shall not refuse to enter into such contracts.

b. Preliminary Contract System

A preliminary contract is an agreement where the parties agree to conclude a contract by a certain time in the future. It is a kind of contract formation method widely used in subscriptions, purchase orders, commercial housing reservation agreements, etc.

The previous *Contract Law* did not set forth provisions for a preliminary contract. However, *Judicial Interpretation of Purchase and Sales Contract*[23], Article 2 reads: "if a party signs a preliminary contract such as a subscription, purchase order, reservation, letter of intent, memorandum, and agrees to conclude a sales and purchase contract by a certain time in the future, but either party fails to perform its obligation to conclude such sales and purchase contract, the other party may request the non-performing party to assume liability for breach of preliminary contract, or request termination of the preliminary contract, and claim damages. A people's court shall sustain such request". The chapter on contracts in the *Civil Code* extends the scope of the preliminary contract system from sales and purchase contracts to all contracts, by providing that a subscription, purchase order, reservation, etc., under which the parties agree to enter into a contract within a certain time in the future shall constitute a preliminary contract. If a party fails to perform its obligations to contract as agreed in the preliminary contract, the other party may claim liability of such party for breach of a preliminary contract.

23 The Judicial Interpretation of Purchase and Sales Contracts, refers to the Interpretation by the Supreme People's Court on Issues of Applicable Laws for Review of Disputed Cases regarding Purchase and Sales Contracts

c. Standard Clause System

The *Civil Code* extends the applicable scope of obligations of reminder and explanation for those who employ standard clauses. A party using standard clauses shall, in addition to the obligation of reminder of clauses regarding relief or restriction of liabilities, has the obligation of reminder and explanation on all the clauses related to the material interests of the other party. What is a clause related to material interests? The *Civil Code*, Article 470 provides general clauses that shall be included in a contract. Generally, the clauses listed in this Article are related to the parties' material interests, including object, quantity, quality, price or payment, term, location and method of performance, liability for breach of contract and dispute settlement. There are also certain laws that provide clauses related to material interests. For example, in a consumer contract, a business operator shall remind the consumer, in an obvious way, to pay attention to the quantity, quality, price, cost, term and method of performance, safety precaution, risk warning, after-sale services, civil responsibility etc. of products or services[24].

If the party providing standard clauses fails to perform its obligation of reminder and explanation, the other party, instead of removing such clauses in accordance with the previous *Contract Law*, has the right to claim that such standard clauses shall not constitute a part of the contract.

d. Guarantee Contract

After the implementation of the *Law of Property Rights*, most provisions in the *Guarantee Law* are void, leaving only the "guarantee" part that is still applicable to the *Guarantee Law*. The *Civil Code* incorporates the provisions on "guarantee" in the *Guarantee Law* into the chapter on contracts.

The *Guarantee Law* provides that, if the parties fail to reach any agreement, or reach an agreement that is unclear, on the method of guarantee, they shall bear the liabilities of guarantee in

24 Law on Protection of Rights and Interests of Consumer, Article 26 (1)

《民法典》第九百七十二条利润分配和亏损分担的规定，第九百七十三条债务承担的规定，第九百七十四条合伙财产份额转让的规定，第九百七十五条债权人行使代位权限制的规定，分别对应《合伙企业法》第三十条、第三十八条、第三十九条、第四十条和第四十一条，属于将合伙企业的制度规定拓展至所有合伙。

原先的《民法通则》并没有规定合伙期限届满如何处理。《合伙企业法》第四十六条规定"合伙协议未约定合伙期限的，合伙人在不给合伙企业事务执行造成不利影响的情况下，可以退伙，但应当提前三十日通知其他合伙人。"《民法典》新增规定合伙期限没有约定或者约定不明确的，视为不定期合伙，并赋予合伙人解除合同的权利，但是解除不定期合伙合同的，应当在合理期限之前通知其他合伙人[39]。中国《民法典》的规定与《瑞士债法典》、台湾地区的"民法"相类似。

2.人格权编

人格权制度在《民法典》独立成第四编，是中国民法历史的第一次。第四编人格权共6章，51条，从民法角度规定民事主体人格权的种类、内容、边界和保护方式，对生命权、身体权、健康权、姓名权和名称权、肖像权、名誉权和荣誉权，以及隐私权和个人信息保护等具体人格权益的保护作出较为全面的规定。

a. 名称

根据原先的《民法通则》规定，法人的名称仅能使用和转让。但是，《民法典》修改了该规定，法人的名称可以依法决定、使用、变更、转让或者许可他人使用。

《民法总则》规定了法人、非法人组织的名称权，但并没有对法人、非法人组织的简称保护作出规定。《民法典》第一千零一十七条规定"具有一定社会知名度，被他人使用足以造成公众混淆的笔名、艺名、网名、译名、字号、姓名和名称的简称等，参照适用姓名权和名称权保护的有关规定。"

该规定将简称纳入名称权的保护范围。例如，"阿里""茅台"等都是相关主体的简称，根据社会公众一般认知其简称与企业是相联系的，应当受到法律保护。这对于保护法人、非法人组织的利益具有重要意义，尤其是在制止不正当竞争行为的方面。

b. 肖像权

传统肖像的含义限于以面部特征为中心的外部形象，即肖像应当再现自然人的面部特征。自然人的其他身体特征即便能够反映个人的外在形象，也不应当属于肖像。但《民法典》第1018条第二款规定"肖像是通过影像、雕塑、绘画等方式在一定载体上所反映的特定自然人可以被识别的外部形象。"由此可见，《民法典》对于肖像权的定义从"以面部为中心"转变为"可被识别"。例如，某人特有的肢体动作、背影等，如果为相关公众所知悉，能够对外展现个人的形象，则应当受到法律保护，从而扩大肖像权的保护范围。

原有的《民法通则》第一百条规定"公民享有肖像权，未经本人同意，不得以营利为目的使用公民的肖像。"《民法典》第1019条则规定"任何组织或者个人不得以丑化、污损，或者利用信息技术手段伪造等方式侵害他人的肖像权。未经肖像权人同意，不得制作、使用、公开肖像权人的肖像，但是法律另有规定的除外。未经肖像权人同意，肖像作品权利人不得以发表、复制、发行、出租、展览等方式使用或者公开肖像权人的肖像。"对肖像权的侵权认定不再要求以营利为目的，而且应包括侵犯肖像权的方式，加强肖像权的保护。

同时，《民法典》规定了肖像权的合理使用范围[40]，肖像许可使用合同中关于肖像使用条款的解释[41]和使用期限[42]。

《民法典》第一千零二十三条规定，对自然人声音的保护，参照使用肖像权保护的有关规定。

c. 人格权救济

受害人可以请求行为人停止侵害、排除妨碍、消除危险、消除影响、恢复名誉、赔礼道歉请求权，而且上述救济不适用诉讼时效的规定[43]。违约与侵权责任出现竞合时，精神损害赔偿不受影响[44]。

人格权受侵害一方有证据证明行为人正在实施或者即将实施侵害其人格权的违法行为，不及时制止将使其合法权益受到难以弥补的损害的，有权依法向人民法院申请行为保全[45]。

d. 性骚扰

《民法典》第一千零一十条规定："违背他人意愿，以言语、文字、图像、肢体行为等方式对他人实施性骚扰的，受害人有权依法请求行为人承担民事责任。机关、企业、学校等单位应当采取合理的预防性骚扰、受理投诉、调查处置等措施，防止和制止利用职权、从属关系等实施性骚扰。"该条明确了用人单位应当采取合理的预防、投诉、处

依照本法第三十条规定作出决定。受委托执行合伙事务的合伙人不按照合伙协议或者全体合伙人的决定执行事务的，其他合伙人可以决定撤销该委托。"
39 《民法典》第九百七十六条

40 《民法典》第一千零二十条
41 《民法典》第一千零二十一条
42 《民法典》第一千零二十二条
43 《民法典》第九百九十五条
44 《民法典》第九百九十六条
45 《民法典》第九百九十七条

accordance with joint liability[25]. However, the *Civil Code* completely overrides this previous provision, by providing that if the parties fail to reach any agreement, or reach any agreement that is unclear, they shall bear the general liabilities of guarantee[26], that is, the guarantor shall only assume its proportion of liability, instead of joint liability. Should there be no agreed arrangement on the proportion of liability, each party shall share an equal proportion. A guarantor bearing joint liability does not enjoy the benefit of resistance. This means if the debtor fails to assume the debt, the creditor may require the guarantor to assume the liability of guarantee, and does not need to file lawsuit to a court or apply for arbitration to an arbitration organization. However, if the guarantor is subject to general liabilities of guarantee, it shall assume such liability only when the debtor cannot pay the debt. For example, in case of a guarantor with general liability for guarantee, if a debtor fails to pay the debt, a creditor cannot directly request the guarantor to assume liabilities as it can do so in the case of joint liability; instead, the creditor must file a lawsuit in courts or apply for arbitration to an arbitration tribunal. Upon the court's judgement or the panel's arbitral award, if the creditor applies to the court for enforcement, but the debtor still fails to pay the debt, the creditor may have the right to request the guarantor to assume liabilities. If the creditor directly requests the guarantor to assume liabilities, the guarantor may exercise its right of benefit of resistance for defense and refuse to assume liability.

The general guarantor has the right to refuse to assume the liabilities of guarantee in the event that the dispute over the main contract has not been reviewed by a court or arbitrated, when the debtor still cannot assume its debt even if its property is enforced pursuant to law. However, there are three exceptions[27]. Compared to the previous *Guarantee Law*, the *Civil Code* adds one more exception, namely the creditors shall provide evidence that the debtor's property is insufficient to assume all its obligation or that the debtor is incapable of assuming its debts[28]. Based on the above features, the Supreme People's Court

25 Guarantee Law, Article 19
26 Civil Code, Article 686
27 Guarantee Law, Article 17
28 Civil Code, Article 687

issued the *Interpretation of the Supreme People's Court on the Application of the Guarantee System in the Civil Code of the People's Republic of China* that potentially will further refine and regulate the specific application of guarantee contracts. For example, unless otherwise subject to one of the four circumstances set forth in Article 687 (2) of the *Civil Code*, the court will not support the creditor's application for preservation of a general guarantor's assets. In a general guarantee, the creditor cannot only sue the guarantor, but it must add the debtor as a joint defendant; otherwise, the court will dismiss the creditor's claim.[29]

This judicial interpretation, if adapted, will further regulate the statute of limitations for a general guarantee. In 2000, the *Interpretation of the Supreme People's Court on Several Issues Regarding Application of the Guarantee Law of the People's Republic of China*, Article 34 reads: "if a creditor of a general guarantee brings a lawsuit or applies for arbitration against a debtor prior to the expiration of the term of guarantee, the statute of limitations of the guarantee contract will commence as of the effective date of the judgement or arbitral award." However, this judicial interpretation has a contradiction. According to the priority of allocation of a general guarantee, before the creditor applies for enforcement against the debtor but the debtor fails to make full payment, the general guarantor may refuse to assume liability for the guarantee. However, if, in accordance with the judicial interpretation in 2000, the statute of limitations of the guarantee contract starts after the effective date of the judgement or arbitral award, obviously, it is unfair to the creditor. As a result, the judicial interpretation revised this provision to "if the people's court makes an order to terminate this execution procedure, or makes an order to terminate execution in accordance with the Civil Procedure Law, Article 257 (3) and (5), the statute of limitations shall commence tolling as of the day of service of order on the creditor. If the people's court fails to make the ruling mentioned in the preceding paragraph within one year as of the date of receipt of application for execution, the statute of limitation shall start as of the date of expiration of one year from the date of receipt of

29 Interpretation of the Supreme People's Court on the Application of the Guarantee System in the Civil Code of the People's Republic of China, Article 26

置等措施，预防和制止性骚扰行为，以遏制性骚扰行为的发生。

e. 错误信息的更正

《民法典》第一千零二十八条规定“民事主体有证据证明报刊、网络等媒体报道的内容失实，侵害其名誉权的，有权请求该媒体及时采取更正或者删除等必要措施。”《民法典》第一千零二十九条规定“民事主体可以依法查询自己的信用评价；发现信用评价不当的，有权提出异议并请求采取更正、删除等必要措施。信用评价人应当及时核查，经核查属实的，应当及时采取必要措施。”上述两条明确了信息错误情形下的更正权，是人格权请求权的具体体现，有利于预防损害的进一步发生。

3. 物权编

《民法典》物权编共五个分编，二十章，二百五十八条，修改的内容主要涵盖农村集体产权制度、建筑物区分所有权制度、居住权、担保物权制度和住宅建设使用权续期。

a. 用益物权：居住权

物权法规定了建设用地使用权、土地承包经营权、宅基地使用权、地役权四种用益特权，民法典在此基础上，增加规定了居住权这一新的用益物权。居住权是指居住权人有权按照合同约定或者遗嘱，对他人的住宅享有占有、使用的权利，以满足生活居住的需要[46]。

居住权的立法历程最早可追溯到罗马法，罗马法上作为人役权的居住权的立法目的是为了保护离婚妇女和保姆等特定人员或弱者。德国的《民法典》中规定的居住权分为两种，一是传统的居住权，即保护弱者、特定对象的居住权；二是广义的居住权，即包括投资性居住权。中国的《民法典》写入居住权的主要理由之一是“为公租房和老年人以房养老提供法律保障”[47]，其规定的居住权不仅限于保护离婚妇女、保姆等弱者或特定人群，属于广义的居住权，具有投资性能，适用于“以房养老”。

根据《民法典》的规定，居住权仅能设立于住宅，而非房屋，因此商铺等经营性用房不能设立居住权。居住权设立方式有两类：一是意定居住权，基于合同设立或基于遗嘱设立；二是裁判居住权，包括作为离婚时的“适当帮助”、法定继承的遗产分割方式以及强制执行的变通途径等。对于居住权的意定设立需要订立书面形式的合同[48]，

46 《民法典》第三百六十六条
47 《关于<民法典各分编（草案）>的说明——2018年8月27日在第十三届全国人民代表大会常务委员会第五次会议上》，作者沈春耀，全国人大常委会法制工作委员会主任。
48 《民法典》第三百六十七条

并且应当向登记机构申请居住权登记[49]。居住权不能转让、继承，除当事人另有约定外，不可出租[50]。

b. 担保物权制度

民法典在担保物权制度方面进行了制度创新，扩大担保合同范围，明确规定担保合同包括抵押合同、质押合同和其他具有担保功能的合同[51]，包括买卖合同、融资租赁合同以及保理合同，分别规定在《民法典》第六百四十一条、第七百四十五条和第七百六十八条。

《民法典》新增海域使用权作为可抵押财产之一[52]，但是未明确该财产经营和管理的抵押问题。

《民法典》对“浮动抵押”的相关规则进行了修改，确定“债权人有权就抵押财产确定时的动产优先受偿”[53]，而不是原先《物权法》上规定的“在实现抵押权时优先受偿”[54]。结合《民法典》第四百一十一条浮动抵押财产确定的四种情形[55]，债权人应当关注债务履行、抵押人、抵押财产的状态，一旦发生抵押财产确定的情形，债权人应及时与债务人、抵押人确认抵押财产的范围、价值，并及时实现抵押权。例如，抵押人以不合理的低价转让财产，使得财产明显减少，但是抵押权期限未届满，按照《物权法》原有的规定，由于抵押权人抵押权仍未实现。抵押权人无法就财产优先受偿。但是，《民法典》修改后，抵押人的行为属于严重影响债权实现的其他情形，此时，抵押财产确定，抵押权人可以就财产优先受偿。

原先的《物权法》规定不得设立流质条款[56]，即约定债务人不履行到期债务时抵押财产归债权人所有。若有此约定，则该约定无效。《民法典》生效后，流质条款依然无效，只是债权人能依法就抵押财产优先受偿[57]。

《民法典》修改了权利质权设立的规则，一是删除了具体登记机构的规定，为建立统一的动产抵押和权利质押登记制度留下制度空间；二是删除了“应当订立书面合同”的规定；三是权利质权设立采用“非经同意，不得处分”的规则，与抵押期间抵押财产处理规则不同[58]。权利质权是指债务人或者第三人对以下权利质押后债权人获得的权利：一、汇票、本票、支票；二、债券、存款单；三、仓单、

49 《民法典》第三百六十八条
50 《民法典》第三百六十九条
51 《民法典》第三百八十八条
52 《民法典》第三百九十五条
53 《民法典》第三百九十六条
54 《物权法》第一百八十一条
55 《民法典》第四百一十一条规定“依据本法第三百九十六条规定设定抵押的，抵押财产自下列情形之一发生时确定：
（一）债务履行期限届满，债权未实现；
（二）抵押人被宣告破产或者解散；
（三）当事人约定的实现抵押权的情形；
（四）严重影响债权实现的其他情形；
56 《物权法》第一百八十六条
57 《物权法》第四百零一条
58 《民法典》第四百四十一条至第四百四十五条

the application for execution by the people's court, unless the guarantor has evidence to prove that the debtor still has property for execution."[30]

e. Factoring Contract

A factoring contract is a contract where creditors of accounts receivable transfer accounts receivable to a factor who will provide financial support and services such as management of receivables, collection's services, and a payment guarantee for accounts receivable. It is a device for company finance. The chapter of contract in the *Civil Code* has a special chapter for factoring contracts, including the concept, contents and forms of a factoring contract, factoring for fabricated accounts receivable, notice of assignment by a factor, recourse factoring, non-recourse factoring and multiple factoring.

The *Civil Code* provides that where an accounts receivable creditor and debtor fabricate accounts receivable as the subject of assignment and enter into a factoring contract with a factor, the accounts receivable debtor may not claim against the factor on the grounds that the accounts receivable does not exist, unless the factor knows such accounts receivable are fabricated[31]. The legal basis of this provision is that "invalidity through conspiracy and fabrication shall not be an excuse against a bona fide third party"; however, it is noticeable that the result of conspiracy and fabrication between creditor of the accounts receivable and debtors must show that their act has fabricated the rights that do not exist, and the factor has acted in good faith and has not committed wrongdoing.

If the factor knows that the basic contract is a false contract, the act of financing rendered by the factor for the creditor will be defined as borrowing. In this case, the factor may only require the creditor to refund the capital and pay for the interest, while it has no right to claim against the debtor.

The *Civil Code* states that a factor shall present its identity as a factor, attaching necessary evidence when issuing a notice of assignment of accounts receivable to the debtor of accounts receivable[32]. Article 546 of the *Civil Code* adopts Article 100 of the *Contract Law*, providing that if a creditor assigns its credit without notifying the debtor, the transfer will have no effect on the debtor. The additional provision that in a factoring contract, a factor shall notify the debtor, not only recognizes the effect of the notice, but also requires the factor to present its identity, attaching the necessary evidence for debtor's review, so as to protect the debtor's interest.

At the same time, the *Civil Code* also provides that a creditor of accounts receivable and a debtor shall not claim against a factor if they change or negotiate the basic contract without proper reasons, and they have the right to choose to request the factor exercise in case of recourse factoring, the scope of the factor's rights in case of non-recourse factoring, the sequence of the factor's rights in case of several factoring contracts, etc.

The *Interpretation of the Supreme People's Court on the Application of the Guarantee System in the Civil Code of the People's Republic of China* further elaborates on how to deal with factoring and pledges of accounts receivable in the same accounts receivable group[33]. If the accounts receivable include factoring and pledge of accounts receivable at the same time, the priority of the party concerned will be the same as the sequence of the factors at the conclusion of the factoring contracts; the registered factors will be prior to the non-registered factors; if all the factors are registered, the former registered factors will be prior to the later registered factors; if all the factors have not been registered, the factors that has received the notice of assignment from the debtor of the accounts receivable shall have priority.[34]

f. Partnership Contracts

The legal system of China's partnership law integrates the respective adjustments in the general provisions and chapter on contracts in the *Civil Code*, as well as the *Partnership Law*. The general provisions provide that a partnership

30 Interpretation of the Supreme People's Court on the Application of the Guarantee System in the Civil Code of the People's Republic of China, Article 28
31 Civil Code, Article 763
32 Civil Code, Article 764
33 Interpretation of the Supreme People's Court on the Application of the Guarantee System in the Civil Code of the People's Republic of China, Article 66
34 Civil Code, Article 786

提单；四、可以转让的基金份额、股权；五、可以转让的注册商标专用权、专利权、著作权等知识产权中的财产权；六、现有的以及将有的应收账款；及，七、法律、行政法规规定可以出质的其他财产权利。

c. 住宅建设用地使用权续期

中国《民法典》对住宅建设用地使用权届满如何处理作出原则性规定，规定"住宅建设用地使用权期限届满的，自动续期。续期费用的缴纳或减免，依照法律、行政法规的规定办理。"[59]这为国务院正式提出修改有关法律的议案后，再进一步做好衔接做好准备。

4. 侵权责任编

a. "自甘风险"规则

在侵权责任法的基础上，民法典进一步完善了侵权责任的归责原则，确立"自甘风险"规则。《民法典》明确自愿参加具有一定风险的文体活动，因其他参加者的行为受到损害的，受害人不得请求其他参加者承担侵权责任，但是其他参加者对损害的发生有故意或者重大过失的除外[60]。

b. "自助行为"

《民法典》明确合法权益受到侵害，情况紧迫且不能及时获得国家机关保护，不立即采取措施将使其合法权益受到难以弥补的损害的，受害人可以在保护自己合法权益的必要范围内采取扣留侵权人的财物等合理措施，但是应当立即请求有关国家机关处理[61]。此处《民法典》规定的是私力救济，以弥补国家机关救济的不足，保护个体利益，但是需要注意的是，民事中的私力救济仅限于财物，而且要限制在必要范围内，并随即请求有关国家机关处理。

c. 精神损害赔偿

《民法典》规定因故意或者重大过失侵害自然人具有人身意义的特定物造成严重精神损害的，被侵权人有权请求精神损害赔偿[62]。根据原先的《侵权责任法》，精神损害赔偿是由于行为人侵害他人人身权益，造成他人严重精神损害而产生的。但是，《民法典》扩大了精神损害赔偿的范围，侵害特定物而导致严重精神损害的也可以要求赔偿，之前的司法解释也有相关的规定，法院应当受理因侵权行为导致具有人格象征意义的特定纪念物品灭失或毁损而请求精神损害赔偿的起诉[63]。

d. 知识产权惩罚性赔偿

《民法典》切实加强对知识产权的保护，显著提高侵犯知识产权的违法赔偿以发挥法律的威慑作用，明确规定故意侵害他人知识产权，情节严重的，可以请求惩罚性赔偿[64]。

e. 生态环境损害责任

《民法典》增加规定生态环境损害的惩罚性赔偿，规定侵权人违反法律规定故意污染环境、破坏生态造成严重后果的，被侵权人可以请求惩罚性赔偿[65]。而且，《民法典》明确了生态环境损害的修复和赔偿制度，规定相关国家机关或组织可以要求造成生态环境损害的侵权人在合理期限内承担修复责任，期限内未修复的则承担修复费用[66]。

《最高人民法院关于审理环境侵权责任纠纷案件适用法律若干问题的解释》第十四条仅规定经被侵权人请求，法院可以裁判污染者承担环境修复责任。而《民法典》将可以要求污染者修复生态环境损害的主体范围从法院扩大至国家机关或法律规定的组织。

5. 总则编

《民法典》总则编共十章，二百零四条。与原来的《民法通则》相比，完善了监护制度、民事权利制度和民事责任制度，确立了特别法人制度。《民法典》立法过程主要分为两步：第一步是制定《民法总则》；第二步是整合其他民事基本法律，结合《民法总则》编撰为《民法典》。因此，《民法典》总则编与《民法总则》相比改动较小。

59 《民法典》第三百五十九条
60 《民法典》第一千一百七十六条
61 《民法典》第一千一百七十七条
62 《民法典》第一千一百八十三条
63 《最高人民法院关于确定民事侵权精神损害赔偿责任若干问题的解释》第四条
64 《民法典》第一千一百八十五条
65 《民法典》第一千二百三十二条
66 《民法典》第一千二百三十四条

company is a non-legal person organization and thus does not have the status of a legal person, but it may engage in civil activities in its own name[35]. The chapter on contracts adjusted the legal relations of a civil partnership, highlighting that an internal relation of a partnership is subject to a general provisions for the legal relationship of the partnership. The *Partnership Law*, on the other hand, fully provides for the rules of internal and external relations of the partnership, which is a special provision for commercial partnerships.

The *Civil Code* provides that prior to the termination of a partnership contract, a partner may not divide partnership property[36]. Partnership property is common property, jointly managed and employed by the partners. However, this chapter only provides general provisions of the partnership, while the *Partnership Law* has specific provisions for commercial partnerships which provide that the partnership company shall not divide its partnership property prior to liquidation[37].

Article 970 of the *Civil Code*, based on Article 34 of the *General Principles of the Civil Law*, fully elaborates on undertaking partnership affairs. First, the partnership affairs decisions shall follow the principle of unanimous consent, unless otherwise agreed to the partnership contract. Second, in principle, partnership affairs shall be jointly executed by all partners. Third, this Article established a system for partnership affairs undertaken by entrusted partners. Fourth, it adds a partner objection system. Any partners who execute partnership affairs believing that the execution by other partners is improper and may damage the interests of the partnership may raise objections, and other partners should suspend such partnership acts. "Objections" means a partner may express opposition to specific conduct of other partners, rather than dissatisfaction with the matter executed by other partners. Whether the execution of such acts should be suspended, depends on the unanimous decision of all partners. The objection system, which was previously set forth in the *Partnership Law*, Article 29[38], is extended to all partnerships pursuant to the *Civil Code*.

35 Civil Code, Article 102
36 Civil Code, Article 969 (2)
37 Partnership Law, Article 21 (1)

The *Civil Code*, Article 972, provides for sharing profits and losses. Article 973 provides for debt obligations. Article 974 regulates the transfer of shares of partnership property. Article 975 provides restrictions on the exercise of the right of subrogation by creditors. The said Articles respectively correspond to Articles 30, 38, 39, 40 and 41 in the *Partnership Law*, which are extended to all partnerships in the partnership system.

The previous *General Principles of Civil Law* did not specify how to deal with the expiration of the partnership. The *Partnership Law*, Article 46 provides that "where the term of partnership is not specified in a partnership agreement, a partner may withdraw from the partnership by an advance 30-day notice to other partners, provided that its withdrawal will not cause adverse effect on the operation of the partnership affairs." If there is no agreement on the term of the partnership, or the term of the partnership is undefined, it shall be deemed as a partnership at will, and a partner shall be granted the right to terminate the contract; however, the partner shall notify the other partners of its termination of a contract of partnership at will, at a reasonable time in advance[39]. These provisions in the *Civil Code* are similar to those in the *Swiss Code of Obligations* and the "Civil Law" of Taiwan.

2. Personality Rights

The system of personality rights is composed as a separate chapter, Chapter Four in the *Civil Code*, which is new. Chapter Four, regarding personality rights, consists of 6 subchapters and 51 articles. This Chapter provides for the type, content, boundary and protection of the personality rights

38 Partnership Law, Article 29 reads: if each partner may separately execute the partnership affairs, and the partners executing the partners may raise objections to the affairs executed by other partners. When raising objections, the execution of such affairs shall be suspended. If any dispute arises, a decision shall be made in accordance with Article 30 of this Law. Where a partner entrusted to execute the partnership affairs fails to execute according to the partnership agreement or decision of all partners, the other partners may decide to revoke the entrustment.
39 Civil Code, Article 976

四、总结

《民法典》经过多年的酝酿于2021年1月1日正式实施。鉴于中国的具体情况以及多年的司法实践，与原先的民事基本法律相比，《民法典》体现了重要的进步，《民法典》的颁布使整个民事法律制度都趋于完善。对最高人民法院的所有司法解释的清理是一项重大举措，是整理当代中国法律司法体系的必然结果，展示了最高人民法院司法解释与全国人大颁布的法律具有同等的法律效力。另外仍存在很多不足，仍然存在诸多空白亟待法律法规填补。例如，《民法典》合同编仅是增加对保理合同的基本问题作出法律规定，实践中还有很多问题等待进一步解决。即便如此，《民法典》无疑是当代中国法律发展进程的重要里程碑。《民法典》在《宪法》的基础上为中国人民的个人权利做了实质的规定。

《民法典》仍有待完善，还有许多民事法律未纳入《民法典》，但《民法典》对巩固个人基本权利起到了举足轻重的作用，引导进一步更全面合理的法律汇编方向。

of civil subjects from the perspective of civil law, and has full regulations on protection of specific personality rights and interests such as rights to life, rights to body, rights to health, rights to name, portrait rights, rights to reputation, rights to honor, and protection of privacy rights and personal information.

a. Name

According to the previous *General Principles of the Civil Law*, the names of a legal person could only be used and transferred. However, the *Civil Code* amended this provision, stating that the name of a legal person may be determined, used, changed, transferred or permitted for use by others pursuant to law.

The *General Provisions of Civil Law* provided for the rights to the name of legal persons and non-legal person organizations, but there were no provisions on protection of abbreviation of the name of legal persons and non-legal person organizations. The *Civil Code*, Article 1017 reads, "pseudonyms, artist names, net names, translated names, identifiers, and abbreviations of names, that have certain social popularity, and are sufficient to cause public confusion if they are used by others, shall refer to and apply the provisions on the protection of rights to one's name."

This provision includes abbreviations subject to the scope of protection of the rights to a name. For example, "Ali" "Maotai" and the like are the abbreviations of the relevant subjects. They are known to the general public that are related to their enterprises, and thus should be protected by law. This provision is of great significance for protection of the interests of legal persons and non-legal person organizations, especially for restraining unfair competition.

b. Portrait Rights

The traditional meaning of a portrait is limited to external images, mostly facial features, namely a portrait should reproduce the facial features of a natural person, while other physical features of a natural person should not be considered as a portrait, even if they reflect an individual's external image. However, the *Civil Code*, Article 1018 (2) provides that "a portrait is an external image reflective of a certain natural person by means of video, sculpture, painting, etc., wherefrom such person can be identified." Thus, the definition of portrait rights in the *Civil Code* has changed from "face-centric" to "recognizable". For example, any unique body movements, or any view of the back, etc. of a person that are known to the public and can show the image of such person, shall be protected by law. This provision therefore expands the scope of protection of portrait rights.

In the previous *General Principles of Civil Law*, Article 100, "citizens shall enjoy portrait rights. The portraits of citizens shall not be used for the purpose of profit without their consent." However, the *Civil Code*, Article 1019 provides that: "all organizations or individuals shall not infringe on other people's portrait rights by defaming, defacing, or forgery through information technology, or any other means. Without the consent of the portrait rights holders, none of their portraits shall be made, used, or published, unless otherwise provided for by law. Without the consent of portrait rights holders, any rights holders of any portrait works shall not use or publish the portrait of the portrait rights holder by publication, reproduction, issuance, leasing, exhibition, or any other means." Infringement of portrait rights will no longer be limited to the purpose of obtaining profit, but shall include other ways of infringement of portrait rights, which strengthens protection of portrait rights.

At the same time, the *Civil Code* specifies the proper scope of use of portrait rights[40], explaining clauses[41] and terms[42] for use of portrait in license contracts.

The *Civil Code*, Article 1023 stipulates that protection of the voice of a natural person shall be referred to the relevant provisions on protection of the right to use portraits.

c. Relief of Personality Rights

The victim may have the right to request the infringer to cease infringement, remove obstruction,

40 Civil Code, Article 1020
41 Civil Code, Article 1021
42 Civil Code, Article 1022

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eliminate danger, eliminate influence, restore its reputation and apologize, and the above-mentioned relief will not fall under the statute of limitations[43]. In the event of concurrence of breach of contract and tort liability, compensation for mental damages shall be available[44].

If any party whose personality rights are infringed has evidence that the infringer is committing or is about to commit an illegal act that infringes upon its personality right, which will cause irreparable damage to its legal interests if it is not stopped on time, such party shall have the right to apply to the people's court for protection of act pursuant to law[45].

d. Sexual Harassment

The *Civil Code*, Article 1010 provides that "If any person commits sexual harassment against any other person's will by words, characters, images, or physical acts, the victim has the right to request such person to assume civil liability pursuant to law. Organs, enterprises, schools and other entities shall take reasonable measures to prevent sexual harassment, accept complaints of, investigate and handle sexual harassment cases, so as to prevent and cease sexual harassment conducted through abuse of any person's powers and affiliation relationship." This Article specifies that employment entities shall take reasonable measures such as prevention, acceptance of complaints and disposal, in order to prevent and stop sexual harassment and restrain the occurrence of sexual harassment.

e. Correction of False Information

The *Civil Code*, Article 1028 reads, "any civil subject who has evidence proving that the contents reported in newspaper, periodical, network or other media are not true, and infringe upon its right of reputation, has the right to request the media to promptly take necessary measures such as correcting or deleting the contents." The *Civil Code*, Article 1029 provides, "any civil subject may check its own credit rating pursuant to law. If the civil subject discovers any improper contents regarding its credit rating, it has the right to raise an objection and request necessary measures such as correcting or deleting the contents. Credit raters shall promptly verify the objection or request, and shall promptly take necessary measures where the complaint is verified to be true." The said two articles specify the right of correction in the case of false information, which shows the right to make claim for personality rights and is conducive to preventing further damage.

43 Civil Code, Article 995
44 Civil Code, Article 996
45 Civil Code, Article 997

3. Property Rights

The *Civil Code* consists of 5 sub-chapters, 20 chapters and 258 articles regarding property rights. The changes mainly cover the rural collective property rights system, the condominium ownership system, the right to reside, the collateral rights system and renewal of the right to usage of residential construction.

a. Usufruct: right to reside

The *Law of Property Rights* provides four privileges: the right to use land for construction, land contractual management rights, the homestead use and easement. The *Civil Code*, based on this, adds the right to reside as a new right of usage. The right to reside means that a person with right to reside has the right of possession and use of a residence of others in accordance with a contract or will, in order to meet life's requirements[46].

The history of legislation on rights to reside can be traced back to Roman Law. In Roman Law, the laws on personal servitude are established to protect divorced women, babysitters and other specific persons or the disadvantaged. In the German *Civil Code*, the right to reside is divided into two types, one is the traditional right to reside, which is for protection of the right to reside of the weak or a particular person, and the other is the general right to reside, including the right to reside through investment. One of the main reasons why China's *Civil Code* decided to include the right to reside is "to provide legal protection for public rental housing and housing for the elderly"[47], which provides that the right to reside

46 Civil Code, Article 366
47 Explanation on Sub-sections of the Civil Code (draft) ----- at the 5th Meeting of the Standing Committee of the 13th National People's Congress on 27th August 2018, by

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is not limited to divorced women, babysitters and other disadvantaged or specific groups of people under protection; rather, it is the right to reside in general, with features of investment, and can be applied to "housing for the elderly".

Pursuant to the *Civil Code*, the right to reside can only be established for a residence, but not for a house. Therefore, shops and other commercial housing cannot establish the right to reside. There are two ways of establishing the right to reside: one is the right to reside passed on by a will, based on the establishment of a contract or a testament; and the other is the right to reside based on a judgement, including "proper assistance" in the event of divorce, division of heritage in legal inheritance and transportation of enforcement, etc. The right to reside at will requires a contract in writing[48] and the registration of the right to reside with the registration authorities[49]. The right to reside cannot be transferred or inherited, or be rented unless otherwise agreed to by the parties[50].

b. Collateral Right System

The *Civil Code* has made institutional innovations in the collateral rights system, by expanding the scope of collateral contracts, and specifying that collateral contracts include mortgage contracts, pledges and other contracts with collateral functions[51], such as sales contracts, financial lease contracts and factoring contracts, respectively in Articles 641, 745 and 768 of the *Civil Code*.

The *Civil Code* adds the right to use the sea area as a mortgageable property[52]; however, it has not clarified the problem of operations and management of a mortgage on such property.

The *Civil Code* amends the relevant regulations on a "floating charge", and determines that "creditors enjoy a priority of compensation over movable property when the mortgaged property is fixed"[53] rather than "priority of compensation when the right to mortgage is fulfilled"[54] as previously stated in the *Law of Property Rights*. Combining the four conditions for determination of a floating charge on property in the *Civil Code*, Article 411[55] provides that creditors shall focus on the status of debt performance, mortgagor and mortgaged property. In the event of determining mortgaged property, creditors shall promptly confirm the scope and value of the mortgaged property with the debtor and the mortgagor, and perform their rights to mortgage in a timely manner. For example, the mortgagor transfers the property at an unreasonable low price that significantly depreciate the property, but the term of mortgage has not expired. Pursuant to the previous *Property Law*, since the mortgagee cannot exercise its right to the mortgage, the mortgagee may not enjoy the priority of compensation of property. However, after the *Civil Code* revised this provision, if the mortgagor's acts are subject to other circumstances with serious effects on the exercise of the creditor's rights, the mortgaged property may be fixed, and the mortgagee may enjoy the priority of compensation of property.

The previous *Law of Property Rights* provided that no fluidity clause shall be established[56], namely the mortgaged property shall be owned by creditors if the debtor fails to perform its due debts. Such clause (if any) shall be invalid. Even if the *Civil Code* becomes effective, the fluidity clause remains invalid, but creditors can only enjoy priority of compensation from mortgaged property pursuant to law[57].

The *Civil Code* amends the regulations on the establishment of right to a pledge. First, it deletes the provisions of the specific

Shen Chunyao, director of the Legislative Affairs Commission of the Standing Committee of the National People's Congress
48 Civil Code, Article 367
49 Civil Code, Article 368
50 Civil Code, Article 369
51 Civil Code, Article 388
52 Civil Code, Article 395

53 Civil Code, Article 396
54 Laws of Property Rights, Article 181
55 Civil Code, Article 411 provides "where mortgage is created in accordance with Article 396 of this Code, the mortgaged property shall be determined under any of the following circumstances:
(1) that creditor's right is not exercised upon the expiration of the term for performing the obligation;
(2) that the mortgagor is declared bankrupt or is dissolved;
(3) that mortgage shall be exercised as agreed upon by the parties;
(4) any other circumstance that seriously affects the exercise of the creditor's right."
56 Law of Property Rights, Article 186
57 Law of Property Rights, Article 401

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registration institution, which leaves room for the establishment of a unified registration system for mortgages and the right to pledge moveable property. Second, it deletes the provision that "a written contract shall be concluded". Third, it provides that the right to pledge shall apply the rules of "no disposition without consent", which is different from the rules for the disposal of mortgaged property during the mortgage period[58]. The right to pledge refers to the right obtained by a creditor after a debtor or a third party has pledged the following: (1) bills of exchange, promissory notes and cheques; (2) bonds and certificates of deposit; (3) warehouse receipts and bills of lading; (4) transferable shares of funds and equity; (5) property rights in transferable exclusive rights to use registered trademarks, patent rights, copyrights and other intellectual property rights; (6) accounts receivable that are owned or will be owned; and (7) other property rights that can be pledged pursuant to law and administrative regulations.

c. Renewal of the right to use land for residential construction

China's *Civil Code* provides principles on how to deal with the expiration of the right to use land for residential construction. "If the term of the right to use land for residential construction expires, it shall be automatically renewed. The payment or reduction of renewal fees shall be made in accordance with laws and administrative regulations."[59] This allows for better continuity after the State Council officially put forward a bill to amend the relevant laws.

4. Tort Liability

a. Rule of "Assumption of Risk"

Based on the *Tort Liability Law*, the Civil Code further refines the principle of attribution of tort liability and establishes the rule of "assumption of risk". The *Civil Code* specifies if the victim, who voluntarily participates in cultural activities with certain risks, is damaged due to other participants' acts, it shall not request other participants to bear tort liability, unless the other participants were willful or gross negligence in causing the damage[60].

58 Civil Code, Article 441 to Article 445
59 Civil Code, Article 359

b. "Self-help" Behavior

The *Civil Code* provides that if any person whose lawful rights and interests are infringed, is unable, under pressing conditions, to receive protection from the state authorities in a timely manner, and its lawful rights and interests would be irreparably damaged unless measures will be immediately taken, such person may take reasonable measures, such as distraining the property of the tortfeasor, necessary for protection of its own lawful rights and interests, but it shall immediately request the relevant state authorities to proceed[61]. This provisions in the *Civil Code* refers to self-help for making up the insufficiency of relief provided by the state authorities and protection of individual interests. However, it is noticeable that, in civil matters, self-help is limited to property, shall be made within a necessary scope, and one is then required to apply to the relevant state authorities to proceed.

c. Compensation for Psychological Injury

The *Civil Code* provides that if any harm results from intentional or grossly negligent act by a tortfeasor to a specific object with personal significance to a natural person, which has caused serious psychological injury to the victim of the tort, the victim shall have the right to require compensation for psychological injury[62]. In accordance with the pervious *Tort Liability Law*, compensation is limited to the severe psychological injury of other persons caused by the infringer of such person's personal rights and interests. However, the *Civil Code* expands the scope of compensation for psychological injury, stating that one can also claim compensation for the tort caused by a specific object resulting in serious psychological injury. The previous judicial interpretation also had relevant provisions that a court shall accept a claim for compensation for a tort which causes loss or destruction of a

60 Civil Code, Article 1176
61 Civil Code, Article 1177
62 Civil Code, Article 1183

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commemorative item with symbolic personal significance[63].

d. Punitive Damages for Intellectual Property

The *Civil Code* is committed to strengthen protection of intellectual property, and significantly increases damages for infringement of intellectual property rights, in order to manifest the deterrent effect of law. It clearly provides that anyone who intentionally infringes others' intellectual property rights, under serious circumstances, may face punitive damages[64].

e. Responsibility for Ecological Damages

The *Civil Code* adds punitive damages for ecological damages. It states that where a tortfeasor violates the provisions of law and intentionally causes environmental pollution or ecological damage, resulting in serious consequences, the victim shall have the right to claim corresponding punitive damages[65]. Furthermore, the *Civil Code* specifies that for the repair and compensation system for ecological damage, the relevant state authorities or organizations may require the tortfeasor to assume liability for repair within a reasonable time. If the tortfeasor fails to do so, it shall cover the cost of repair[66].

The *Interpretation of the Supreme People's Court on Several Issues on Applicable Law for Review of Disputed Cases regarding Liability for Ecological Damages*, Article 14 only provides that at the infringed person's request, the court may order the polluter to assume responsibilities for repairing the environment. However, the *Civil Code* states that not only the courts, but also the other state authorities or organizations pursuant to law, may require the polluter to repair the ecological damages.

5. General Provisions

The *General Provisions of the Civil Code* consists of 10 chapters and 204 articles. Compared to the previous *General Principles of Civil Law*, it refines the guardianship system, civil rights system and civil liability system, and sets up a special legal person system. The legislative process of the *Civil Code* is divided into two main steps: the first step is to formulate the *General Provisions of the Civil Law*, and the second step is to incorporate other basic civil laws and *General Provisions of the Civil Law* into the *Civil Code*. As a result, the General Provisions in the *Civil Code* has fewer modifications than the *General Provisions of the Civil Law*.

D. Conclusion

After years of preparation, the *Civil Code* will finally come into effect on 1st January 2021. In view of the specific situation in China and years of judicial practice, compared to previous basic civil laws, the *Civil Code* reflects important progress. The entire civil legal system is improved by enactment of the *Civil Code*, nevertheless, the need to clean up all the explanations and interpretations of the Supreme People's Court is a major undertaking, as a result of the bifurcated judicial system of contemporary Chinese law, where the Supreme People's Court's interpretations have the same force of law as statutes promulgated by the People's Congress. In addition, there are still inadequacies and gaps that remain to be refined by laws and regulations. For example, the contract chapter in the *Civil Code* only adds regulations on the basic problems of factoring contracts, while there are many problems to be further resolved in practice. Nevertheless, the *Civil Code* is clearly an important milestone in the development of contemporary Chinese law. It provides substantial personal rights for the Chinese people, based, as it says, on the *Constitution*.

The *Civil Code* is incomplete; many civil laws have not been included in the *Civil Code*, yet it provides for a fundamental establishment of personal rights that is most important. Furthermore, it points in the direction of more comprehensive and rational codification.

63 Interpretation of the Supreme People's Court on Several Issues on Determination of Liability for Psychological Injury in Civil Matters, Article 4
64 Civil Code, Article 1185
65 Civil Code, Article 1232
66 Civil Code, Article 1234

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1.8 Brief Analysis on *Measures for Handling Complaints of Foreign-Invested Enterprises*

**Courtesy of Anderson & Anderson LLP*

Introduction

The Measures for Handling Complaints of Foreign-invested Enterprises (hereinafter, the "Measures for Complaints") have been officially approved by the Ministry of Commerce on 18th August 2020, with a total of 5 chapters and 33 articles, and have become effective as of 1st October 2020. The Measures for Complaints were inspired by the important work of Harley Seyedin and the White Paper of AmCham South China. The Measures for Complaints are established in response to the regulations that "the State shall establish a mechanism for the work of complaints by foreign-invested enterprises, promptly handle the problems raised by foreign-invested enterprises or their investors, and coordinate and improve the relevant policy measures" stated in the Foreign Investment Law1 and the Regulations on Implementation of the Foreign Investment Law 2issued in 2019. The relevant provisions have replaced the original Interim Measures for Handling Complaints of Foreign-invested Enterprises (hereinafter, the "Interim Measures") enforced on 1st January 2000.

Compared with the original Interim Measures, the Measures for Complaints have the following major revisions:

1 Foreign Investment Law, Article 26 (1)
2 Regulations on Implementation of the Foreign Investment Law, Article 29 (1)

1. Larger Scope of Complaints

The Measures for Complaints shows that the complainant can not only apply to the agencies for handling complaints for coordination and resolution in case of infringement on his legal rights and interests, but also in order to raise problems in the investment environment caused by administrative actions, and to make suggestion on improvement of the relevant policy measures3. In other words, complaints can be made related to specific administrative actions and policies; however, the complaints for policies are only limited to the investment environment. The "Interim Measures" did not have limitation on reporting situations, providing advice and suggestion or making a claim 4, and thus, the new Measures for Complaints restrict the scope of the advice and suggestion.

Moreover, not only foreign-invested enterprises and foreign investors, but also chambers of commerce and associations established pursuant to laws and voluntarily participated in by foreign-invested enterprises can act as complainants to raise questions about the investment environment. 5 The subject of complaints have been expanded.

3 Measures for Handling Complaints of Foreign-invested Enterprises, Article 2
4 Interim Measures for Handling Complaints of Foreign-invested Enterprises, Article 2
5 Measures for Handling Complaints of Foreign-invested Enterprises, Article 9

1.8《外商投资企业投诉工作办法》简要分析

本节由安以恩律师事务所提供

引言

《外商投资企业投诉工作办法》(以下简称"《投诉办法》")于2020年8月18日由商务部正式通过,共5章,33条,自2020年10月1日起施行。《投诉办法》受到了哈利·赛亚丁重要工作和华南美国商会白皮书的启发。《投诉办法》是因应2019年通过的《外商投资法》1 以及《外商投资法实施条例》2 中"国家建立外商投资企业投诉工作机制,及时处理外商投资企业或者其投资者反映的问题,协调完善相关政策措施。"的相关规定而制定的,替代了原来2006年10月1日起施行的《外商投资企业投诉工作暂行办法》(以下简称"《暂行办法》")。

与原有的《暂行办法》相比,《投诉办法》主要有以下修改:

1 《外商投资法》第二十六条第一款
2 《外商投资法实施条例》第二十九条第一款

一、投诉范围扩大

《投诉办法》表明投诉人不仅可以就其合法权益受到行政行为侵害,向投诉工作机构申请协调解决,还可以向投诉工作机构申请协调解决政府行为反映投资环境方面存在的问题,建议完善相关政策措施3。也就是说,不仅可以针对具体的行政行为进行投诉,还可以向政策等进行投诉,但仅限于投资环境的。《暂行办法》未对反映情况、提出建议、意见或请求做出限制4,因此,新的《投诉办法》将建议、意见的范围缩小了。

而且针对投资环境提出问题的投诉人不仅包括外商投资企业和外国投资者,还包括外商投资企业依法成立和自愿参加的商会和协会5。投诉主体范围也扩大了。

3 《外商投资企业投诉工作办法》第二条
4 《外商投资企业投诉工作暂行办法》第二条
5 《外商投资企业投诉工作办法》第九条

2. Adjustments on Agencies for Handling Complaints

In addition to the National Center for Complaints of Foreign-invested Enterprises and the departments for handling complaints designated by local governments at all levels6, established in accordance with the original Interim Measures, a "joint meeting system for complaints of foreign-invested enterprises" (hereinafter, the "Joint Meeting") 7 at the central level has been added to the new Measures for Complaints. The Joint Meeting is established by the Ministry of Commerce in cooperation with the relevant departments under the State Council, primarily, to coordinate and promote on handling complaints of foreign-invested enterprises at the central level, and to guide and supervise on the local complaints. The Joint Meeting Office is set up in the Department of Foreign Investment Administration of the Ministry of Commerce.

However, the National Complaints Center for Foreign-invested Enterprises will handle complaints subject to a smaller scope. In accordance with the original Interim Measures, the National Complaint Center for Foreign-invested Enterprises was responsible for reviewing complaints directly from foreign-invested enterprises, as well as from foreign-invested enterprises across provinces and cities, and foreign-invested enterprises with significant influence8. However, the new Measures for Complaints state that the National Complaint Center for Foreign-invested Enterprises can only be responsible for reviewing complaints involving administrative actions by the relevant departments of the State Council and provincial governments, and suggestions on the relevant departments and provincial governments of the State Council, or with all complaints significant national or international influence9.

6 Measures for Handling Complaints of Foreign-invested Enterprises, Article 5 (2)
7 Interim Measures for Handling Complaints of Foreign-invested Enterprises, Article 5 (1)
8 Interim Measures for Handling Complaints of Foreign-invested Enterprises, Article 5 (1)
9 Measures for Handling Complaints of Foreign-invested Enterprises, Article 6

3. More Specific Rules on Handling Complaints

The new Measures for Complaints specify details of materials that shall be included in a complaint10. If the materials are incomplete, a one-time written notice shall be issued within 7 working days and a period of 15 working days shall be seen for procedural matters including corrections11, duration on handling complaints, relief and remedy in case of objection against the complaint. The Measures for Complaints also provide an authorized complaint12. However, the original Interim Measures simply set out the conditions for the review and acceptance of complaints13, while the detailed required materials were determined by the departments at their discretions, and neither period of correction nor the condition of the authorized complaints was provided.

The new Measures for Complaints states that for complaints involving multiple departments or complicated matters, the time limits can be extended as appropriate14. However, it does not provide the specific working days that can be granted for extension agreed by the person in charge of the organizations for complaints. This can be adverse to improv efficiency of handling complaints, and it may cause delay for complaint proceedings.

The Measures for Complaints provides that the complaints shall be determined in no more than one year15. Such period is too long. Pursuant to the Administrative Reconsideration Law, generally, if a citizen, legal person or other organization believes that a specific administrative actions infringe on their legal rights and interests, they may submit an application for administrative reconsideration within sixty days of their knowledge of such specific administrative actions16. Therefore, in accordance

10 Measures for Handling Complaints of Foreign-invested Enterprises, Article 11
11 Measures for Handling Complaints of Foreign-invested Enterprises, Article 13
12 Measures for Handling Complaints of Foreign-invested Enterprises, Article 12
13 Interim Measures for Handling Complaints of Foreign-invested Enterprises, Article 8
14 Measures for Handling Complaints of Foreign-invested Enterprises, Article 19
15 Measures for Handling Complaints of Foreign-invested Enterprises, Article 21
16 Administration Consideration Law, Article 9

二、投诉工作机构发生调整

除了根据原有的《暂行办法》设立的全国外商投资企业投诉中心和地方各级政府指定的投诉受理部门6外，新的《投诉办法》在中央层面上新增了"外商投资企业投诉工作部际联席会议制度7"（以下简称"联席会议"）。该联席会议是由商务部会同国务院有关部门共同建立，主要是协调、推动中央层面的外商投资企业投诉工作，指导和监督地方的投诉工作。该联席会议办公室设在商务部外国投资管理司中。

但是，全国外商投资企业投诉中心受理的范围缩小了。根据原有的《暂行办法》规定，全国外商投资企业投诉中心负责受理外商投资企业直接投诉至全国外商投资企业投诉中心的事项以及跨省市外商投资企业投诉事项和影响重大的外商投资企业投诉事项8。但是新的《投诉办法》规定全国外商投资企业投诉中心负责受理涉及国务院有关部门和省级政府的行政行为以及对国务院有关部门和省级政府的建议和全国范围内或者国际上有重大影响9。

6 《外商投资企业投诉工作暂行办法》第五条第一款
7 《外商投资企业投诉工作办法》第五条第二款
8 《外商投资企业投诉工作暂行办法》第五条第一款
9 《外商投资企业投诉工作办法》第六条

三、投诉工作规则更加明确

新的《投诉办法》详细规定投诉材料应当包括的内容10，投诉材料不齐全的，应当在7个工作日内一次性书面通知并给予15个工作日的补正宽限期11、投诉处理期限、对投诉异议的救济方法等程序性事项。《投诉办法》还规定了委托投诉 12。而原有的《暂行办法》仅简单规定了投诉受理的条件13，详细要求的材料都是由各单位自己决定的，没有规定补正期限，也没有规定委托投诉情况。

新的《投诉办法》规定涉及部门多，情况复杂的投诉事项，可以适当延长处理期限14。但是，其并未规定经投诉工作机构负责人同意处理期限可延长多少个工作日，这不利于投诉处理效率的提升，可能造成投诉处理的拖延。

《投诉办法》规定投诉处理的最长期限为一年 15。该最长期限太长了，对于根据《行政复议法》，一般情况下，公民、法人或者其他组织认为具体行政行为侵犯其合法权益的，可以自知道该具体行政行为之日起六十日内提出行政复议申请 16。因此，为与行政法律法规相对应，公民、法人或者其他组织认为具体行政行为侵犯其合法权益的，投诉处理的最长期限应当为六个月。对于外商投资企业或者其投资者的建议和问题反映，最长处理期限可以限定为一年。

新的《投诉办法》与原有的《暂行办法》一样，也规定了投诉工作机构的处理方式和投诉处理终结情形。但是，《投诉办法》新增规定投诉工作机构可以推动投诉人和被投诉人达成谅解（包括达成和解协议），该和解协议对投诉人和被投诉人具有约束力17。被投诉人不履行生效和解协议的，将会被依法依规追究责任18。投诉工作机构对于被投诉人是没有强制力的。因此，他们不能强制执行和解而和解协议的运用有利于解决部分被投诉人获得投诉人谅解后不按照约定履行或者拖延履行的问题。

10 《外商投资企业投诉工作办法》第十一条
11 《外商投资企业投诉工作办法》第十三条
12 《外商投资企业投诉工作办法》第十二条
13 《外商投资企业投诉工作暂行办法》第八条
14 《外商投资企业投诉工作办法》第十九条
15 《外商投资企业投诉工作办法》第二十一条
16 《行政复议法》第九条
17 《外商投资企业投诉工作办法》第十八条
18 《外商投资法实施条例》第四十一条

with the administrative laws and regulations, if the enterprises or their investors believe that the administrative actions of the administrative authorities and their staff infringe on their legal rights and interests and file complaints, their complaints shall be determined for no more than six months. The suggestions or reports on issues made by foreign invested enterprises or their investors should be disposed for no more than one year.

Like the original Interim Measures, the new Measures for Complaints, also provide methods for handling complaints and conclusion of complaints. However, the provisions added in Measures for Complaints state that the agencies for handling complaints can promote an understanding (including a settlement agreement) between the complainant and the complained person, which is binding on the complainant and the complained person17. If the complainant fails to fulfill the effective settlement agreement, he will be pursued for responsibility pursuant to law18. The agencies for handling complaints does not have mandatory power over the person that is the object of the complaint. Therefore, they cannot enforce the settlement. The settlement agreement helps resolve the problems caused by non-performance or delay of performance by some of the complainants after they have obtained the complainant's understanding.

17 *Measures for Handling Complaints of Foreign-invested Enterprises, Article 18*

18 *Regulations on Implementation of the Foreign Investment Law, Article 41*

4. Protection of Complainant's Rights and Interests

The original Interim Measures simply stated that the agencies for handling complaints shall keep the complainant's trade secrets in confidence19, while the new Measures for Complaints further specify that the agencies for handling complaints shall establish and improve the internal management system in order to protect the complainant's trade secrets20. Moreover, unlike the Interim Measures, in addition to protection of trade secrets, agencies for handling complaints are also required to protect confidential business information and personal privacy21. The Measures for Complaints also provide that the agencies for handling complaints and their staff who are held liable for abuse of power, negligence of duties, favoritism and irregularities, or disclosure of trade secrets, confidential business information and personal privacy, will be punished pursuant to law; if such actions constitute crimes, they will be pursued criminal responsibilities22 23.

Conclusion

In conclusion, compared to the original Interim Measures, the new Measures for Complaints is more specific, reasonable and practical as to the complaint mechanism for foreign-invested enterprises, and is beneficial for realizing the full functions of the complaint mechanism, despite some of the problems we are unsatisfied.

19 *Interim Measures for Handling Complaints of Foreign-invested Enterprises, Article 13*

20 *Measures for Handling Complaints of Foreign-invested Enterprises, Article 23*

21 *Measures for Handling Complaints of Foreign-invested Enterprises, Article 23*

22 *Measures for Handling Complaints of Foreign-invested Enterprises, Article 39*

23 *Foreign Investment Law, Article 39*

四、保护投诉人的权益

原有的《暂行办法》仅是简单规定投诉工作机构应保守投诉人的商业秘密19，新的《投诉办法》则更详细地规定投诉工作机构应当建立健全内部管理制度保护投诉人的商业秘密20。而且，不同于《暂行办法》，除保护商业秘密之外，投诉工作机构还需要保护保密商务信息和个人隐私21。《投诉办法》还规定了投诉工作机构及其工作人员滥用职权、玩忽职守、徇私舞弊，或者泄露商业秘密、保密商务信息和个人隐私的，依法给予处分；构成犯罪的，依法追究刑事责任22 23。

19 《外商投资企业投诉工作暂行办法》第十三条

20 《外商投资企业投诉工作办法》第二十三条

21 《外商投资企业投诉工作办法》第二十三条

22 《外商投资企业投诉工作办法》第二十八条

23 《外商投资法》第三十九条

总结

总的来说，相较于原有的《暂行办法》，新的《投诉办法》对于外商投资企业投诉机制的规定更加详细合理而且具有实践性，有利于充分发挥投诉机制的作用，尽管有些问题我们不满意。

1.9 Development of China's Intellectual Property in 2020

**Courtesy of Anderson & Anderson LLP*

A. General Statistical Information on China's Intellectual Property Developments in 2020

On 9th July 2020, the National Intellectual Property Administration of China published its semiannual statistical report regarding patents, trademarks, geographical indications and layout-designs of integrated circuits. Ge Shu, director of the Strategic Planning Department of the National Intellectual Property Administration, said that, "from the statistics of the first half year, we can see that domestic applications [for IP registration] submitted by the market subjects in China are recovering, and overseas applications are steadily stepping up."

As for patents, in the first half of 2020, 683,000 applications for patents for inventions were filed in China; 217,000 of the said applications have been granted, among which 176,000 were domestic patents for inventions. The said applications are a slight increase from 649,000 during the same time in 2019. In the first half of the year, a total of 29,500 PCT international patent applications have been reviewed, an increase of 22.6% year on year. Among the reviewed PCT applications, 26,800 were Chinese patents, with a growth of 20.7% year on year. In the first half of the year, 26,200 requests for patent reexamination have been reviewed and 25,700 cases of these requests have been concluded. 2,600 requests for patent invalidity have been reviewed and 4,300 cases of these requests have been concluded. In China, the average time required for examination of patents for inventions is for 20.3 months; for high-value patents, 15.2 months; for utility models, 6.4 months; and for designs, 3.2 months.

In terms of trademarks, in the first half of 2020, 4,284,000 Chinese trademark applications have been filed and 2,629,000 trademarks have been registered. The time for review of trademark registration is normally at 4.5 months. By the end of June 2020, 27,414,000 trademarks in China have been considered as validly registered. A total of 3,875 applications for international registration of Madrid trademarks filed by Chinese applicants have been received, increasing by 36.0% year on year. By the end of June 2020, 41,000 international registration of Madrid trademarks filed by Chinese applicants have been held valid.

With respect to geographical indications, in the first half of 2020, the Intellectual Property Administration approved 322 enterprises using special marks for geographical indication products, witnessing a significant increase from 116 enterprises compared to the same time of last year. 364 registrations for geographical indications have been approved. By the end of June 2020, a total of 2,385 geographical indication products have gained permission, 8,811 enterprises have been approved for use of special marks, and 5,682 geographical indication trademarks have been registered.

As for layout-designs of integrated circuits, in the first half of 2020, 5,176 applications for registration of layout-designs of integrated circuits in China have been filed, rising by 78.2% year-on-year; 5,262 designs in the total have been granted certificates, jumping by 111.6% from the same period of last year.

With regard to protection of intellectual property, in the first half of 2020, there were 5,320 cases of administrative rulings on patent infringement disputes in all provinces (districts and cities) of China. The use of pledges of patents and trademarks throughout China is valued at RMB 85.3 billion, increasing by 45% year on year. 4,678 pledged projects were involved and increased by 52% year on year. Specifically, the patent pledge

1.9 2020年中国知识产权发展情况

**本节由安以恩律师事务所提供*

一、2020年中国知识产权发展数据统计

2020年7月9日，国家知识产权局集局中发布专利、商标、地理标志、集成电路布图设计的半年统计数据。国家知识产权局战略规划司司长葛树说："从上半年统计数据来看，我国市场主体国内知识产权注册申请持续恢复并向好，向外申请布局稳步较快推进。"

在专利方面，2020年上半年，中国发明专利申请68.3万件；共授权发明专利21.7万件。其中，国内发明专利授权17.6万件。对比2019年同期64.9万件，略微增加。上半年，共受理PCT国际专利申请2.95万件，同比增长22.6%。其中，国内2.68万件，同比增长20.7%。上半年，共受理专利复审请求2.62万件；结案2.57万件。受理专利无效宣告请求0.26万件；结案0.43万件。中国发明专利审查平均周期20.3个月，高价值专利审查周期15.2个月，实用新型审查周期6.4个月，及外观设计审查周期3.2个月。

在商标方面，2020年上半年，中国商标申请量为428.4万件，商标注册量为262.9万件。商标注册平均审查周期稳定在4.5个月以内。截至2020年6月底，中国有效注册商标量为2741.4万件。共收到中国申请人马德里商标国际注册申请3875件，同比增长36.0%。截至2020年6月底，中国申请人马德里商标国际注册有效量为4.1万件。

在地理标志方面，2020年上半年，知识产权局核准使用地理标志产品专用标志企业322家，较上年同期核准的116家明显增加。核准注册地理标志商标364件。截至2020年6月底，累计批准地理标志产品2385个，核准专用标志使用企业8811家，累计注册地理标志商标5682件。

在集成电路布图设计方面，2020年上半年，中国集成电路布图设计登记申请5176件，同比增长78.2%；发证总达5262件，同比增长111.6%。

在知识产权保护和运用方面，2020年上半年，中国各省（区、市）专利侵权纠纷行政裁决案件总量5320件。全国专利商标质押使用金额人民币853亿元，同比增长45%，质押项目数4678项，同比增长52%。其中，专利质押金额人民币651亿元，同比增长61%，质押项目数4171项，同比增长54%；商标质押总金额人民币202亿元，同比增长8.8%，质押项目数507项，同比增长34%。

二、中国知识产权最新进展

1.推进知识产权强国加快

知识产权局全面启动《知识产权强国战略纲要（2021—2035年）》制定工作，完成纲要初稿。其目的是"十三五"国家知识产权保护和运用规划，包括健全知识产权相关法律制度和提高知识产权质量效益。专利商标审查质量和效率持续提升，高价值发明专利审查周期压缩至17.3个月，商标注册平均审查周期压缩至4.5个月。

2.知识产权保护加强

推进实施《关于强化知识产权保护的意见》，知识产权保护中心和快速维权中心达46家。开展"铁拳""剑网""网剑""龙腾"等专项行动。2019年，查处商标违法案件3.2万件，假冒专利违法案件0.7万件，案值合计人民币5.1亿元。办理专利侵权纠纷行政裁决案件3.9万件。查处各类不正当竞争案件1.0万件，案值人民币31.6亿元。全国公安机关共立案各类侵犯知识产权和制售伪劣商品犯罪案件2.4万起，破案1.6万起，抓获犯罪嫌疑人2.9万名，涉案价值人民币86.7亿元。全国海关共查获进出口侵权货物5.1万批次。人民法院共新收各类知识产权案件48.0万件，审结47.5万件。全国检察机关批准逮捕涉及侵犯知识产权犯罪案件4346件7430人，起诉5433件1.1万人。

3. 深化知识产权国际合作

签署中欧地理标志保护与合作协定谈判的联合声明、中法地理标志合作议定书等知识产权合作保护协议。稳步推进加入《工业品外观设计海牙协定》准备工作。《视听表演北京条约》批准或加入的国家达31个，于2020年4月28日正式生效，这是首个以中国城市命名的知识产权国际条约。

4. 海南国际知识产权交易中心

中共中央、国务院于2020年6月1日印发《海南自由贸易港建设总体方案》，进一步强调，2025年前重点任务之

amounts to RMB 65.1 billion, with 4,171 pledge projects and an increase by 54% year on year, while the trademark pledge amounts to RMB 20.2 billion with a growth of 8.8%, involving 507 pledge projects, up by 34% from same time of last year.

B. Recent Developments of Intellectual Property in China

1. Faster Development of a Strong Nation of Intellectual Property

Improvement of The Intellectual Property Administration has fully set out the Strategic Outline of a Strong Nation of Intellectual Property (2021-2035) (the "Outline") and has completed its first draft. It is intended to enhance protection and use of intellectual property rights provided in the "13th Five-Year Plan", including to refining laws and regulations related to intellectual property and to improve the quality and efficiency of intellectual property. The quality and efficiency of patent and trademark examination will continue to be improved, with the patent examination period for high-value inventions cut down to 17.3 months and the average review period for trademark registration limited to 4.5 months. and efficiency of review

In the first half of 2019, the average period for authorization of patents with high value by the National Intellectual Property Administration of China was shortened to 20.9 months, and the average period for review of trademark registrations was cut down to 5 months.

2. Stronger Protection of Intellectual Property

In promotion of the Opinions on Strengthening the Protection of Intellectual Property, 46 Intellectual Property Protection Centers and Expedite Rights Protection Centers have been established, and special actions consisting of "Tie Quan" "Jian Wang" "Wang Jian" "Long Teng" have been carried out. In 2019, 32,000 cases of trademark violations and 7,000 cases of counterfeit patent violations were investigated, with a total value of RMB 510 million involved. 39,000 cases of administrative ruling on patent infringement disputes were handled. 10,000 cases of unfair competition were investigated and prosecuted, involving RMB 3.16 billion. The public security organs in China have accepted 24,000 cases of various infringement of intellectual property and manufacture and sales of counterfeit and inferior commodities, 16,000 of which were solved, and 29,000 suspects in these cases were arrested, with RMB 8.67 billion involved. Chinese customs has seized a total of 51,000 shipments of imported and exported infringing goods. The people's courts received 480,000 new intellectual property cases, 475,000 of which have been settled. The Chinese procuratorates approved the arrest of 7,430 persons in 4,346 cases for crimes involving infringement of intellectual property, and 11,000 persons in 5,433 cases were prosecuted.

3. Further International Cooperation on Intellectual Property

Cooperation agreements for protection of intellectual property were signed, such as the Agreement between the European Union and the Government of the People's Republic of China on Cooperation on and Protection of Geographical Indications and the Protocole Franco-Chinois sur la Coopération en Matière d'Indications Géographiques. The preparation of the Hague Agreement Concerning the Industrial Designs has steadily proceeded. The Beijing Treaty on Audiovisual Performances was approved or joined by 31 countries, and has become effective on 28th April 2020, which is the first international treaty regarding intellectual property that is named by a Chinese city.

4. The IP International Exchange of Hainan

The Overall Plan for the Construction of Hainan Free Trade Port, published on 1st June 2020 by the Central Committee of the CPC and the State Council, further emphasized that one of the top priorities by 2025 is to build the Hainan International Intellectual Property Exchange,

一是建设海南国际知识产权交易所，在知识产权转让、运用和税收政策等方面开展制度创新，规范探索知识产权证券化。

海南知识产权交易中心（下称"交易中心"）于2020年8月28日正式开业。交易中心作为试点，正在发展四个系统：分别是知识产权权属转让、知识产权许可、知识产权生态体系和多链联盟。

关于知识产权转让和许可，交易中心正在探索参与者转让其知识产权权属或者许可机制，定制金融衍生品以充分利用新知识产权。交易中心也在探索知识产权交易市场挂牌定价机制，更好地展现知识产权价值，推动中国市场发展。

交易中心希望在知识产权转让、运用等方面进行定向税收优惠和人民币自由汇兑等注重制度创新，以此方式，助推海南服务贸易的自由化和便利化。

交易中心与海南国际仲裁员、金融公司、科技公司、知识产权代理公司、律师事务所、银行等合作，构建知识产权生态体系。交易中心还引入区块链技术至知识产权相关业务，例如证据保全、知识产权注册、交易和融资。

三、中国主要知识产权发展计划

1.《2020年深入实施国家知识产权战略加快建设知识产权强国推进计划》

2015年国务院审议通过了《深入实施国家知识产权战略行动计划（2014-2020年）》，首次提出"建设知识产权强国"。2020 年5月18日，国务院国务院知识产权战略实施工作部际联席会议办公室印发《2020年深入实施国家知识产权战略加快建设知识产权强国推进计划》（下称《推进计划》）。

《推进计划》中明确提到以下几点：

（1）加强专利审查能力建设，完善质量评价机制，高价值专利审查周期压减至16个月以内。完善集中审查、优先审查、专利审查高速路、延迟审查等模式。

（2）优化商标审查质量评价，完善审查质量管理，将商标注册平均审查周期压减至4个月。深化商标注册制度便利化改革，推进商标评审、异议、撤销等业务的电子化。加快智能审查系统开发，加大人工智能技术在审查工作中的运用。

（3）形成打击非正常专利申请和商标恶意注册、囤积行为的长效机制。推动地方全面取消实用新型、外观设计和商标申请注册环节的资助与奖励。

（4）逐步建立高校职务科技成果披露制度和专利申请前评估制度，停止对专利申请的资助奖励，大幅减少并逐步取消对专利授权的奖励，可通过提高转化收益比例等"后补助"方式对发明人或团队予以奖励，在职称晋升、绩效考核、岗位聘任、项目结题、人才评价和奖学金评定等政策中，坚决杜绝简单以专利申请量、授权量为考核内容，增加专利转化运用绩效的权重。

2.《关于强化知识产权保护的意见》

2019年11月24日，中共中央办公厅、国务院办公厅首次出台知识产权保护工作的纲领性文件-《关于强化知识产权保护的意见》，并发出通知，要求各地区各部门结合实际认真贯彻落实。该意见要求到2022年，侵权易发多发现象得到有效遏制，权利人维权"举证难、周期长、成本高、赔偿低"的局面明显改观。到2025年，知识产权保护社会满意度达到并保持较高水平，保护能力有效提升，保护体系更加完善，尊重知识价值的营商环境更加优化，知识产权制度激励创新的基本保障作用得到更加有效发挥。为实现这两个目标，该意见共提出99条措施，从审查授权、行政执法、司法保护、仲裁调解、行业自律等环节完善知识产权保护体系，包括引入侵权惩罚性赔偿制度、规制商标恶意注册、非正常专利申请以及恶意诉讼等行为、探索建立侵权行为公证悬赏取证制度等。

3.《2020—2021年贯彻落实<关于强化知识产权保护的意见>推进计划》

2020年4月20日，知识产权局发布《2020—2021年贯彻落实<关于强化知识产权保护的意见>推进计划》，详细列举知识产权局2020年至2021年工作计划，包括制定修订34部知识产权法律法规和规范性文件，开展大规模知识产权执法活动，推动与其他部门地区的合作，开展知识产权仲裁、调解优先推荐试点。加大知识产权仲裁、调解组织和公证机构培育力度，研究扩展仲裁、调解、公证工作中有关知识产权保护方面的业务类型，设立中国国际知识产权仲裁委员会等等。

四、知识产权领域最新相关立法以及法律法规修订

1.《专利法》第四次修改

2020年10月17日，十三届全国人大常委会第二十二次会议表决通过关于修改《中华人民共和国专利法》的决定。该决定将于2021年6月1日起施行。这是《专利法》第

by fostering institutional innovation in transfer, application and taxation policy of intellectual property, and standardizing intellectual property securitization.

The IP International Exchange of Hainan (the "Exchange") has officially commenced operations as of 28th August 2020. This pilot project is developing four systems: IP right transfers, IP licenses, IP ecosystem and multi-chain alliances.

As for IP transfers and licenses, the Exchange is exploring a mechanism where the participants can transfer or license their IP ownership, and customize financial derivatives to make full use of new IP rights. The Exchange is also working on a mechanism to list prices on an IP trading market to better indicate the value of IP and promote the Chinese market.

The Exchange is expected to emphasize innovation such as providing targeted tax incentives and RMB's a free exchange services in transfer or application of IP exchange, in order to motivate the liberalization and facilitation of service and trading sectors in Hainan.

The Exchange cooperates with the Hainan International Arbitration Court, financial companies, technology companies, intellectual property agencies, law firms, banks etc., for construction of an IP ecosystem. At the same time, the Exchange introduced blockchain technology into IP-related business, such as evidence preservation, IP registration, trade and finance.

C. China's Major Plans for Intellectual Property Development

1. Promotion Plan for Further Implementation of the National Intellectual Property Strategy and Faster Development of a Strong Nation of Intellectual Property in 2020

In 2015, in the Plan for Further Implementation of the National Intellectual Property Strategy (2014-2020) reviewed and adopted by the State Council, called the "Development of a Strong Nation of Intellectual Property" was proposed for the first time. On 18th May 2020, the Office of the State Council Inter-Ministerial Joint Meeting for Implementing Intellectual Property Rights Strategy issued the Promotion Plan for Further Implementation of the National Intellectual Property Strategy and Faster Development of a Strong Nation of Intellectual Property in 2020 (hereinafter, the "Promotion Plan").

The Promotion Plan specifies the following:

(1) The Promotion Plan will strengthen the review of patents and improve the quality evaluation mechanism. The examination period of high-value patents shall be cut down to less than 16 months. It will also improve the centralized examination, priority examination, patent prosecution highway (PPH), delayed examination, etc.

(2) The Promotion Plan strives for quality evaluation in trademark examination and better examination quality management. The average examination period for trademark registration is limited to 4 months. It will further reform in a more convenient trademark registration system, and will digitalize the trademark review, objection, cancellation and other procedures. The development of an intelligent examination systems will be accelerated, which will expand the application for artificial intelligence technology, in examination work.

(3) The Promotion Plan will create an effective system to fight against irregular patent applications, malicious trademark registration and hoarding activities. It will help local authorities cancel subsidies and rewards in applications and registration of utility models, designs and trademarks.

(4) The Promotion Plan will gradually set up a disclosure system for professional scientific and technological achievements in higher education institutions and an assessment system for pre-application patents. Funds and incentives for patent applications will cease to provide incentives for patent authorization which will be significantly reduced and gradually canceled.

四次修改，主要修改内容为：一是加强对专利权人合法权益的保护，包括加大对侵犯专利权的赔偿力度，对故意侵权行为规定一到五倍的惩罚性赔偿，将法定赔偿额上限提高到人民币五百万元，完善举证责任，完善专利行政保护，新增诚实信用原则，新增专利权期限补偿制度和药品专利纠纷早期解决程序有关条款等。二是促进专利实施和运用，包括完善职务发明制度，新增专利开放许可制度，加强专利转化服务等。三是完善专利授权制度，包括进一步完善外观设计保护相关制度，增加新颖性宽限期的适用情形，完善专利权评价报告制度等。

以下是《专利法》具体条文的修改及其分析：

（1）外观设计增加局部保护

第二条第四款中"外观设计，是指对产品的形状、图案或者其结合以及色彩与形状、图案的结合……"修改为"外观设计，是指对产品的整体或者局部的形状、图案或者其结合以及色彩与形状、图案的结合"

新修改的《专利法》引入局部外观设计保护制度，即保护产品的某一局部所做出的创新设计制度，比如玻璃杯的杯把、微波炉的旋钮等。美国、日本、韩国、欧盟等国家和地区均已实行该制度，通常在专利申请图样中通过实线和虚线等方式标示请求保护和不请求保护的部分。原来的《专利法》及其实施细则只对产品外观设计的整体提供保护，而对产品的某一组成部分的外观设计不给予单独保护。实际的设计创新过程中，大部分企业更多时候是对产品的某些局部进行改良设计创新，而不是进行完全的颠覆性改造，此时局部外观设计保护显得尤为重要。新修改的《专利法》改变了原来单一的整体保护，加入局部保护，为外观设计提供更加全面的保护

（2）鼓励采用不同方式实行产权激励

将《专利法》第十六条改为第十五条，增加一款，作为第二款："国家鼓励被授予专利权的单位实行产权激励，采取股权、期权、分红等方式，使发明人或者设计人合理分享创新收益。"

该条主要是关于职务发明创造，执行本单位的任务或者主要是利用本单位的物质技术条件所完成的发明创造为职务发明创造。2020年度国内授权的发明专利中96%是职务发明，职务发明所有权人为单位，个人在发明工作中仅能获得较少的报酬。因此，国家鼓励被授予专利权的单位实行产权激励，采取股权、期权、分红等方式奖励发明人或设计人，从而鼓励创新。

（3）防止专利权滥用

新增一条作为《专利法》第二十条："申请专利和行使专利权应当遵循诚实信用原则。不得滥用专利权损害公共利益或者他人合法权益。

滥用专利权，排除或者限制竞争，构成垄断行为的，依照《中华人民共和国反垄断法》处理。"

新增的第二十条确立禁止权利滥用原则，即禁止滥用专利权损害公共利益或他人的利益。该条立法背景是如同在美国等多个国家出现的专利流氓（Patent Troll）一样，近年来，越来越多的非专利实施实体（Non-Practicing Entity）在中国发起恶意专利侵权诉讼，要求专利使用人承担巨额赔偿。另外，专利诉讼也成为一些厂商牵制或延缓竞争对手首次公开募股（IPO）的重要手段。2018年5月10日，在小米筹划香港IPO关键节点，酷派发布公告称，因涉嫌专利侵权，酷派起诉了小米。

（4）推动专利信息公开

《专利法》第二十一条第二款对于国务院专利行政部门的责任增加了"加强专利信息公共服务体系建设"，"提供专利基础数据"，以便"促进专利信息传播与利用"。

该修改主要是推动知识产权局开放更多专利相关数据。

（5）增加申请前公开不丧失新颖性的情形

在《专利法》第二十四条中增加一项，作为第一项："（一）在国家出现紧急状态或者非常情况时，为公共利益目的首次公开的"。

原则来说，公开的技术方案因为丧失新颖性而丧失了获得授权的先决条件。但是为了公共利益目而首次公开的发明创造，中国通过规定符合这一条件的发明创造在公开之日起六个月内递交申请可以不丧失新颖性，有效地保护了社会公共利益的同时加强了对专利权人合法权益的保护。在2020年爆发的新冠疫情背景下，该规定显得尤为重要。

（6）增加外观设计国内优先权

《专利法》第二十九条第二款修改为："申请人自发明或者实用新型在中国第一次提出专利申请之日起十二个月内，或者自外观设计在中国第一次提出专利申请之日起六个月内，又向国务院专利行政部门就相同主题提出专利申请的，可以享有优先权。"

该修改设立了外观设计专利申请国内优先权制度，将外观设计的国内优先权与国外优先权相统一，加强外观设计保护。原有的《专利法》规定中只有发明和实用新型才能在中国或外国第一次提出专利申请之日起十二个

Instead, individuals or teams of inventors may be rewarded by increasing their proportion of profitable income or other "post-subsidies." In assessment of professional titles, performance examinations, recruitment, project completion, talent evaluation, and scholarship appraisal, the number of patent applications and the number of patent authorizations cannot be used as the only standard. On the other hand, the assessment will highlight patent commercialization and utilization.

2. Opinions on Strengthening Protection of Intellectual Property

On 24th November 2019, the General Office of the CPC Central Committee and the General Office of the State Council, for the first time, issued a framework document on IP protection -- the Opinions on Strengthening Protection of Intellectual Property (the "Opinions"), and gave notice requiring all regions and all relevant departments to stick to the Opinions based on their actual conditions. The Opinions require that, by 2022, the frequency of infringements of intellectual property rights shall be effectively reduced, and the situations where right holders find it difficult to protect their rights due to difficulty in burdens of evidence, time-consuming trials, high costs, or low damage compensation, will have significant changes. By 2025, the public satisfaction of intellectual property protection should reach to and remain at a high level, the power of protection shall be greatly enhanced, and the protection system shall be upgraded. The business environment that respects the value of knowledge will greatly improve, and incentives for innovations offered by the intellectual property system will serve as a more effective guarantee. To achieve these two goals, the Opinions provide 99 measures to improve the IP protection system through examination and authorization, administrative enforcement, judicial protection, arbitration and mediation, industrial self-discipline, etc. The measures include introducing punitive compensation system on infringement, regulating malicious trademark registration, irregular patent applications and malicious litigation, etc., and working on a reward system for evidence provided by the public on infringement.

3. Promotion Plan Thorough Implementation on the Opinions on Strengthening Protection of Intellectual Property in 2020—2021

On 20th April 2020, the Promotion Plan for Thorough Implementation of the Opinion on Strengthening Protection of Intellectual Property in 2020—2021 issued by the Intellectual Property Administration, elaborated on the Administration's work plan for 2020—2021, including a draft and revision of 34 provisions of laws, regulations and standards related to intellectual property, extensive IP law enforcement, cooperation with other departments and local authorities, and preference on experiment on IP arbitration and mediation. It aims to further nurture IP arbitration and mediation organizations and notary institutions, expand the business types related to IP protection in arbitration, mediation and notary, and form the China International Intellectual Property Arbitration Committee.

D. Recent Legislation and Revision on Laws and Regulations in Intellectual Property Sector

1. Fourth Amendment of the Patent Law

On 1st October 2020, the 22nd Session of the 13th Standing Committee of the National People's Congress approved the decision to amend the Patent Law of the People's Republic of China. The decision will become effective on 1st June 2021. This is the fourth amendment of the Patent Law. The main revisions have been made in the following aspects: first, to strengthen the protection of legal rights and interests of patent holders, by increasing compensation for infringement of patent rights, such as imposing one to five times punitive damages for intentional

月内享有优先权，外观设计仅有在外国第一次提出专利申请之日起六个月内享有优先权。

（7）延长发明和实用新型提交优先权文件时间

将《专利法》第三十条修改为："申请人要求发明、实用新型专利优先权的，应当在申请的时候提出书面声明，并且在第一次提出申请之日起十六个月内，提交第一次提出的专利申请文件的副本。

申请人要求外观设计专利优先权的，应当在申请的时候提出书面声明，并且在三个月内提交第一次提出的专利申请文件的副本。

申请人未提出书面声明或者逾期未提交专利申请文件副本的，视为未要求优先权。"

原有的《专利法》要求申请人无论是发明、实用新型还是外观设计都必须在三个月内提交第一次提出的专利申请文件的副本，而本次修改将发明、实用新型专利优先权提交第一次申请文件副本的时间延长到了十六个月，是根据发明、实用新型和外观设计三种类型专利属性不同而做的区分。

（8）延长外观设计保护期限和确立专利权保护期限补偿

将《专利法》第四十二条修改为："发明专利权的期限为二十年，实用新型专利权的期限为十年，外观设计专利权的期限为十五年，均自申请日起计算。

自发明专利申请日起满四年，且自实质审查请求之日起满三年后授予发明专利权的，国务院专利行政部门应专利权人的请求，就发明专利在授权过程中的不合理延迟给予专利权期限补偿，但由申请人引起的不合理延迟除外。

为补偿新药上市审评审批占用的时间，对在中国获得上市许可的新药相关发明专利，国务院专利行政部门应专利权人的请求给予专利权期限补偿。补偿期限不超过五年，新药批准上市后总有效专利权期限不超过十四年。"

第四十二条第一款将外观设计专利权期限由原来的十年延长至十五年，是中国为了适应其加入的《海牙协定》的需要。

第四十二条第二款规定了发明专利权期限补偿制度，是因应中美贸易第一阶段协议的要求所做出的修改。但是，第二款规定要求享有保护期补偿的发明专利必须是自申请日起满四年，且自实质审查请求之日起满三年后授予的，而非中美贸易第一阶段协议中要求的期限是"自在中国提交申请之日起4年内或要求审查申请后3年内未被授予专利权，以较晚日期为准"[1]。

第四十二条第三款是针对创新药物发明的特殊保护，是对新药上市的专利权期限的补偿。该条款的增加也是因应中美贸易第一阶段协议的要求，但是也是众多医药公司的要求。实践中，医药公司由于新药临床试验周期和上市审批时间长，往往新药无法在专利权期限一开始投入市场，开始盈利，因此一直希望中国《专利法》参照美国《专利法》对专利权期限给予补偿。

（9）确立开放许可制度

增加一条，作为第五十条："专利权人自愿以书面方式向国务院专利行政部门声明愿意许可任何单位或者个人实施其专利，并明确许可使用费支付方式、标准的，由国务院专利行政部门予以公告，实行开放许可。就实用新型、外观设计专利提出开放许可声明的，应当提供专利权评价报告。

专利权人撤回开放许可声明的，应当以书面方式提出，并由国务院专利行政部门予以公告。开放许可声明被公告撤回的，不影响在先给予的开放许可的效力。"

增加一条，作为第五十一条："任何单位或者个人有意愿实施开放许可的专利的，以书面方式通知专利权人，并依照公告的许可使用费支付方式、标准支付许可使用费后，即获得专利实施许可。

开放许可实施期间，国家知识产权局对专利权人缴纳专利年费相应给予减免。

实行开放许可的专利权人可以与被许可人就许可使用费进行协商后给予普通许可，但不得就该专利给予独占或者排他许可。"

增加一条，作为第五十二条："当事人就实施开放许可发生纠纷的，由当事人协商解决；不愿协商或者协商不成的，可以请求国务院专利行政部门进行调解，也可以向人民法院起诉。"

新增的第五十条、第五十一条和第五十二条明确了专利开放许可制度。该制度源于现实中越来越多的厂商为了发挥技术创新优势，构筑行业竞争壁垒，减少简单重复投入，倾向实施"专利开放许可"，向行业或产业链相关方共享或开放许可其技术积累。例如，2018年，国内智能手机闪充技术的代表公司OPPO首次面向行业开放其VOOC闪充技术专利。据不完全统计，截至目前，OPPO已经累计面向数十家公司开放了其VOOC闪充技术专利。开

1 《中华人民共和国政府和美利坚合众国政府经济贸易协议》第一章第四节第1.12条第2款第一项

infringement, and adjusting legal compensation cap up to RMB five million; by improving the burden of proof, improving the administrative protection of patents, adding principles of good faith, and inputting the compensation system for patent duration and the relevant provisions on the preliminary settlement procedures for drug patent disputes. Second, to promote the utilization and application of patents, by improving the system of service inventions, adding the patent open licensing system, and strengthen patent conversion services. Third, to improve the patent licensing system, by further upgrading the system related to design protection, increasing the application of a novelty grace period, and improving the patent evaluation and reporting system.

The followings are the specific revisions and their analysis:

(1) Add protection to partial designs

In paragraph 4 of Article 2, "design means a design of the shape, pattern, or a combination thereof, as well as a combination of the color, shape and pattern of a product..." is changed to "design means a design of the shape, pattern, or a combination thereof, as well as a combination of the color, shape and pattern, of the entirety or a portion of a product".

The newly amended Patent Law introduces a system of protection for partial designs, namely a system that protects of innovated designs made in a certain part of the product, such as a handle of a glass, a rotary knob of a microwave, etc. Such system has been implemented in the United States, Japan, South Korea, the European Union and other countries and regions. It usually marks the part requiring protection in full lines, and the part not requiring protection in dotted lines on patent application drawings. The previous Patent Law and its implementing rules only provided protection for the overall design of the product, while the design of certain parts of the product were not specially protected. In fact, in course of design innovation, most enterprises often modify some parts of a product, rather than give it a complete transformation. At this point, protection for partial design is particularly important. The newly amended Patent Law grants protection not only to the overall design, but also to partial design. In this way, it provides more comprehensive protection for designs.

(2) Motivate property right incentives in a different manner

Article 16 of the Patent Law was numbered as Article 15, adding in one paragraph as paragraph 2: "The State encourages that entities granted patent rights may use property right incentives, such as equities, options, dividends, etc., to make profits gained from innovation properly available to inventors or designers."

This Article is mainly about service inventions. A service invention is an invention created during performance of tasks assigned by an organization, or by mainly using the material and technical conditions of such organization. In 2020, 96% of the domestic patents granted for inventions are service inventions owned by organizations, while individuals are underpaid for their work on inventions. Therefore, the State encourages organizations that are granted patent to adopt property rights incentives such as equity, options, dividends, etc., to reward inventors or designers, and eventually motivate innovation.

(3) Prevent abuse of patent rights

Article 20 of the Patent Law, a new provision, stating: "Patent applications and the exercise of patent rights shall adhere to the principle of good faith. Patent rights shall not be abused to damage public interest or the lawful rights and interests of any other person.

Any abuse of patent rights to preclude or restrict competition, which constitutes a monopolistic act, shall be handled in accordance with the Anti-monopoly Law of the People's Republic of China."

The new Article 20 establishes the principle of prohibiting abuse of rights, that is, prohibiting the abuse of patent rights to the detriment of the public interest or the interests of others. The purpose of adding this Article is that, like Patent

放许可制度的确立使得企业既可以协商达成专利许可，也可以通过“开放许可”的模式，申请通过专利行政部门面向潜在的不特定厂商实现许可合作。

新增的第五十一条明确了开放许可的形式，以及国家给予费用减免。而第五十二条则明确了开放许可的纠纷解决方式。新修改的《专利法》对于开放许可制度规定仍然处于概括性的，需要相关部门出具进一步的实施细则。

（10）提高专利侵权惩罚性赔偿上限

将第六十三条改为第六十八条，修改为：“假冒专利的，除依法承担民事责任外，由负责专利执法的部门责令改正并予公告，没收违法所得，可以处违法所得五倍以下的罚款；没有违法所得或者违法所得在人民币五万元以下的，可以处人民币二十五万元以下的罚款；构成犯罪的，依法追究刑事责任。”

对于惩罚性赔偿，2019年修正施行的《商标法》中，对于“对恶意侵犯商标专用权的”，惩罚性赔偿幅度调整为其造成损失的“一倍以上五倍以下”。而在著作权领域，2020年4月26日，提请审议的《著作权法修正案（草案）》中也提出，对于“故意侵犯著作权或者与著作权有关的权利，情节严重的”，可以在实际损失或违法所得“确定数额的一倍以上五倍以下确定赔偿数额。”

（11）明确执法部门可采取的措施

将第六十四条改为第六十九条，增加第二款“管理专利工作的部门应专利权人或者利害关系人的请求处理专利侵权纠纷时，可以采取前款第（一）项、第（二）项、第（四）项所列措施。”

原先的《专利法》规定管理专利工作的部门可以询问有关当事人，调查与涉嫌违法行为有关的情况；对当事人涉嫌违法行为的场所实施现场检查；查阅、复制与涉嫌违法行为有关的合同、发票、账簿以及其他有关资料；检查与涉嫌违法行为有关的产品，对有证据证明是假冒专利的产品，可以查封或者扣押。新修改的《专利法》明确负责假冒专利的部门将分为负责专利执法部门和管理专利工作的部门。专利执法部门主要是国家市场监督管理局和地方各市场监督局下的知识产权执法队伍，该执法队伍负责专利商标等知识产权执法，可以采取以上所有规定。而管理专利工作部门是知识产权局，其应专利权人或者利害关系人的请求处理专利侵权纠纷时只能采取询问有关当事人，调查与涉嫌违法行为有关的情况、对当事人涉嫌违法行为的场所实施现场检查、检查与涉嫌违法行为有关的产品这三项措施。知识产权局的执法权限缩小。

（12）处理跨地域侵权案件

增加一条，作为第七十条：“国务院专利行政部门可以应专利权人或者利害关系人的请求处理在全国有重大影响的专利侵权纠纷。

地方人民政府管理专利工作的部门应专利权人或者利害关系人请求处理专利侵权纠纷，对在本行政区域内侵犯其同一专利权的案件可以合并处理；对跨区域侵犯其同一专利权的案件可以请求上级地方人民政府管理专利工作的部门处理。”

新增的第七十条明确如何处理跨地域侵权案件，地方机关可以对异地侵权行为合并处理或者请求上一级部门处理。

（13）提高侵权赔偿

将第六十五条改为第七十一条，修改为：“侵犯专利权的赔偿数额按照权利人因被侵权所受到的实际损失或者侵权人因侵权所获得的利益确定；权利人的损失或者侵权人获得的利益难以确定的，参照该专利许可使用费的倍数合理确定。对故意侵犯专利权，情节严重的，可以在按照上述方法确定数额的一倍以上五倍以下确定赔偿数额。

权利人的损失、侵权人获得的利益和专利许可使用费均难以确定的，人民法院可以根据专利权的类型、侵权行为的性质和情节等因素，确定给予人民币三万元以上人民币五百万元以下的赔偿。

赔偿数额还应当包括权利人为制止侵权行为所支付的合理开支。

人民法院为确定赔偿数额，在权利人已经尽力举证，而与侵权行为相关的账簿、资料主要由侵权人掌握的情况下，可以责令侵权人提供与侵权行为相关的账簿、记录；侵权人不提供或者提供虚假的账簿、资料的，人民法院可以参考权利人的主张和提供的证据判定赔偿数额。”

新修改的《专利法》增加了对于故意侵权专利权，情节严重的赔偿数额。权利人的损失、侵权人获得的利益和专利许可使用费均难以确定的，专利侵权法定赔偿的下限从原来的人民币一万元提高至人民币三万元，上限从人民币一百万元提高至人民币五百万元，进一步提供专利侵权惩罚程度。

新增的第七十一条第三款是《民事诉讼法》在专利侵权领域的具体应用。

Trolls that in recent years have emerged in the US and several other countries a growing number of Non-Practicing Entities have launched malicious lawsuits of patent infringement in China, claiming substantial compensation from patent users. In addition, patent lawsuits have been exploited as a special device by some manufacturers to restrict or delay a competitor's initial public offering (IPO). On 10th May 2018, on the verge of Xiaomi's plan for an IPO in Hong Kong, Coolpad announced that it had brought a lawsuit against Xiaomi for suspicion of patent infringement.

(4) Promote disclosure of patent information

Article 21, paragraph 2 of the Patent Law, to responsibilities for thepatent administrative department of the State Council, adds to: "... strengthen the construction of patent information public service systems", "... provide basic patent data", so as to "promote the dissemination and utilization of patent information".

The revision of this Article is mainly to encourage the Intellectual Property Administration to disclose more patent-related data.

(5) Adding in a new condition it allows novelty to survive disclosure to the public prior to application

Article 24 of the Patent Law adds one paragraph as paragraph 1: "(1) it is disclosed to the public for the first time for the purpose of public interest, amid a national emergency or any extraordinary circumstance occurring in the country".

In principle, after disclosure, technical solutions will lose their novelty, and thus lose preconditions for obtaining authorization. However, if an invention is disclosed to the public for the first time for the purpose of public interest, China decided that the novelty of the invention subject to this condition may survive after submission of application within six months as of the date of disclosure. This effectively protects public interest, and at the same time, strengthens protection of patent holders' legal rights and interests. Under the Covid-19 epidemic in 2020, this Article is particularly important.

(6) Add in domestic priority for design

Article 29, paragraph 2 of the Patent Law is changed to, "Where, within 12 months as of the date of filing the first application for a patent for an invention or utility model in China, or within six months as of the date of filing the first application for a patent for a design in China, the applicant files a subsequence application for a patent for the same subject matter with the patent administrative department of the State Council, the applicant may enjoy right of priority."

The revised Article establishes a domestic priority system for design patent applications, equalizes domestic priority with foreign priority in design, and thus strengthens protection of design. In the previous Patent Law, only inventions and utility models could enjoy priority within twelve months as of the date of the first patent application in China or a foreign country, while designs can only enjoy priority within six months as of the date of the first patent application in a foreign country.

(7) Extend the time for the submission of priority documents for inventions and utility models

Article 30 of the Patent Law is changed to: "An applicant claiming a right of priority for an invention or utility model patent shall provide a written declaration at the time of application, and submit the copy of the first patent application materials within sixteen months as of the date of filing the first application.

An applicant claiming a right of priority for a design patent shall make a written declaration at the time of application, and submit the copy of the first patent application materials within three months.

An applicant failing to make a written declaration or submit the copy of patent application materials within the prescribed time shall be deemed as waiving the right to claim of priority."

The previous Patent Law required that an applicant submit copies of the first patent

（14）简化保全程序

将第六十六条改为第七十二条，修改为："专利权人或者利害关系人有证据证明他人正在实施或者即将实施侵犯专利权、妨碍其实现权利的行为，如不及时制止将会使其合法权益受到难以弥补的损害的，可以在起诉前依法向人民法院申请采取财产保全、责令作出一定行为或者禁止作出一定行为的措施。"

原先的《专利法》第六十六条规定了诉前保全制度，但新修改的《专利法》仅规定诉前可以采取财产保全、责令作出一定行为或者禁止作出一定行为的措施。将原有的详细程序规定删除，说明《专利法》的诉前保全程序遵照《民事诉讼法》及其相关规定，不再赘述。

（15）修改诉讼时效

将第六十八条改为第七十四条，修改为："侵犯专利权的诉讼时效为三年，自专利权人或者利害关系人知道或者应当知道侵权行为以及侵权人之日起计算。

发明专利申请公布后至专利权授予前使用该发明未支付适当使用费的，专利权人要求支付使用费的诉讼时效为三年，自专利权人知道或者应当知道他人使用其发明之日起计算，但是，专利权人于专利权授予之日前即已知道或者应当知道的，自专利权授予之日起计算。"

新修改的《专利法》修改了专利侵权诉讼的诉讼时效，使之与现有的《民法总则》和即将实施《民法典》相一致。

（16）解决药品上市申请专利纠纷

新增一条，作为第七十六条："药品上市审评审批过程中，药品上市许可申请人与有关专利权人或者利害关系人，因申请注册的药品相关的专利权产生纠纷的，相关当事人可以向人民法院起诉，请求就申请注册的药品相关技术方案是否落入他人药品专利权保护范围作出判决。国务院药品监督管理部门在规定的期限内，可以根据人民法院生效裁判作出是否暂停批准相关药品上市的决定。

药品上市许可申请人与有关专利权人或者利害关系人也可以就申请注册的药品相关的专利权纠纷，向国务院专利行政部门请求行政裁决。

国务院药品监督管理部门会同国务院专利行政部门制定药品上市许可审批与药品上市许可申请阶段专利权纠纷解决的具体衔接办法，报国务院同意后实施。"

新修改的《专利法》规定了药品专利早期解决纠纷机制，明确药品上市专利权纠纷可向法院起诉，也可以向国务院专利行政部门请求行政裁决。国务院药品监督管理部门会同国务院专利行政部门制定药品上市许可审批与药品上市许可申请阶段专利权纠纷解决的具体衔接办法，报国务院同意后实施。

新修改的《专利法》草案三审稿过程中，全国人大宪法和法律委员会研究提出，药品专利纠纷早期解决机制属于新确立的制度机制，涉及药品专利权人和仿制药申请人利益平衡，应当稳妥推进。对于其中涉及专利的法律问题，《专利法》宜作原则规定、提供必要的法律依据，具体内容可由有关主管部门、司法机关依法予以细化并在实践中不断完善。

2020年9月11日，国家药监局综合司联合国家知识产权局办公室公开《药品专利纠纷早期解决机制实施办法（试行）（征求意见稿）》，征求公众意见。

2.《最高人民法院关于审理侵犯商业秘密民事案件适用法律若干问题的规定》

2020年9月10日，最高人民法院公布《最高人民法院关于审理侵犯商业秘密民事案件适用法律若干问题的规定》，并于2020年9月12日起施行。

该司法解释共二十九条，包括商业秘密保护客体、商业秘密的构成要件、保密义务、侵权判断、民事责任、民刑交叉以及有关程序规定，与2007年最高院发布的《最高人民法院关于审理不正当竞争民事案件应用法律若干问题的解释》中有关商业秘密的规定相比，对于经过司法实践检验，并无争议的规定，予以直接吸收或者适当修改；对需要进一步完善的内容，结合法律修改情况以及社会各界提出的修改建议，相应进行了调整、补充和完善。2007年的司法解释与该司法解释不一致的，不再适用。

该司法解释针对举证、维权成本、侵权代价等关键节点，以及对行为保全、保密义务、侵权责任等作出规定，对于审判实践中争议较为集中的不为公众所知悉、相应保密措施、保密义务的认定，以及与员工、前员工有关的商业秘密保护，也作出了明确具体的规定。同时，重点对相关诉讼程序问题作出规定，包括诉讼中的保密措施，人民法院调查收集证据，以及刑民交叉的相关问题。

3.《最高人民法院关于审理专利授权确权行政案件适用法律若干问题的规定（一）》

2020年9月10日，最高人民法院公布《最高人民法院关于审理专利授权确权行政案件适用法律若干问题的规定（一）》，自2020年9月12日起施行。

该司法解释共三十二条，对权利要求解释、以说明书为依据、说明书充分公开、创造性、外观设计专利授权标

application materials within three months, whether for inventions, utility models or designs. However, for patent priority of inventions and utility models, this revision extends the time to sixteen months for submitting copies of the first application materials. Such time difference is made based on the patent features of invention, utility model and design.

(8) Extend the period of design protection and establish extension for the period of patent protection

Article 42 of the Patent Law is revised as: "The term of a patent for an invention is twenty years, for a utility model, ten years, and for a design, fifteen years, all commencing from the date of application.

Where a patent for an invention is granted four years as of the date of application and three years as of the date of filing of request for substantial examination, the patent administrative department of the State Council shall, at the patentee's request, provide term extension for unreasonable delay caused in the patenting process for the invention, except for unreasonable delay caused by the applicant.

For the purpose of making up the time required for assessment and approval of marketing a new drug, the patent administrative department of the State Council may, at the patentee's request, provide term extensions for an invention patent related to the new drug approved for marketing in China. The extension may not exceed five years, and the total valid term of the patent as of approval for marketing the new drug shall not exceed fourteen years."

Article 42, paragraph 1 extends the duration of design patent from ten years to fifteen years. China has to make such adjustment to meet the requirements for joining the Hague Agreement.

Article 42, paragraph 2, provides a compensation system for duration of invention patent rights, which is a modification made in response to the requirements in the China-US Trade Agreement of the First Phase. However, paragraph 2 provides that if a patent for invention requires compensation for the protection period, it must be a patent granted four years as of the date of application and three years as of the date of request for substantive examination, while a different term requirement was set forth in the China-US Trade Agreement on the First Phase, stating "... a patent right that has not been granted within four years from the date of filing the application in China OR within 3 years from the date of request for examination, the most recent date prevails."[1].

Article 42, paragraph 3 focuses on special protection for innovative drug inventions and compensation for the duration of patents for marketing new drugs. The new paragraph is not only in response to the requirements in the China-US Trade Agreement on the First Phase, but also to the requirements of pharmaceutical companies. In practice, since a new drug created by pharmaceutical companies has to undergo a long clinical trial and requires a lot of time waiting for approval of marketing, generally they cannot enter the market or make profit as soon as the patent term starts to count. Therefore, it is expected that China's Patent Law may refer to compensation for patent terms in the US Patent Law.

(9) Establish an open licensing system

Article 50, as a new provision, states that: "Where a patentee, at its own discretion, files a written declaration with the patent administrative department of the State Council, expressing its intention to permit any entity or individual to use its patent, and specifying the royalty payment methods and standard, the patent administrative department shall make an announcement for release of an open license. If the declaration of an open license is made for a utility model or design patent, a patent evaluation report shall be provided.

Any declaration of an open license withdrawn by a patentee shall be made in writing, and the announcement thereof will be made by the patent administrative department of the

1 Economic and Trade Agreement between the Government of the People's Republic of China and the Government of the United States of America, Chapter 1, Section D, Article 1.12, paragraph 2 (1)

准等重要法律适用问题予以明确，并对有关证据、程序问题作出规定。

4.《最高人民法院、最高人民检察院关于办理侵犯知识产权刑事案件具体应用法律若干问题的解释（三）》

2020年9月12日，最高人民法院公布《最高人民法院、最高人民检察院关于办理侵犯知识产权刑事案件具体应用法律若干问题的解释（三）》，自2020年9月14日起施行。

该司法解释共十二条，主要规定了三方面的内容：一是规定了侵犯商业秘密罪的定罪量刑标准，根据不同行为的社会危害程度，规定不同的损失计算方式，以统一法律适用标准；二是进一步明确假冒注册商标罪"相同商标"、侵犯著作权罪"未经著作权人许可"、侵犯商业秘密罪"不正当手段"等的具体认定，以统一司法实践认识；三是明确侵犯知识产权犯罪刑罚适用及宽严相济刑事政策把握等问题，规定从重处罚、不适用缓刑以及从轻处罚的情形，进一步规范量刑标准。

五、2019年中国法院十大知识产权案例

1、"机动车刮水器"侵害发明专利权纠纷案

瓦莱奥清洗系统公司与厦门卢卡斯汽车配件有限公司、厦门富可汽车配件有限公司、陈少强侵害发明专利权纠纷案〔最高人民法院（2019）最高法知民终2号民事判决书〕

【案情摘要】瓦莱奥清洗系统公司（简称瓦莱奥公司）是名称为"机动车辆的刮水器的连接器及相应的连接装置"（简称涉案专利）的中国发明专利的专利权人。瓦莱奥公司于2016年向上海知识产权法院提起诉讼称，厦门卢卡斯汽车配件有限公司（简称卢卡斯公司）、厦门富可汽车配件有限公司（简称富可公司）以及陈少强制造、销售的雨刮器产品落入其专利权保护范围，请求判令卢卡斯公司、富可公司、陈少强停止侵权，赔偿损失及制止侵权的合理开支。瓦莱奥公司同时提出了临时行为保全（又称临时禁令）申请，请求法院裁定卢卡斯公司、富可公司、陈少强立即停止侵权行为。后上海知识产权法院作出部分判决，认定卢卡斯公司、富可公司、陈少强构成侵权，并判令停止侵权行为。据此未对瓦莱奥公司提出的临时行为保全（又称临时禁令）申请进行处理。卢卡斯公司、富可公司等不服上述部分判决，向最高人民法院提起上诉。最高人民法院认定被诉侵权产品落入涉案专利权的保护范围，卢卡斯公司、富可公司的行为构成侵权，应当承担停止侵害的法律责任。瓦莱奥公司虽坚持其责令卢卡斯公司、富可公司停止侵害涉案专利权的诉中行为保全申请，但是其所提交的证据并不足以证明发生了给其造成损害的紧急情况，且最高人民法院已经当庭作出判决，本案判决已经发生法律效力，另行作出责令停止侵害涉案专利权的行为保全裁定已无必要。故对于瓦莱奥公司的诉中行为保全申请，不予支持。最高人民法院遂判决驳回上诉，维持原判。

【典型意义】本案由最高人民法院依法公开开庭审理并当庭宣判，是最高人民法院知识产权法庭受理的第一件上诉案件，标志着技术类案件统一上诉机制顺利启动，也是最高人民法院知识产权法庭审判职能的首次展现。本案是针对部分判决的上诉案件，允许就侵权判定问题先行作出部分判决并提起上诉。同时，最高人民法院还在本案判决中首次探讨了判令停止侵害的部分判决制度和临时禁令制度的关系，阐明了判令停止侵害的部分判决尚未发生效力时临时禁令的价值，倡导人民法院在作出部分判决的同时，支持专利权人关于责令停止侵权行为的保全申请。此外，功能性特征是专利案件中的热点和难点问题，本案判决对于详尽阐述功能性特征认定标准问题，有助于澄清司法实践中的认识偏差。

2、"HONDAKIT"定牌加工侵害商标权纠纷案

本田技研工业株式会社与重庆恒胜鑫泰贸易有限公司、重庆恒胜集团有限公司侵害商标权纠纷案〔最高人民法院（2019）最高法民再138号民事判决书〕

【案情摘要】本田技研工业株式会社（简称本田株式会社）获准注册"1587460591674898.jpg"等三枚涉案商标，分别核定使用在第12类车辆、摩托车等商品上。后海关查获重庆恒胜鑫泰贸易有限公司（简称恒胜鑫泰公司）委托瑞丽凌云货运代理有限公司申报出口的标有"HONDAKIT"标识的摩托车整车散件220辆，申报总价118 360美元，目的地缅甸，该批货物系由缅甸美华公司授权委托重庆恒胜集团有限公司（简称恒胜集团公司，与恒胜鑫泰公司系母子公司关系，法定代表人均为万迅）加工生产。本田株式会社遂以恒胜鑫泰公司、恒胜集团公司侵害其商标权为由，向云南省德宏傣族景颇族自治州中级人民法院提起诉讼。经审理，一审认定构成侵权，判决恒胜鑫泰公司、恒胜集团公司立即停止侵权行为并连带赔偿本田株式会社经济损失人民币30万元。恒胜鑫泰公司及恒胜集团公司不服，提起上诉。云南省高级人民法院二审认为本案被诉行为属于涉外定牌加工行为，故不构成商标侵权，并判决撤销一审判决，驳回本田株式会社的诉讼请求。本田株式会社不服，向最高人民法院申请再审。最高人民法院裁定提审本案后，判决撤销二审判决，维持一审判决。

State Council. The announced withdrawal of declaration of an open license shall not affect the validity of the open license granted earlier."

Article 51, as a new provision, reads: "In the event that any entity or individual has an intention to adopt an open license for a patent, once it notifies the patentee in writing, and pays the royalty in accordance with the announced royalty payment methods and standard, it may obtain such license.

During the implementation of the open license, the annual fee for the patent covered by the patentee may be reduced or exempted accordingly by the Intellectual Property Administration.

The patentee using an open license may grant a simple license to the licensee upon negotiation over royalties, but not an exclusive license or a sole license for the patent."

Article 52, as a new provision, reads: "Any dispute that arises from the use of an open license shall be first resolved through the parties' negotiation; if the parties refuse or fail to do so, they may apply for mediation by the patent administrative department of the State Council, or file a lawsuit with a people's court."

The new Article 50, Article 51 and Article 52 specify the open patent licensing system. The system is based on the fact that in order to realize the advantages of technological innovation, build barriers in industrial competition, and reduce simple and repeated input, more and more manufacturers tend to implement "open patent licenses", and share or open the license of their technology to the industry or related parties in the industry. For example, in 2018, OPPO, one of the Chinese leading companies mastering smartphone rapid-charge technology, unprecedentedly disclosed its VOOC rapid-charge technology patent to the industry. According to some incomplete statistics, so far, OPPO has opened its VOOC rapid-charge technology patents to dozens of companies. The establishment of an open licensing system allows enterprises to gain a patent license through negotiation, or, through "open license", by applying to the patent administration for cooperation with potential vendors.

The new Article 51 defines the form of open license and fee reductions granted by the State. On the other hand, Article 52 defines the way to resolve disputes over open licenses. The new amended Patent Law has only provided general terms on the open licensing system and thus requires the relevant departments to further make specific rules.

(10) Lift the punitive compensation cap for patent infringement

Article 63 is moved to Article 68 and revised as: "Any person who counterfeits a patent shall, in addition to assuming civil liabilities pursuant to law, receive orders from the responsible patent law enforcement agency on corrections that will be announced to the public. With its illegal income confiscated, such person may be fined no more than five times the illegal income it received; or if there is no illegal income, or the illegal income is no more than RMB 50,000, it shall be fined not more than RMB 250,000; in case of criminal action, it shall be responsible for criminal liabilities pursuant to law."

As for punitive compensation, the Trademark Law amended in 2019 adjusted the penalty on "malicious infringement of the right to exclusive use of trademarks" to "more than one time but less than five times the damage it caused". In the field of copyright, on 26th April 2020, the Amendment (Draft) on the Copyright Law submitted for consideration, also proposed that for "intentional infringement of copyright or rights related to copyright, under serious circumstances", the amount of compensation "may be determined at more than one and five times of the confirmed amount" from actual loss or illegal income.

(11) Specify the feasible measures for law enforcement

Article 64 is changed to Article 69, and adds in paragraph 2: "The patent management departments may take measures set forth in subparagraphs (1), (2) and (4) of the preceding paragraph in the event of handling patent infringement disputes at the request of the patentee or the interested party."

【典型意义】最高人民法院在本案中明确，商标使用行为是一种客观行为，通常包括许多环节，如物理贴附、市场流通等等，是否构成商标法意义上"商标的使用"应当依据商标法作出整体一致的解释，不应该割裂一个行为而只看某个环节，要防止以单一环节遮蔽行为过程，要克服以单一侧面代替行为整体。在法律适用上，要维护商标法律制度的统一性，遵循商标法上商标侵权判断的基本规则，不能把涉外定牌加工这种贸易方式简单地固化为不侵犯商标权的除外情形。同时，对于没有在中国注册的商标，即使其在外国获得注册，在中国也不享有注册商标专用权，与之相应，中国境内的民事主体所获得的所谓"商标使用授权"，也不属于我国商标法保护的商标合法权利，不能作为不侵犯商标权的抗辩事由。

3、"MLGB"商标权无效宣告请求行政纠纷案

上海俊客贸易有限公司与原国家工商行政管理总局商标评审委员会、姚洪军商标权无效宣告请求行政纠纷案〔北京市高级人民法院（2018）京行终137号行政判决书〕

【案情摘要】涉案商标"MLGB"由上海俊客贸易有限公司（简称上海俊客公司）申请注册。在法定期限内，姚洪军针对涉案商标，向原国家工商行政管理总局商标评审委员会（简称商标评审委员会）提起注册商标无效宣告申请。商标评审委员会认为，涉案商标的字母组合在网络等社交平台上广泛使用，含义消极、格调不高，用作商标有害于社会主义道德风尚，易产生不良影响。上海俊客公司虽称涉案商标指称"My life is getting better"，但并未提交证据证明该含义已为社会公众熟知，社会公众更易将"MLGB"认知为不文明用语。商标评审委员会据此裁定宣告涉案商标权无效。上海俊客公司不服，向北京知识产权法院提起行政诉讼。北京知识产权法院判决驳回上海俊客公司的诉讼请求。上海俊客公司不服一审判决，提起上诉。北京市高级人民法院认为，网络环境下已有特定群体认为"MLGB"具有不良影响的含义，应认定涉案商标含义消极、格调不高。据此判决驳回上诉，维持一审判决。

【典型意义】商标法禁止具有不良影响的标志作为商标使用。本案终审判决的作出，对于净化网络环境、制止以擦边球方式迎合"三俗"行为均具有示范效应。此外，二审判决还进一步拓展了此类案件的审理思路，明确了人民法院在判断商标是否具有不良影响的过程中，应当考量的判断主体、时间节点、判断标准以及举证责任等。本案裁判对于人民法院在类似案件审理过程中准确理解和正确适用商标法第十条第一款第八项关于"其他不良影响"的规定，具有指导意义。

4、"武侠Q传游戏"侵害改编权及不正当竞争纠纷案

明河社出版有限公司、完美世界（北京）软件有限公司与北京火谷网络科技股份有限公司、昆仑乐享网络技术有限公司、昆仑万维科技股份有限公司侵害改编权及不正当竞争纠纷案〔北京市高级人民法院（2018）京民终226号民事判决书〕

【案情摘要】明河社出版有限公司（简称明河社）是《射雕英雄传》《神雕侠侣》《倚天屠龙记》《笑傲江湖》等作品在中国境内的专有使用权人。经明河社同意，查良镛（金庸）将上述作品部分区域和期间内移动终端游戏软件改编权及后续软件的商业开发权独家授予完美世界（北京）软件有限公司（简称完美世界公司）。被诉侵权的武侠Q传游戏由北京火谷网络科技股份有限公司（简称火谷网）开发，昆仑乐享网络技术有限公司（简称昆仑乐享公司）经授权可在中国大陆等多个国家和地区独家运营该游戏。昆仑万维科技股份有限公司（简称昆仑万维公司）为涉案游戏的运营者。涉案游戏共有人物卡牌、武功卡牌、配饰卡牌和阵法卡牌等四类卡牌，经比对，涉案游戏在人物描述、武功描述、配饰描述、阵法描述、关卡设定等多个方面与涉案武侠小说中的相应内容存在对应关系或相似性。火谷网认可开发时借鉴和参考了权利人作品中的元素。一审法院认为，现有证据不能证明涉案游戏软件构成对权利人任意一部作品的改编。但火谷网、昆仑乐享公司和昆仑万维公司的行为构成对明河社及完美世界公司的不正当竞争。据此判令火谷网、昆仑乐享公司和昆仑万维公司停止侵权、消除影响，并赔偿明河社等经济损失人民币16 319 658元。双方当事人均不服一审判决，提起上诉。北京市高级人民法院二审认定涉案游戏构成对权利人作品的改编，火谷网构成对明河社和完美世界公司享有权利作品移动终端游戏软件改编权的侵害。火谷网作为开发者，昆仑乐享公司、昆仑万维公司作为游戏运营者，三者应共同承担侵权责任。由于已经认定涉案游戏构成对权利人改编权的侵害，故不再适用反不正当竞争法对被诉侵权行为进行评述。据此判决驳回上诉、维持一审判决。

【典型意义】本案是涉及作品游戏改编权的典型案例。《射雕英雄传》《倚天屠龙记》《神雕侠侣》《笑傲江湖》是金庸先生创作的四部知名武侠小说。被诉侵权卡牌游戏对权利人作品的改编方式，不同于通常形式上的抄袭剽窃，侵权人在改编时并未完整使用权利人作品中的故事情节，而是对人物角色、人物特征、人物关系、武功招式以及武器、阵法、场景等创作要素进行了截取式、组合式的使用。二审法院明确，在游戏改编过程中，未经许可对他人作品中人物角色、人物特征、人物关系、武功招式以及

The previous Patent Law provided that the patent management departments may inquire of the parties concerned, investigate the relevant suspected illegal acts, and carry out on-site inspections at the facilities where suspected illegal acts might have occurred. Moreover, they may review and copy contracts, invoices, books and other relevant information related to the suspected illegal acts, examine products related to the suspected illegal acts, and seize or detain products if there is any evidence proving that they are counterfeit patents. The new amended Patent Law states that the department handling counterfeit patents will be divided into departments of patent law enforcement and departments of patent management. The teams of patent law enforcement are mainly formed by intellectual property law enforcement organizations under the State Administration for Market Regulation and local market supervision bureaus. Such law enforcement teams are responsible for law enforcement on patent and trademark and other intellectual property, and they can take all measures set forth in the above provisions. On the other hand, the patent management department is the Intellectual Property Administration, which, at the request of the patentee or the interested party, may only handle the patent infringement disputes by inquiring of the parties concerned, investigating the relevant suspected illegal acts, carrying out on-site inspection at the facilities where suspected illegal acts might have occurred, and examining the products related to the suspected illegal acts. The Intellectual Property Administration's authority in law enforcement has been limited.

(12) Handle cross-regional infringement cases

Article 70, as a new provision, provides that: "The patent administrative department of the State Council may, at the request of the patentee or the interested party, handle patent infringement disputes that have significant influence on the State.

When handling patent infringement disputes at the request of the patentee or the interested party, the patent management department of a local people's government may combine all infringement cases subject to the same patent right under its jurisdiction; and it may request the patent management department of a superior local people's government to handle cross-regional infringement cases subject to the same patent."

The new Article 70 specifies that a local patent management department may handle cross-regional infringement cases. The local authority can combine them with those of the same subject matter or file a request to a superior department when the acts of infringement are found in different places.

(13) Increase compensation for infringement

Article 65, changed to Article 71, states that: "The compensation for patent infringement shall be determined according to the actual loss suffered by the right's holder due to infringement or profits gained by the infringer from the infringement, or, if it is difficult to determine the loss suffered by the right holder or the profits gained by the infringer, the compensation shall be reasonably determined by reference to the royalty for this patent. In the case of serious intentional infringement of a patent, the compensation may be determined as no less than one but more than five times of the determined amount in the aforesaid method.

Where it is difficult to determine the loss suffered by the right's holder, the benefits obtained by the infringer, and the patent royalty, a people's court may, in consideration of the type of the patent, the nature and particulars of the infringement and other factors, determine the compensation at no less than RMB 30,000 but no more than RMB 5,000,000.

Compensation shall also cover the reasonable expenses that the right's holder has paid in order to stop the infringement.

Where the right's holder has made best efforts to produce evidence, but the account books and information related to the infringement are mainly in the possession of the infringer, in order to determine the damages, a people's court may order the infringer to provide its books and records. If the infringer refuses to do so or provides any false materials, the people's court may rule on the compensation by reference to

武器、阵法、场景等具体创作要素进行截取式、组合式使用，且由此所表现出的人物特征、人物关系以及其他要素间的组合关系与原作品中的选择、安排、设计不存在实质性差别，未形成脱离于原作品独创性表达的新表达，即构成对他人作品改编权的侵犯，进一步厘清了侵害改编权与合理借鉴的行为边界。此外，二审判决在充分考虑权利人作品市场价值的基础上，判令三被告承担人民币1600余万元的赔偿责任，坚持了知识产权侵权赔偿的市场价值导向，切实保障权利人获得了充分赔偿。

5、"MOTR"侵害商标权纠纷案

平衡身体公司与永康一恋运动器材有限公司侵害商标权纠纷案〔上海市浦东新区人民法院（2018）沪0115民初53351号民事判决书〕

【案情摘要】平衡身体公司是核定使用在健身器材等商品上的"MOTR"商标（即涉案商标）的注册人，也是全球从事运动器材生产销售的知名厂商，并在中国拥有多项发明专利及注册商标。永康一恋运动器材有限公司（简称永康一恋公司）在某展览会上推销使用了涉案商标的健身器材，并通过微信商城等多种方式进行实际销售。平衡身体公司以侵害商标权为由，对永康一恋公司提起诉讼，并主张适用惩罚性赔偿。后经法院查明，在本案被诉侵权行为发生前，永康一恋公司就曾侵犯平衡身体公司的知识产权，经平衡身体公司发送警告函后，双方签订和解协议，且永康一恋公司明确承诺不再从事侵权活动。据此，上海市浦东新区人民法院判令永康一恋公司停止侵权行为，并鉴于其重复侵权的情形，适用三倍惩罚性赔偿标准，确定永康一恋公司承担人民币300万元的赔偿责任。该案判决后，双方均未上诉。

【典型意义】本案系适用知识产权侵权惩罚性赔偿标准的典型案例，体现了人民法院严厉打击重复侵权、持续侵权等恶意侵权行为、加大侵权惩处力度的坚定信心。人民法院在判决中明确指出，被告不信守承诺、无视他人知识产权的行为，是对诚实信用原则的违背，侵权恶意极其严重。为保护商标权人的合法权益，法院严惩侵权行为，维护市场秩序，对权利人的诉讼请求应当予以全额支持。

6、"QQ企鹅"因恶意提起知识产权诉讼损害责任纠纷案

深圳市腾讯计算机系统有限公司与谭发文因恶意提起知识产权权利人诉讼损害责任纠纷案〔广东省高级人民法院(2019)粤民终407号民事判决书〕

【案情摘要】深圳市腾讯计算机系统有限公司（简称腾讯公司）拥有多项"QQ企鹅1587460738820155.jpg"系列美术作品的著作权以及注册商标专用权。谭发文为傲为科技（深圳）有限公司（简称傲为公司）的股东及董事。2008年12月，谭发文向国家知识产权局申请"音箱（Xzeit迷你企鹅型）"外观设计专利，并获得授权。2011年3月，腾讯公司以谭发文、傲为公司销售的QQ迷你音箱侵害其著作权和商标权为由提起诉讼。后双方就该两案达成和解，谭发文同意停止侵权并支付赔偿款人民币2.5万元。谭发文同时承诺，将于一个月内向国家知识产权局撤回其企鹅音箱外观设计专利申请。后经法院查明，谭发文并未履行承诺，且持续缴纳该外观设计年费至2015年12月。此后，腾讯公司与深圳市中科睿成智能科技有限公司（简称中科公司）合作生产、销售企鹅外型音箱。2016年2月，谭发文以腾讯公司及中科公司侵害其外观设计专利权为由，提起诉讼。腾讯公司随即针对谭发文的外观设计专利提出无效宣告请求，原国家知识产权局专利复审委员会经审查宣告该外观设计专利权无效。广东省深圳市中级人民法院遂裁定驳回谭发文的起诉。后腾讯公司以谭发文明知其外观设计专利不符合授权条件，仍然恶意提起侵害专利权的诉讼，并给腾讯公司造成了包括商誉损失、律师代理费、差旅费、预期可得利益等在内一系列损失为由，向广东省深圳市中级人民法院提起本案诉讼，请求判令谭发文赔偿腾讯公司的损失、赔礼道歉并消除影响。法院一审认定谭发文的行为构成恶意提起知识产权诉讼，判令其赔偿腾讯公司经济损失及维权合理开支共计50万元。广东省高级人民法院二审维持一审判决。

【典型意义】"因恶意提起知识产权诉讼损害责任纠纷"是知识产权诉讼领域的新类型案由，在行为要件、裁判标准等方面尚待进一步明确。本案中，二审法院从权利基础、判断能力、抗辩事由等多方面，对当事人是否具有提起诉讼的主观恶意等问题进行了有益探索，对赔偿数额的确定标准也给予了充分论述。本案裁判对于合理确定法律责任边界，依法维护善意使用者的市场交易安全，降低创新者的法律风险，鼓励更多社会主体投身创新创业，均具有积极意义。

7、手机游戏"换皮"侵害著作权纠纷案

苏州蜗牛数字科技股份有限公司与成都天象互动科技有限公司、北京爱奇艺科技有限公司侵害著作权纠纷案〔江苏省高级人民法院（2018）苏民终1054号民事判决书〕

【案情摘要】苏州蜗牛数字科技股份有限公司（简称蜗牛公司）开发的手机游戏《太极熊猫》于2014年10 月31日上线，成都天象互动科技有限公司（简称天象公司）、北京爱奇艺科技有限公司（简称爱奇艺公司）开发的手机游戏《花千骨》最早版本于2015年6月19日上线。蜗牛公司向江苏省苏州市中级人民法院提起诉讼，主张《花千骨》手机游戏"换皮"抄袭了《太极熊猫》游戏，即仅更换了《花千骨》游戏中的角色图片形象、配音配乐等，而在游戏的玩法规则、数值策划、技能体系、操作界面等方面与《太极熊猫》游戏完全相同或者实质性相似，侵害其著作权。一审

the claims and the evidence provided by the right holder."

The new amended Patent Law increases the amount of compensation for intentional infringement of patent rights under serious circumstances. If it is difficult to determine the losses of rights' holders, interests obtained by infringer and royalties of patent, the bottom line of statutory compensation for patent infringement has been raised from RMB 10,000 to RMB 30,000, and the cap has been lifted from RMB 1 million to RMB 5 million, which further defines the degree of penalty on patent infringement.

The new Article 71, paragraph 3, is specific to the application of the Civil Procedure Law in the field of patent infringement.

(14) Simplify the preservation process

Article 66 is changed to Article 72: "Where the patentee or interested party has evidence to prove that any other person is committing or will commit infringement of a patent, or an act of obstructing exercise of its rights, and irreparable harm will be caused to its lawful rights and interests if the infringement cannot be promptly stopped, the patentee or interested party may, prior to legal actions, apply to a people's court for property preservation, and order or injunction against certain acts pursuant to law."

Article 66 of the previous Patent Law provided a system of pre-litigation preservation, but the new amended Patent Law only allows property preservation, and order or injunction against certain acts prior to litigation. The removal of the original detailed procedural provisions indicates that the pre-litigation preservation procedure in the Patent Law abides by the Code of Civil Procedure and the relevant regulations, and thus avoid redundancy.

(15) Revise statute of limitations

Article 68 is changed to Article 74: "The statute of limitations for actions against a patent infringement shall be three years, as of the date when the patentee or interested party knows or should have known the infringement and the infringer.

Where any other person uses an invention after an application for the invention patent is published and before the patent is granted without paying proper royalties for such use, the patentee may claim the payment within the statute of limitations of three years, as of the date when the patentee knows or should have known that the invention has been used by that person. However, if the patentee knows or should have known the use prior to the date of granting the patent, the statute of limitations shall commence from the date of granting the patent."

The new amended Patent Law revised the statute of limitations for patent infringement proceedings to be consistence with the existing General Provisions of Civil Law and the forthcoming Civil Code.

(16) Settle disputes over patent applications for marketing drugs

Article 76, as a new provision, reads: "Where, in assessment and approval for marketing a drug, any dispute arises between the applicant and the relevant patentee or interested party over the patent right related to the drug applied for registration, the relevant party may file a lawsuit with a people's court, requesting a judgement as to whether the relevant technical solution of the drug applied for registration falls within the scope of protection of any other person's patent for the drug. The Medical Products Administration of the State Council may, within the prescribed period, make a decision on whether to suspend the approval of marketing the relevant drug pursuant to the effective judgement of the people's court.

The applicant for the marketing a drug and the relevant patentee or interested party may also apply to the patent administrative department of the State Council for an administrative judgement on any patent dispute related to the drug applied for registration.

The Medical Products Administration of the State Council and the patent administrative department of the State Council shall work on how to settle patent disputes arising between the phase of approval and the phase of application for the marketing of a drug. The solutions may be adopted after reported to the State Council."

法院确认，《花千骨》游戏与《太极熊猫》游戏相比，其中有29个玩法在界面布局和玩法规则上基本一致或构成实质性相似；另外《花千骨》游戏中47种装备的24个属性数值与《太极熊猫》游戏呈现相同或者同比例微调的对应关系；《花千骨》V1.0版游戏软件的计算机软件著作权登记存档资料中，功能模块结构图、功能流程图以及封印石系统入口等全部26张UI界面图所使用的均为《太极熊猫》游戏的元素和界面。同时，在新浪微博以及IOS系统《花千骨》游戏用户评论中，亦有大量游戏玩家评论两游戏非常相似。一审法院遂判令天象公司、爱奇艺公司停止侵权行为、消除影响，并赔偿蜗牛公司经济损失人民币3000万元。天象公司、爱奇艺公司不服，提起上诉。江苏省高级人民法院二审判决驳回上诉、维持一审判决。

【典型意义】本案是网络游戏产业领域知识产权保护的典型案例。二审法院在本案中明确，网络游戏"换皮"抄袭可能构成侵害著作权的行为，并在此基础上全额支持了权利人人民币3000万元的诉讼请求，体现了严格保护知识产权的裁判理念。本案裁判是"互联网+"环境下司法裁判积极回应技术发展与产业需求的例证。

8、"奥普"侵害商标权纠纷案

杭州莫丽斯科技有限公司、奥普家居股份有限公司与浙江风尚建材股份有限公司、浙江现代新能源有限公司、云南晋美环保科技有限公司、盛林君侵害商标权及不正当竞争纠纷案〔浙江省高级人民法院（2019）浙民终22号民事判决书〕

【案情摘要】杭州莫丽斯科技有限公司（简称莫丽斯公司）是核定使用在排风一体机等商品上的"奥普"商标的权利人。经授权，奥普家居股份有限公司（简称奥普家居公司）可排他性使用上述商标。被诉侵权行为发生前，莫丽斯公司的"奥普"商标已有作为驰名商标被保护的记录。浙江现代新能源有限公司（简称现代公司）于2006年受让取得使用在金属建筑材料商品上的"1587460685588883.jpg"商标后，通过许可浙江风尚建材股份有限公司（简称风尚公司）等在扣板商品及包装、经销店门头、厂房、杂志广告、网站上大量使用"AOPU 奥普"等标志，且辅以"正宗大品牌""高端吊顶专家与领导者"等文字进行宣传并实现迅速扩张，在此期间还对莫丽斯公司进行了多次侵权诉讼和行政投诉。后莫丽斯公司或其关联企业对现代公司享有的"1587460704561544.jpg"商标提出无效宣告请求，人民法院于司法审查过程中撤销了商标行政机关维持该商标权有效的决定。莫丽斯公司、奥普家居公司以风尚公司、现代公司等上述行为侵害其商标权并构成不正当竞争行为为由，提起诉讼。浙江省杭州市中级人民法院一审认为，涉案商标构成驰名商标，风尚公司等在金属吊顶商品上使用"AOPU 奥普"等标志的行为构成对涉案商标的复制、摹仿，不正当利用了"奥普"商标的市场声誉，损害了驰名商标权利人的利益。且现有证据可证明，风尚公司等在本案中的侵权获利已远超法定赔偿上限。一审法院遂判令风尚公司等停止侵权并赔偿经济损失及合理费用共计人民币800万元。浙江省高级人民法院二审维持一审判决。

【典型意义】本案是加大知名品牌保护力度、遏制恶意注册行为的典型案例。二审裁判以鼓励诚实竞争、遏制仿冒搭车为导向，根据商标的知名度与显著性，充分利用现有法律手段，强化知名品牌保护，严厉打击不诚信的商标攀附、仿冒搭车行为，并对双方长达十余年的使用争议作出了明确的市场划分，净化了市场竞争环境，有力规范了商标使用行为。此外，此案还充分体现了人民法院强化民事诉讼在民行交叉纠纷解决中的引导作用这一司法政策导向，充分运用诚实信用、保护在先权利、维护公平竞争、禁止权利滥用等原则作出公正裁判，对引导后续商标权行政纠纷的正确解决发挥了积极作用。

9、"刀靶大捷雕塑"侵害著作权纠纷案

河北山人雕塑有限公司与河北中鼎园林雕塑有限公司、遵义市播州区三合镇人民政府、遵义众和诚农业开发有限公司、贵州慧隆建设工程有限责任公司、贵州慧隆建设工程有限责任公司遵义分公司侵害著作权纠纷案〔贵州省高级人民法院（2019）黔民终449号民事判决书〕

【案情摘要】河北山人雕塑有限公司（简称山人雕塑公司）与河北中鼎园林雕塑有限公司（简称中鼎雕塑公司）是从事雕塑设计、制作和安装的专业机构。2017年12月，山人雕塑公司与贵州省遵义市播州区三合镇人民政府（简称三合镇政府）商谈合作三合镇刀靶烈士陵园的雕塑工程，山人雕塑公司将创作完成的涉案作品"刀靶大捷"设计图及展板交给三合镇政府审阅，并按三合镇政府的要求进行数次修改，但双方最终未达成合意。后山人雕塑公司向贵州省遵义市中级人民法院提起诉讼，主张三合镇政府委托中鼎雕塑公司在刀靶烈士陵园设计、安装的被诉侵权雕塑侵害其著作权。贵州省遵义市中人民法院一审判决由三合镇政府、中鼎雕塑公司共同向山人雕塑公司支付作品使用费人民币10万元及合理支出费用人民币2万元，并由中鼎雕塑公司赔礼道歉。山人雕塑公司、中鼎雕塑公司均不服一审判决，提起上诉。贵州省高级人民法院二审认定侵权行为成立，但同时认为，刀靶烈士陵园是进行革命传统教育和爱国主义教育的重要场所，从遵循利益平衡原则和有效利用资源的效益角度出发，被诉侵权雕塑不宜判决拆除。故可通过适当提高侵权赔偿标准对山人雕塑公司的权利予以充分救济的情况下，对山人雕塑公司主张停止侵害、拆除侵权雕塑的诉讼请求不予支持。据此，改判中鼎雕塑公司、三合镇政府等共同赔偿山人雕塑公司侵权赔偿和合理支出共人民币20万元。

The new amended Patent Law provides a preliminary settlement mechanism for disputes over drug patents. It specifies that patent disputes over drug marketing may be submitted to a court, or to the patent administrative department of the State Council for administrative decision. The Medical Products Administration of the State Council and the patent administrative department of the State Council will work together on how to settle patent disputes arising between the phase of approval and the phase of application for the marketing of a drug. The solutions may be adopted after reported to the State Council.

In the third review of the draft of the amended Patent Law, based on research, the Constitution and Law Committee of the National People's Congress has proposed that, since the preliminary settlement mechanism for disputes over drug patents is a newly established institutional mechanism, related to the balance between the interests of drug patentee and applicants of generic drug, it should be steadily promoted. With respect to the legal issues in patents, the Patent Law may provide principle and necessary legal basis, and the specific contents thereof may be refined by the relevant competent departments and judicial organs in accordance with the law, and may be constantly improved based on practice.

On 11th September 2020, the General Division of the State Medical Products Administration, in cooperation with the State Intellectual Property Administration Office, issued the Measures for the Implementation of the Preliminary Settlement Mechanism for Drug Patent Disputes (Trial) (Draft for Comments) for soliciting public comments.

2. Provisions of the Supreme People's Court on Several Issues of the Applicable Law to the Review of Civil Cases of Infringement of Trade Secrets

On 10th September 2020, the Supreme People's Court issued the Provisions on Several Issues of the Applicable Laws in the Review of Civil Cases of Infringement of Trade Secrets, which has become effective on 12th September 2020.

The said judicial interpretation consists of 29 articles, including provisions on the objects subject to trade secret protection, the elements of trade secrets, the obligations of confidentiality, judgement on infringement, civil liabilities, overlap in civil cases and criminal cases, and the other relevant procedures. Compared to the provisions on trade secrets in the Explanation of the Supreme People's Court on the Applicable Law to the Review of Unfair Competition Civil Cases issued by the Supreme Court in 2007, if, based on judicial practice and examination, the provisions of 2007 judicial interpretation are not controversial, they shall be directly, or upon proper modification, incorporated in the 2020 judicial interpretation. Any provisions required to be refined shall be adjusted, supplemented and improved based on amendments of laws and suggestions for modification put forward by the society. Any provisions in the 2007 judicial interpretation that are inconsistent with the 2020 judicial interpretation will no longer apply.

The said judicial interpretation sets forth key points such as burdens of proof, costs of protection of rights, cost of infringement, and provisions regarding injunctions actions, obligations of confidentiality, infringement liability, etc. It also specifies, for highly debated cases in judicial practice, how to keep confident from the public, take confidentiality measures and assume obligations of confidentiality, and how the relevant employees and former employees shall protect trade secrets. At the same time, it focuses on the relevant procedural issues, including confidentiality measures in litigation, investigation and evidence collection by people's courts, and issues related to the overlap in civil cases and criminal cases.

3. Provisions of the Supreme People's Court on Several Issues of the Applicable Law to the Review of Administrative Cases of Patent Authorization (I)

On 10th September 2020, the Supreme People's Court issued the Provisions of the Supreme People's Court on Several Issues of the Applicable Law to the Review of Administrative Cases of

【典型意义】本案是一起涉及红色经典作品的著作权纠纷，二审判决秉承尊重法律、尊重权利、尊重经典的原则，在判决不停止侵权的同时，通过提高侵权赔偿金和使用费的方式对权利人进行救济，既充分考虑了对权利的有效保护，也有力兼顾了经典传承，使裁判结果符合法律，又契合社情民意，实现了法律效果、政治效果和社会效果的有机统一。

10、厦门德乐盟科技有限公司等假冒注册商标罪、销售假冒注册商标的商品罪案

厦门德乐盟科技有限公司、厦门兴恒昌贸易有限公司、杨明凤、杨茂淦假冒注册商标罪、销售假冒注册商标的商品罪案〔福建省厦门市中级人民法院（2018）闽02刑终632号刑事判决书〕

【案情摘要】厦门德乐盟科技有限公司（简称德乐盟公司）、厦门兴恒昌贸易有限公司（简称兴恒昌公司）购入假冒“SKF”“FAG”“NSK”“NTN”“INA”“HRB”“ZWZ”“Koyo”等注册商标的轴承对外销售。两被告单位在未经前述注册商标权利人许可的情况下，使用激光打码一体机、角磨机、封口机等工具设备，擅自将与前述注册商标相同的商标标识打印在其购入的无商标标识的轴承上进行销售；还将购入的国产其他品牌轴承的商标抹除后，擅自将与前述注册商标相同的商标标识打印在轴承上进行销售。两被告单位未经注册商标所有人许可，在同一种商品上使用与其注册商标相同的商标，且假冒两种以上注册商标，非法经营数额达人民币285万余元；还销售明知是假冒注册商标的商品，已销售金额人民币206万余元，未销售侵权产品的价值人民币151万余元，数额巨大。杨明凤、杨茂淦系两被告单位直接负责的主管人员。厦门市思明区人民法院以假冒注册商标罪、销售假冒注册商标的商品罪分别判处德乐盟公司、兴恒昌公司罚金人民币35万元、人民币230万元，对杨明凤、杨茂淦分别判处有期徒刑5年、4年并处罚金。杨明凤、杨茂淦不服该判决提起上诉。厦门市中级人民法院审理本案的过程中，还受理被害单位斯凯孚（中国）有限公司基于同一知识产权侵权行为对杨明凤、杨茂淦等提起的民事诉讼。杨明凤、杨茂淦与被害单位达成和解协议，并履行赔偿义务，被害单位撤回对民事案件起诉，并在刑事案件中对杨明凤、杨茂淦的侵权行为表示谅解。针对本案，厦门市中级人民法院认为，杨茂淦具有自首、立功等法定从轻或减轻情节，杨茂淦实施的是侵害财产性权益的犯罪，其在二审期间积极赔偿被害单位经济损失，取得被害单位谅解，降低了犯罪行为的社会危害性，具备酌定从轻处罚情节，并结合杨茂淦的具体犯罪行为及其在共同犯罪中地位、作用等因素考量，决定对杨茂淦依法减轻处罚。综合考量杨茂淦的具体犯罪性质、犯罪情节、到案后的认罪、悔罪表现及人身危险性、对社区的影响等具体情况，厦门市中级人民法院二审认为杨茂淦具备适用缓刑的条件，决定对其宣告缓刑，改判杨茂淦犯假冒注册商标罪，判处有期徒刑2年，并处罚金人民币10万元；犯销售假冒注册商标的商品罪，判处有期徒刑2年，并处罚金人民币10万元；数罪并罚，决定执行有期徒刑3年，缓刑5年，并处罚金人民币20万元；维持原审其他部分判决。

【典型意义】本案充分运用知识产权案件“三合一”审判机制，就同一侵权行为的事实认定和法律适用作出统一的司法判定，妥善处理了基于相同事实的刑事案件和民事案件，是知识产权案件“三合一”审判机制的鲜活运用，凸显了审理机制创新促进知识产权司法保护发展的成果。同时，本案二审法院对犯罪事实进行全面审查，并对共同犯罪中上诉人的地位作用，立功的构成以及数罪并罚适用缓刑时应综合考量的因素等法律问题进行了充分阐述，对于同类案件的裁判具有借鉴意义。

六、结语

2008年中国国务院颁布《国家知识产权战略纲要》，将知识产权上升为中国国家战略，要求到2020年把中国建设成为知识产权创造、运用、保护和管理水平较高的国家。过去的十二年里，中国三次修改《专利法》、《商标法》，两次修改《著作权法》，出台多部相关行政法规和司法解释，建起了符合国际通行规则、门类较为齐全的知识产权制度，加入了世界几乎所有主要的知识产权国际公约。但是，值得注意的是，虽然中国已经建立起较为完善的知识产权制度，但是知识产权法律执行仍有较大的问题。例如，中国政府虽然不断深化行政执法与刑事司法的衔接，但是几乎所有的知识产权所有人在实践中仍然会遇到知识产权保护难的问题，部分原因是法律体制和行政体制建设仍存在不足。

美国东部时间2020年1月15日，中美双方于美国华盛顿签署了作为第一贸易阶段协议的《中华人民共和国政府和美利坚合众国政府经济贸易协议》。该协议包括知识产权、技术转让、食品和农产品贸易、金融服务、宏观经济政策、汇率问题和透明度等七项内容。协议部分内容已经由中国通过2019年3月15日颁布的《外商投资法》、2020年10月17日修订的《专利法》等一系列的法律法规得以实现，但是该协议的部分内容还有待进一步的实现。明显地，中国显示了尊重其在贸易协议中部分责任的初步意愿。

Patent Authorization (I), which has become effective on 12th September 2020.

This judicial interpretation consists of 32 articles in total. It explains the claim of rights, specifies the specification as a basis, full disclosure specifications, creativity, standard for granting design patent, and other important legal application issues, and sets forth the relevant evidence issues and procedural issues.

4. Interpretation of the Supreme People's Court and the Supreme People's Procuratorate on Several Issues concerning the Specific Applicable Law in Handling Criminal Cases of Infringement of Intellectual Property Rights (III)

On 12th September 2020, the Supreme People's Court issued the Interpretation of the Supreme People's Court and the Supreme People's Procuratorate on Several Issues concerning the Specific Applicable Law in Handling Criminal Cases of Infringement of Intellectual Property Rights (III), which has become effective on 14th September 2020.

This judicial interpretation, a total of 12 articles, mainly provides for three aspects: (1) it defines the conviction and sentencing criteria for the crime of trade secrets infringement, and the calculation of losses that varies with the degree of social hazard caused by different acts, which unifies the standard of law application; (2) it further determines the crime of counterfeiting the same registered trademark", infringement on copyright "without permission of the copyright holder", and the infringement of trade secrets by using "improper means" etc., which provides consistent understanding of judicial practice; (3) it weighs the criminal penalty for IP infringement, the policy of combination of punishment with leniency and other issues, and stipulates the circumstances that apply to severe punishment, non-application of probation and light punishment, which further regulates sentencing standards.

E. Ten Important Intellectual Property Cases of Chinese Courts in 2019

1. Dispute over infringement of invention patent for "motor vehicle's windscreen wiper"

Valeo Systemes d'Essuyage v. Xiamen Lukasi Automobile Parts Co., Ltd., Xiamen Fuke Car Accessories Co., Ltd., and Chen Shaoqiang regarding dispute over infringement of an invention patent [(2019) SPC IP No. 2 Civil Final Judgement of the Supreme People's Court]

[Case Summary] Valeo Systemes d'Essuyage (hereinafter, "Valeo") was the patentee of the Chinese invention patent named "motor vehicle's windscreen wiper and related connecting device" (the "involved patent"). In 2016, Valeo filed a lawsuit in the Shanghai Intellectual Property Court, claiming that Xiamen Lukasi Automobile Parts Co., Ltd. (hereinafter, "Lukasi"), Xiamen Fuke Car Accessories Co., Ltd. (hereinafter, "Fuke"), and Chen Shaoqiang manufactured and sold windscreen wiper products subject to the scope of protection of the involved patent. Thus, Valeo required an order that Lukasi, Fuke and Chen Shaoqiang stop the infringement and pay damages and its reasonable expenses necessary for stopping the infringement. Valeo also filed a motion for temporary injunction on actions (also known as interim injunction), requesting the court to order Lukasi, Fuke and Chen Shaoqiang to stop the infringement immediately. Shanghai Intellectual Property Court, in its a partial judgement, held that Lukasi, Fuke and Chen Shaoqiang committed infringement, and ordered them to stop the infringement, while it did not proceed with the motion for temporary injunction on action filed by Valeo. Lukasi, Fuke, et al. disagreed with the judgement, and thus appealed to the Supreme People's Court. The Supreme People's Court ruled that the alleged infringing product fell within the scope of protection of the involved patent, and that Lukasi and Fuke committed infringement; therefore they shall assume the legal responsibility for stopping the infringement. Although Valeo insisted on its motion for interim injunction ordering Lukasi and Fuke to stop the

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infringement on the involved patent, since the evidence it submitted is insufficient to prove an emergency that caused damage to it, and the judgement made by the Supreme People's Court had already come into effect, it is unnecessary to enter a separate ruling in favor of the interim injunction for purpose of cease of the infringement. Therefore, Valeo's motion for interim injunction was rejected. The Supreme People's Court ruled to dismiss the appeal and sustain the original judgement.

[Significance] The Supreme People's Court had an open hearing on this case pursuant to law and pronounced the judgement in open court. This case was the first appealed case that the Intellectual Property Tribunal of the Supreme People's Court had ever heard. It symbolizes success in initiating the unified appeal mechanism for technical cases, and the first time the Intellectual Property Tribunal of the Supreme People's Court performed its function of holding a hearing. This case pertained to an appeal against a partial judgement that allows preliminary partial judgement to be made, or the appeal to be filed against such judgement, on the issues regarding determination of infringement. Meanwhile, at the hearing of this case, the Supreme People's Court, for the first time, discussed the relationship between a partial judgement system for an order to cease of infringement and the interim injunction, and clarified the value of an interim injunction when the partial judgement in favor of cessation of infringement was not yet in effect. It calls for the people's courts to support patentee's motions for preservation regarding cessation of infringement when they enter a partial judgement. In addition, the functional features are widely concerned with difficult issues in patent cases. The problem of the determination standard of elaborated functional features in the judgement of this case is conducive to clear up misunderstanding in judicial practice.

2. Trademark infringement dispute over original equipment manufacture (OEM) of "HONDAKIT"

Honda Motor Co., Ltd. v. Chongqing Hengsheng Xintai Trading Co., Ltd. and Chongqing Hengsheng Group Co., Ltd. regarding trademark infringement dispute [Civil (2019) SPC Civil Rehearing No. 138 Judgement of the Supreme People's Court]

[Case Summary] Honda Motor Co., Ltd. (hereinafter, "Honda") was approved to register three trademarks involved in this case, "1587460591674898.jpg", which were respectively permitted to be used on Class-12 goods such as cars and motorcycles. The Customs then seized 220 motorcycles, in the complete knock-down commission, bearing the mark "HONDAKIT". These motorcycles were declared for export by Ruili Lingyun Freight Forwarding Co., Ltd. authorized by Chongqing Hengsheng Xintai Trading Co., Ltd. (hereinafter, "Hengsheng Xintai Company"), with a total declared price of USD 118,360, to be shipped to Myanmar. The goods were processed and produced by Chongqing Hengsheng Group Co., Ltd. (hereinafter, "Hengsheng Group", the parent company of Hengsheng Xintai Company, with their legal representative both as Wan Xun) with the authorization of Mei Hua Company Limited, a Myanmar-based company. Honda brought a lawsuit in the Intermediate People's Court of Dehong Dai and Jingpo Autonomous Prefecture, Yunnan province, on the grounds that Hengsheng Xintai Company and Hengsheng Group infringed its trademarks. Upon review in the first hearing, the Court held that the said two companies committed infringement and ordered them to immediately stop the infringement, and to jointly compensate Honda with RMB 300,000 for its economic losses. Hengsheng Xintai Company and Hengsheng Group Company refused to accept the judgement and filed an appeal. The Higher People's Court of Yunnan Province, in the second hearing, held that the accused acts in this case was subject to foreign-related original equipment manufacture (OEM) and thus did not constitute trademark infringement. The Higher Court entered a judgement to set aside the judgement of the first hearing, and dismiss the claims made by Honda. Honda disagreed and petitioned the Supreme People's Court for rehearing this case. The Supreme People's Court decided to hear this case and finally made a judgement to set aside the judgement of the second hearing, and sustain the judgement of the first hearing.

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[Significance] In this case, the Supreme People's Court specified that the use of trademarks was an objective act, usually undergoing several steps such as physical label and market circulation. Whether the "use of a trademark" is subject to the term defined in the Trademark Law should be explained based on whole consistent conduct pursuant to the Trademark Law, rather than a certain part of the conduct. We should not cover one whole course of the conduct with only a single step, and should avoid replacing one whole conduct with a single perspective. In the application of law, we are required to maintain the consistency of the trademark legal system, and abide by the basic rules of determining trademark infringement established by the Trademark Law, while we should not simply stereotype the trading manners like a foreign-related OEM as an exception to trademark infringement. At the same time, as for a trademark that is not registered in China, even if it was approved to be registered in a foreign country, that does not mean it is entitled to the right of exclusive use of a registered trademark. Correspondingly, the so-called "trademark licensing" received by civic parties in China is neither the lawful rights of trademarks protected by the Trademark Law nor a defense to trademark infringement.

3. Administrative dispute over request for announcement of invalidation of a trademark, "MLGB"

Shanghai Junke Trading Co., Ltd. v. the Trademark Review and Adjudication Board of the Former State Administration for Industry and Commerce and Yao Hongjun regarding administrative dispute over request for announcement of invalidation of trademark [(2018) BJ Final No. 137 Administrative Judgement of Beijing Higher People's Court]

[Case Summary] Shanghai Junke Trading Co., Ltd. (hereinafter, "Shanghai Junke") applied for registration of the trademark "MLGB" involved in this case. Within the statutory period, Yao Hongjun filed an application for announcement of invalidation of the registered trademark involved in this case with the Trademark Review and Adjudication Board of the State Administration for Industry and Commerce (hereinafter, the "Trademark Review and Adjudication Board"). The Trademark Review and Adjudication Board considered that the combination of letters in the involved trademark had been widely used on social media, which was negative in meaning and vulgar in tone. If it was used as a trademark, it would damage the social morality, and would be likely to have adverse effects. Although Shanghai Junke claimed that the said trademark stood for "My life is getting better", it failed to submit evidence to prove that such meaning of the word had been well known to the public. Instead, the public tended to recognize "MLGB" as an impolite word. The Trademark Review and Adjudication Board thus decided to announce the trademark to be invalid. Shanghai Junke disagreed and filed an administrative litigation with Beijing Intellectual Property Court. Beijing Intellectual Property Court ruled to dismiss the claims made by Shanghai Junke. Shanghai Junke then appealed against the judgement of the first hearing. The Beijing Higher People's Court held that under the current network environment, there had been certain groups of people who considered that "MLGB" was a word with negative meaning, and that the involved trademark shall be determined to be negative in meaning and vulgar in tone. As a result, the Higher Court entered a judgement to dismiss the appeal and sustain the judgement of the first hearing.

[Significance] The Trademark Law prohibits any signs with adverse effects to be used as trademarks. In this case, the final judgement set example of cleaning the network environment and preventing the conduct that intended to cater to "disgracefulness, vulgarity, and ingloriousness" by playing at the borderline of law. In addition, the judgement of the second hearing further expanded the methods for review of this type of case, and specified that when judging whether a trademark has negative influence, the people's court shall consider the subject matter, time, judging standard and burdens of proof. The judgement in this case may serve as a guideline for the people's courts to have accurate understanding and properly apply the provision of "other adverse effect" set forth in paragraph 1(8), Article 10 of the Trademark Law during the review of the similar cases.

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4. Dispute over the infringement on the right of adaptation and unfair competition by "Wu Xia Q Legend Game"

Ming Ho Publications Corporation Limited and Beijing Perfect World Software Co., Ltd. v. Beijing Firevale Network Technology Co., Ltd., Beijing Kunlun Lexiang Network Technology Co., Ltd., and Beijing Kunlun Tech Co., Ltd. regarding dispute over the infringement on the right of adaptation and unfair competition [(2018) BJ Final Civil Hearing No. 226 Civil Judgement of Beijing Higher People's Court]

[Case Summary] Ming Ho Publications Corporation Limited (hereinafter, "Ming Ho Corporation") was the owner of the right to use the works such as The Legend of the Condor Heroes (《射雕英雄传》), The Return of the Condor Heroes (《神雕侠侣》), The Heaven Sword and Dragon Saber (《倚天屠龙记》), and The Smiling, Proud Wanderer (《笑傲江湖》) within the territory of China. With the consent of Ming Ho Corporation, Louis Cha Leung-yung (Jin Yong) exclusively granted Beijing Perfect World Software Co., Ltd. (hereinafter, "Perfect World") the exclusive right to adapt the said works in its the mobile game software within certain regions and periods and the commercial development of subsequent software thereof. Wu Xia Q Legend Game, the accused infringing game, was developed by Beijing Firevale Network Technology Co., Ltd. (hereinafter, "Firevale Network"). Beijing Kunlun Lexiang Network Technology Co., Ltd. (hereinafter, "Kunlun Lexiang") was authorized to exclusively operate this video game in many countries and regions including Mainland China. Beijing Kunlun Tech Co., Ltd. (hereinafter, "Kunlun Company") was the operator of the involved video game. The involved video game had four types of cards: character cards, martial arts cards, accessory cards, and matrix cards. After comparing the two video games, the description of characters, martial arts, accessories, matrix, level settings, and other aspects of the involved video game shared corresponding relations or similarities with the original martial arts novels in this case. Firevale Network admitted that it borrowed and referred to the elements in the works of the right holders in development of its game. The Court, in the first hearing, held that existing evidence could not prove that the involved video game software was an adaptation of any work of the right holders; nevertheless, the act of Firevale Network, Kunlun Lexiang, and Kunlun Company was subject to unfair competition against Ming Ho Corporation and Perfect World. Therefore, the Court ordered Firevale Network, Kunlun Lexiang, and Kunlun Company to stop infringement, eliminate adverse effects, and compensate Ming Ho Corporation RMB 16,319,658et al. for economic losses. The parties on both sides disagreed and appealed against the judgement of the first hearing. The Beijing Higher People's Court, in the second hearing, found that the involved video game of Firevale Network was an adaptation of the works of the right holders, and thus infringed on the right of adaption of the works in mobile game software that Ming Ho Corporation and Perfect World Company were entitled to. Firevale Network, as the developer, and Kunlun Lexiang Company and Kunlun Company, as the operators of the accused video game, should jointly bear liabilities for their infringement. Since the involved video game was found infringing on the right of adaptation of the right holders, the Law against Unfair Competition would not be applied to the accused infringement. Therefore, the Higher Court decided to dismiss the appeal and sustain the judgement of the first hearing.

[Significance] This case is a typical case related to the rights of video game adaption. The Legend of the Condor Heroes, The Return of the Condor Heroes, The Heaven Sword and Dragon Saber, and The Smiling, Proud Wanderer were four famous martial arts novels created by Mr. Jin Yong. The adaption by the accused infringing card game of the works of the right holders was an unusual form of plagiarism. When making the adaption, the infringer did not completely use the stories in the right holder's works, but only extracted or combined characters, character features, character relations, martial arts moves, weapons, matrix, scenes and other created elements. The Court of second hearing stated that in the process of making a video game adaptation, if, without other people's permission, the extraction or combination of the characters, character's features, character relations, martial arts moves, weapons, matrix, scenes, and other specific elements in their works and thus resulted in combination of the character

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features, character relations, and other elements that did not have substantial difference from the selection, arrangement, and design in the original work, nor created new representations independent from the unique expressions in the original work, it constituted infringement of the right of adaptation of the works. This clarified the boundaries between the infringement of the right of adaptation and reasonable borrowing. In addition, the judgement of the second hearing, in full consideration of the market value of the right holder's works, ordered the three defendants to make compensation of more than RMB 16 million, which adheres to the market value orientation of compensation for intellectual property infringement and effectively guaranteed that the rights holders can be sufficiently compensated.

5. Dispute over infringement of a trademark, "MOTR"

Balanced Body Inc. v. Yongkang Yilian Exercise Equipment Co., Ltd. regarding trademark infringement dispute [(2018) SH 0115 Civil First Hearing No. 53351 Civil Judgement of Pudong New Area People's Court of Shanghai Municipality]

[Case Summary] Balanced Body Inc. is the holder of the registered trademark, "MOTR" (namely the involved trademark) approved to be used on fitness equipment and other goods, as well as a famous manufacturer engaged in the world wide manufacture and sales of exercise equipment. Balanced Body Inc. owns several patents for invention and registered trademarks in China. Yongkang Yilian Exercise Equipment Co., Ltd. (hereinafter, "Yongkang Yilian") promoted and used fitness equipment bearing the involved trademark at an exhibition, and sold it through the WeChat Mall and by other means. Balanced Body Inc. initiated an action against Yongkang Yilian on the ground of trademark infringement, and claimed punitive compensation. The Court ascertained that prior to the accused actions in this case, Yongkang Yilian had already infringed the intellectual property of Balanced Body Inc. After Balanced Body Inc. served a warning letter, the parties signed a settlement agreement, where Yongkang Yilian explicitly guaranteed that it will never engage in infringement activities again. The Pudong New Area People's Court of Shanghai Municipality thus ordered Yongkang Yilian to stop the infringement and determined, given its repeated infringement, that Yongkang Yilian shall be liable for compensation of RMB 3 million, as 3 times damages as per the punitive compensation standards. After judgement has been made in the case, neither party appealed.

[Significance] This case is a typical case applying punitive compensation standards for intellectual property infringement. It presents the absolute confidence of people's courts in rigorously fighting against malicious infringement such as repeated infringement and continuous infringement, and enhancing punishment of infringement. The people's court explicitly stated in the judgement that the defendant failed to keep his promise and showed ignorance of the infringement of other people's IP rights. The defendant deviated from principle of good faith and committed serious malicious infringement. In order to protect the legal rights and interests of trademark owners, the Court severely punished the infringement, and maintained market order, supporting all the claims made by the right's holder.

6. Dispute over liability for damages caused by malicious intellectual property lawsuit for "QQ Penguin"

Shenzhen Tencent Computer System Co., Ltd. v. Tan Fawen regarding dispute over the liability for damages caused by malicious lawsuit against an intellectual property right's owner [(2019) GD Civil Final Hearing No. 407 Civil Judgement of the Higher People's Court of Guangdong Province]

[Case Summary] Shenzhen Tencent Computer Systems Co., Ltd. (hereinafter, "Tencent") owned the copyright and the exclusive right to use a registered trademark in several series of graphic works of "QQ Penguin1587460738820155.jpg". In December 2008, Tan Fawen, shareholder and director of Aowei Technology (Shenzhen) Co., Ltd. (hereinafter, "Aowei"), applied to the State Intellectual Property Administration for a design patent for "Speaker (Xzeit in Mini Penguin Shape)" and was granted the patent. In March

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2011, Tencent brought an action on the ground that the QQ mini speakers sold by Tan Fawen and Aowei had infringed its copyright and trademarks. The parties then reached a settlement on these two cases, where Tan Fawen agreed to stop the infringement and pay RMB 25,000 as compensation. Tan Fawen also undertook to withdraw his application for the design patent for the said penguin speakers from the State Intellectual Property Administration within one month. The Court ascertained that Tan Fawen failed to keep his promise, and even paid the annual fee for the design patent until December 2015. Since then, Tencent had cooperated with Shenzhen Zhongke Ruicheng Intelligent Technology Co., Ltd. (hereinafter, "Zhongke") in manufacture and sales of the penguin-shaped speakers. In February 2016, Tan Fawen brought a lawsuit on the grounds that Tencent and Zhongke infringed on his design patent. Tencent immediately filed a request for the cancellation of the validity of Tan Fawen's design patent. The Patent Reexamination Board of the former State Intellectual Property Administration announced the design patent invalid upon examination. The Intermediate People's Court of Shenzhen, Guangdong Province decided to dismiss the lawsuit brought by Tan Fawen. Tencent Company then initiated an action in the Intermediate People's Court of Shenzhen, Guangdong Province, requesting an order that Tan Fawen pay compensation to Tencent's for its losses, apologize, and eliminate adverse effects, on the ground that Tan Fawen filed a malicious lawsuit of patent infringement with clear knowledge that his design patent did not satisfy the granting conditions, resulting in a series of losses to Tencent, including losses in business reputation, attorney's fee, travel expenses, and expected profit. The Court, in the first hearing, held that the Tan Fawen's act was a malicious intellectual property action. Thus, the Court ordered him to pay a total of 500,000 yuan to Tencent as compensation for its economic losses and reasonable expenses for protection of its rights. In the second hearing, the Higher People's Court of Guangdong Province sustained the judgement of the first hearing.

[Significance] "Dispute over liability for damages caused by malicious intellectual property action" is a new cause of action in the field of intellectual property actions. However, the components of acts, judgement standards, etc. in this kind of action remain to be further clarified. In this case, the court of second hearing provided a positive perspective for issues such as whether the party concerned had a subjective malicious intent to bring an action, in terms of its basis of rights, judgement capacity, and grounds of defense. Moreover, the Court fully explained the standards for determining the amount of compensation. The judgement of this case has positive significance for definition of the boundaries of legal liability, protection of the market transaction security for good faith users pursuant to law, decrease of the legal risks for innovators, and motivation for more members of society to engage in innovation and entrepreneurship.

7. Dispute over copyright infringement by a "reskinned" mobile game

Suzhou Snail Digital Technology Co., Ltd., v. Chengdu Skymoons Technology Co., Ltd. and Beijing iQIYI Science & Technology Co., Ltd. regarding copyright infringement dispute [Civil Judgement No. 1054 [2018], Final, Civil Division, Jiangsu of the Higher People's Court of Jiangsu province]

[Case Summary] The mobile game, "Tai Chi Panda" developed by Suzhou Snail Digital Technology Co., Ltd. (hereinafter, "Snail") was launched on 31st October 2014. The earliest version of the mobile game, "Hua Qiangu" developed by Chengdu Skymoons Technology Co., Ltd. (hereinafter, "Skymoons") and Beijing iQIYI Science & Technology Co., Ltd. (hereinafter, "iQIYI") was launched on 19th June 2015. Snail brought a lawsuit in the Intermediate People's Court of Suzhou, Jiangsu Province, claiming that the mobile game, "Hua Qiangu" copied the game, "Tai Chi Panda" by "reskinning", namely, "Hua Qiangu" had different character images, soundtrack, and voice-overs, etc., but it still had the exact same as or substantially similar features as "Tai Chi Panda" in game rules, numerical planning, skill systems, user interface, which infringed on its copyright. The Court of the first hearing confirmed that compared to "Tai Chi Panda", there were 29 games in "Hua Qiangu" that were basically the same or

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substantially similar to interface and rules of "Tai Chi Panda". In addition, 24 numbers of 47 types of equipment in "Hua Qiangu" reflected the same as or slightly adjusted in proportion to those in "Tai Chi Panda". Moreover, according to the archive of copyright record on the computer software registration for the V1.0 game software of "Hua Qiangu", the structure diagram of functional modules, functional flowchart, and all the 26 user interface images including the entrance to the seal stone system, were elements and interfaces of "Tai Chi Panda". At the same time, according to user reviews on Sina Weibo and the "Hua Qiangu" for IOS systems, plenty of game players found the two games very similar. The Court of first hearing thus ordered Skymoons and iQiyi to stop the infringement, eliminate adverse effects, and pay RMB 30 million to Snail as compensation for its economic losses. Skymoons and iQiyi disagreed and appealed. The Higher People's Court of Jiangsu Province ruled in second hearing to dismiss the appeal and sustain the judgement of the first hearing.

[Significance] This case is a good example of IP protection in the online video game industry. In this case, the court of second hearing specified that "reskinning" an online video game might constitute copyright infringement, and thus supported the right holder's claims for RMB 30 million in full. It illustrates that the ideal of strict IP protection. The judgement of this case shows that a judicial judgement can positively respond to the development of technology and the requirements of industries in the "Internet+" environment.

8. Trademark infringement dispute of "AUPU"

Hangzhou Molisi Technology Co., Ltd. and Aupu Home Style Corporation Limited v. Zhejiang Fengshang Building Materials Co., Ltd., Zhejiang Modern New Energy Co., Ltd., Yunnan Jinmei Environmental Protection Technology Co., Ltd., and Sheng Linjun regarding trademark infringement and unfair competition dispute [(2019)ZJ Civil Final Hearing No. 22 Civil Judgement of the Higher People's Court of Zhejiang Province]

[Case Summary] Hangzhou Molisi Technology Co., Ltd. (hereinafter, "Molisi") was the owner of the trademark, "AUPU" approved to be used on goods including integrated exhaust hoods. Being licensed, Aupu Home Style Corporation Limited (hereinafter, "Aupu Company") can exclusively use the said trademark. Prior to the alleged infringement, there were records that the Molisi's trademark "AUPU" has been recorded as a protected well-known trademark. Since its acquisition by transfer of the trademark "1587460685588883.jpg" for use on metal construction materials in 2006, Zhejiang Modern New Energy Co., Ltd. (hereinafter, "Modern New Energy"), by authorizing Zhejiang Fengshang Building Materials Co., Ltd. (hereinafter, "Fengshang") to extensively use "AOPU 奥普"and other marks on drop ceiling tiles and packaging, gates of dealer shops, factory buildings, magazine advertisements and websites, promoted and rapidly expanded its business with expressions such as "authentic established brand" and "high-end drop ceiling expert and leader". Meanwhile, Modern New Energy also filed several infringement actions and administrative complaints against Molisi. Molisi or its affiliates submitted a request for the declaration of invalidity of the trademark, "1587460704561544.jpg" owned by Modern New Energy. The people's court, upon judicial review of the case, dismissed the decision made by the trademark administrative organ, and held the trademark valid. Molisi and Aupu Company filed a lawsuit on the grounds that the above acts of Fengshang and Modern New Energy infringed on their trademark and constituted unfair competition. In the first hearing, the Intermediate People's Court of Hangzhou, Zhejiang Province held that the trademark involved in this case was a well-known trademark. The use of marks such as "AOPU 奥普" on the goods of metal drop ceiling by Fengshang constituted copy and imitation of the involved trademark, resulting in improper use of the market reputation of the trademark "AUPU", and damage to the interests of the owners of the well-known trademark. Furthermore, the existing evidence may prove that the profits gained by Fengshang Company due to infringement in this case far exceeded the upper limit of statutory compensation. The Court of first hearing thus made a judgement to order Fengshang to stop the infringement and pay RMB 8 million in total as compensation for economic losses and reasonable expenses. In the second hearing, the Higher

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People's Court of Zhejiang Province sustained the judgement of the first hearing.

[Significance] This typical case stands for increasing efforts in protection of a well-known brands and suppression of malicious registration. The judgement of second hearing set sights on encouraging honest competition and fighting against counterfeits. In terms of the popularity and distinctiveness of the trademark, with full use of existing legal means, it enhanced the protection of the well-known brand, severely punished dishonest trademark imitation and counterfeits, clearly defined the market as to the use dispute between the parties over ten years, purified the environment for market competition, and effectively regulated the use of trademarks. In addition, this case fully demonstrates the judicial policy guidance that the people's courts strengthened the role of civil litigation in guiding the settlement of disputes in overlaps of civil and administrative cases, and makes a fair judgment based on the principles of good faith, protection of prior rights, maintenance of fair competition, and prohibition of abuse of rights. As such, it provides positive guidance on the accurate settlement on future administrative trademark disputes.

9. Copyright infringement dispute regarding "Sculpture of Daoba's Great Victory"

Hebei Shanren Sculpture Co., Ltd. v. Hebei Zhongding Garden Sculpture Co., Ltd., Sanhe Town People's Government of the Bozhou District of Zunyi City, Zunyi Zhonghecheng Agricultural Development Co., Ltd., Guizhou Huilong Construction Engineering Co., Ltd., and Zunyi Branch of Guizhou Huilong Construction Engineering Co., Ltd. regarding copyright infringement dispute [(2019) Guizhou Civil Final Hearing No. 449 Civil Judgement of the Higher People's Court of Guizhou Province]

[Case Summary] Hebei Shanren Sculpture Co., Ltd. (hereinafter, "Shanren Sculpture") and Hebei Zhongding Garden Sculpture Co., Ltd. (hereinafter, "Zhongding Sculpture") were professional institutions engaged in sculpture design, production, and installation. In December 2017, Shanren Sculpture and the Sanhe Town People's Government of the Bozhou District of Zunyi City, Guizhou province (hereinafter, "Sanhe Town Government") discussed cooperation on the sculpture project for Sanhe Town Daoba Martyrs' Cemetery. Shanren Sculpture delivered a completed design drawing and display board of the work "Daoba's Great Victory" involved in this case to Sanhe Town Government for review. Shanren Sculpture also made changes several times at the request of Sanhe Town Government. However, both parties could not reach an agreement. Shanren Sculpture then filed a lawsuit in the Intermediate People's Court of Zunyi City, Guizhou Province, claiming that the alleged infringing sculpture that was designed and installed by Zhongding Sculpture authorized by Sanhe Town Government in Daoba Martyrs' Cemetery, had infringed on its copyright. In the first hearing, the Intermediate People's Court held that Sanhe Town Government and Zhongding Sculpture shall jointly pay Shanren Sculpture RMB 100,000 for use of the work and RMB 20,000 for reasonable expenses, and that Zhongding Sculpture shall offer an apology. Shanren Sculpture and Zhongding Sculpture both appealed against the judgement of the first hearing. The Higher People's Court of Guizhou province found in the second hearing that the infringement was confirmed; however, as Daoba Martyrs' Cemetery was an important venue for revolutionary tradition education and patriotism education, it was inappropriate to rule in favor of the demolition of the alleged infringing sculpture, given the principle of interest balance and the effective use of resources. As a result, the claim made by Shanren Sculpture for stopping the infringement and demolishing the infringing sculpture would not be supported; however, the standard of compensation for infringement may be properly raised to satisfy the remedy for the rights of Shanren Sculpture. As such, Zhongding Sculpture Company and Sanhe Town Government, et al. were ordered to jointly pay Shanren Sculpture a total of RMB 200,000 as compensation for the infringement and reasonable expenses.

[Significance] This case pertains to copyright disputes related to a red classic work. The judgement of the second hearing, with the principles of respecting the law, rights, and classics, decided not to cease the infringement,

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and at the same time, granted remedies to the right holder by increasing the compensation for infringement and royalties. It not only fully considered the effective protection of rights, but also the cultural inheritance. The result of the judgement complies with the law and satisfies social conditions and public will, so that it fulfills the organic unity of legal, political, and social effects.

10. Case of crime of counterfeiting registered trademark and selling goods with counterfeit registered trademark by Xiamen Delemeng Technology Co., Ltd. et al.

Case of crime of counterfeiting registered trademarks and selling goods with counterfeit registered trademark by Xiamen Delemeng Technology Co., Ltd., Xiamen Xinghengchang Trading Co., Ltd., Yang Mingfeng, and Yang Maogan [(2018) Fujian 02 Criminal Final Trial No. 632 Criminal Judgement of the Intermediate People's Court of Xiamen City, Fujian Province]

[Case Summary] Xiamen Delemeng Technology Co., Ltd. (hereinafter, "Delemeng") and Xiamen Xinghengchang Trading Co., Ltd. (hereinafter, "Xinghengchang") purchased and sold bearings with counterfeit trademarks including "SKF", "FAG", "NSK", "NTN", "INA", "HRB", "ZWZ" and "Koyo". Without the permission of the owners of the above registered trademarks, the two defendants used a laser marking machine, angle grinder, sealing machine, and other tools and equipment to print the same trademarks as the registered trademarks on the bearings free of trademarks purchased by the defendants, as well as the bearings of other domestic brands after their removal of the original trademarks, for purpose of sales of these bearings. The two defendants used the same trademarks as the registered trademarks on the same product, without the permission of the owners of the registered trademarks, and counterfeited more than two registered trademarks, gaining more than RMB 2.85 million from their illegal business. They also sold products that were, with their clear knowledge, bearing counterfeit registered trademarks, with significant value: the sold products valued over RMB 2.06 million while the unsold infringing products valued over RMB 1.51 million. Yang Mingfeng and Yang Maogan were directly responsible persons of the two defendants. Due to the crime of counterfeiting registered trademark and selling goods bearing counterfeit registered trademark, the Siming District People's Court of Xiamen City imposed a fine of RMB 350,000 Delemeng Company and a fine of RMB 2.3 million on Xinghengchang Company. The Court sentenced Yang Mingfeng to a fixed-term of imprisonment of 5 years and Yang Maogan to a fixed-term of imprisonment of 4 years, along with a respectively fine. Yang Mingfeng and Yang Maogan filed an appeal against the judgement. In the trial of this case, the Intermediate People's Court of Xiamen City accepted the civil action brought by the victim, SKF (China) Co., Ltd. against Yang Mingfeng and Yang Maogan et al. for the same intellectual property infringement. Yang Mingfeng and Yang Maogan reached a settlement agreement with the victim and assumed their obligation for compensation. The victim eventually withdrew the litigation of the civil case and forgave the infringement committed by Yang Mingfeng and Yang Maogan in the criminal case. In this case, the Intermediate People's Court of Xiamen City held that Yang Maogan surrendered himself, which satisfied the condition for mitigation or ease of punishment, and he was forgiven by the victim after it actively compensated the victim for economic losses caused by his crime of infringement of property interests, during the second trial, which reduced damages to the society. Therefore, given his specific criminal acts, status and role in the joint crimes, and other factors, the Court decided to mitigate the punishment on Yang Maogan pursuant to law. Considering Yang Maogan's specific criminal nature, crime details, confession, repentance for his crime, personal danger, and impact on the community, the Intermediate People's Court of Xiamen City held at the second trial that Yang Maogan was qualified for the conditions of probation, and thus decided to announce probation and change the sentence of Yang Maogan to a fixed-term imprisonment of 2 years, in addition to a fine of RMB 100,000 for the crime of counterfeiting a registered trademark; to a fixed-term of imprisonment of 2 years, in addition to a fine of RMB 100,000 for the crime of selling goods bearing counterfeit registered trademarks. Combining the crime and

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punishment, the Court decided to execute a fixed-term imprisonment of 3 years with a probation of 5 years, along with a fine of RMB 200,000, and sustained the other portions of the decisions in the judgement of first trial.

[Significance] This case applied a "three-in-one" trial mechanism in an intellectual property case. The Courts made a unified judicial decision on the determination of facts and the application of law in the same infringement, and properly handled the criminal case and the civil case based on the same facts. It flexibly used the "three-in-one" trial mechanism of intellectual property cases, highlighted the achievements in the innovation of the trial mechanism under the development of judicial IP protection. At the same time, the Court of second trial in this case thoroughly reviewed the facts of the crimes and fully elaborated on the status and role of the appellant in the joint crimes, the composition of meritorious conduct, in considerations of factors in combination of crimes and punishment and the application of probation, and other legal issues, which is a significance reference for ruling of the same type of cases.

F. Conclusion

Strategic Outline of Intellectual Property ("Strategic Outline") issued by the State Council of China in 2008 has made intellectual property a matter of national strategy. This Strategic Outline is intended to make China better in creation, application, protection and management of intellectual property. Over the past 12 years, there have been 3 amendments of both the Patent Law and the Trademark Law, 2 amendments on the Copyright Law, and several relevant administrative regulations and judicial interpretations thereof, that have formed an intellectual property system that is becoming compliant with international rules for general practice, which widely covers various categories, and incorporates almost all the main international conventions related to intellectual property in the world. It is notable, however, that although China has set up a fine intellectual property system, there remains serious issues in enforcement of intellectual property laws. For example, despite the constant efforts of Chinese government to further connections between administrative enforcement and criminal justice, in practice, nearly every right's holder of intellectual property will still struggle with protection of intellectual property. This is partially due to the weakness of the legal and administrative institution.

On EDT 15th January 2020, China and US signed a first-phase trade agreement, the Economic and Trade Agreement between the Government of the People's Republic of China and the Government of the United States of America, in Washington DC, which includes intellectual property, technology transfer, trade in food and agricultural products, financial services, macroeconomic policies, exchange rate matters and transparency. Some parts of the Agreement have been implemented by China in the Foreign Investment Law issued on 15th March 2020, the amended Patent Law issued on 17th October 2020 and other laws and regulations, while some other parts are still remained to be further implemented. Clearly, China has manifested an initial intent to honor some of its responsibilities in the Trade Agreement.

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Part II

Industry Overviews

第二部分

行业概况

2.1 Agriculture

Key Take-Aways

• The early part of 2020 saw crops rotting in fields as workers were forced to stay at home and transport links were cut.

• Corn and wheat prices have drastically fluctuated due to disruptions caused by Covid-19, locust infestations, the drought and flood.

• Concerns with food production increased as videos and reports of storage problems circulated online.

• There were concerns about whether the grain prices would stabilize or whether the agricultural industry would need reforms.

• People began to question whether China's corn shortage could bring about rural reform. The Chinese government may make changes to its agricultural policy to restore the country to grain self-sufficiency if the corn shortage is as bad as analysts suggest.

• Speculators have been blamed for the rapidly shifting prices on grains.

• The Chinese soybean industry was especially tumultuous as trade relations deteriorated between China and one of its largest trade partners, the United States of America.

• China has tried to find a balance between it's phase one deal obligations and an increased desire for self-reliance on grain production.

• China has started using recycled materials to construct artificial greenhouses to increase produce production.

• China has spent the year battling one of the worst locust infestations in recorded history. This drastically impacted agriculture production.

• Droughts at the start of the year and record flooding in the latter part of the year greatly affected the amount of land available for farmers and destroyed crops.

• Increased urbanization and industrial production has led to less land available to farming.

Covid-19 Repercussions

• Early in 2020, transport networks came to a grinding halt because of the deadly coronavirus outbreak. Sales for farmers in China are at a record low due to the pandemic disrupting distribution.

• The epidemic is yet another blow for rural China, where incomes are about 40 per cent of the urban average and much of the country's poverty is concentrated. Off-farm incomes, whether on other agricultural operations or in other industries, are an essential source of money for these people – one they cannot access if they are confined to home.

• The lockdowns across China cost migrant farmers weeks of pay due to them being unable to get passes to areas in order to pick the crops.

• Throughout the pandemic, China has said food supplies are stable, to try and quell panic buying amid coronavirus uncertainty, but has still exercised caution and concern over its supply. For instance, the agriculture ministry official says farmers and traders should prevent waste caused by improper storage. Ministry officials also warned that farmers who stockpile goods in the hope of later gains should be wary that prices could turn against them.

2.1 农业

关键要点

· 2020年上半年，由于农民被迫在家禁足，加上交通道路封锁，大量粮食只能烂在地里。

· 受新冠疫情、秋叶蛾虫害、旱涝灾害的影响，玉米、小麦价格出现了大幅波动。

· 网传粮食储备问题相关视频和报道使人们愈发担忧粮食生产问题。

· 粮食价格能否稳定下来、农业产业是否需要实施改革，令人忧心。

· 人们开始质问中国的玉米短缺问题会否引发农村改革。如果粮食短缺问题如同分析师们预测的那般严重，那么中国政府可能会通过调整农业政策来使国家恢复粮食自给自足的状态。

· 投机炒作被斥为粮价大涨大跌的元凶。

· 由于中美贸易关系恶化，中国大豆业出现了尤其剧烈的波动。美国是中国最大的贸易伙伴之一。

· 一方面，中国需要遵守中美第一阶段贸易协议的承诺，另一方面，其对实现粮食自给自足的渴望愈发强烈，中国政府正试图在两者之间找到平衡。

· 中国开始应用回收材料建造人工温室，希望提升农产品的产能。

· 今年，中国花了很大力气抗击史上最严重的秋叶蛾虫害。农业生产受到了极大影响。

· 年初的旱灾和年中的洪灾也对可耕地的数量造成了极大的不利影响，摧毁庄稼无数。

· 城镇化、工业化的加速发展使可耕地进一步减少。

新冠疫情所带来的影响

· 2020年初，由于新冠疫情爆发，交通运输网络陷入无止境的瘫痪。受疫情影响，中国农民的生产销售收入达到了史上最低。

· 在中国，农村居民的平均收入仅为城市居民的40%左右，农村是国家贫困最集中的地区，新冠疫情对农村而言无疑是雪上加霜。对农民来说，来自其他农业生产活动或打工的"非农"收入才是至关重要的收入来源，然而在封城禁足的措施之下，他们无法取得这类收入。

· 全国封城的举措使农民工无法通行，不能按时收粮，损失了数周的收入。

· 疫情期间，中国政府一再宣称粮食供应处于稳定水平，试图平息因疫情变幻莫测而引起的恐慌情绪，但政府仍对粮食供应问题采取了审慎和担忧的态度。比如，农村农业部官员称，农民和粮商应抵制不当储存造成的粮食浪费。农业农村部官员还警告称，囤积居奇的农户需要警惕价格下行的风险 。

背景

中国对粮食安全问题的担忧已达顶点，但随着农民囤粮的状况出现，粮食供应风险相应上升。据业内人士称，受新冠疫情影响，农民在自家仓库囤积的粮食大概在20%-30%左右。作为世界人口最多的国家，在中国日益依赖粮食进口、可耕地逐渐减少、自然灾害侵扰不断的境况下，小麦和玉米价格疯长的趋势不禁引发了这个问题：中国的粮食供应真的处于安全水平吗?及至八月，夏收小麦政府采购量出现了下降。小麦是中国家庭的重要口粮之一。据国家粮食和物资储备局发布的数据显示，今年7月1日至7月31日期间，国家粮食储备系统共收购了4,100万吨（约合4,500万美吨）新麦，同比减少了17.2%。业内人士表示，受新冠疫情影响，许多农民决定囤积粮食，而不是卖给政府。河南省粮油对外贸易有限公司副总经理马晓娟称，根据估计，农民手中应该有20%-30%左右的粮食囤积在自家仓库，而担任农民和国营粮储机构之间中间商的粮商也在囤积粮食，希望等

Background

China's food security concerns mount, but supply risks are growing as farmers hoard grains. Industry insiders say the coronavirus pandemic has resulted in farmers holding about 20 to 30% more grain in reserve in their home warehouses. Prices of wheat and corn are rising sharply in the world's most populous country, raising fresh questions about whether China's food supply is truly safe amid a rising dependence on grain imports, shrinking arable land and disruptions caused by natural disasters. By August there was a decline in the state purchase of summer harvests of wheat – an important grain for Chinese households. According to data released by China's National Food and Strategic Reserves Administration (NFSRA), China's state grain reserve system purchased 41 million tons (45 million short tons) of fresh wheat from June 1 to July 31, a drop of 17.2% from a year ago. Industry insiders said that many farmers have decided to hoard grains – instead of selling them to the government – as a result of the coronavirus pandemic. Ma Xiaojuan, deputy general manager at the Henan Oil and Grain Foreign Trade General Company, said farmers are estimated to have put about 20 to 30% more in reserve in their home warehouses, while traders, who play the role of agents between farmers and state-run warehouses, are also hoarding grains in anticipation of further price increases. The NFSRA declined to comment on the reason for the decline in purchases in Henan, but it said China's purchasing of the summer harvest was on track. In Shandong, another wheat-producing province, the price of wheat in July increased to 2,380 RMB per ton, or about 5% higher than in July 2019. A decline in summer grain purchases by the state, meanwhile, is not an indication of any imminent trouble – summer grain purchases fell in 2018 and 2016, as well. Looking at the broader picture, China's National Bureau of Statistics said that the country's summer grain output, including wheat and rice, has reached an all-time high of 142.81 million tons in 2020 – an increase of 0.9% from last year, despite the coronavirus and serious floods along the Yangtze River. However, the supply pressure in China's grain market is obvious. The price of corn, which is mainly used for animal feed, has hit five-year high in China, forcing factories and farmers to switch to wheat as an alternative. The Chinese government, in a clear bid to ease price increases in wheat, has auctioned off 6.17 million tons of stocked wheat in 2020, as of July 27, or about four times the auctioned volume in the same period in 2019, according to China's official auction figures. China has been sourcing grain from other parts of the world, as well. It imported 910,000 tons of wheat in June alone, an increase of 197% from 2019, customs data showed. China's leaders and officials have repeatedly assured the public that the food-supply situation was under control, though this in turn fanned suspicions of supply problems. President Xi Jinping urged the country's officials to ensure grain-supply security. During 2020 there was a rise in concerns about China's reliance on US farm products, which in turn is part of a Phase I trade deal signed between Beijing and Washington. Analysts at Heilongjiang Agricultural Investment Group, a big state-owned farming company, wrote in an opinion piece on August 1 that the US could launch a "food war" against China by cutting food supplies, which could be "more brutal than the trade war." Zhang Hongyu, former director of the Department of Rural Economic System and Management at the Ministry of Agriculture and Rural Affairs, said that China should not waste a single inch of arable land in planting grains, "we should ensure sufficient planting area to guarantee the absolute safety of staple crop supplies," he said (Wang, "Concerns over China's Food Security Mount as Farmers Hoard Grains").

Grain Concerns: Wheat and Corn

An upcoming concern for China is a potential grain supply gap of 130 million tons by 2025 as rural workforces dwindles. China is expected to face a grain supply gap of about 130 million tons by the end of 2025, according to the China Academy of Social Sciences. China's looming supply shortage is a result of the increasing urbanization and an ageing rural workforce. The fact that China will face a domestic grain supply gap of about 130 million tons by the end of 2025, points to a growing reliance on imports to feed the world's most populous country, according to a new report from a government think tank. This comes amid heightened concern about food security in China, which has been ignited by anecdotal reports of grain shortages and calls by President Xi Jinping to cut back on food waste. China's domestic supply of three staple grains – wheat, rice and corn – is

待价格进一步上涨。国家粮储局拒绝评论河南省粮食收购量下降的原因，仅表示政府收购夏粮的活动正按计划进行。七月，山东省小麦价格上涨至2,380元/吨，同比上涨了约5%。山东省也是主力小麦产区之一。虽然今年国家夏粮收购量出现了下降，但这并不意味着国家面临着严重的粮食问题，因为2018年和2016年国家夏粮收购量都出现了下降的情况。据中国国家统计局称，从更广阔的层面来看，即使在新冠疫情爆发、长江流域发生严重洪涝灾害的情况下，2020年全国小麦和大米等夏粮的产量还是达到了历史最高点的1.4281亿吨，同比增长了0.9%。尽管如此，中国粮食市场面临的供应压力显而易见。主要用作动物饲料的玉米，价格一度飞涨至五年以来最高水平，养殖场和养殖户只能改用小麦作为替代品。为了调控不断上涨的小麦价格，截至7月27日，中国政府共拍卖了617万吨临储小麦，是2019年同期的四倍左右。此外，中国还在从世界各地采购粮食。海关数据显示，仅六月份，中国就进口了91万吨小麦，同比增长了197%。中国领导人和官员反复安抚公众，称粮食供应情况在可控范围内，但这反而使公众对粮食供应问题更加担忧。国家主席习近平督促全国官员确保粮食供应安全。2020年期间，中国对美国农产品的依赖越来越使人担忧，而这正是中美第一阶段贸易协议的一部分内容。黑龙江省农业投资集团（简称：农投集团）的分析师在8月1日发布的一篇评论文章中表示，美国可能会通过切断粮食供应的方式对中国发起"粮食战"，这可能会"比贸易战更加残酷"。农投集团为一家大型国有农业企业。农业农村部农村经济体制与经营管理司副司长张红宇称，要让每一寸可耕地都成为丰收的沃土，"我们应当确保耕地充足，以保障主要粮食供应的绝对安全。"(Wang, "Concerns over China's Food Security Mount as Farmers Hoard Grains")

粮食问题：小麦和玉米

随着农村劳动力缩减，到2025年，中国可能很快面临1.3亿吨粮食供应缺口，情况令人担忧。据中国社科院称，到2025年底，中国料将面临约1.3亿吨粮食供应缺口。城镇化加速发展和农村劳动力老龄化是导致中国粮食供应短缺问题的原因。据一则政府智库发布的最新报告，到2025年底，中国将面临约1.3亿吨粮食缺口，这意味着，作为世界人口最多的国家，中国将越来越依赖粮食进口。国家主席习近平呼吁抵制粮食浪费、各种关于粮食供应短缺的报道捕风捉影，种种迹象之下，人们愈发担忧中国的粮食安全问题。中国社科院农村发展研究所认为，预计到2025年底，国内市场小麦、大米和玉米这三大主粮将会供不应求，缺口在2500万吨左右，这意味着中国将愈发依赖粮食进口。虽然中国已建立了全国性的粮食安全系统，而且目前看来整体粮食供应充足，但"仍有供需结构不平衡的问题"。如何养活14亿人口，是中国政府最担心的问题之一，解决这个问题既要依靠国内生产，也要依靠进口。虽然目前暂无小麦和大米供应缺口的征兆，但玉米供应已出现明显缺口。据农业农村部市场预警专家委员会发布的另一份报告显示，预计今年10月至2021年9月，中国将会面临1668万吨玉米供应缺口，较七月的预测数值1398万吨有所增长。玉米供应出现缺口，导致玉米价格飞涨，促使更多动物饲料企业转而使用小麦作为原材料，从而引起了国产小麦价格上涨，令人更加担忧粮食安全问题。即使2020年小麦总产量较2019年有所增长，截至2020年8月，中国政府粮储机构从农民手中收购4290万吨小麦，同比减少了940万吨。中国社科院发布的报告指出，政府应完善"粮食收购和储备政策"以确保粮食供应安全，但该报告并没有提出具体的政策建议。农村居民向城镇迁移，农村劳动力减少，也是中国粮食短缺问题的原因。据中国社科院的数据，预计未来五年将有约8000万农村居民迁移至城市。另据社科院指出，中国农村人口快速老龄化令这一问题雪上加霜，预计到2025年60岁以上人口将占中国农村人口的四分之一。此外，社科院的报告还指出，中国农民"耕种积极性不强"。虽然政府一直宣传粮食丰收的盛况，但中国的粮食进口已开始呈现增长趋势。据中国海关的数据显示，2020年前七个月，中国共计进口了7451万吨粮食，同比增长了22.7%(Wang, "China Faces 'Grain Supply Gap' by 2025 as Rural Workforce Shrinks")。

在新冠疫情、旱涝灾害的多重打击下，人们更加关注粮食安全问题，其中，玉米产量问题愈发令人忧心。有市民拍摄到了某地玉米粮库状况，进一步加剧了人们对粮食供应安全的担忧，于是当地粮储机构禁止在粮库内外进行拍摄。中储粮某地分支机构下令禁止携带任何录像设备进入粮库之后，人们愈发怀疑国家战略粮食储备的质量，尤其是玉米储备的质量。中央政府批评了中储粮分支机构的手机禁令，并表示经调查显示，玉米储备不存在任何质量问题。2020年二季度，玉米市价飙升、进口美国玉米数量创下历史记录，种种情况令人对玉米储备的数量和质量问题产生了怀疑。禁止拍摄粮库的禁令是中国储备粮管理集团有限公司（简称：中储粮）黑龙江省分公司下发的。究其原因，是因为新冠疫情的不利影响、严重的夏季洪涝灾害、大量进口美国玉米的市场操作等因素致使人们愈发担心中国的粮食安全问题。今年七月中旬，网上爆出了一则中储粮肇东粮库的相关视频，随后，当地机构下令禁止携带录像设备进入粮库。肇东市是肇州县附近的一个县级市。网曝视频显示，许多粮食似乎已经发霉，并混有泥土和其他异物。该则视频在微博上广泛传播。微博是一个类似于推特的社交平台。网曝视频和相关机构的反应加剧了全国人民对潜在粮食供应缺口问题的担忧。在新冠疫情肆虐、南方洪涝灾害泛滥、北方旱灾严重、中美关系恶化的背景下，最近数周，中国政府加强了关于保护国家粮食安全的口径。政府强调，没有证据表明中国正面临粮食供应不足的问题。然而，有关玉米储粮的网曝视频令公众开始质疑国家粮食储备到底安不安全、是否能够满足国内需求。禁止携带手机进入粮库的要

expected to fall short of demand by 25 million tons by the end of 2025, meaning there will be a rising dependence on imports, the Rural Development Institute at the China Academy of Social Sciences (CASS) found. While it noted China had established a national grain security system and that overall supply was sufficient at the moment, it said “there are also problems of structural imbalance between supply and demand.” One of the government’s top concerns was the ability to feed a population of 1.4 billion, which relied on domestic production and imports. While there are no indications of wheat and rice shortages, there is evidence of insufficient supply in corn. China is expected to have a corn supply gap of 16.68 million tons in the year from October to September 2021, an increase from the July forecast of 13.98 million tons, according to a separate report from the Chinese Agricultural Outlook Committee, a unit at the Ministry of Agriculture. The shortage has prompted a surge in the price of corn and pushed more animal feed companies to use wheat, sending domestic wheat prices soaring and adding to concern about grain security. China’s national wheat reserve has bought 42.9 million tons of wheat from farmers as of August 2020, down 9.4 million tons compared to last year, despite an increase in overall production on 2019. The CASS report suggested China should improve “grain purchasing and storage policies” to secure food supply security, although it did not provide specific policy recommendations. China’s domestic supply shortage would result from the shrinking rural workforce, as residents move from the countryside to cities. About 80 million rural residents are expected to shift to urban areas within the next five years, CASS said. Adding to the problem was China’s fast-ageing rural population, which will see one in four people in the countryside above the age of 60 by 2025, CASS said. Furthermore, Chinese farmers “lack enthusiasm in growing grains”, the CASS report found. China’s imports of grains have started to grow, even as the government reports bumper harvests. It imported a total of 74.51 million tons of grain in the first seven months of 2020, up 22.7% from a year ago, according to the Chinese customs data (Wang, “China Faces ‘Grain Supply Gap’ by 2025 as Rural Workforce Shrinks”).

The production of corn has been an increasing concern in China as concerns towards food security grows amid the Covid-19 pandemic, flooding, and drought. These concerns were further stoked as Chinese citizens took footage of corn granaries with their mobile devices, leading to local communities to band filming in and around granaries. China’s state agency in charge of its strategic grain stockpiles has sparked concern over the quality of national grain reserves, particularly corn, after a local unit moved to ban all photo-taking devices from its granaries. Beijing criticizes local move to ban mobile devices from granaries, says investigation shows no problem with corn quality. Suspicions about quantity and quality of corn stockpiles arose due to a jump in market price and record purchases from United States in the second quarter of 2020. The order, by the storehouse unit of the China Grain Reserves Cooperative (Sinograin) in the northern province of Heilongjiang province, came as the impact of the coronavirus, heavy summer flooding and record purchases from the United States have increased worries about food security in the world’s most populous country. The device ban followed the online posting of a video showing a pile of corn from a Sinograin warehouse in Zhaodong, a county-level city outside Zhaozhou, in mid-July. Much of the grain appeared to be moldy and mixed with bits of dirt and other foreign matter. The clip circulated on Weibo, China’s Twitter-like platform. The clip and the government agency’s reaction came during growing nationwide anxiety about a potential shortage of crops. In recent weeks, Beijing has strengthened its rhetoric on protecting national food security, following disruptions caused by the coronavirus pandemic, floods in the south, and a drought in the northern region, in addition to the uncertainties caused by deteriorating US-China relations. The government emphasized that there was no evidence suggesting that the country is facing an insufficient food supply. However, the video showing the stockpiled corn triggered public questions about whether the official grain reserves were safe and sufficient enough to meet domestic demand. The ban on carrying mobile phones into granaries further fueled online speculation that the state-owned grain reserve agency could be hiding a deterioration in the quality of stockpiles and was moving to prevent exposure. The footage is representative of concerns by the people of the quality of grains available for the public. In response, Sinograin issued a statement on Weibo, confirming the clip showed the Zhaozhou warehouse but adding that the parent company

求公布后，网友不禁猜测，这是否为了防止储备粮质量恶化问题曝光，国有粮储机构而采取的措施。该则视频反映了公众担忧粮食质量问题。作为回应，中储粮在微博上发布了一则公告，承认了该视频拍摄地为肇州粮库。但其强调，总公司并未试图掩盖任何问题。中储粮也承认，黑龙江分公司禁止携带手机进入粮库的要求过于粗暴，已经对其进行了严厉批评。中储粮黑龙江分公司称，将允许公众在指定时间进入粮库参观，但并明确具体时间和如何申请。中储粮承认，部分堆积在角落未能打扫干净的储备粮食中混入了一些异物。中储粮经理称：“这些异物不影响整个玉米粮库的质量和数量。” 中国14亿人口的粮食供应问题一直是政府工作的重中之重，中央政府将国家粮食储备视为国家粮食安全的关键保障。然而，中储粮一向对粮食储备的总规模秘而不宣。玉米、小麦和大米是中国的战略储备粮食，中国通过它们确保粮食供应充足。据国务院新闻办公室2019年发布的《中国的粮食安全》白皮书中的数据显示，2018年中国粮食仓库仓容9.1亿吨。这是目前公布的最新数据。为了进一步证明粮食安全没有问题，中国政府公布，今年夏粮产量1.4281亿吨，比2019年增长0.9%，创历史新高。2020年1月以来，玉米期货价格上涨了近30%，表明国内玉米供应缺口已经出现。玉米是生产动物饲料、酒精和乙醇燃料的重要原材料。为了抑制价格走高的趋势，中国政府向美国增购玉米，据美国农业部数据显示，今年八月，中美达成了一笔193.7万吨量级的玉米交易订单。美国农业部称，该订单是美国玉米出口史上第三大订单，也是对华玉米出口的最大订单。此前，美国对华出口玉米的最大一笔订单为176.2万吨，发生在2020年7月(Wang, “China Corn Video Stokes Food Security Fears amid Covid-19, Flooding, Drought”)。

随着时间推移，其他相关疑虑也逐渐浮现，比如，玉米缺口会不会引发中国农村改革。如果粮食短缺问题如同分析人士预测的那般严重，那么中国政府可能会通过调整农业政策来使国家恢复粮食自给自足的状态。每隔几年，农业分析人士都会预测中国政府“很快”要大量进口玉米，因为国内玉米产量跟不上需求。2020年他们第一次预测准确。整体而言，中国近年来都能够很好地应对粮食供给冲击，尤其是近两年来，受中美贸易战影响，中国政府对美国进口大豆征收高额关税，严重抑制了美国大豆的进口 。同时中国扩大南美大豆进口。但整体而言，大豆进口量呈下跌态势，于是中国用其他饲料填补大豆供应缺口，并调整了猪饲料配方。此外，非洲猪瘟造成生猪数量缩减，也使中国无需进口太多大豆。但是，玉米供应缺口问题的严重性证实了分析人士的预测，2020年以来，玉米进口量也的确一直呈增长态势。预计政府将对农业政策做出重大调整，以实现粮食自给自足，这也是政府几十年来一直致力实现的目标。中国政府不希望玉米、小麦和大米像油籽一样，出现结构性供给不足问题。今年八月，国内玉米价格上涨超过2300元/吨 (约335多美元/吨)，而美国市场的玉米价格约为140美元/吨。中国政府维持玉米高价的目的在于确保供给充足，但今年玉米供给缺口特别大。相较于2019年，国内玉米价格也处于高位，涨幅约15%。2020年发生的多场气候灾害，使中国的粮食问题面临更大压力。其中，三场台风引发了洪涝和风灾，对重要玉米产区东北地区造成了严重破坏。官方预测2020-2021年玉米产量将达到2.65亿吨，较八月份的预测数字调低了180万吨，但较近年来的水平仍有所增长。一些分析人士认为，产需缺口可能比官方公布的1668万吨更大，可能高达2500万吨。美国玉米种植户一向期待中国大单，今年他们更是如此，因为今年是个丰收年，且受新冠疫情影响，燃油用量缩减，乙醇行业几近停摆。美国玉米种植户需要大量出口玉米，否则年底会出现滞销库存。一些分析人士预计，2020年发生的一系列事件将促使中国玉米进口贸易进入新时期。国内玉米价格飞涨引发了种种担忧(McMillan)。

中国政府将国内玉米价格飞涨归咎于投机炒作行为，同时采取措施缓解人们对粮食缺口问题的担忧。为了让人们放心，中国政府表示国家并没有面临粮食短缺的问题，并谴责投资炒作行为，称这类行为导致了玉米价格飞涨。2020年，由于玉米产区接连遭受台风和洪涝灾害的破坏，国内玉米价格创下八年来新高来。南华早报八月探访中国玉米产区时发现，大量庄稼被摧毁，当地农民普遍忧心产量会锐减。如前所述，2020年前八个月，作为动物饲料的主要原料，中国的玉米进口量创下三十年来新高，加剧了市场对国内玉米供应缺口的担忧。据农业农村部网站发布的采访记录，部长韩长赋称，玉米价格上涨的主要原因是“市场投机炒作和非理性囤粮”。据该采访记录，韩长赋表示，虽然黑龙江省和吉林省受到了自然灾害的不利影响，中国损失了一个季度的玉米产量，但国家目前粮食储备充足，今秋也将迎来丰收。今年九月，黑龙江玉米新粮拍卖价同比上涨了30%。黑龙江是全国最大的玉米产区。农业农村部市场预警专家委员会已将今年的玉米产量预测下调至2.65亿吨，这意味着国内玉米供给缺口可能会扩大至2350万吨。据中国国家粮油信息中心称，2019年的玉米产量可能高估。机构及政府部门的专家表示，造成2020年玉米价格飞涨的因素有囤积居奇和市场炒作(Wang, China’s Surging Corn Prices Blamed on Speculators as Beijing Plays down Fears of Grain Shortage)。

大豆进口

2020年，如同其他领域，中国大豆市场也深受一系列事件的影响，尤其是大豆进口贸易。中国的大豆主要依赖于进口。新冠疫情的爆发和国际关系的紧张使中国大豆市场波动不断。此前，中国主要从美国进口大豆，但随着两国关系日益紧张，两国的大豆贸易也相应承压。中国开始大量进口巴西大豆，新冠疫情造成供应链断裂等因素也使美国对华大豆出口受到了打击。根据中美第一阶段贸易协议，中国承诺将在未来两年内增购美国

was not trying to conceal any problems. It also admitted that the local ban was a crude step and said it had severely criticized the Heilongjiang subsidiary. The subsidiary said it would allow the public to visit local granaries on certain days but did not give a timetable or registration guidelines. Sinograin confirmed that it found some foreign materials in certain parts of the pile, which were left in the corn after the warehouse failed to clean them up. "[But] the foreign matter did not affect the quality and quantity of the whole corn warehouse," the state stockpile manager said. The food supply for the country's 1.4 billion people has long been a top priority for Beijing, and the central government has promoted the huge national reserves of grains as the key guarantee of China's food security. Sinograin, however, has always kept the overall size of grain reserves a secret. China has designated corn, wheat, and rice as strategic grains that it relies on to ensure adequate supply. The latest available data was from a food security white paper issued by the State Council Information Office in 2019, which showed that the storage capacity of China's warehouses had reached 910 million tons in 2018. China also said the country's summer grain output reached a historic high of 142.81 million tons this year, up 0.9% from 2019, citing this as further evidence of food security. A nearly 30% jump in futures prices since January 2020 suggests a domestic supply gap in corn – a crucial ingredient in animal feed, alcohol, and ethanol fuel. In response to the higher prices, China stepped up corn purchases from the United States, with a deal for 1.937 million tons confirmed by the US Department of Agriculture (USDA) in August. That was the third-largest deal for corn to any destination on record, and the biggest US corn purchase ever by China, topping the previous largest deal to China of 1.762 million tons in July 2020, the USDA said (Wang, "China Corn Video Stokes Food Security Fears amid Covid-19, Flooding, Drought").

As the year progressed, other concerns and questions arose, including whether China's corn shortage could bring about rural reform. The Chinese government could make big changes to its agricultural policy to restore the country to grain self-sufficiency if the corn shortage is as bad as analysts suggest and imports do boom this year. Every few years analysts in the grain industry forecasts that "very soon" China will begin to import vast amounts of corn because its farmers will be unable to keep up with demand. 2020 is the first time that this has decidedly happened. Overall, China adapted well to other recent supply shocks, most noticeably in the last two years when as part of its trade war with the United States it put large tariffs on American soybeans, causing supply from the US to fall to a trickle. It also bought more from South America, but still total soybean imports fell, and the country filled the gap with other feedstuffs and by altering hog feed formulations. It also helped that its hog herd shrank because of African swine fever. However, if the corn shortage is as bad as analysts suggest and imports do continue to boom post-2020, the government is expected to make big changes to its agricultural policy to restore the country to grain self-sufficiency, a goal it has stuck to for decades. It does not want its structural deficit in oilseeds to be repeated in corn, wheat, and rice. In August, corn in China topped 2,300 RMB per ton, or more than US$335, while corn in the US fetched around US$140 per ton. China keeps its corn prices high to try to ensure ample supply, but the gap is particularly wide this year. The corn value is also high compared to prices in China in 2019, up about 15%. Several weather events stressed China's crops in 2020, including three typhoons that caused flooding and wind damage to key corn-growing areas in the northeast. The official forecast for the 2020-21 corn crop is for 265 million tons, down 1.8 million from August, but still a little larger than in recent years. Some analysists worry that the gap between production and demand could be much larger than the official forecast of 16.68 million tons, perhaps as much as 25 million tons. American corn growers always hope for big shipments to China but in 2020 they were particularly keen because they expected a massive harvest and demand from the ethanol industry was off because of reduced fuel use associated with the pandemic. Huge exports will be needed to avoid a large buildup in year-end corn stocks. Some analysts expect the 2020 years' experience will usher in a new era of big Chinese corn importing. Many of these concerns are boosted by China's surging corn prices (McMillan).

China's surging corn prices have been blamed on speculators as Beijing tried to play down fears of grain shortage. China's agriculture minister has blamed speculators for skyrocketing corn prices, as

农产品。但兑现这一承诺面临着种种阻碍。虽然美国政府希望中国政府遵守中美第一阶段贸易协议，购买更多美国农产品，但是，新冠疫情的爆发和来自其他国家的激烈竞争使美国难以提升对华农产品出口额。尽管分析人士认为新冠疫情并未影响到美国大豆的出口，但由于从巴西进口大豆的成本更低，美国大豆的竞争力削弱。巴西今年迎来了历史上最好丰收年。中国正在探索扩大大豆等农产品的采购量，比如要求国有企业为政府粮储采购农产品。中国政府近日取消了自2018年7月以来对美国农产品征收的25%关税，美国猪肉养殖户和大豆种植户殷切盼望对华出口将会提升。这些关税是中国政府在贸易战初期为反制美国而采取的举措。但是，最新数据显示，过去一年以来，大豆贸易逐渐下降。据美国农业部周报显示，4月10日至16日这一周，美国大豆净出口销售额较上周增长了41%，达344900吨。然而，相较于前四个星期平均值，美国大豆出口额下降了488%。据该则周报显示，2019-2020年4月10日至16日，中国购买美国大豆的数量为零。总部位于英国的国际谷物理事会（International Grains Council）称，2020年前几个月，中国市场对美国大豆的需求极为乏力。据农业农村部称，中国拟于2020年进口9248吨大豆，较2019年的8859吨有所增长。据农业农村部三月发布的一则报道，3月2日取消美国大豆进口加征关税后，美国大豆进口将会出现增长，但没有明确具体数字或时间。根据中美第一阶段贸易协议，中国承诺未来两年内增购320亿美元美国农产品(Lee, "US Soybean Imports to China Dive as Bumper Brazilian Crop Adds Competition")。

2020年6月，中美关系紧张加剧，两国的贸易关系也受到了影响。有关大豆，中国一边要兑现第一阶段贸易协议承诺，一边要实现自给自足，在两者之间似乎难以取得平衡。截至2020年6月中国超过80%的大豆来自进口，但随着中美关系波动不断，人们愈发担心粮食安全问题。2020年，预计中国的大豆进口需求会回升，不过关于进口来源仍存在问题。中国希望在减少过度依赖进口大豆的同时，兑现中美第一阶段贸易协议的承诺。随着中美关系波动不断，人们愈发担忧粮食安全问题，自从贸易战开打以来，中国一直在努力实现制造业和粮食生产业等行业的自给自足。农业农村部发布的数据显示，2019年中国约86%的大豆来自进口。大豆主要是牲畜饲料和食用油生产的关键原料，巴西和美国为全球最大的大豆出口国。由于贸易关系的不确定性，中国已开始探索用油沙豆或虎坚果等其他替代性原料生产饲料。扩大油沙豆种植规模，作为健康食用油生产的原料，能够减少进口依赖，提升国内食用油自给自足水平，更好地维护食用油安全。过去两年，中国市场的大豆需求放缓，主要是因为非洲猪瘟使国内生猪数量锐减。而去年国产大豆的产量达到1810万吨，同比增长了13.3%，创历史新高。国家统计局发布的数据显示，国产大豆产量提升的原因是大豆产区面积扩大了10.9%，达930万公顷（约1.4亿亩）。据农业农村部四月份预测，2020年国产大豆的产量将提升3.9%，产区面积将扩大1.6%。中国考虑对国产大豆实施补贴政策。但有分析人士认为，仅靠补贴政策难以显著提升国产大豆产量，摆脱进口依赖(Lee, "China' s Soybean Dilemma")。

2020年以来，由于新冠疫情和香港问题等因素，中美关系日益紧张，影响第一阶段贸易协议。最后，中国决定暂时搁置冲突，专注于2020年6月前兑现第一阶段贸易协议的承诺。这段时间里，中国按照约定向美国增购农产品，虽然数量比第一阶段协议中约定的仍存在较大差距。中国政府还将采购农产品的任务下达至农业农村部，表明这不再是一项政治任务。据消息人士和政府公告显示，中国政府对部门职责做了一些调整，将采购美国农产品的日常权限由商务部转交农业农村部。这一调整表明，按照第一阶段协议增购320亿美元美国农产品，更多地是处理国内需求与市场供给关系的一项目举措，而非政治任务。分析人士认为，虽然香港国安法、新冠病毒起源争议等问题使中美关系的紧张局面不断升级，但中国政府仍然认为第一阶段贸易协议是中方诚意的重要体现。分析人士表示，增购美国农产品的主管部门变更为农业农村部，意味着国有粮食进口商未来可能会接到更多技术性指令，因为鉴于其职权范围，农业农村部在处理国内供需求关系以及供应商价格等方面更为敏捷。中国商务部确认，2020年一季度，中国共计进口了逾781万吨美国大豆，为去年同期的三倍。去年同期，中美进出口贸易受贸易战严重影响。但是，仅达到2017年一季度的1540万吨的一半。而根据第一阶段贸易协议，中国需在未来两年内将美国农产品采购量提升到2017年的两倍以上水平，也就是说，中国离兑现协议承诺仍有较大距离。据专家预测，中国将在今年下半年美国大豆丰收后显著提升美国大豆采购量(Wang, "China Subtly, Quietly Implementing Phase One Trade Deal despite US Tensions")。

尽管中方努力改善贸易关系和缓解政治因素对贸易的不利影响，今年六月至八月期间，中美关系的再度恶化还是引发了人们对供应中断的担忧，导致农产品进口量激增。六月份，小麦、大麦、玉米、大米、高梁和大豆等粮食的进口总量增长了80.6%。一方面原因是中国为了兑现第一阶段贸易协议，另一方面原因是政府为了填补国内供应缺口，调低粮食价格。六月，中国农产品进口出现激增，原因是买家囤积居奇，以对冲中美关系恶化可能导致的供应中断风险，并填补国内生产缺口。所以，中国政府增购美国农产品既为了兑现第一阶段贸易协议，也为了填补国内供应缺口，包括战略储备粮食的缺口。如前所述，中国14亿人口的粮食安全问题一直是中国政府工作的重中之重。分析人士表示，今年八月前的几个月，中国政府一直在着力防止新冠疫情和华东华中的洪涝灾害引发粮食价格通胀。分析人士还表示，鉴于国内供应缺口，预计今年下半年中国还将大量进口农产品。为了防范中美关系进一步恶化带来的潜在风险，许

Beijing tried to reassure the public during 2020 that the world's most populous country is not facing a grain shortage. In 2020 corn prices hit an eight-year high following typhoons and floods that damaged the nation's Corn Belt. A trip to the area by the South China Morning Post in September found swathes of cropland had been flattened, fueling concern among local farmers about a steep drop in output. As previously stated, China's imports of corn, which are mainly used in animal feed, hit their highest level in nearly three decades in the first eight months of 2020, adding to anxiety over a domestic supply gap. Han Changfu, the nation's Minister of Agricultural and Rural Affairs, said the surging prices were caused primarily by "market speculation and irrational hoarding," according to an interview transcript published on the ministry's website. In the interview with state media, Han said the country had ample stocks of the grain and was set to have another bumper harvest in autumn, despite the impact of natural disasters in Heilongjiang and Jilin provinces, which together account for a quarter of China's corn output. In September, the bidding price for new corn in Heilongjiang, the country's largest corn producing region, was 30% above what it was in 2019. The government's Chinese Agricultural Outlook Committee cut the corn output forecast for the year to 265 million tons, meaning the domestic supply gap would widen to 23.5 million tons. The China National Grain and Oils Information Centre said that output in 2019 may have been overestimated. Experts in China and in the government has stated that the surge in corn prices during 2020 were the result of hoarding and speculation (Wang, China's Surging Corn Prices Blamed on Speculators as Beijing Plays down Fears of Grain Shortage).

Soybean Imports

One of the areas of Chinese agriculture that was most affected by the events of 2020 was the Chinese soybean market, specifically its imports. The coronavirus and international tensions have made the soybean industry, one that China primarily relies on imports for, a tumultuous affair in 2020. Previously, the US was the main exporter to China, but tensions between the two nations strained this relationship. US farm sales to China were also hit by bumper soybean crop from Brazil, as well as supply chain disruptions cause by the pandemic. This is hampering China's guarantee to buy more US agricultural products over the next two years as part of the Phase I trade deal they agreed to. The coronavirus pandemic and strong foreign competition are obstructing a US push to increase sales of farm products to China, even as Washington banks on Beijing buying more of its agricultural goods as part of the Phase I trade deal signed in January. While analysts say the pandemic has not affected soybean shipments from the United States, cheaper beans from Brazil have made them less competitive. The South American country is also benefiting from its largest harvest on record. China is exploring ways to accelerate purchases of farm products such as soybeans by asking state-owned firms to buy them for government reserves. US pork and soybean farmers had high hopes of increasing their exports to China after Beijing waived a 25% tariff on the American products, which was imposed in July 2018 as a countermeasure to tariffs levied by Washington in the first days of the trade war. However, new data shows that any gains made late last year have tailed off. Between April 10 and 16, net sales of US soybeans for delivery during the 2019-20 crop year to all foreign buyers rose 41% to 344,900 tons compared to the previous week, according to a weekly report released by the USDA. However, export sales of US soybeans were down 48% compared to a four-week average prior to April 10 to 16. China did not buy any soybeans between April 10 and 16 for the 2019-20 crop year, the report said. UK-based research firm International Grains Council said that demand for US soybeans from China have been especially weak over the first few months of 2020. China planned to import 92.48 million tons of soybeans in 2020, up from 88.59 million tons in 2019, according to China's Ministry of Agriculture. In a March report, the agriculture ministry said imports of US soybeans would rise in 2020 after tariffs were lifted on March 2 but did not specify by how much or offer a timetable. As part of the Phase I deal, China agreed to increase US agriculture purchases by US$32 billion over two years (Lee, "US Soybean Imports to China Dive as Bumper Brazilian Crop Adds Competition").

By June 2020, tensions continued to rise between the US and China, affecting trade relations. China found itself facing a soybean dilemma as it tried to

多中资企业都在扩大产品进口规模，尤其是农业企业。专家称，虽然今年下半年农业进口仍会呈现强劲增长，但是国内供应的缺口是否会由美国农产品来填补仍不确定。中美贸易关系恶化可能会促使中国走向其他贸易伙伴(Wang，"China Farm Imports Surge in June as Buyers Hedge against Worsening US Ties")。

2020年八月底，中国政府呼吁与其战略伙伴俄罗斯建立大豆产业联盟。在与俄方的会谈中，中国商务部敦促双方加强大豆供应链各环节的合作。中方重申，在中俄建立大豆产业联盟的同时，中国仍将从美国采购大豆。分析人士认为，短期内俄罗斯不太可能能够取代美国成为中国最大的大豆进口来源国。分析人士还表示，建立中俄大豆产业联盟的举措旨在加强中俄两国的合作关系，俄罗斯是中国的重要战略伙伴。农业农村部也表示，预计中国大豆进口量仍将处于高位，中国将继续拓展其他供应来源。中俄两国于2019年6月签署了一项关于大豆的合作协议，提出建立中俄大豆产业联盟，并明确到2024年将俄罗斯大豆进口量提升至370万吨的目标。俄罗斯大豆目前在中国进口大豆中的占比不到1%。俄罗斯不太可能会成为中国的主要大豆贸易伙伴。然而，中俄的大豆供应链合作表明两国之间存在政治互信，这将有利于巩固双边关系。此举的政治意义大于经济意义(Wu)。

温室大棚的发展和塑料污染

2020年，塑料在农业生产中的地位越来越重要。在山东省，放眼望去，尽是塑料温室大棚。全世界90%的塑料温室大棚坐落于中国，面积达330万公顷，和美国马里兰州差不多大。其中，大部分塑料温室大棚位于山东省。山东省的塑料温室大棚设计独特，北面有厚厚的砖土结构防风墙，南面和顶部采取钢架支撑塑料薄膜的结构。山东省的温室大棚主要用于栽培蔬果，温室大棚技术使山东省成为了国内最大的蔬果产区。应用温室大棚能够将产量提升一倍并延长生长期，让农民可以利用更少的土地生产更多农产品，有利于改善他们的生活，助力脱贫。对于山东北部滨州市的农民来说，一座0.13公顷的温室大棚每年能够产生8万到10万元人民币的收入，而当地农民的平均年收入为12362元人民币。滨州市共有330座温室大棚，面积有286个足球场那么大。但温室大棚厚厚的塑料薄膜的有效期是有限的。长期受到紫外线照射，塑料会损坏。塑料薄膜三年需要更换一次。那么，这些塑料废弃物何去何从呢？塑料薄膜中国的耕地面积仅为美国的四分之一，人口却是美国的四倍。因此，中国必须最大程度地利用每一寸耕地，才能养活这么多人口。农用塑料薄膜的应用始于上世纪八十年代。中国是塑料薄膜应用最广泛的国家。目前，中国的塑料薄膜使用量超过200万吨，应用面积达20万平方千米，与美国内布拉斯州差不多。塑料薄膜能够抑制杂草生长，减少除草剂的用量需求，并有助于防止土壤侵蚀。塑料薄膜还有助于土壤保温和节约水资源。山东省为应用塑料薄膜生产农作物的五大省份之一，但是，近来陕西省的农用塑料薄膜应用量超过了山东省。陕西省气候寒冷干燥，年均降水量仅为50-600毫米，与美国北达科他州差不多。塑料薄膜的好处非常显著，它可以将产量和水资源的使用效率提升约25%，能够推动因过于寒冷干燥而不适耕种的地区的农业发展。但是，应用塑料薄膜栽培农作物的方式同时会带来了问题。塑料薄膜易脏，难以回收再利用，且会产生大量的塑料废弃物。中国的农用塑料薄膜通常很薄，厚度类似于塑料包装袋，仅有4-8微米，而一般拉锁袋的厚度为38微米。这么薄的塑料很容易撕裂，只能用一个栽培季，而且几乎完全无法回收。塑料薄膜易破易裂，塑料碎片就会留在土壤中，或冲入河流，汇入大海。塑料碎片还容易混入动物饲料中，被牲畜食用。土壤中残留的塑料会破坏土壤环境。短期内，土壤中的塑料残留物只是个小问题，比如堵塞农业机械、迎风飘扬、黏在篱笆上、冲入河流等。但是，如果塑料在土壤中残留的时间超过20年，那么其将会影响农作物根基的生长和水体流动，降低粮食产量，温室大棚种植的优势就不复存在。2019年12月，中国生态环境部和发改委提出新规以减轻农用塑料问题。根据新规，应当使用质量更好、更厚、可重复利用、回收再利用的塑料薄膜。目前全国200万吨塑料薄膜中仅有18万吨可回收再利用。2018年，中国停止从外国进口塑料废品，优先发展国内塑料回收再利用。农用塑料改变了中国农业的状况，也改变了农民的生活。全面禁止塑料使用是不现实的。比较现实的做法是研发可生物降解的农用产品。比如，俄亥俄州大学正研发一种可以在45天内完全降解的植物基塑料。中国科学家也在研发植物基塑料，但目前这种产品成本太高，无法大范围推广使用。中国在这方面目前的工作重点是提高收集、重复利用、回收再利用农用塑料的能力以及确保农用塑料废弃物的安全处理(Mancl)。

蝗灾

2020年初，蝗虫席卷邻国印度和巴基斯坦，蹂躏了农作物，中国不得不加强蝗虫防治工作。截至2月，中国政府已拨款14亿元人民币（约2亿美元）用于害虫防治，包括蝗虫和秋粘虫。联合国专家预测，由于喜马拉雅山的天然屏障作用，印巴蝗虫大举入侵中国的可能性较小。尽管中国发生大规模蝗灾的可能性微乎其微，但是出于谨慎考虑，中国加强了相关防控措施，以预防印巴沙漠蝗虫的侵袭，保护农作物。蝗虫会摧毁几乎所有的绿色植物，包括农作物和树木，它们成群结队地侵袭了印巴边境的大片农田，该地区被联合国粮农组织（FAO）认定为全球害虫重点区。印巴蝗灾引发担忧的同时，受新冠疫情的影响，中国经济愈发低迷。截至2020年1月底，新冠病毒已导致2200多人死亡，几乎所有商铺关

balance the Phase I trade deal with self-reliance. As of June 2020. China imported more than 80% of its soybeans, but there were growing concerns regarding its food security as the relationship with the US became volatile. China's demand for soybeans was expected to rebound in 2020 but the question became where the supply would come from as it attempted to move away from over reliance on imports but also meet its commitments under the Phase I trade deal with the United States. There were growing concerns regarding China's food security as the relationship with the US becomes increasingly volatile, and since the beginning of the trade war, China has been reinforcing self-reliance on its industries including manufacturing and food production. In 2019, China imported around 86% of its soybeans, according to the Ministry of Agriculture, which are mainly used as the key ingredient for livestock feed and edible oil, with Brazil and the US the biggest exporters in the world. Because of trade uncertainties, China has begun investigating alternatives to soybeans for feed, including chufa, and tiger nuts. Expanding the planting area of chufa can produce a healthy raw edible oil ingredient, reducing foreign dependence, improving the self-sufficiency of edible oil in China, helping to better maintain the safety of edible oil in China. Even though China's demand for soybeans has slowed in the last two years largely due to an African swine fever outbreak that decimated the nation's pig herd, its own production of soybeans last year rose 13.3% to a record 18.1 million tons. This was because of a 10.9% increase in the planted area to 9.3 million hectares (23 million acres), according to the National Bureau of Statistics. The Ministry of Agriculture and Rural Affairs forecast in April that China's production of soybeans would rise 3.9% in 2020, with a 1.6% increase in planted areas. China is looking at potentially using subsidies to aid in domestic production. But analysts said subsidies alone might not be able to lift domestic production of soybeans significantly enough to replace imports (Lee, "China's Soybean Dilemma").

As 2020 progressed, it became apparent that tensions between the US and China over issues such as the coronavirus and Hong Kong were affecting the Phase I trade deal. As a result, China put aside those tensions to directly focus on the deal by June 2020. During this period, China increased its purchases of US farm products, although it still lagged far behind the commitment it had made under the deal. Beijing has also transferred responsibility for the purchases to the Ministry of Agriculture and Rural Affairs, suggesting they are no longer a political task. In a subtle move behind the scenes, Beijing has shifted the day-to-day authority over China's purchases of US farm products, such as soybeans, to the Ministry of Agriculture and Rural Affairs from the Ministry of Commerce, according to sources and government documents. The adjustment suggests that authority to make the purchases of an additional US$32 billion in agricultural goods required by the trade deal was more of a bureaucratic task of combining domestic demand with market conditions rather than a political task. Beijing still saw the deal as an important way to display goodwill even as tensions between Beijing and Washington continued to escalate on other issues, including the national security law in Hong Kong and the origin of the coronavirus, analysts said. The change in authority over China's purchase of US farm goods means that China's state-owned grain importers could be subject to more intensive and technical directives from the Agriculture Ministry, which given its remit, is more sensitive in responding to domestic demand and supply conditions, as well as prices from different suppliers, analysts added. China confirmed that it imported a total of over 7.81 million tons of US soybeans in the first quarter of 2020, three times the amount during the same trade war-depressed period last year, according to data from China's Commerce Ministry. But the figure was still just half of the 15.4 million tons bought in the first three months of 2017, indicating that China is lagging far behind the commitment in the Phase I deal, which requires China to more than double its purchase of US farm goods over two years compared to 2017 levels. Experts predicted that China would significantly increase its purchases in the second half of the year when the later US soybean crop is harvested (Wang, "China Subtly, Quietly Implementing Phase I Trade Deal despite US Tensions").

Despite efforts to improve relations and remove political complications from trade, as June transitioned into August agricultural imports surged as worsening US ties stoke fears of supply disruptions. China's total imports of grains, including wheat, barley, corn, rice, sorghum, and

闭。联合国粮农组织官员对相关问题轻描淡写，称中国不太可能发生大规模的蝗灾。2019年是中国农业痛苦不堪的一年：吞噬农作物的秋粘虫侵袭了大约150万亩农田；为控制非洲猪瘟，4.4亿头猪中约有一半被扑杀。截至2020年2月，中国政府拨款14亿元人民币（约2亿美元）用于害虫防治，其中3000万元人民币（约420万美元）用于15个省份的蝗虫防治(Chan)。

随着时间的推移，中国认识到，其正在面临几十年来最严重的蝗灾。云南省的村民称，蝗灾的影响比他们的预计要严重得多。粮食安全形势日益严峻，而玉米供给问题尤为突出。谈及这场几十年来最严重的蝗灾，中国南方的一些农户称，其影响比想象的要严重得多。有些人表示自己看到每棵作物上趴着三四十只蝗虫。6月下旬，成群结队的黄脊竹蝗越过南方边境进入中国，然后北上。根据官方数据，仅6月份，受蝗虫影响的地区在20天内就翻了一番。相关部门加大蝗灾防控力度，调派大量检查员前往村庄和森林，同时部署无人机喷洒杀虫剂。根据农业农村部官网公布的一份声明，为应对迅速蔓延的蝗灾，农业农村部在江城县举行蝗虫应急防控实战演练，云南、广西、四川和贵州参加了演练活动，开展东南边境蝗灾防控工作。中国建立了监测网络以监测和预防害虫侵袭。但有官员们指出，蝗虫机动性强，对付它们并非易事，它们每天能飞70多公里，“什么无人机能够阻挡它们？”黄脊竹蝗在云南已经存在相当长一段时间，它的突然爆发，可能与近几年偏远山区未发现的种群逐渐增长有关，因为存在有利的繁殖条件，比如：在蝗虫关键生长期，降雨量理想。蝗虫也可能会从其他受灾地区迁徙过来，因此，2020年农户面临更为严峻的困境(Zhou)。

旱涝灾害

2020年，困扰中国另一个问题是一系列的旱涝灾害，随着食品价格的持续攀升，给中国带来了更多的不确定性。相关部门持续密切监测食品价格，这对维护社会稳定至关重要。截至2020年8月，严重洪涝已造成至少141人死亡或失踪。有人说，这是至少自1998年以来最严重的一次洪灾。6月份食品价格同比上涨11.1%。仅7月份前两个星期，农产品价格就上涨了2%。从商业角度看，新冠疫情对食品饮料行业的影响尤为严重，因为疫情防控措施，人们很少外出就餐。此外，许多人选择自己在家做饭，而不是叫外卖。今年上半年，有10.58万家食品饮料企业倒闭或停业，其中70%在第二季度倒闭。99.05万家新注册食品饮料企业中，70%也在第二季度倒闭，但第二季度的倒闭增幅大于新注册增幅。奥迈企业顾问公司（Alvarez & Marsal）驻北京零售和制造业高级总监高欢表示，2020年自然灾害进一步加剧了食品市场问题。周一接受电话采访时，她说：“食品价格的确在上涨，主要是由于供给侧减少了，需求侧增加了。”“实际上，这个趋势很可能会持续，因为自然灾害频发，例如南方的洪涝，这对原材料供给影响很大。这个影响很快会反映到市场上。”洪涝灾害对中国经济造成非常严重的影响，直接经济损失已超过860亿元人民币(约123亿美元)，约2.9万座房屋被摧毁，224多万人被紧急转移。习近平主席称，2020年过去一半了，防汛形势严峻，防汛救灾已进入关键时期。由于近期华南地区洪灾产生供给冲击，抵消了2019年7月高基数，预计7月份CPI同比上涨2.7%。不过有专家认为，今年下半年CPI同比涨幅的下降趋势将持续（年底降至1%左右），主要原因是2019年下半年猪肉价格飙升导致的基数较高。杭州南华期货公司分析师指出，洪灾对食品价格的影响只会是短暂的，对生猪生产造成的影响会更大。但对整体经济发展而言，疫情短暂性地卷土重来，洪灾后的重建成本大，这些会使得经济复苏更迟缓。有专家指出，面对这些情况，需要改进的一点是供应链效率，否则会影响成本(Cheng)。

由于年初的旱灾和近期的洪灾，人们对2020年中国粮食供给的担忧与日俱增，尽管政府坚信，夏季粮食收成会达到历史最高水平。业内专家表示，很难去做相关估计，原因是农户开始囤积粮食，期待在目前供给不足的形势下，粮食价格会继续上涨。由于旱涝灾害，粮食产量下降，所以越来越多农户开始囤积居奇。进入秋季，农户开始担忧花生的收成。暴雨频发影响了花生的生长，给本已痛苦难堪的农户带来了更多压力——由于年初旱灾，夏季小麦收成不佳。面临洪涝加剧，许多农户越发担心他们赖以为生的小麦和花生的收成。有农户称，他们的小麦产量减少一半，花生产量减少三分之一以上，玉米产量总体下降了10%。2020年，“粮食安全”是中国媒体报道的热词之一，而根据官方数据，粮食短缺问题并非迫在眉睫。农业农村部称，尽管中国发生了洪涝灾害，但夏季收成创历史新高，较2019年增加0.9%，其中小麦产量增长0.6%。此前，2004年至2019年期间，中国连续16年实现粮食丰收，2019年粮食产量比2004年增长54%。相关政府官员4月份时表示，尽管面临干旱和新冠疫情，中国仍有足够的小麦和大米储备，足够中国人吃一年。而与此同时，中国政府加大力度，强调坚持战略粮食自给自足的重要性，包括大米、小麦和玉米。习近平主席强调节约粮食、减少浪费。于是，全国上下开展节约粮食行动，餐馆控制菜品份量，直播平台禁止吃播，同时一些人大代表表示，应该建立法律框架，惩罚浪费食物的行为。这些都是为了应对由于新冠疫情、旱涝灾害和蝗灾而导致的粮食产量下降。这不禁勾起了某些人的回忆，1959年，大饥荒伊始，毛泽东主席下了道指示：闲时要少吃，要节省粮食。

河南省的粮食产量占全国总产量约10%，由于粮食供给出了问题，当地农户不愿意出售他们的小麦，这种情况与官方的说法背道而驰。粮食供给不足，一方面原因是许多农户囤积粮食，期待粮食价格继续上涨，另外

soybeans, jumped 80.6% by volume in June. This comes as China imported more to comply with the US trade deal, but also to fill domestic supply gaps and hold down food prices. Chinese imports of agricultural goods surged in June as buyers stockpiled farm products to hedge against possible supply disruptions caused by deteriorating relations with the United States and fill gaps in domestic production, analysts said. On the face of it, the rise in imports appeared to show Beijing meeting the agricultural purchases element of its Phase I trade deal with the US, but it also served to highlight gaps in domestic supply, including strategic grains. As previously mentioned, food security for China's 1.4 billion people has long been a top priority for the central government, and analysts said authorities have tried in months prior to August to prevent food price inflation caused by the coronavirus pandemic and flooding in central and eastern China. Imports of farm goods were likely to remain strong in the second half of the year given gaps in domestic supply, they added. Many Chinese companies were also buying extra products to safeguard against a further deterioration in US-China relations, particularly in the agricultural fields. Although agricultural imports would be strong in the second half of the year, it was less certain that this supply would be filled by American farmers, experts said. However, the continuing deterioration of trade relations with China and the US would lead China to seek alternative trade agreements (Wang, "China Farm Imports Surge in June as Buyers Hedge against Worsening US Ties").

By late August, China was calling for a soybean industry alliance with strategic partner Russia. The Commerce minister urged closer cooperation in all areas of the supply chain during talks with Russian counterpart. While this deal was put into motion, China reaffirmed that it will still be buying soybeans from the US. Russia was unlikely to replace America as a major soybean exporter to China in the short term, according to analysts. But they said China's proposed alliance was a gesture to strengthen cooperation with Russia, which Beijing sees as strategically important. The agriculture ministry also said China's soybean imports were expected to remain high and the country would continue to expand suppliers. The alliance proposal comes after Beijing and Moscow signed a cooperation agreement on soybeans in June 2019, aiming to increase imports from Russia to 3.7 million tons by 2024. Russian soybeans at present account for less than 1% of China's imports. It is unlikely for Russia to become the primary exporter of soybeans to China. Instead, the supply chain cooperation between Russia and China serves as an indication of the political mutual trust between the two countries, and it will cement bilateral ties. It is a move that will have a greater political impact than economic (Wu).

Greenhouse Growth and Plastic Pollution Crops

2020 saw China increasing agricultural production on a sea of plastic. If one were to visit the Shandong Province, they would see a sea of plastic greenhouses as far as the eye could see. 90% of the world's plastic greenhouses are in China, covering 3.3 million hectares, about the area of Maryland, with the majority in the Shandong Province. The Shandong plastic greenhouses have a unique design, with thick earthen or brick north walls that provide insulation from the wind, and plastic stretched over steel poles to cover the top and south side. Inside Shandong's greenhouses are a cornucopia of fruits and vegetables, making it #1 in China's vegetable production and in fruit production. Using greenhouses doubles yield and extends the growing season, improving the lives of Chinese farmers and bringing many out of poverty as they are able to produce more food on less land. For farmers in Binzhou City in northern Shandong Province, one greenhouse covering 0.13 hectares (or 0.33 acres) can generate 80,000 to 100,000 RMB annually, compared to the average annual farmer income is 12,363 RMB. Binzhou has 330 greenhouses covering the area of 286 football fields. The thick plastic greenhouse sheeting, however, does not work forever. Long exposure to UV light starts to break down the plastic. After three years it needs to be replaced. So, what happens to all that waste? Plastic mulch. With one fourth the farmland of the US to feed four times the population, China must get the most from every hectare. Agricultural plastic mulch use started in the 1980s. China is the world's largest user of plastic film mulch. Current use in China is over two million tons of plastic covering 200,000 square kilometers, like covering every inch of Nebraska with plastic mulch. The mulch blocks

一方面原因是新冠疫情和洪灾。由于这些复杂情况，产量下降，农民囤积居奇，导致2020年的小麦收购量下降了44%。洪灾还导致了粮食供给问题。官方数据似乎也说明了这个问题。根据国家粮食和战略储备局的数据，截至8月5日，中国小麦采购量为4290万吨，比2019年同期减少940万吨。包括小麦和玉米在内的谷物进口激增，这也说明了中国粮食供给的确出了问题。由于自然灾害，中国是否会出现粮食短缺，现在预测还为时过早。根据海关总署的数据，今年1月至7月，中国进口了7451万吨粮食，比2019年增长了22.7%。旱涝灾害等自然灾害在中国很常见，没有其他数据表明官方的粮食产量数据不准确。有些人担忧粮食安全问题，不过中国早已走出粮食短缺和饥荒的日子了(Wang,"Drought, Rain Ignite Fear of China Food Crisis despite Bumper Crops")。

耕地流失

中国未来发展面临的另一个问题是有限的可耕地在不断减少。近期中国的经济措施都是为了消除绝对贫困人口。绝对贫困人口即年收入低于2300元的人群，中国希望今年底前彻底消除该类人群。因此，不少人认为，2020年中国面临的主要粮食和农业问题是，许多中国人吃太多了。中国疾病预防控制中心研究人员去年发表的一项研究显示，2004年至2014年间，中国肥胖症患病率增加了三倍多。而中国农业仍面临着一些长期挑战，包括城市化和工业化发展正在蚕食可耕地。2月份才被移出极度贫困县名单的上蔡县，正在占用农田，建设大量商品房。在某个地区，芝麻和花生种植地被占用，建了个新小区，大约有20栋楼。农田被占用，人们被迫搬迁。为满足工业发展需求，人们的农田和祖屋被征用，比如黄河边上的某个大型水电项目。在其他一些农村地区，建起了铝粉厂，导致几乎所有耕地流失。当地居民对这些工厂喜忧参半，一方面它们提供了月薪2000元到3000元不等的工作岗位，比种地的收入要多。另一方面，越来越多年轻人离开农村来到城市打工，把家里的农田留给已到退休年龄的老一辈来打理。例如，宝上村是个传统的农村，如今大多数成年人已经离开村子到城市打工。他们把家里的农田出租给村里的农户耕种。2019年河南人均耕地面积仅为1.2亩，低于全国平均水平1.5亩。由于每户拥有的土地并不多，所以对农村居民来说，种地难以维持生计。在中国，即使拥有更多的土地和农业机械，种地仍是项艰难的工作，还要面临许多不可预测的因素，所以专职种地的农民越来越少(Wang,"Drought, Rain Ignite Fear of China Food Crisis despite Bumper Crops")。

weed growth, reducing the need for herbicides and protects the soil from erosion. The plastic also helps warm the soil and conserves water. While Shandong is in the top five provinces growing crops using plastic mulch, it is surpassed by the cold, arid Xinjiang Province, which gets only 50 – 600 mm (2 to 24 inches) of precipitation annually, similar to North Dakota. The benefits of plastic mulch are significant, increasing yield and water use efficiency by about 25%, and benefitting farming in areas that were too dry or cold to grow food. Growing crops under plastic has a dark side, however. It is dirty, hard to recycle, and generates a mountain of plastic waste. The plastic mulch used in China is as thin as plastic wrap, only 4 to 8 microns–a zip lock bag is 38 microns. The thin plastic easily tears, so it is only used for one growing season and is almost impossible to pick up. The thin mulch shreds and flakes, and balls of plastic stay in the soil or are washed away into streams that lead to the ocean. Flakes of plastic caught up in animal feed is ingested by livestock. The plastic left in the soil is changing the soil environment. At first the remnants in the soil were a nuisance, clogging farm equipment, blowing in the wind, getting caught on fencing and washing into ditches. Now, more than 20 years of plastic building up in the soil has started to interfere with roots and water movement, reducing crop yield and canceling out the benefits of the plastic mulch. In December 2019, the Chinese Ministry of Ecology and Environment and the National Development and Reform Commission proposed new regulations to reduce the agricultural plastic problem. The regulations would require the use of higher quality, thicker mulch that can be reused, collected, and recycled. Right now, of the two million tons of plastic mulch used in China, only 180,000 tons is being recycled. In 2018, China stopped importing plastic waste from foreign countries and is prioritizing domestic recycling. Agricultural plastics have transformed China's agriculture and the lives of farmers. It is unlikely that the use of plastics will be abandoned. Research is underway to develop biodegradable agricultural products. Ohio State University, for example, is developing plant-based plastics that degrade in 45 days. Chinese scientists are also developing plant-based plastics, but right now they are still too expensive for widespread use. The current focus is on improving the ability to gather, reuse, recycle, and safely dispose of agricultural plastics (Mancl).

Locusts

Necessity forced China to step up locust prevention as swarms ravaged crops in neighboring India and Pakistan in early 2020. By February, Beijing had allocated 1.4 billion RMB (US$200 million) for the prevention and control of pests, including locusts and fall armyworms. UN experts predicted that China was unlikely to suffer major infestation because the Himalaya Mountains act as 'natural barrier' for locusts in India and Pakistan. Still, ever cautious, China heightened prevention and control measures to protect its cropland from the desert locusts that ravaged India and Pakistan, despite assurances that the likelihood of a large-scale attack was marginal. The locusts, which decimate almost all green vegetation including crops and trees, swarmed swathes of agricultural land on the India-Pakistan border, an area identified as a global hotspot for the pests by the UN's Food and Agriculture Organization (FAO). The outbreak raised concerns in China, where an economic downturn was already being made worse by the spread of a new coronavirus that has killed more than 2,200 people and ground business to a near halt by late January 2020. Officials at the FAO downplayed the threat, saying a huge plague of locusts was unlikely. China's agriculture sector had a devastating year in 2019, hit by the crop-gobbling fall armyworms, which spread over a million hectares of farmland, as well as African swine fever that killed about half of the country's 440 million pigs through culling of disease. Beijing allocated 1.4 billion RMB (US$200 million) for the prevention and control of pests, including 30 million RMB (US$4.2 million) for locust prevention and control in 15 provinces, by February 2020 (Chan).

As the year went on, China found itself fighting the worst locust infestation in decades. Villagers in Yunnan province say the impact has been far worse than they feared. Corn supplies were particularly vulnerable at a time when concerns about food security were already increasing. Farmers in southern China have spoken of the devastation caused by one of the worst locust infestations in decades, saying the impact was far worse than they could have imagined. Some farmers reported seeing 30 to 40 locusts on each plant. Swarms of yellow-spined bamboo locusts crossed the border into China in late June and have since made their

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way northwards. According to official figures, the areas affected by the locusts doubled over 20 days in July 2020 alone. Authorities stepped up efforts to contain the outbreak – tens of thousands of inspectors were sent to villages and forests, while drones were deployed to spray pesticides. In a response to the fast-spreading infestation, the Ministry of Agriculture and Rural Affairs held an emergency drill in Jiangcheng, when teams from Yunnan as well as the neighboring provinces of Guangxi, Sichuan and Guizhou, met for "prevention and control works at the southeast border," according to a statement on the ministry's website. China set up a surveillance network to help monitor and stop the insect invasion. However, officials noted it was not easy to tackle the highly mobile swarms, which can over up to 70km (44 miles) a day, adding "what kind of drones can stop them?" While the yellow-spined bamboo locust has long been present in Yunnan, the upsurge could be "linked to a gradual increase in undetected populations in remote locations over the last few years assisted by favorable breeding conditions, such as ideal rainfall at critical times in the locust life cycle. Swarms also may be migrating from other infected regions, furthering the troubles farmers experienced in 2020 (Zhou).

Drought and Flooding

Another concern that arose throughout 2020 were the series of droughts and floods that created even more uncertainty for China as food prices continued to climb. Authorities have been closely monitoring food prices as they are an important aspect of maintaining social stability. Severe floods, which some have described as the worst since at least 1998, have left at least 141 people dead or missing. Food prices rose 11.1% in June compared 2019. Weekly data from the Ministry of Commerce showed prices of agricultural food products rose 2% within the first two weeks in July alone. From a business perspective, Covid-19 has particularly hit the food and beverage industry as efforts to limit the virus' spread discouraged people from going out to eat. Many people have also shifted from ordering food online to cooking at home. In the first half of the year, 105,800 food and beverage-related businesses dissolved or suspended operations, with more than 70% of the closures occurring in the second quarter. Over 70% of 990,500 new registrations in the industry also occurred in the second quarter, but the percentage increase in closed businesses for the second quarter was greater than that of new registrations. Gao Huan, a senior director focused on retail and manufacturing at consulting firm Alvarez & Marsal in Beijing elaborated on how the food market was further aggravated by the natural disasters in 2020. "The price increase is actually pretty real, and it's mainly driven by the decrease from the supply side and increase of the demand side," she said in a phone interview on Monday. "Actually, this trend is most likely to continue as we see a lot of other natural disasters such as the flood in the south of China, which is having a lot of impact to the raw material. This is going to reflect (in) the market very soon." The economic impact of the flood is severe, with direct economic losses having surpassed 86 billion RMB (US$12.3 billion), with about 29,000 homes destroyed and more than 2.24 million emergency relocations. President Xi Jinping described the flood situation as "grim" and that the response has entered a "critical" period, at the midpoint of the year. CPI inflation was expected to inch up to 2.7% y-o-y in July as the supply shock of the recent flooding in South China more than offset the high base in July 2019. However, experts believed the downtrend in year-over-year CPI inflation will remain intact over H2 (to around 1% at year-end) due mainly to the higher base from surging pork prices in H2 2019. Analysts from Hangzhou-based Nanhua Futures, a brokerage, noted that the impact on food prices will only be in the short term, while the floods will have a greater effect on live pork production. However, for the economy overall, developments such as the temporary re-emergence of the coronavirus and the costs of recovering from the flood will likely mean a more gradual return growth. One area that experts point to needing improvement during these times is supply chain efficiency which may affect costs (Cheng).

Due to the droughts at the beginning of 2020 and the recent floods, concerns are mounting about China's grain supply in 2020, despite government assurances that the summer harvest was at an all-time high. These estimates are difficult to determine as farmers have taken to hoarding crops in expectation that the prices will continue to rise due to the low supply available. Output has been hit by

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drought and heavy rains, leading to an increase in the aforementioned hoarding. As they entered the fall of 2020 farmers began expressing concerns about the peanut crops. Heavy rains hindered the development of 2020's peanut crop, putting a strain on farmers who were already reeling from a poor summer wheat harvest that was decimated by the severe droughts earlier in the year. Many farmers who rely on following the wheat harvest with a bumper peanut crop grew concerned as the flooding increased. Some farmers reported losing as much as half of their wheat crop and over a third of their peanut output, on top of an overall 10% drop in corn production. "Grain security" became a buzzword in Chinese media during 2020, even though official data did not show an immediate danger of a shortage. Despite the floods, China reported that its summer harvest hit "an all-time high", rising 0.9% from 2019, including a 0.6% increase in wheat output, according to the Ministry of Agriculture. That follows 16 consecutive years – between 2004 and 2019 – of "good harvests", with grain output in 2019 being 54% higher than it was 2004. Officials also made assurances in April that despite the droughts and Coronavirus there was enough wheat and rice in storage to feed the Chinese population for a year. Yet, Beijing simultaneously stepped up efforts to remind the country about the importance of maintaining self-sufficiency in strategic grains, including rice, wheat, and corn. President Xi Jinping emphasized conserving the nation's grains and cutting waste. The message on food thrift immediately turned into a national campaign, with restaurants promising to serve food in smaller portions, websites banning food shows, and lawmakers flirting with the idea of creating a legal framework to punish food waste. All to combat the drop in availability due to the coronavirus, drought, floods, and locusts affecting crops. For some, the message has fanned memories of Mao Zedong's instructions in 1959, at the beginning of the Great Chinese Famine, that people should eat less during leisure time to save food.

In Henan, which accounts for about 10% of China's grain output, farmers have become reluctant to sell their wheat because of supply problems – a perception that runs against the official narrative. Many farmers are hoarding crops in expectation that prices will continue rising because of low supply, partly because of the coronavirus pandemic and flooding. Due to these complications, wheat traders have reported a drop in purchases by 44% in 2020 due to a drop in output and reluctance among farmers to sell. Flooding has also caused disruptions in distribution of grain output. Official figures also appear to hint at disruptions in output. State purchases of wheat were 42.9 million tons as of August 5, a drop of 9.4 million tons from the same period 2019, according to the National Food and Strategic Reserves Administration. Surging imports of grains, including wheat and corn, also offers evidence there are issues with domestic grain supply, although it is too early to predict any shortages due to the natural disasters that have struck the nation. China imported 74.51 million tons of grain in the January-July period, up 22.7% from 2019, according to data from the General Administration of Customs. Natural disasters like floods and droughts are common in China and there is no alternative data to suggest the official grain output figures are not accurate. Though there is concern from some quarters about food security, China has come a long way from the days of food shortages and famine (Wang, "Drought, Rain Ignite Fear of China Food Crisis despite Bumper Crops").

Loss of Land

One aspect to look for in the future is the loss of China's limited supply of farmable land. Many of China's recent economic pushes have been to eliminate their definition of absolute poverty. Absolute poverty – defined as income below 2,300 RMB per year – is expected to cease to exist in China by the end of this year. As such, many view the main issue concerning food and agriculture for many Chinese in 2020 is eating too much. The prevalence of obesity in China increased more than threefold between 2004 and 2014, according to a study by researchers at Chinese National Centre for Disease Control and Prevention published last year. Still, China's farming sector faces a number of long-term challenges from increasing urbanization and industrialization, which is eating into the supply of arable land. In the county town of Shangcai, which was categorized as extremely impoverished until February, residential buildings are advancing while green farmland is in retreat. In one area, a new residential block with about 20 buildings encroaches on fields of sesame and

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peanut. Farmland and traditional rural ancestral communities have been forced to relocation as residents' farms and ancestral homes were seized for development of industrial needs, such as a large hydropower project on the Yellow River. Other rural areas have been taken over by an aluminum powder factory, leaving little space for farming. Local residents have mixed feelings towards such developments, as the industries provide monthly salaries ranging from 2,000 to 3,000 RMB, more than they would earn planting. Another concern is the number of young people who are leaving rural communities for urban areas and developments, causing farm duties to fall to an older generation who would otherwise retire. For example, in Baoshang village, a traditional farming area, most of the adults have left to take jobs in towns and cities. They otherwise lease their land to the remaining farmers in the area to tend. Henan had just 0.2 acres of arable land per capita in 2019, below the national average of 0.25 acres. With the land entitlement for each household so small, farming is not a realistic source of income for many rural residents. Even with a larger plot of land and machinery, farming is still a hard and unpredictable business in China, causing a drop in active farmers (Wang, "Drought, Rain Ignite Fear of China Food Crisis despite Bumper Crops").

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2.2 Animals and Related Products

Key Take-Aways

- Many farmers in China's are unable to access animal feed due to lockdowns across the country, leading to fears for the future of the meat supply chain.

- China has been forced to loosen restrictions of agriculture market access, amid fears of a further spike in food prices.

- Maritime troubles increase as China battles other south Asian nations for dominance in fishing areas of the South China Sea.

- During lockdown, cats and dogs became important players online, with the number of live-stream pet shows surging 375%.

- Animal smuggling has drastically increased with an instance of 4,000 dogs, cats, rabbits, and other pets found dead in boxes at a logistics depot in China.

Covid-19 Repercussions

- Supply lines for feed for livestock has been disrupted.

- Supply lines for transporting livestock has been disrupted by lockdowns and restrictions.

- An increase in nationalism has impacted the support of imported products.

- Interest in pets and pet supplies increased.

Background

One of the biggest impacts that the Coronavirus had on China's livestock was on its farms and food supply chain, causing spikes in meat prices. The rapid spread of the novel coronavirus throughout China led to the shutdown of many marketplaces and cut farmers off from their livestock and the supply of animal feed. In 2019, China's agriculture sector was rocked by an African swine fever outbreak, which reduced the nation's pig herd by half, sending meat prices skyrocketing around the country and leaving many farmers penniless. If producers had hoped 2020 would be better, the early part of 2020 likely left those hopes in tatters. To contain the virus, China's central and local governments placed huge areas on lockdown, meaning people cannot come or go, nor can vehicles freely pass between counties and provinces. While animal feed production resumed on February 10, the Ministry of Agriculture said, the logistics network was understaffed and faced with travel restrictions. This means farmers struggled to feed their livestock, while many of the live and wet markets where they sell their animals, or the slaughtered meat remained shut. Early in the year, Beijing ordered local authorities not to hold up animal feed passing between regions at the temporary checkpoints that have sprang up to counter the virus' spread, but continued restrictions on logistics still mean that the options to transport feed often do not exist. The early part of the ear also saw drastic impacts on imported meats. In February, thousands of containers of frozen meat piled up at Chinese ports because the trucking network effectively collapsed. Ports were running out of power points to keep the meat frozen, further stoking fears of damage to the food supply chain. Concerns also grew about the conditions of poultry hatcheries– where layer birds and eggs are cultivated – which were dependent on manpower and resources that were not available. The price of pork – China's most popular meat – rose by 116% in January, the biggest increase on record. With the government already

2.2 动物及相关产品

关键要点

· 由于中国政府执行封城措施，许多养殖户无法获得动物饲料，市场担忧肉类供应链的未来前景。

· 为了避免食品价格进一步大幅上涨，中国政府只好放松了农产品市场准入限制。

· 鉴于中国与其他东亚国家就南海捕鱼区主权问题的争议不断，海事纷争也日益增多。

· 封城期间，猫和狗成为了“网红”，宠物直播秀剧增了375%。

· 动物走私案也显著增多，其中，中国某物流仓库发现成箱的动物尸体，包括4000只狗、猫、兔子及其他宠物。

新冠疫情所带来的影响

· 牲畜饲料供应链断裂。

· 由于封城和限制措施，运输牲畜饲料的供应链断裂。

· 民族主义的兴起影响产品进口。

· 市场对宠物和宠物用品的需求提升。

背景

新冠疫情对中国牲畜业的影响最大的一个方面，是农场和供应链，肉价飞涨。新冠疫情在中国境内快速传播，许多农贸市场被迫关停，养殖户无法继续贩卖牲畜，也买不到动物饲料。2019年，中国农业领域饱受非洲猪瘟的打击，生猪出栏量骤减一半，全国猪肉价格飙升，许多养殖户血本无归。农户原本希望2020年情况会变好，但2020年上半年，情况很可能不会变好。为控制新冠疫情，中国中央和地方政府对许多地区实施封城，人们不能随意外出，乡际和省际交通实施严格限制。农业农村部称，虽然饲料生产业已于2月10日复工复产，但物流网络仍缺乏人手，且面临着交通限制。也就是说，养殖户们无法获得足够饲料喂养牲畜，同时，生鲜农贸市场和屠宰场处于关停状态。今年年初，中国政府下令，要求地方有关部门不得在疫情防控安检站拦截饲料运输车辆，但由于物流限制措施，饲料基本无法运输。今年年初，新冠疫情对进口肉类的影响也十分显著。二月，由于货运网络瘫痪，中国的港口堆满了运输冷冻肉类的集装箱。港口供电不足，难以维持肉类的冷冻储存条件，进一步加剧了对食品供应链受损的担忧。人们也愈发担心家禽养殖业的情况，由于疫情，家禽业面临劳动力和资源不足的问题。中国最爱吃的猪肉的价格在二月增长了116%，创历史最高纪录。中国政府本没有处理好新冠疫情爆发问题，已饱受激烈批评，如果食品价格通胀问题始终无法得到缓解，会进一步引发社会动荡，那时问题就更严重了。种种问题促使中国政府放松了对农产品市场的准入限制。二月底，中国政府公布了一项政策，进口商从美国进口猪肉和大豆等商品的可以申请减免关税。此举既是中国政府兑现第一阶段贸易协定中的采购承诺，也是解决食品供应紧缺的举措(Bermingham)。

家畜

中国正进行养殖业创新，包括产业化养殖。但是，有批评人士称，家畜产业化养殖为病原体的繁衍埋下了一颗定时炸弹。经历了非洲猪瘟和新冠疫情后，中国政府计划堵塞相关漏洞，控制动物相关疾病，而专家表示这是一个全球性问题。家畜产业化养殖可能触及到了许多人的敏感神经，因为在这种养殖方式下，有很多令人不安的场景，比如，用管子插进动物的嘴巴进行喂食，家畜几乎无法直立。一些科学家也警告称，这种养殖方式可能会导致新型疾病的大规模爆发。新冠疫情爆发的三年前，另一种致病的新型冠状病毒也曾经在华南地区蔓延。这种病毒具有致命性，但不是对人类致命，而是25000头乳猪。2018年，非洲猪瘟，类似埃博拉病毒的瘟疫——，开始以更大的规模散播开来，非洲猪瘟也不会造成人类感染，但是在全国境内造成了至少1亿头生猪死亡。非洲猪瘟使中国猪肉业面临危机，也让中国人爱吃的猪肉价格飞涨。目前，非洲猪瘟仍在非洲蔓延。各种疫情此起彼伏，新冠疫情和非法野生动物贸易很可能存在一定的联系，

bearing the brunt of severe and widespread criticism for its handling of the coronavirus outbreak, it will be desperate to avoid further social unrest that could stem from prolonged food inflation. This confluence of issues has persuaded Beijing to loosen the barriers to entry to its agricultural market. In late February, it announced a process through which importers could apply for waivers on trade war tariffs on goods from the United States, including pork and soybeans. This is viewed as a way of both satisfying its purchase commitments in the phase one trade deal and filling holes in its food supply (Bermingham).

Livestock

One of the ways that China is innovating its farming industry is through industrial farming of livestock. Though, some critics feel that this is a ticking pathogen bomb. After the African swine fever and the coronavirus, Chinese authorities plan to plug holes to control diseases in animals, but experts say it is a global problem. Industrial farming of livestock may offend the sensibilities of many people, with animals crushed into pens where they are barely able to stand up, among other distressing images. But some scientists warn such methods are also breeding grounds for mass production of new diseases. Three years before the virus that causes Covid-19 started making people sick in China, another novel coronavirus began circulating in the southeast of the country. It was fatal, but its victims were 25,000 piglets, not humans. That outbreak was swiftly followed in 2018 by a scourge on a much larger scale – the Ebola-like African swine fever, which does not infect humans but killed at least 100 million pigs as it raged across China. It threw the country's pork industry into crisis and sent the price of China's favorite meat soaring. The disease is still spreading in Asia. This flurry of outbreaks and the possible link between the Covid-19 human pandemic to China's wildlife trade has pressed the authorities to tighten rules. In addition to a ban in February on trade of wildlife for human consumption, China said it would revise or enact several laws related to the control of diseases in or linked to animals over the next two years. Some regulations, like those updating the animal epidemic prevention law, would be introduced "as soon as possible", said Zhang Yesui on May 21. Zhang is the spokesman for the National People's Congress, the country's legislative body. China aims to plug the holes that experts say have escalated past problems – low standards of biosecurity, lack of oversight and responsibility, as well as local government cover-ups of outbreaks. Biosecurity covers methods to prevent disease outbreaks in animals as well as to protect crops from infections and pests. The way livestock is raised in industrial-scale farming not only skews biodiversity, but it also creates a pathogen bomb for potential disease outbreaks, experts say. Pathogens can get into livestock farms in a number of ways, including via feed or water contaminated with viruses from bat or bird droppings or humans coughing and sneezing. But in large-scale, high-density farms, the viruses can spread quickly through the ranks of cows, pigs, or poultry, with ample opportunity to mutate, recombine and otherwise practice their ability to invade cells, including those of humans. This threat may be recognized but it is not being sufficiently monitored. The risk of disease broadens as the domestication of animals expands, such as the breeding farms for "wild" animals in China, which may have had a role in the current Covid-19 pandemic, some experts say. The World Health Organization has said that since the 1970s about 70% of emerging pathogens came from animals, which it calls a "burgeoning threat" because animals are intensively farmed, transported for trade and kept in close contact with other species and humans in market places. This was one lesson for China in the wake of its African swine fever outbreak, which wiped out 40% of its pig herd in the space of a little more than a year. China has seen outbreaks in 2020 and while officials say the disease is on a "downward trend", they have called for vigilance to prevent a rebound. By 2020, the country was on a fast track to replacing the small-scale farms that have dominated the industry with large, industrialized farms that can afford tighter biosecurity controls (McCarthy).

An example of the new industrial farming that China is pursuing would be the 12-story pig farms they are developing. The buildings do not look like farms. They are huge grey concrete blocks, many stories high, which stand side by side in the middle of what might look like a quarry, a "hole" of red earth dug in the heart of a mountain. China now has the largest pig arm in the world, units up to nine stories high housing thousands of pigs, with construction of a 12-storey pig unit under way. Each floor we can breed 1,270 pigs. In the future, with upcoming designs, they plan to have 1,300 pigs per floor. Yangxiang is one of the

这促使中国政府收紧了监管。中国政府于二月颁布了禁止使用野生动物制度，此外，中国政府还表示其将在未来两年内修改或制定多项法律法规，以控制动物源性传染病。张业遂5月21日表示，中国政府将会“尽快”颁布相关法律法规，包括更新和修订动物防疫法。张业遂是中国立法机关全国人大的发言人。专家表示，鉴于生物安全标准低、监管和责任划分不完善、当地政府掩盖疫情等问题已经导致了严重后果，中国政府在着手堵塞相关漏洞。生物安全包含动物防疫方法，以及植物作物防虫防害的方法。专家称，家畜产业化养殖不仅会影响生物多样性，而且还是潜在疫情的定时炸弹。病原体能够通过多种途径进入家畜养殖场，包括被蝙蝠、鸟类粪便或人类咳嗽、喷嚏污染的饲料和水。在大规模、高密度的养殖场内，病毒能够在牛群、猪群、家禽中快速传播，容易发生变异、重组或以其他方式入侵细胞，包括人类细胞。虽然已经人们意识到了威胁，但没有对其进行充分地监控。随着越来越多的动物被驯养，疫情传播的风险不断增长。比如，中国出现的“野生”动物养殖场就可能与当前的新冠疫情有联系。世界卫生组织称，自1970年代起，约70%的新发病原体来自动物。世卫组织称，这是一种“快速加剧的威胁”，动物高密度养殖、运输，会在交易市场与其他品种以及人类发生近距离接触。非洲猪瘟爆发对中国来说是一个深刻教训，仅一年多的时间就杀死了近40%的生猪。2020年中国也偶发非洲猪瘟疫情，但官方称相关疫情“呈下降趋势”，并呼吁各界警惕疫情卷土重来。到2020年，曾经一度占据家畜业主导地位的小规模养殖场正迅速被大规模产业化养殖场所取代，因为后者能够有能力执行更严格的生物安全控制措施(McCarthy)。

中国正探索新型产业化养殖道路，这包括正处于建设阶段的12层楼房式养猪场。这个养猪场看起来一点也不像农场。这个养殖场由巨大的灰色水泥砖块砌成，高达数层，一座挨着一座，屹立在在大山深处的红土地，一块像采石场一样的空地上。中国现在拥有全球最大的养猪场，最高的有九层楼，能够饲养数千头猪。12层楼高的养猪场目前正在建设。每层楼可以容纳1270头猪。根据设计，未来这种养猪场每层楼将能够养殖1300头猪。扬翔股份有限公司为中国猪肉业巨头之一，生猪年产量约为200万头，在华南地区拥有数十家养殖场。扬翔的亚计山养殖基地，拥有最大、最先进的多层楼房养殖系统，项目投产后，生猪年产能约为84万头。过去两年，中国养猪户和消费者受到了一波又一波疫情的冲击。包括：新冠疫情、正在缓慢传染给养殖工的H1N1猪流感、一年致死2亿头生猪的非洲猪瘟、还有在生猪之间传播的高度致病性口足病——现在也被兽医认为是一种传染病。但是，中国政府已制定了关于生物安全的超高标准和精细的清洁和处置体系。那么，正如一些人所希望那样，这能否有效防控传染病？并不是只有中国面临动物源性传染病传播的威胁，但有一点日益明确的是，中国的官僚体制、社会和环境等因素，会导致传染病传播成为全球性的威胁。中国的食品供应曾经一度依赖于小作坊，但随着对肉类的需求极速增长和动物源性传染病的风险攀升，旧体系下的许多问题变得更为严峻。这些问题不难发现。其他有关防疫的问题包括：缺乏合格的兽医以及滥用和乱用抗生素。中国兽医培训一直跟不上动物养殖业的快速发展步伐。生猪饲养过程限制在一个楼层，以避免与其他动物接触，每个养殖单元都有一个通风系统、运输电梯、以及专门用来直接运送死猪至内部焚烧区域的管道。但是，类似亚计山养殖基地这样的高密度养殖系统仍可能会成为传染病繁衍的温床。牲畜在这种养殖系统下饲养，对它们健康状况的影响，人们知之甚少。中国养殖业未来必将在这方面经受考验(Standaert and Augustinis)。

渔业

2020年，中国畜牧业的南海捕鱼活动是也备受争议。越南农业与农村发展部拒绝接受中国的”伏季休渔令“，因为越南认为该区域属于其领海。越南农业与农村发展部称，中国政府颁布的休渔令是“无效的”，并要求各省市鼓励渔民继续在越南领海进行捕鱼活动。根据其官方声明，越南将指导相关组织和专班支持渔民海上作业。持有2020年底前有效执照的渔船可继续在北部湾公共海域捕鱼，但应避免前往北部湾划界线以东海域。同时，越南农业与农村发展部要求地方政府部门在这段时间内 加强对渔业活动的管理监督，积极监控渔船离港情况，如有紧急情况，拨打越南渔业部热线求助。据新华社援引中国海警局南海分局的消息报道，4月30日，海南省农村农业厅颁布了一年一度的休渔令，南海休渔时间为5月1日起至8月16日。休渔海域涉及部分南海海域，包括北部湾和西沙群岛（越南称黄沙群岛）的部分海域。根据海南农村农业厅颁布的休渔令，除非有特殊情况，否则在规定时间内，不得在中国领海开展任何渔业活动。休渔令实施期间，中国将对渔业设备和渔船进行安全检查，并对渔民提供相关政策和技能指导。越南渔业协会反对中方的单方面决定，并称中方颁布的休渔令对越南领海没有法律效力。近年来，中国每年都会颁布类似“休渔令”，而越南则不断谴责，并拒绝接受这些休渔令。中国方面称，伏季休渔令目的在于促进渔业可持续发展和改善海洋生态环境。相关争议可能会持续困扰中国一整年(Hai)。

随着时间推移，局面越来越紧张，美国联合越南，加强对南海巡视管理方式，挑衅中国。中国为期三个半月的休渔期结束后，纷争不断的南海将迎来扁舵鲣、黑带棘鳍鱼、黄鳍鱼和大眼金枪鱼的成熟季节。来自中国海南省、越南海防市、岘港和李山岛的成千上万只渔船即将迎来丰收。连美国也来在这一滩浑水中横插一脚。近期，美国国际毒品暨强制法事务局和越南农业部渔业理事会签署了一份备忘录。尽管美国和越南方面宣称该备忘录的目的是加强越南渔业管理和执法能力，但大部分南海局势观察专家认为，这是美国政府在帮

Chinese giants of the pork industry, producing about 2 million pigs a year in a dozen farms throughout China. The Yaji mountain site is its largest and most advanced multistorey farming system and will have the capacity to produce around 840,000 pigs a year by itself when construction is finished. Over the past two years Chinese farmers and consumers have been rocked by pandemic after pandemic. Covid-19; an H1N1 swine flu that is now slowly spreading to farm workers; African swine fever (ASF), which has led to as many as 200 million pig deaths in a year; and a highly pathogenic foot-and-mouth disease, also in pigs, that vets now say is endemic. But here are sky-high standards of biosecurity and sophisticated cleaning and disposal systems. Is this, some hope, the answer? China is not the only country facing challenges from emerging zoonotic diseases, but it has become clear that the country faces bureaucratic, societal, and ecological factors that magnify them into global threats. China's food supplies once depended on small farms, but as demand for meat has rocketed and animal disease risks rise, the strain on the old system has been acute. The problems are easy to spot. Other problems for controlling disease include a lack of qualified vets – veterinary training has struggled to keep pace with the rapid growth of the farmed animals' sector – and the overuse and misuse of antibiotics. The pigs are restricted to one floor for their whole lives to avoid mixing animals and each housing unit has a ventilation system, elevators for transporting animals and a specific pipeline to direct dead piglets to internal incineration areas. But intensive farming systems like the multistorey Yaji site can still be a breeding ground for disease. The effect on the welfare of the animals that live in these spaces is still very poorly understood. This an aspect of Chinese agriculture that should be examined in the future (Standaert and Augustinis).

Fishing

One of the more controversial aspects of China's animal industry in 2020 has been its fishing activities in the South China Sea. For instance, Vietnam's Ministry of Agriculture and Rural Development rejected China's "ban on fishing" in what the Vietnamese view as their sea territory. The ministry said the ban was "invalid" and directed provinces and cities to encourage fishermen to continue with their activities within Vietnam's territorial waters. They should also guide groups and teams to support fishermen at sea, it said in a statement. The ministry said fishing vessels with licenses valid until the end of 2020 can fish in the Tonkin Gulf common fishing area but asked them to avoid the area east of the Tonkin Gulf delimitation line. The ministry also requested local authorities to strengthen the management and supervision of fishing activities and monitor fishing vessels' departure actively during this period, adding that the hotline of the Department of Fisheries Control will be available for emergencies. On April 30, the Hainan Provincial Department of Agriculture announced that China's annual "fishing ban" on the South China Sea has begun on May 1 and would last until August 16, Chinese news agency Xinhua reported, citing the South China Sea branch of the China Coast Guard. The ban would apply to certain sea areas of the South China Sea that encompass parts of the Gulf of Tonkin and Vietnam's Hoang Sa (Paracel) Islands. No fishing activities are allowed in sea areas under China's sovereignty within the time period, except in certain cases, according to the Hainan department. During the ban, China would perform safety checks for fishing equipment and vessels, as well as instruct its fisherpeople on relevant policies and skills, it said. The Vietnam Fisheries Society has opposed China's unilateral decision, saying the fishing ban has no legal value over sea areas under Vietnam's sovereignty. China has been issuing similar "fishing bans" every year in recent times and Vietnam has consistently condemned and rejected them. China claims the bans seek to promote sustainable fisheries development and improve marine ecology. This serves as a preface for concerns that China will have to deal with throughout the year (Hai).

As the year progressed and tensions grew, the US rebuked China by joining Vietnam in strengthening South China Sea marine management. Frigate mackerel, red soldier fish, yellow fin and bigeye tuna were in season after Beijing's three-and-a-half-month summer fishing ban in the roiling South China Sea. This signaled a harvest for the thousands of fishing vessels from Hainan, Haiphong, Da Nang and Ly Son. Even the US cast its net into the contested waters by way of a recent Memorandum of Understanding between the State Department's Bureau of International Narcotics and Law Enforcement Affairs (INL) and the Vietnamese Agriculture Ministry's Directorate of Fisheries (DFISH). While the

助越南政府应对与中国的海域海事纷争所采取的非法措施。即使在2020年新冠疫情期间，中国也对南海海域确立了实质性控制，包括击沉了一艘越南渔船，在西沙群岛附近开展军事演习，并加强了航行自由限制。特朗普政府对中国政府猛烈抨击，鼓舞越南增强其海上实力。美越今年签订了《海上合作协议》，其中一项重要内容是，给越南渔民在海上遭受的非法"威慑"提供直接支持，并促进合作，确保海洋生物资源的可持续发展，打击非法的、没有备案的和不规范的捕鱼活动。这是美国政府首次公开维护海牙常设仲裁法院2016年关于西沙群岛主权问题的裁定，也颠覆了美国政府此前在南海争议上一贯中立的政策立场。这对中国渔业发展的影响仍有待观察(Borton)。

乳制品

2020年9月，随着中澳贸易关系日益紧张，中国家庭对澳洲乳制品的热情也逐渐消退。新冠疫情爆发后的数月内，由于中美、中澳关系日益紧张，贸易活动日益受到民族主义热潮的影响，外资乳制品生产商在中国市场的阵地开始失守。据China Skinny发布的最新乳制品追踪报告，1月至8月期间，天猫上的海外品牌销售量占比为23%。海外品牌在线上电商平台的市场份额占比呈稳步下降趋势，从2016年的52%降至2019年的35%。据中国海关发布的数据显示，今年七月，澳洲鲜奶进口量骤跌超过20%。中澳贸易和外交关系紧张，令中国开始遏制澳洲大麦、牛肉和红酒产品的进口。澳洲政府呼吁国际社会对新冠病毒的源头进行独立调查，并批评中国政府实行港区国安法，中澳关系愈发紧张。中国消费者的民族主义情绪不断高涨。中国政府指责澳洲政府联合美国妨碍其实施港区国安法。据Research & Markets今年1月发布的一份报告显示，根据海关数据，2018年中国乳制品进口额增长了约15%，达106.5亿美元，其中奶粉产品占比约为70%。然而，婴儿奶粉生产商飞鹤乳业等中资乳制品企业对此并无怨言，因为国内销量也有所增长。2008年毒奶粉事件后，进口乳制品一直备受中国大陆消费者的偏爱。这起事件震惊业界，消费者不再信任国产奶粉，许多人的香港购物之旅主要是为了购买婴儿奶粉。随着地缘政治的紧张局面不断升级，可能会外资乳制品生产商失去扩大中国市场份额的机会。据欧睿预测显示，到2022年，以销售为衡量指标，中国市场有望成为全球最大的乳制品市场(Liu)。

宠物和宠物用品

受新冠疫情影响，人们对宠物的兴趣愈发高涨。据一份报道显示，即使今年疫情肆虐，但线上宠物用品的销售额却"加速增长"，养宠人士将宠物用品的线上销售额一再推高。中国的宠物市场正在稳步增长。不幸的是，封城措施使许多养宠人士被迫与他们的宠物分离。越来越多因封城而被迫与自己的宠物分开的养宠人士选择网购宠物用品，寄给愿意为其提供宠物看护服务的人士。受疫情影响，在线直播宠物秀的人也越来越多。疫情期间，许多由于封城措施而无法返乡的直播观众通过观看别人的宠物寻求一丝安慰。阿里巴巴旗下电商平台淘宝的数据显示，今年二月，平均每天有100万观众在线观看淘宝宠物直播，宠物直播的数量同比激增了375%。据亚洲宠物展览会、天猫和阿里妈妈发布的联合报告显示，养宠人士的热情将宠物用品的线上销售额一再推高，使宠物用品市场得以迅速从疫情期间实体店停业的影响中恢复过来。阿里妈妈是阿里巴巴旗下的线上市场营销技术平台。该报告显示，2019年宠物用品线上销售额创下了300亿元人民币（约合43亿美元）的历史记录，而2020年虽然新冠疫情肆虐，宠物用品的线上销售额却呈现了"加速增长"。在线配送平台也记录了宠物用品销售量的激增。外卖业巨头"饿了么"表示，相较于2019年，2020年宠物用品的销售量激增了300%。其中，宠物食品的外卖单增长了135%，平均每单的价格在125元人民币左右。为了应对疫情期间可能发生的生产和物流停滞，养宠人士开始囤货，从而推高了宠物用品的在线销售额。在消费者购买力和购买意愿的支撑下，预计未来数年宠物行业将保持快速发展。越来越多老年人将会成为养宠人士。官方数据显示，中国大陆约有1.18亿"空巢老人"，占60岁及以上人口的51%。随着中国人口老龄化加速，预计该数字也将继续激增。据狗民网和亚洲宠物展览会于去年联合发布的一份报告显示，2019年中国城镇宠物（犬猫）消费市场达2024亿元人民币（约合288亿美元），较2018年增长18.5%。 2019年，养宠人均年花费5561元人民币，较2018年的545元人民币提升不少。许多养宠人士表示，养宠花费物有所值(Cai)。

然而，随着中国宠物市场的增长，相关的悲剧也越来越多。2020年，关于宠物失窃和走私的报道层出不穷。被盗和走私的宠物要么去了宠物市场，要么去了菜市然后上了某些人的餐桌，或者被直接卖到餐馆(Thomson)。据某动物福利保护团体称，运送网购宠物的快递盒在华中某物流园滞留近一周，快递盒内约4000只猫、狗、兔子等动物被发现时都已死亡。救援者9月22日到达河南省漯河市东兴物流园时，仅有约1000只兔子、仓鼠和猫、狗等动物获救，其余都几乎已经死亡。这些动物被装在快递盒内，丢弃在河南省漯河市东兴物流园。志愿者和救助者们表示，他们从未见过如此惨不忍睹的场面。该事件进行了相关调查，引发了人们对于中国网购宠物缺乏监管的担忧。随着电商行业蒸蒸日上，几乎所有东西都能够从网上买到，其中包括活体动物，然而，许多通过网络销售的宠物是在不安全的条件下由快递公司进行非法运送的。据Utopia Animal Rescue称，这批动物的发货时间为9月16日，它们在物

MoU is intended to strengthen Vietnam's fisheries management and law enforcement capabilities, most South China Sea observers suggest that it is Washington's way to help Hanoi address China's unlawful actions associated with maritime claims in the disputed waters. Even during the 2020 COVID-19 pandemic, China established de facto control over the South China Sea by sinking a Vietnamese fishing boat, conducting military exercises near the Paracel Islands, and declaring greater restrictions over freedom of navigation. The Trump administration's broadside at Beijing boosts Vietnam's maritime capabilities since a key component of the agreement includes direct support against illegal "intimidation" of Vietnamese fishermen at sea and foster greater cooperation to ensure sustainable living marine resources and combat illegal, unreported and unregulated (IUU) fishing. This action represents the first time that Washington has publicly endorsed the integrity of the 2016 Permanent Court of Arbitration Hague decision on the status of certain features in the Spratly Islands and represents a reversal from previous neutral American policy position in the disputed South China Sea. It remains to be seen how this will affect China's fishing industry in the future (Borton).

Baby Formula

The first half of 2020 saw an increase in protein milk powder imports from Australia, New Zealand jump, but questions arose overuse as a supplement for infants. Chinese demand for lactoferrin and whey products has increased dramatically since the outbreak began, with consumers hoping the immunity boosting qualities can help both adults and children fight off the deadly virus. While stand-alone powder products have been researched, they have not been properly produced or tested to higher infant food standards. Exploding demand and the claims of the "powers" of lactoferrin and whey protein on social media led to a fact-check by news agency Reuters in late March, which showed there was no evidence the products can prevent coronavirus infections. Exports of Australian whey protein milk powder to China tripled in March from February to more than 1,000 tons, according to data from the Australian Bureau of Statistics collected by industry group Dairy Australia. The export volume remained high in April, with more than 700 tons shipped. Before the coronavirus outbreak, Chinese imports of whey protein generally stood at around 200 tons to 400 tons a month. A breakdown of lactoferrin milk powder exports is not available. China customs data also showed a 25% growth in annual protein powder exports from Australia between 2018 and 2019. In New Zealand, export volumes were expected to grow by 40% in 2020 to 7 million cans from 5 million cans in 2019. The booming trade is lucrative, with more than 100 brands in China partnering with Australian and New Zealand manufacturers to produce batches of whey protein and lactoferrin products primarily for the Chinese market. A 60 gram tub of lactoferrin powder costs just under 30 RMB (US$4.20) to make and send to China, but are being sold for between 400 yuan (US$56.40) to 600 yuan (US$84.70), representing a mark-up of over 1,500 per cent. The boom was fueled by general consumers, but also new mothers who, swayed by retailers, buy up cans of whey protein and lactoferrin powder mostly on e-commerce platforms such as JD.com, Taobao and Tmall to use as a supplement to their babies' daily consumption of standard infant formula. This situation is potentially risky as the stand-alone powder products, while widely researched as having health benefits, have not been properly produced or tested to infant food standards, which are stricter than general food standards. Lactoferrin added commercially to infant formula brands during the manufacturing process, though, has been properly tested to the higher standards for consumption by babies and infants. The US-based Whey Protein Institute advises consumers, "to be clear: you shouldn't take a scoop of whey protein you bought online or at a supplement store, mix it in liquid, and feed it to an infant" because of possible protein toxicity (Tan).

Dairy Products

By September 2020, Chinese households began to lose their taste for Australian dairy products as souring relations affected sales. Foreign milk producers began losing tremendous ground in China during the latter months of the coronavirus pandemic, as nationalistic fervor influenced sales amid souring relations with the United States and Australia. Overseas brands accounted for 23% of sales on Tmall from January to August, according to

流园被发现的时候，它们已经至少五天没有进水进食。根据中国邮政法，通过快递公司运送活体动物属于违法行为。根据民航规定，在发货人能够提供检疫记录、健康证明等必要文件和符合标准的托运箱的情况下，活体动物才可以通过飞机进行托运。然而，运送动物所需的相关文件容易伪造，这次的物流园事件就是个例子(Lew)。

the latest dairy tracker report published by China Skinny. Their share on the business-to-consumer online platform has steadily declined from 52% in 2016 and 35% in 2019. Fresh milk imported from Australia, for example, slumped more than 20% in July, according to Chinese Customs data, against the backdrop of trade and diplomatic spats as China curbed the import of Australian barley, beef, and wine products. Nationalism among consumers on both sides of arguments have risen with geopolitical tensions as Canberra called for an independent inquiry into the origins of the novel coronavirus and criticized a new security law imposed by Beijing on Hong Kong. China has accused Australia of working with the US to hinder its progress. China's import of dairy products increased about 15% to US$10.65 billion in 2018, with milk powder making accounting for about 70% of the amount, according to a Research & Markets report in January, citing customs statistics. Chinese companies such as infant milk producer China Feihe, however, were not complaining as they see an increase in domestic sales. Imported milk products were long favored by mainland consumers after a melamine scandal in 2008 rocked the industry and eroded trust in local production, pushing them to the top of the shopping list on buying trips to Hong Kong. Escalating geopolitical tensions may cost foreign milk producers the chance to gain a stronger foothold in China, which is expected to be the world's largest milk market by sales in 2022, according to a Euromonitor forecast (Liu).

Pets and Pet Products

Due to the Coronavirus in China, the pandemic led to an increased interest in pets. Pet owners also boosted online sales of pet products, which showed 'accelerated growth' this year despite Covid-19, according to one report. The pet market has been steadily growing in China. Unfortunately, lockdowns saw many pet owners separated from their pets. This led to an increase in online shopping for pet goods for owners to send to contacts willing to care for their pets while they were quarantined far away. This also led to an increase in online streams of animals. During the pandemic in China, live-stream viewers, in many cases unable to return home because of social-distancing measures, sought comfort in watching other people's pets. Live-streams of pets on Taobao were watched by more than 1 million people on average every day in February, and the number of live-stream pet shows surged 375% compared with a year earlier, according to the e-commerce platform owned by Alibaba. The outpouring of love from pet keepers boosted online sales of pet products, helping pet consumption recover quickly from the impact of brick-and-mortar shop closings amid the pandemic, according to a joint report by Pet Fair Asia, Tmall and Alibaba's online marketing technology platform Alimama. Online sales of pet products even showed "accelerated growth" in 2020 despite Covid-19, after reaching a record high of 30 billion yuan ($4.3 billion) in 2019, according to reports. Online delivery platforms have also seen a spike in the sales of pet products. Food delivery service giant Ele.me said that the number of pet-related products purchased on its platform surged by 300% in the first half of 2020 compared to 2019. Among them, the number of food delivery orders for pets rose 135%, with an average price at 125 yuan per order. The online sales boomed as pet keepers got prepared for possible production and logistic disruptions during the pandemic. However, the pet industry is expected to grow robustly in the coming years, backed by consumers with purchasing power and willingness to spend. One sector expected to increase pet ownership is the elderly. Official figures showed approximately 118 million "empty nest" elderly across mainland China, accounting for 51 per cent of the population aged 60 and above, and the number is expected to soar as the country rapidly ages. Urban residents in China were estimated to spend a total of 202.4 billion yuan (about US$28.8 billion) on their pet cats and dogs in 2019, up 18.5% from 2018, according to a report jointly published by Goumin.com and Pet Fair Asia last year. Annual expenditures on pets averaged at 5,561 yuan per pet last year, up 545 yuan from 2018. Pet owners report that they view the increased expenditures as worth it (Cai).

Unfortunately, as demands for pets grow in China, so do stories of tragedy. There have been reports of thefts and smuggling throughout 2020 by people trying to play into the demand for new pets or the gaps in the wet markets for potential food animals or for restaurant use (Thomson). About 4,000 dogs, cats, rabbits and other animals believed to have been bought online as pets were found dead in boxes at a logistics hub in central China after being stranded there for nearly a week, according

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to an animal welfare group. Rescuers managed to save just over 1,000 rabbits, hamsters, dogs, and cats but the rest had already perished by the time they arrived at the Dongxing facility in Luohe, Henan province, on September 22. The animals had been transported in boxes and dumped at the Dongxing logistics hub in Luohe, Henan. Volunteers and rescuers stated that they have never seen such a loss of this magnitude. The investigation of the incident raised concerns over the lack of regulation of online pet sales in China. A burgeoning e-commerce industry means almost anything, including live animals, can be bought online – but pets are often illegally transported in unsafe conditions by courier companies. The shipment of animals was said to have been sent on September 16, and by the time they were discovered at the depot they had not had water or food for at least five days, according to Utopia Animal Rescue. It is illegal to transport live animals via the courier system under China's postal law. They can be transported on planes if the sender can provide required documents such as vaccination records and health certificates and an approved pet transport crate for the journey, according to the civil aviation rules. However, documentation to transport animals can be falsified as it was in this instance (Lew).

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2.3 Automotive Industry

Key Take-Aways

- The Chinese auto market has rebounded early in the year, compared to international markets.

- Tesla production continued to grow in China during 2020.

- Chinee Millennials began to purchase vehicles, revitalizing the automotive industry.

- China saw its automotive market resurging as international markets continued to fall.

- Imports such as Volkswagen saw China as a primary market in 2020.

Covid-19 Implications

- Despite setbacks early in 2020 due to the Coronavirus, the Chinese automotive market was the first to recover in 2020.

- The Pandemic led to the failure of some foreign investors in the Chinese automotive market.

- There were concerns that the virus would stifle the recovery of the Chinese automotive market, but this did not occur. A few companies did not survive the pandemic, but China remained one of the strongest markets in the world in 2020.

Background

Due to the implications of Covid and the various other concerns, there was a fear that in the first half of 2020 that the car market would begin to slump. There was also a fear that events would worsen for China's slumping car market due to the coronavirus. However, hope came in the form of new-energy vehicle subsidies and tax breaks by two years, in the unlikely hope to boost the market based on industry observers' analysis. As events worsened for the Chinese automotive market in 2020, one of the few bright spots was the Tesla locally made Model 3 electric car. Overall, China, the world's largest automotive market was poised for a third year of declining sales in 2020, as the Chinese government's incentives and tax breaks failed to convince buyers to make large financial commitments during a global economic slump and the coronavirus pandemic. Despite this, the State Council, China's cabinet, announced in April 2020 that it would extend subsidies and tax breaks for new-energy vehicle purchases by two years to boost the sluggish market. Current subsidies as of April 2020 were of up to 25,000 yuan (US$3,531) per vehicle and exemption from a 10% purchase tax for buyers will be extended until 2022. Both policies were expected to be cancelled in 2020. China's economy in 2020 was poised for its slowest growth rate in four decades, after the coronavirus, which has sickened 83,059 people and claimed 3,305 lives as of April 2020, forced production and services to shut across the country for two months. Even as the country's manufacturing and overall economy moved back into action, jobs and business prospects remained bleak as the worsening pandemic took its toll on China's export markets, leading to what is known as a second wave of demand slump. Tesla's Chinese made Model 3 electric car was the bright spot of 2020, after it topped other home-grown rivals in February in terms of sales. The American carmaker began producing the Model 3 at its US$2 billion Gigafactory 3 in Lingang, Shanghai – its only production facility outside the US – towards the end of 2019. As industrial activity picked up in China, the coronavirus pandemic shut down other economies across the world. China, the world's largest automotive market, was poised for a third year of declining

2.3 汽车行业

关键要点

· 与国际市场相比，中国的汽车市场需求在今年年初已出现反弹。

· 2020年特斯拉在中国的产量持续增长。

· 中国千禧一代购车潮兴起，为汽车行业重新注入活力。

· 中国汽车市场正在复苏，与日渐萎缩的国际市场形成对比。

· 2020年，中国成为大众等进口汽车品牌的主要市场。

新冠疫情所带来的影响

· 尽管2020年初新冠疫情爆发带来了冲击，中国汽车市场已经率先恢复。

· 疫情爆发导致部分外国投资商在中国汽车市场中失利。

· 曾有人担忧病毒肆虐会阻碍中国汽车市场的恢复，但这一情况并未出现。尽管有少数企业未能撑过这次疫情，中国仍是2020年全球最强劲的汽车市场之一。

背景

面对新冠疫情影响，出于其它各种担忧，有人担心2020年上半年，汽车市场会开始下滑，且疫情的爆发会让本就下行的中国汽车市场处境更加艰难。据行业观察者分析，重振中国汽车市场的希望渺茫，然而，延长两年的新能源汽车购置补贴和减税降费政策，为此带来一线生机。随着中国汽车市场在2020年的处境愈发艰难，国产特斯拉Model 3电动车成为为数不多的亮点之一。在全球经济下滑和新冠肺炎疫情的双重夹击下，中国政府出台的激励和减税政策并不能说服消费者进行大笔财务支出。因此，总体而言，作为全球最大的汽车消费市场，中国2020年的汽车销量很有可能延续前两年的下滑趋势。尽管如此，中国国务院于2020年四月宣布，将新能源汽车购置补贴和免征购置税政策延长两年，以重振汽车市场。截至2020年四月，当前每辆汽车购置补贴高达25,000元人民币（约3,531美元），对购车者免征10%购置税的优惠政策将延长至2022年。以上两项政策原预计于2020年取消。截至2020年四月，新冠肺炎确诊病例总数达83,059例，死亡病例达3,305例，导致全国生产和服务业被迫关停达两个月之久。疫情过后，中国2020年的经济可能为四十年来的最低增长率。尽管中国的制造业和整体经济已恢复正常运转，但疫情的恶化给中国出口市场造成了损失，国内就业和商业前景仍然黯淡，因而导致第二波需求低迷。2020年二月份，特斯拉国产Model 3电动车的销量超越其它本土竞争对手，成为当年汽车行业的一大亮点。位于上海临港的特斯拉超级工厂造价20亿美元，是特斯拉唯一美国本土以外的工厂。2019年底，这家美国汽车制造商正是在此开始了Model 3的生产。中国已开始恢复工业生产活动，而全球其他经济体却因新冠肺炎疫情而采取关闭措施。在全球经济下滑和新冠肺炎疫情的双重夹击下，中国政府出台的激励和减税政策并不能说服消费者进行大笔财务支出。因此，作为全球最大的汽车消费市场，中国2020年的汽车销量很有可能延续前两年的下滑趋势。在这种情况下，为重振汽车市场，中国国务院于四月宣布，将新能源汽车购置补贴和免征购置税政策延长两年。目前每辆汽车购置补贴高达25,000元人民币（约3,531美元），对购车者免征10%购置税的优惠政策将延长至2022年。以上两项政策原预计于今年取消。据2020年初的估计，新冠肺炎可能导致中国汽车减产2%（Ren,“Worst yet to Come for China’s Auto Market amid Pandemic-Led Slump”）。

千禧一代意图重振产业

受到冲击的中国千禧一代希望能出台国家激励措施，提振汽车消费。疫情初显缓解迹象时，汽车行业代表委员在两会期间为刺激行业发展建言献策。大多数观察结果表明，中国的汽车行业之前仍处于滑坡状态。到2020年，汽车产销量连续两年下降，在降薪裁员的阴霾笼罩下，行业的发展令人担忧。新冠肺炎疫情期间，市民对购置汽车的益处产生了质疑。对大多数人而言，住房和汽车属于其人生中的两项大额预算。而新冠肺炎疫情造成的经济和人力损失，直接使这两大产业遭受重创。2019年，

sales in 2020, as the Chinese government's incentives and tax breaks fail to convince buyers to make large financial commitments during a global economic slump and the coronavirus pandemic. Early in 2020 it was estimated that the Coronavirus could cut China auto production by up to 2% (Ren, "Worst yet to Come for China's Auto Market amid Pandemic-Led Slump")

Millennials Attempt to Revitalize Industry

China's shaken millennials looked to state incentives to recharge auto industry spending. China's auto industry sought pick-me-ups from delegates at the 'Two Sessions' amid early signs of rebound from pandemic. By most observations, China's automotive industry was on a slippery slope. Sales and production declined for the past two straight years as of 2020, while concerns about pay and job cuts clouded the industry prospects. During the Covid pandemic, citizens questioned whether it would be beneficial for them to purchase a car. The coronavirus pandemic took its economic and human toll, crimping the housing and car industries, two of the big-ticket budgets in most people's lifetimes. In 2019, the two generated 24.3 trillion yuan in sales (US$3.4 trillion) combined, close to one-tenth of the New York Stock Exchange capitalization. The shaken millennials are key to China's revival efforts. Yet, its conservative stimulus package is only slowly feeding the "revenge spending" needed for a long fight to extricate the economy from its worst slump since 1976, the twilight year of the Mao Zedong era. The 8.3 trillion-yuan car-making and its supply chain is ensconced as a pillar of the economy. It is the second-largest manufacturing industry by market size, employing 33.5 million workers or one in every 12 jobs in the country, according to Sina news portal. The Chinese auto industry is also in a hurry for an upgrade, cutting its reliance on technology imports. The infusion of new-energy and technology like autonomous driving is one of the focal points of the Made-in-China 2025 blueprint, while bolstering its commitments to emissions and climate-friendly policies. Electric vehicle sales will dwindle to 1.7% of the personal auto market in the US by 2021, according to analysts at Bloomberg New Energy Finance (BNEF). They will expand to 8.1% of the market in China at the same time, versus 5% in Europe. By 2025, NEVs will make up 20% of Made-in-China vehicles, when the country commits to full opening of the domestic market under the World Trade Organization terms. Fast forward to 2040, more than half of passenger vehicles in China will be NEV types, higher than the global average of 31%, according to BNEF. Shwoing a prime example of Chinese ingenuity, China has quickly taken steps to engineer a recovery during the pandemic. The State Council in March extended subsidies and tax breaks for new-energy vehicle purchases by two years. Instead of scrapping the 25,000 yuan per vehicle rebate and the 10% purchase tax exemption this year, both will be extended until 2022. For foreign carmakers, the next five years should be a rewarding spell. Since the first Volkswagen-SAIC joint venture in 1984, China has widened the access to the likes of BMW, Nissan, and Tesla Inc. It promises by further dismantling ownership barriers in the passenger and commercial vehicle market. Since overtaking the US as the world's biggest car market in 2009, the industry has struggled for traction in the past three years. Hobbled by pandemic lockdown, French carmaker Renault SA has quit its venture in Wuhan, the fourth largest of production center in China. Sales of passenger vehicles were expected to fall 10% in 2020, according to Fitch Ratings, marking a third straight year of decline. They have slumped 36% to 4.34 million units in 2020 through April, from 2019, bearing the full brunt of the pandemic (Ren, "China's Shaken Millennials Look to State Tonic for Auto Industry's Slump").

China's Auto Market Resurges

As previously stated, thankfully, China car sales rebound accelerated in August as coronavirus pressures eased. Sales of sedans, SUVs, minivans, and multipurpose vehicles increased 8.8% between July and August compared to a year earlier to 1.73 million units, according to the China Passenger Car Association. Toyota reported a 27% increase in China sales for August, while sales of electric cars increased 45% to 82,500 units in July. China's car sales increased for a second straight month in August 2020, raising optimism that a two-year slump in the world's biggest market is nearing an end. Retail sales of sedans, SUVs,

这两大产业的总销售额达24.3万亿元人民币（约3.4万亿美元），接近纽约证券交易所资本总额的十分之一。尽管饱受冲击，千禧一代仍是中国复兴的关键。中国一直在努力摆脱1976年以来（后毛泽东时代）最严重的经济衰退。然而，在这个长期斗争中，政府出台的一系列保守刺激方案只是在缓慢促进"报复性消费"。汽车制造及相关供应链的营收高达8.3万亿元，是国民经济的支柱产业。据新浪新闻门户网站显示，按市场规模计算，汽车制造是中国第二大制造产业，提供了3350万个岗位，即全国每12个工作岗位中，就有一个属于汽车行业。中国汽车工业也亟待升级，以摆脱对技术进口的依赖。新能源和自动驾驶等技术的融入，是《中国制造2025》规划的重点之一，同时也是政府对其减排和环保政策承诺的深度践行。彭博新能源财经（BNEF）的分析师称，到2021年，美国电动汽车销量占私家车市场的份额将降至1.7%。同时，在中国市场，这一份额将扩大到8.1%，而欧洲则为5%。到2025年，中国将按照世界贸易组织的规定全面开放国内市场，届时新能源汽车（NEV）将占国产汽车总量的20%。BNEF的数据显示，到2040年，中国NEV类型的乘用车占比将超过50%，高于31%的全球平均比例。中国已迅速采取步骤，推动疫情期间的经济复苏,这也是中国才智的一个典范。三月份，国务院宣布将新能源汽车的购置补贴和税费减免政策延长两年。也就是说，今年政府不仅没有取消每辆车25,000元的补贴和10%购置税的减免优惠，还将两者延长至2022年。外国汽车制造商在未来五年应该收获颇丰。自1984年大众汽车集团与上汽成立第一家合资企业以来，中国已扩大了与宝马、日产和特斯拉等汽车企业的合作。这有望进一步消除乘用车和商用车市场的保有量障碍。2009年，中国超越美国成为全球最大的汽车市场。而在过去三年中，中国的汽车行业也曾在"泥沼"中挣扎。在疫情期间封锁措施的阻碍下，法国汽车制造商雷诺汽车公司（Renault SA）也退出了其在武汉——中国第四大汽车制造中心——的合资企业。据惠誉评级（Fitch Ratings）的报告显示，2020年乘用车的销量预计下滑10%，形成连续第三年的下行趋势。自2019年至2020年4月，受疫情冲击最高峰时，乘用车销量下跌36%，降至434万辆（Ren, "China's Shaken Millennials Look to State Tonic for Auto Industry's Slump"）。

中国汽车市场的复苏

如前所述，值得庆幸的是，随着新冠肺炎疫情压力的缓解，8月份中国汽车销量加速回升。根据中国乘用车协会的数据，7月至8月期间，轿车、SUV、小型货车和多功能车的销量同比增长8.8%，至173万辆。丰田汽车的报告显示，其8月份在中国的销量增长27%，而7月份电动汽车的销量增长45%，至82,500辆。2020年8月，中国的汽车销量连续第二个月增长，促使人们相信，中国这个世界最大的市场即将摆脱连续两年销量下滑的低谷。中国乘用车协会在9月底表示，8月份轿车、SUV，小型货车和多用途车的零售量同比增长了8.8%，达到173万辆。而7月份则增长了7.9%。随着中国疫情的缓解，展厅和购物中心重新开放，从市场领导者大众到电动汽车制造商特斯拉和比亚迪，对大家而言，这无疑是一个利好消息。不过，中国经济仍在复苏阶段，贸易紧张局势和更严格的环境标准均会对需求造成压力，因此，挑战依然存在。彭博资讯（Bloomberg Intelligence）称，随着中国经济逐渐好转，加之旧换新政策的推行，日本和德国品牌将能从中受益。丰田汽车宣布其8月份在中国的销量增长了27%，而大众汽车7月份的销量则增长了4.7%。中国最大的汽车制造商上汽集团（SAIC）8月份的销量增长了3.6%。近几十年来，全球汽车制造商在中国的投资额达数十亿美元，包括大众、戴姆勒、宝马和丰田在内的汽车制造商仍专注于挖掘中国市场的长期增长潜力。中国政府还增加了退税等激励措施，以振兴汽车行业。中国乘用车协会称，8月份电动汽车的销量增长了45%，达到82,500辆。特斯拉售出11,800辆汽车，在新能源汽车销量榜中排名第三，仅次于上汽和比亚迪（Bloomberg）。

中国自2009年以来便是全球最大的汽车市场，其国内的电动汽车制造商和组装商在研究、销售和营销领域投入了数十亿美元的经费，不断加大宣传力度，努力提高竞争水平，希望能在自家地盘上赶超行业领导者特斯拉。北京国际汽车展览会是中国最重要的行业贸易展览会。从该展会上展出的各种车型可以看出，在中国这个坐拥世界第三大土地面积的国家，单次充电的续航能力是必不可少的，精密的电子设备、独特的应用程序及附属配件也同样重要。而中国消费者不仅以吹毛求疵著称，对年轻的汽车品牌的忠诚度也不高。因此，汽车产品不仅要具备以上特征，其价格还要与这类消费者的消费能力相适应。根据中国政府的《中国制造2025》工业总规划，到2025年，制造商的年度电动汽车销量将达到300万辆，占国内汽车总销售的80%。为达成到2060实现碳中和的国家目标，中国政府积极鼓励消费者使用环保汽车替代内燃机，因此，有乐观分析师预测，中国的年度电动汽车销量有望达到500万（Ren, "China's EV Makers Pull out All Stops to Catch up with Industry Leader Tesla"）。

国际市场萎缩，中国汽车市场崛起

由于成熟的西方市场正在与新的经济阻力和长期结构性挑战抗衡，汽车行业担心，随着2020年的步伐迈进，中西方市场之间的分歧可能会持续。全球最大的汽车制造商大众汽车（Volkswagen）4月份的全球销量萎缩了将近一半。在新冠疫情期间，欧美国家纷纷实施封锁措施，导致需求低迷，而中国经济的重新开放则释放出复苏的信号。这些最新数据以最引人注目的方式，揭示了复苏中的中国市场正逐步与持续疲软的西方市场需求脱钩，而这种趋势在2020年初其他欧洲汽车制造商的数据中也有所显示。2020年初，中国率先采取了疫情的应对措施。

minivans, and multipurpose vehicles increased 8.8% in August from a year earlier to 1.73 million units, the China Passenger Car Association said in late September. That followed a 7.9% gain in July. Showrooms and shopping centers reopened as the coronavirus pandemic eased in China, a boon for everyone from market leader Volkswagen to electric-car manufacturers Tesla and BYD. But challenges remain, with the country's economy still recuperating and trade tensions and stricter environmental standards weighing on demand. Japanese and German brands are set to benefit from some customers trading up as the economy gradually improves, according to Bloomberg Intelligence. Toyota reported a 27% increase in China sales for August, while sales by Volkswagen rose 4.7% in July. SAIC, the biggest Chinese carmaker, posted a 3.6% gain for August. Global carmakers spent billions of US dollars expanding in China in recent decades and manufacturers including Volkswagen, Daimler, BMW, and Toyota remain focused on tapping the market's long-term growth potential. The government also has added stimulus measures such as tax rebates to help revitalize the industry. Sales of electric cars increased 45% to 82,500 units in August, the China Passenger Car Association said. Tesla sold 11,800 cars, ranking third in new-energy vehicles, behind SAIC and BYD (Bloomberg).

Manufacturers and assemblers of electric cars in China, the world's largest vehicle market since 2009, are sharpening their pitches and raising their game as they pour billions of dollars into research, sales and marketing to catch up with the industry leader Tesla in their home turf. Long driving range on a single charge is essential in a nation with the world's third-biggest land mass, as are sophisticated electronic gadgetry, unique applications, bells and whistles, according to the range of models on display at the Beijing International Automotive Exhibition, the nation's most important industry trade show. All these come with a price tag that fits comfortably in the pocket of notoriously finnicky buyers with little loyalty to brands that are usually little more than a few years old. The manufacturers are all positioning themselves to sell as many as 3 million electric cars a year, or 80% of all domestic sales by 2025, according to the Chinese government's Made in China 2025 industrial master plan. Optimistic analysts forecast the number could reach 5 million a year, buoyed by the Chinese government's generous incentives to encourage consumers to abandon internal combustion engines and replace them with environmentally friendly vehicles, part of the nation's state goal of becoming carbon neutral by 2060 (Ren, "China's EV Makers Pull out All Stops to Catch up with Industry Leader Tesla").

Chinese Auto Market Grows as Global Fails

As 2020 progressed, the auto industry feared that the split between the Chinese and western markets could endure as mature markets in the West battle fresh economic headwinds and long-term structural challenges. Volkswagen, the world's biggest car maker, saw its global sales shrink by almost half in April, but as coronavirus lockdowns in the U.S. and Europe stunted demand the reopening of China's economy offered signs of recovery. The figures are the latest and most striking example of the decoupling under way between the reviving Chinese market and persistently weak demand in the West, a trend already on display in figures from other European car makers throughout early 2020. Early 2020 found China ahead of the curve in responding to the pandemic. The virus that causes Covid-19 first emerged there and Beijing was first to reopen its economy, so its lead in resurgent auto sales should not surprise. But auto executives and analysts fear the divergence could persist even after lockdowns are lifted across the West, where markets are increasingly saturated and demand pre-pandemic was already depressed. Companies such as Volkswagen, which already made some 40% of its sales in China before the pandemic, could find themselves even more dependent on the Asian giant. In April, two thirds of the Volkswagen's global vehicle sales came from China. Volkswagen said its new car sales world-wide fell to 473,500 vehicles in April from 866,400 vehicles in 2019. The biggest declines were in South America, mainly in Brazil, where sales fell 78%, and in Western Europe, that saw a fall of 77%. North America, where the bulk of sales come from the U.S., had a 53% drop. In China, already Volkswagen's largest single market,

导致新冠肺炎的病毒最早是在中国被发现，重新开放经济的措施也是由中国政府最先实施，因此，中国市场的汽车销量率先回升，这一点也就不足为奇了。日益饱和的西方市场，其需求在疫情爆发前已经持续低迷。因此，汽车业高管和分析师担心，即使西方全部解除封锁令，中西方市场的这种分歧仍会持续。在疫情爆发之前，大众汽车（Volkswagen）等车企已经在中国实现了约40%的销售额，现在看来，这些企业可能会更加依赖这个巨大的亚洲市场。四月份，大众汽车全球销量的三分之二皆来自中国市场。大众汽车表示，其四月份的全球新车销量从2019年的866,400辆降到了473,500辆。以巴西为代表的南美市场的销量跌幅最大，达78%，而西欧市场的跌幅则为77%。在主要依靠美国市场支撑的北美地区，销量则下跌了53%。作为大众汽车最大的单一市场，中国地区的总销量为305,600辆，比2019年增长了1%。这意味着，在经历了新冠肺炎疫情爆发期间三个月的猛跌之后，中国市场终于迎来了转机。2020年4月，大众汽车在中国的销量领先全行业。中国汽车工业协会此前的报告显示，4月份新车销量增长了4.4%，实现了21个月来的首次同比正增长。此次增长主要由卡车和商用车推动。乘用车销量则下降了2.6%。这些数字暴露了行业发展轨迹的偏离。汽车制造商正从封锁中崛起，并在世界各地的工厂大肆增产。中国似乎已从最糟糕的衰退泥潭中脱身，而欧美则仍旧深陷其中。除了封锁带来的影响外，欧洲汽车制造商还面临着老龄化社会的挑战和经济复苏的结构性障碍。行业高管表示，与汽车保有量较低的中国相比，已经饱和的欧美市场的增长速度预计会更加缓慢（Boston）。

中国的汽车销量反弹或许只是昙花一现

尽管近几个月来出现的迹象令人深受鼓舞，但也有行业观察家警告，这些刺激消费和提振市场的举措在下半年可能动力不足，因而中国汽车行业仍有可能在2020年经历连续第三年下滑。从一月到三月份期间，为应对新冠肺炎疫情，经销渠道被迫关闭，从而导致销量同比下降42.4%。根据中国汽车工业协会（CAAM）的数据，4、5月份的销量同比增长分别为4.4%和14.5%，说明需求仍在回升。此次需求回升是需求积压、地方政府的补贴政策、大力度折扣（尤其是在五月份劳动节假期期间的促销活动）以及由于担心病毒传播而希望避开公共交通工具的首次购车者数量增加等多种因素综合影响的结果。对SUV的需求强势推动了5月份的销量增长，促使该行业的机构将2020年的预测跌幅从15%至25%缩小到10%至20%之间，并表示市场逐步显露出复苏的迹象。但是，由于新冠疫情爆发所造成的经济影响大大削弱了消费者的信心，且补贴和折扣在下半年开始退坡，专家们认为汽车市场的需求将再次疲软。6月通常为销售疲软的月份，需求的下滑很有可能在这个月份初现端倪。然而，在2019年，新的排放标准出台之前，需求量大增，清空了汽车制造商的库存。夏季通常不是汽车销售的旺季，因此，营收的增长还将依赖于今年下半年的新车发布计划。但是，疫情形势的不确定性可能导致这些计划受挫。许多地方政府在疫情期间开始鼓励打折促销活动。各地方政府在2020年主导了多项购车激励举措。超过20个地区出台了一系列刺激汽车消费的政策，包括鼓励以旧换新的现金奖励、购车补贴以及放宽内燃机和电动汽车的车牌管控。例如，作为汽车制造中心的广州，为新车购买者提供了1000元至8000元的现金奖励。这个位于中国南部的城市在4月份发放了17,089块车牌，比3月份增加了70%。但是，这些激励措施均有一定的限制，且多数会在年底失效，从而减少了其长期影响。大多数补贴仅限于较大的城市，这对知名度较高的汽车品牌更加有利。分析人士还指出，补贴政策还引发了"积极的"汽车融资活动，这往往能使大型汽车制造商获益。杰富瑞（Jefferies）进行的一项调查显示，在此期间，有些一线城市还提供了最长期限达60个月的零首付汽车融资产品。汽车经销商也紧随其后，提供现金返还、汽油券和免费的售后服务，以提高成交量。为推动销量增长，经销商大幅削减各大汽车品牌的价格，因而减弱了国产低端车型在中低端汽车消费群体中的竞争力。为应对这一情况，许多汽车厂商通过降低其车辆的规格和减少功能，实现大幅降价。中国汽车品牌中，吉利汽车控股有限公司（Geely Automobile Holdings Ltd.）也采取了此类措施。尽管吉利5月份的销量同比增长24.7%，总体而言，2019年5月期间，本土品牌的市场份额却从39.1%缩减至34.8%。车辆库存预警指数（Vehicle Inventory Alert Index）是衡量库存风险的指标，而在5月份，中国汽车品牌的这一指数最高，为60.7%，其次是中外合资品牌，为53.4%，进口和高档品牌则为52.3%。同时，对进口豪华车的需求也在持续增长。分析人士表示，合资和豪华汽车品牌，尤其是德国和日本品牌，2020年的市场份额有所增长，并且，在有利于中产阶级消费者的政策推动下，其市场份额有望进一步扩大。例如，主要销售中高端品牌的大众汽车（Volkswagen AG），其5月份在中国的销量同比增长了5.7%，不过其全球销量减少了34%。日本的丰田汽车公司（Toyota Motor Corp.）公布其在5月份实现了20.1%的销量增长。根据中国乘用车协会的数据，5月份豪华车的销量上升了26.6%，其市场份额从今年第一季度的12.9%增长到了14%。在这一细分市场推行折扣优惠，将有助于豪华汽车制造商在2020年继续扩大其市场份额（Kang）。

自动驾驶汽车

中国自动驾驶初创公司文远知行（WeRide）计划在广州开展全无人驾驶汽车测试。文远知行的竞争对手包括百度阿波罗（Apollo）、自动驾驶汽车初创公司AutoX、小马智行（Pony.ai ）以及网约车龙头滴滴出行（Didi Chuxing）。中国自动驾驶初创公司文远知行表示，中国这个全球最大的汽车市场正在加大对自动驾驶技术的开发

sales totaled 305,600 vehicles, up 1% from 2019, marking a turnaround after three months of steep declines in the wake of the Covid-19 outbreak. Volkswagen's sales in China outperformed the broader Industry in April 2020. The China Association of Automobile Manufacturers has previously reported that new vehicle sales rose 4.4% in April, the first year-over-year gain in 21 months, largely driven by trucks and commercial vehicles. Passenger car sales fell 2.6%. Such figures exposed a divergence in the industry's trajectory, as car makers were emerging from lockdown and ramping up production in factories around the world, China appeared to be pulling out from the worst of the slump while Europe and the U.S. were stuck in reverse. On top of the fallout from the lockdowns, European auto makers are facing an aging society and structural hurdles to recovery. Industry executives say saturated markets in Europe and the U.S. are expected to grow more slowly than China with its lower levels of car ownership (Boston).

China's auto sales rebound may be short-lived

Despite encouraging signs in recent months, China's automotive industry remains set for its third consecutive year of decline in 2020 as the boost from pent-up demand and generous incentives will likely lose steam in the second half, industry observers warned. The coronavirus pandemic prompted a 42.4% year-over-year sales slump from January through March as dealerships were shuttered and citizens remained under lockdown. Still, demand has returned with sales rising 4.4% year over year in April and 14.5% in May, according to data from the China Association of Automobile Manufacturers, or CAAM. The rebound was mainly due to a combination of pent-up demand, subsidies by local governments, heavy discounting, especially during the Labor Day holidays in May, and a rise in first-time car buyers looking to avoid public transport due to fears around the spread of the virus. Demand for SUVs drove strong May sales, prompting the industry body to improve its 2020 forecast to a decline of between 10% and 20% compared to a previous drop of 15% to 25%, saying that the market is showing signs of recovery. However, as the economic impact of the COVID-19 outbreak dampens consumer sentiment, and subsidies and discounts begin to dry up in the second half of the year, experts believe demand will soften again. The decline could begin as early as June, which is traditionally a weak sales month. However, it saw high demand in 2019 when carmakers cleared inventories ahead of the introduction of new emission standards. Summer has not typically been a high season for vehicle sales, so the market will depend on launches later in the year to help drive revenue. But those plans could be thwarted by the uncertainty from the COVID-19 situation. Many local governments began encouraging discounts during the coronavirus. Local governments in 2020 have led car purchase incentives. Over 20 regions have rolled out stimulus packages including cash incentives for trade-ins, car purchase subsidies and relaxations of license plate controls for both internal combustion engine, or ICE, and electric vehicles. For instance, auto-manufacturing hub Guangzhou offered between 1,000 yuan and 8,000 yuan in cash incentives for new car buyers. The southern Chinese city issued 17,089 license plates in April, up 70% from March. The incentives, however, are capped and many will expire before the end of the year, hence lessening their long-term impact. Most subsidies are limited to larger cities which will help brands with stronger recognition. Analysts also noted that the subsidies have triggered "aggressive" auto financing, which tends to favor larger automakers. A survey carried out by Jefferies showed that zero-down payment auto financing with longer terms of up to 60 months was offered in Tier 1 cities during the period. Car dealerships followed suit with cashback, petrol vouchers and free after-service to sweeten the deal. As dealerships slash prices of major car brands to drive sales, lower-end Chinese models will become less competitive among lower-middle-class car buyers. Among Chinese brands, Geely Automobile Holdings Ltd. is among the companies to have responded with heavy price cuts, which were managed by reducing the specifications and features of its vehicles. While Geely's sales rose 24.7% year over year in May, the market share of the local brands overall dropped to 34.8% in the January to May period from 39.1% in 2019. The Vehicle Inventory Alert Index, which measures inventory risk, in

力度，而该公司将成为中国第一家进行开放道路的全无人驾驶路测的公司。在获得由广州（广东省的省会）市地方政府颁发的、全国首个智能网联汽车远程测试许可后，文远知行将在广州市指定的路测范围内，进行开放道路的全无人驾驶测试。在测试期间，该公司仍将采用包括基于5G网络的远程操控等多重手段，保障路测全程安全可控。在异常交通状况下，如道路施工或政府临时变更交通规则时，无人驾驶汽车可以切换到远程接管模式。文远知行的自动驾驶系统凭借其技术稳定性和安全性能领先业界。该公司还表示，其未来两到三年的目标是实现完全无人驾驶技术。文远知行希望成为中国第一家为公众提供安全可靠的全无人驾驶Robotaxi服务的企业。文远知行在中国的竞争对手包括百度的Apollo，自动驾驶初创公司AutoX，Pony.ai阿波罗（Apollo）、自动驾驶汽车初创公司AutoX、小马智行（Pony.ai）网约车龙头滴滴出行（Didi Chuxing）。这些公司正在上海和长沙等城市正在进行自动驾驶路测，但这些测试车辆上配有安全驾驶人员，以应对突发情况。获得智能网联汽车远程测试许可意味着文远知行离实现完全无人驾驶服务更近了一步。许多专家表示，这将是短期内通过自动驾驶技术实现营收的唯一主流方式。向无人驾驶汽车转型的举措与中国加快自动驾驶技术发展的努力相契合。根据国家发改委的规划，到2020年，智能汽车占新增汽车的比例将达到50%。中国预计，到2025年，以智能汽车和高度自动化汽车为中心的完整生态系统将占汽车总销售额的15%（Zhang）。

赛麟（Saleen）——洛杉矶汽车传奇的中国合资企业的兴衰始末

来自南加州的史蒂夫 · 赛麟（Steve Saleen）是福特野马（Ford Mustangs）的改造者，也是赛麟野马超级跑车的设计者。2019年7月，他站在北京国家体育场的酷炫舞台，向中国市场推出新的汽车系列。在一段90分钟的精彩展示中，不仅呈现了各种高科技元素、还有身着性感服装的舞者表演，以及英国动作明星杰森 · 斯坦森（Jason Statham）的亮相。在介绍环节中，赛麟（Saleen）表示，作为汽车界的传奇人物，其与中国本土投资者的合作将为高端轿车、跑车以及专为年轻群体打造的SUV注入"超级汽车的基因"。一年后，即2020年，那个浮华的愿景却导致该公司严重地偏离了轨道。中国赞助商以欺诈和挪用公款罪名指控赛麟的中国合资公司江苏赛麟，并接管了这家公司，冻结了公司账户，数百名员工被迫失业。警察搜查了到处建起的赛麟新工厂，两名高管被拘留，赛麟上海展示厅也被法院下令查封。赛麟表示，中国股东密谋窃取其知识产权，并用其个人设计和技术在中国申请了500多项专利。中国官方媒体的报道则提供了另一个故事版本——江苏赛麟是一家濒临倒闭的创业公司，其推出的首辆汽车在刚上市时就失败退场，浪费了大量公共资金，而其掌握的技术的实际价值远低于向股东传达的价值。江苏赛麟与如皋（中国东部城市）市政府合资的故事始于美国企业家赛麟。赛麟在进入中国时，梦想着打造一间利润丰厚的全球性公司。跑车大师赛麟虽然精通发动机的调试，却不懂财务管理。由于他的决策失误、猜疑和经验经验不足，他的愿景最终化为泡影。赛麟对外国企业表示，他本人在中国的遭遇是个警世故事。在这个案件中，他指责中国商业伙伴窃取其商业机密，并声称中国的法律体系不透明，偏袒国有企业的，这助长了特朗普政府不断升级与中国"冷战"。关于赛麟公司的争议可能会在香港进行仲裁。而赛麟的商业伙伴、生于中国住在美国的王晓麟，早在几年前就被美国当局调查——他在香港就如皋政府违反合资协议提起诉讼。王晓麟在接受采访时否认了欺诈指控。无论结果如何，赛麟将他的大马力汽车带到中国的尝试终究是失败了，71岁的他也因此留下了遗憾。赛麟说："在全球范围内推广我的品牌，这似乎确实是一个让我无法拒绝的机会。事后我才意识到，哪有这么好的事。"赛麟出生于美国英格伍德市，曾在七八十年代驾驶福特野马参加赛车比赛，他也因此成为美国传奇肌肉车的改装大师。2000年，赛麟首次推出了S7车型，这是一款低矮、线条曲折有致的两人座跑车。这款车完全由赛麟自主设计和制造，凭借其2.8秒60公里加速，很快成为当时全球顶尖的超跑之一。2014年9月，美国赛麟汽车公司向美国证券交易委员会（SEC）报告，其手头仅有7261美元现金，并且拖欠供应商、银行和美国国家税务局（IRS）的欠款超过560万美元，这一举动引发了人们对该公司能否维持运营的"极度怀疑"。到2019年，赛麟公司在鸟巢国家体育馆举行了发布会。在发布会上，王晓麟告诉中国媒体他的投资金额超过800万美元。除了S1之外，王晓麟还展示了三款原始车型：新款S7、一款SUV和一款名为"迈迈"（Maimai）两人座电动汽车。赛麟将这几款新车作为进入中国的首推产品，当时中国市场竞争激烈，财大气粗的特斯拉占据了大量市场份额。作为第一款在中国发售的JSAT车型，外型娇小的迈迈让人摸不着头脑。最大功率为109马力的驱动电机，类似玩具的造型设计（一些原型的引擎盖上还带有笑脸表情符号，有些原型则带有骑自行车的卡通小孩形象），实在不太符合赛麟的硬汉汽车品牌形象。实际上，迈迈是MyCar的更新版本，MyCar是王晓麟计划在密西西比州制造的低速车型。对于这款车的外型和高达22000美元的售价，市场的反应极其冷淡。这款汽车以失败告终。据一篇官方媒体报道，发行六个月后，迈迈全国上险只有27辆。中国投资方控制了江苏赛麟董事会，并对王晓麟提起诉讼，而王晓麟在新冠疫情期间一直待在位于华盛顿的家中。王晓麟表示，自己在中国无法得到公正的审判，因此无计划返回中国（Bengali）。

May was the highest for Chinese car brands, at 60.7%, followed by domestic-international joint venture brands at 53.4%, and imported and premium brands at 52.3%. Simultaneously, there is a growing demand in imported luxury cars. Joint venture and luxury brands, especially German and Japanese ones, have grown their market share in 2020 and are expected to further expand their dominance under policies that favor middle-class buyers, analysts said. For instance, sales of Volkswagen AG, which sells upper-middle-range brands, grew 5.7% year over year in China in May even as its global sales fell 34%, while Japan's Toyota Motor Corp. reported 20.1% sales growth in May. Luxury vehicle sales grew 26.6% in May and their market share increased to 14% compared to 12.9% in the first quarter of the year, according to China Passenger Car Association data. Discounts across the segment will help the luxury carmakers to continue to gain market share in 2020 (Kang).

Self-Driving Car

Chinese self-driving start-up WeRide plans to test fully driverless cars in Guangzhou. WeRide competes with Baidu’s Apollo, self-driving start-ups AutoX, Pony.ai and ride hailing giant Didi Chuxing. Chinese self-driving start-up WeRide said it will be the first in China to test fully driverless cars on the open road as the world’s biggest auto market doubles down on efforts to develop autonomous driving technologies. After securing China’s first remote-control permit for road tests of Intelligent and Connected Vehicles (ICV) from local authorities in Guangzhou, capital of southern Guangdong province, WeRide will conduct road tests of driverless vehicles within designated open roads in the city. The company will still use several safety controls during the tests, including 5G-enabled remote control. The driverless cars can switch to remote takeover mode under unusual traffic conditions, such as road works or temporary changes to traffic rules by authorities. WeRide’s self-driving system leads the industry with its technical stability and safety performance and WeRide says they will pursue fully driverless technology in the next two to three years. WeRide hopes to become the first company to provide the public with a reliable self-driving robotaxi service in China. In China, WeRide competes with Baidu’s Apollo, self-driving start-ups AutoX, Pony.ai and ride hailing giant Didi Chuxing, who are testing autonomous cars in cities including Shanghai and Changsha, but with safety drivers on board to take control in unexpected situations. WeRide’s permit for road tests of fully driverless cars on the open road takes it one step closer to the realization of fully driverless mobility services, which many experts say will be the only mainstream way, in the near term, of making money from self-driving technologies. The move towards self-driving cars is in line with China’s push to accelerate the development of autonomous technologies. China wants smart vehicles to account for half of all new cars sold at home by 2020, according to a road map from the country’s top economic planner. By 2025, the country expects a fully-formed ecosystem around smart vehicles and highly automated cars to take up 15 per cent of sales (Zhang).

The Fall of Saleen, How an LA Auto Legend’s China Venture Crashed

In July 2019, Steve Saleen, the Southern California designer of souped-up Ford Mustangs and eponymous supercars, walked onto a strobe-lighted stage at Beijing National Stadium to launch a new line of vehicles for the Chinese market. During a 90-minute spectacle featuring techno beats, mesh-clad dancers and an appearance by the British action star Jason Statham, Saleen introduced himself as an automotive legend whose partnership with Chinese state investors would inject “supercar DNA” into high-end sedans, coupes and an SUV aimed at younger drivers. One year later, in 2020, that flashy vision has veered disastrously off track. Saleen’s Chinese backers have accused his business partner of fraud and embezzlement and taken over the company, freezing its accounts and forcing hundreds of employees out of work. Police raided the sprawling new factory emblazoned with Saleen’s name. Two senior executives were detained, and a court order sealed its Shanghai showroom. Saleen alleges the Chinese shareholders planned to steal his intellectual property and have filed for more than 500 Chinese patents for his designs

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and technology. Stories in China's government-owned media offer a different account — one of a flailing startup that squandered public funds on the launch while its first vehicle flopped, and whose technology was worth far less than the state shareholders had been led to believe. The story of Saleen's joint venture with the government of the eastern city of Rugao began with yet another American entrepreneur wading into China with dreams of building a lucrative global business. That promise foundered on miscalculations, suspicions and the inexperience of a sports car guru who knew more about engine tuning than financial maneuverings. Saleen advises foreign businesses that he's become a cautionary tale about dealing with China, where the alleged theft of foreign companies' trade secrets — and an opaque legal system that favors China's state-backed companies — has offered grist for the Trump administration's deepening cold war with Beijing. The dispute could go to arbitration in Hong Kong, where Saleen's business partner — Chinese-born U.S. resident Charles Xiaolin Wang, who was investigated years earlier by U.S. authorities — has sued the Rugao government for breach of the joint venture agreement. In an interview, Wang denied the fraud allegations. Whatever the outcome, Saleen's bid to bring his high-powered cars to China has crashed, leaving the 71-year-old filled with regret. "When it came to taking my brand on a global basis, it really seemed to offer me an opportunity that I could not refuse," Saleen said. "In hindsight I realize the deal was too good to be true." The Inglewood-born Saleen, who raced Ford Mustangs competitively in the 1970s and 1980s, made his name as a master modifier of the iconic American muscle car. In 2000 he debuted the S7 — a low, sinuous two-seater with wing-like doors, designed and built from the ground up — which went from 0 to 60 in 2.8 seconds and soon became one of the world's premier supercars. In September 2014, Saleen Automotive reported to the SEC that it had just $7,261 cash on hand and owed more than $5.6 million to suppliers, banks, and the IRS, raising "substantial doubt" that it could stay afloat. By 2019, they saw the launch at the national stadium, the former Olympic venue dubbed the "Bird's Nest," on which Wang told Chinese media he spent more than $8 million. Besides the S1, Wang showed off three prototypes: a new S7, an SUV and a battery-powered two-seater called the Maimai, Saleen's entry into an overcrowded Chinese electric vehicle market dominated by the deep-pocketed Tesla. The first JSAT model to go on sale in China, the petite Maimai left commentators scratching their heads. Its 109-horsepower motor and toylike design — some prototypes featured happy-face emojis on the hood, others a cartoon child on a bike — hardly matched Saleen's brawny brand. In fact, the Maimai was an updated version of the MyCar, the low-speed vehicle that Wang had planned to build in Mississippi. Reaction to its shape, and hefty $22,000 price tag, was withering. The car was a failure. Six months after its release only 27 Maimais were registered in the entire country, according to one state media report. The Chinese investors seized control of the board and have filed suit against Wang, who has been at home in the Washington area during the COVID-19 pandemic. He said he has no plans to return to China, believing he won't get a fair trial (Bengali).

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2.4 Machinery and Semiconductors

Key Take-Aways

- The worldwide Garden and Orchard Type Tractors Machinery market size is projected to reach US$3,956.5 million by 2026, from USD 3,861.8 million in 2020, at a CAGR of 2.3% during 2020-2026.

- Construction equipment sales in China increased 14% in 2020. The previous expectation was for sales to fall 8% due to the impact of Covid-19, but stimulus measures in the wake of the pandemic reversed this trend.

- Chinese companies are rushing to deploy robots and automation technology as the coronavirus spreads throughout the nation. China has become the world's largest market for industrial robotics and the fastest-growing market worldwide.

Covid-19 Repercussions

COVID-19 can affect the global economy in three main ways: by directly affecting production and demand, by creating supply chain and market disruption, and by its financial impact on firms and financial markets, all of which are apparently prevented with enough government money. The recovery in the equipment market is due to investment countermeasures against the impacts of Covid-19 on the economy as a whole. The central government has adopted policies to increase investment, including a great increase in the issuing of local special bonds. In the first two months of the year, many construction projects were suspended. However, March saw them restart along with numerous new schemes. China has recovered quicker from the pandemic than the majority of other countries and in March excavator sales by Chinese OEMs reached record levels. The construction equipment volumes expected in 2020 would take the Chinese market to its highest levels since 2010 and 2011. This was caused by huge national stimulus spending by the Chinese Government in the wake of the global financial crisis that took sales to a high of more than 520,000 units in 2011. That high was followed by a deep and painful five-year recession for the Chinese industry. Many are predicting a downturn for 2021-2023, but it is not expected to be as steep or as deep as seen from 2012-2016 (Brown).

Background

China's machinery industry is one of the leading pillars of the country's economy. Its main business revenue increased about 6.05% in 2018, reaching US$3.18 trillion in value. China's manufacturing industry recovered in 2018 with greater than expected trade exports, indicating a stable development of the world's second-largest economy. According to the data from China Customs, exports accounted for US$429 billion and imports were approximately US$202 billion from January to October in 2018, an increase of 12.1% and 19.1% respectively from 2017. However, problems such as rising costs and decreasing demand still exist, putting pressure on the Chinese government to ensure the industry's stability. In the next few years, the Chinese government aims to control capital outflow to foreign industries such as real estate, sports, and entertainment while focusing on overseas investment for high tech manufacturing technology industries. The low-end machinery market is dominated by SMEs, mainly due to their cost-cutting structures, price-based competition, and ability to crowd out larger enterprises to some extent. Chinese machinery SMEs is mainly clustered in and around Shanghai, Shandong Province, Jiangsu Province, and Zhejiang Province. The high-end machinery market is largely composed of state-owned enterprises and international market players. These companies can differentiate their

2.4 机械和半导体

关键要点

· 预计到2026年，全球园艺拖拉机市场的规模将由2020年的38.618亿美元增至39.565亿美元，2020-2026年间的年均复合增长率将达2.3%。

· 2020年，中国市场建筑工程机械的销量增长了14%。根据此前预测，受新冠疫情的影响，该指标将会下降8%，但国家在新冠危机之际采取的刺激措施逆转了这一下降势头。

· 随着新冠疫情在全国蔓延，中国企业争相推动机器人和自动化技术的应用。中国已成为全球工业机器人产业最大且增长最快的市场。

新冠疫情所带来的影响

新冠疫情对全球经济的影响主要体现在以下三个方面：1. 直接影响生产和需求，2. 导致供应链和市场波动，3. 对企业和金融市场产生财务方面的影响。不过，在政府充足的财政支持下，以上影响显然得到了有效的预防。为抗击新冠疫情对整体经济的影响，政府采取了多项投资措施，机械设备市场也得以恢复。中央政府采取了增加投资的政策，包括大量增发地方专项债券。今年前两个月，许多建筑施工项目都处于停工状态。不过，在三月份，随着多项政府方案政策的公布，这些停摆的项目也陆续复工。面对新冠疫情带来的冲击，中国的恢复速度比全球其他国家更快。今年三月，中资代工商的挖掘机销量达到了破纪录的水平。预计2020年中国市场建筑工程机械设备的销量将达历史最高水平，此前的两个高点分别发生在2010年和2011年。2011年，为应对全球金融危机，中国政府大举投资刺激市场，建筑工程机械设备的销量飙升至52万台以上。经过这个高点后，中国建筑工程机械设备行业进入了长达五年的沉郁痛苦的衰退期。许多人认为，2021-2023年该产业将再次出现下行，但情况不会像2012-2016年那样严峻和沉重。(Brown)

背景

机械产业是中国经济的重要支柱之一。2018年，该产业主营业务营收增长了约6.05%，总值达3.18万亿美元。2018年，贸易出口情况超出预期，中国制造业得以恢复元气，表明中国这个全球第二大经济体正处于稳定发展阶段。中国海关数据显示，2018年1-10月出口额为4290亿美元，进口额约为2020亿美元，较2017年分别增长了12.1%和19.1%。然而，成本上涨、需求下降等问题仍然存在，中国政府在维护该产业稳定性方面仍承受压力。接下来的数年内，中国政府将在控制资本外流进入国外地产、体育、娱乐等行业的同时，着重针对高科技制造技术行业进行海外投资。中小企业在低端机械市场占据着主导地位，主要是因为中小企业有着易于削减成本的企业结构、以价格为基础的竞争策略、以及在一定程度上超越较大规模企业的实力。中国机械行业的中小企业主要集中在上海及其周边、山东省、江苏省和浙江省。高端机械市场则由国企和跨国企业占据主导地位。这类企业持有大量知识产权资产，如专利、许可、商标等，并有全球闻名的品牌作为支撑，其提供差异化产品的能力，是地方性企业和较小规模的竞争者难以企及的。据中国模具工业协会发布的数据显示，2013年，中国机床行业的企业数量为2023家，其中959家属于国有企业，占47.4%，雇佣人数超50万人。《中国制造2025》是中国政府提出的一项刺激政策，旨在实现机械行业升级，制造拥有自主创新能力、自有知识产权的重要机械产品，满足国家在能源、交通运输、新材料和农业机械装备领域的需求。此外，中国政府还提出另一个工作重点，即最大程度利用外来资本、管理专长和先进技术，发展高科技密集型制造业。中国致力于发展制造业，许多因创新性强、产品优质而闻名的美国企业获得了前所未有的绝佳机会，得以将其优质耐用的工业产品及零部件出口销售给中国制造商，尤其是来自模具、机器人、数控机床领域的中国制造商。但是，美国出口商也将面临知识产权定价和保护方面的挑战。(PSF)

市场趋势

中美贸易纠纷局势不断变化，对全球投资者的信心造成了持续的不利影响。但是，随着中美最高领导人签署第一阶段贸易协议和中美关税战停火，全球对于长期承压的制造业和消费行业活动又变得乐观起来。2019

products beyond the reach and capabilities of local, smaller competitors and therefore possess significant intellectual property assets in terms of patents, licenses, and trademarks while leveraging their globally recognized brands. According to data from the China Die Mold Industry Association, there were 2,023 enterprises in the machine tools industry in China in 2013. 959 belonged to State owned enterprises, accounting for 47.4% of the industry and employing over 500,000 people. Made in China 2025 is a Chinese government initiative to upgrade China's machinery industry to be capable of manufacturing major machine goods with their own innovation and intellectual property rights, as well as meeting the country's needs in the energy, transportation, new material and agriculture equipment sectors. Another top priority is to adopt high-tech intensive manufacturing by making best use of foreign capital, management expertise, and advanced technology. As China strives to improve the country's manufacturing industry, US firms, known for being innovative and producing high quality products, will be offered an unprecedented opportunity to export their high quality and endurable industrial products and components/parts to Chinese manufacturers in different sectors: die and mold, robotics, and CNC machinery sectors in particular. However, US exporters will face challenges in pricing and protecting their intellectual property rights (PSF).

Market Trends

The ever-changing situation of the US-China trade dispute continues to disrupt global investor confidence. However, with the initial agreement between the US and China's top leaders, the tariff war has ceased, and the world is optimistic that the long-repressed manufacturing and consumer activities can be restored. In 2019, Taiwan's machine tool exports decreased by nearly 20%, but China's orders for Taiwan's machine tools have bottomed out. Although the sales of bulk machine tools have fallen by nearly 20%, demand for some products such as lathes and grinders has gradually emerged. China's economic growth has slowed year by year, but supply-side reforms continue to advance, and under the catalysis of the US-China trade dispute, there is still the possibility of accelerated progress in 2020; Southeast Asian emerging markets are the beneficiaries of the US-China trade war, and foreign investment. Export trade has increased compared with previous years, and with the support of the supply chain and policies, the prospects are still promising, bringing new opportunities for processing equipment. At the same time, they should integrate the industrial Internet of Things (IIoT) technology to develop the machine networking functions of client factories to provide end-users with overall solutions. As manufacturers in China and major manufacturing countries tend to be conservative in equipment investment at this stage, manufacturers are only willing to install new equipment upgrades on familiar old machines. On the one hand, the networking function of the machine can lower the manufacturer's psychological threshold. It provides new options for manufacturers who intend to introduce industrial Internet of Things (IIoT) technology. However, from the second half of 2018 to 2019, the trade dispute between the United States and China gradually intensified and has even escalated to the dispute between the two countries' technological leadership. Increases in tariffs and transportation costs have affected the investment confidence of companies in most countries, and consumption momentum has become conservative (especially the automobile market), Taiwan's machinery orders and machine tool exports have also been affected. It is estimated that the output value of Taiwan's machine tools in 2019 will decrease by more than 15% compared with the same period of the previous year. The report of the United Nations Conference on Trade and Development pointed out that the world economy is gradually developing against globalization. From the perspective of global foreign direct investment (FDI), its scale has been reduced for three consecutive years. In 2019, the global foreign direct investment flow decreased by 13% to 130 million US dollars, which is also the lowest level since the global financial crisis, which also highlights the lack of international investment in the past decade. However, the main reason for this is the rapid decline in investment flows to developed countries, especially in Europe. FDI flows to the United States have also declined. Although global FDI continues to shrink, the flow of FDI to developing countries is growing in reverse, especially in the African market (Weebly).

年，台湾机床出口量下降了近20%，但来自中国大陆的订单呈现了爆发式增长。虽然大型机床的销量下滑了近20%，但对于车床、磨床等产品的需求逐渐兴起。中国经济增长正逐年放缓，但供给侧改革仍在持续推进，而且，在中美贸易纠纷的催化下，2020年中国仍有实现加速发展的可能性。东南亚新兴市场成为了中美贸易战和对外投资的受益者。相较于过去数年，出口贸易活动有所增长，在供应链发展和相关政策的支持下，行业前景仍然明朗，为加工设备领域带来了新的契机。同时，制造业企业还致力于整合行业物联网技术，开发机械联网功能，为终端用户提供整体解决方案。鉴于中国制造商和全球其他制造业强国现阶段在设备投资方面的保守倾向，制造商仅愿意对旧机械设备进行更新升级。另一方面，机械联网功能可以降低制造商在物理层面的门槛。这种技术为有意引入物联网技术的制造商提供了新的选择。但是，2018年下半年至2019年期间，中美贸易纠纷逐渐加深，甚至升级为两国技术领导地位方面的纠纷。加征关税、运输成本上升影响到了大部分国家的企业投资信心，消费势头也变得更为保守（汽车市场尤其显著），台湾机床订单和机床出口活动也受到影响。据估计，2019年台湾机床产量将较去年同期减少逾15%。联合国贸易和发展会议发布的报告指出，全球经济正逐渐向逆全球化的方向发展。全球外国直接投资活动的规模已连续三年缩减。2019年，全球直接投资活动产生的资金流缩减了13%，达1.3亿美元，这也是自全球金融危机爆发以来的历史最低水平，表明过去十年内国际投资活动有所减少。造成这一现象的主要原因在于对发达国家（尤其是欧洲）投资的急剧缩减。在美国，外国直接投资产生的资金流也有所减少。虽然全球外国直接投资活动仍在衰退，但对于发展中国家（尤其是非洲市场）来说，外国直接投资产生的资金流则呈现了逆势增长。（Weebly）

建筑机械

过去十年间，中国建筑机械市场的需求飞速增长。未来十年，该市场的供给和需求都会继续增长。过去二十年，在工业产值、进出口贸易、消费活动和资本投资不断增长的刺激下，中国经济一直保持高速增长。（BW, Construction）

2020年，中国建筑工程机械的销量增长了14%。根据此前的预测，受新冠疫情的影响，该指标将会下降8%，但国家在新冠危机之际采取的刺激措施逆转了这一下降势头。2020年，中国市场土方机械、起重机、道路机械的总销量为418,180台，2019年销量为368,115台。据此前预测，2019年将是现行行业发展周期的高点，2020年，建筑机械的销量将跌至3.377万台。政府的激励政策是推动建筑机械销量增长的主要原因，同时，市场存在大量较为陈旧的机械，使用寿命已近终点，需要更换。此外，愈发严格的环保规定也推动了建筑机械市场的繁荣发展。（Brown）

随着全国新冠疫情逐步缓解，中央和地方政府相关部门也推出了一系列政策、法规和体系来支持产业发展，因此，今年下半年，大部分建筑机械产业链上的企业将能实现稳定发展乃至增长。某些细分领域（如挖掘机）的增长势头将会尤其迅猛繁荣。由市场观察可知，工业产值维持增势的部分原因在于财政开支和基础设施建设投资有所提升。2021年，基础设施投资的增长率有望进一步提升，这意味着挖掘机及其他建筑机械领域将迎来更多发展机遇。国内代工商近年来实现了引人瞩目的增长。根据中国工程机械协会统计，2019年，挖掘机市场上国内品牌的市场份额占比为60%；2020年5月，三一重工及徐工集团等企业创下了销售记录，名列市场第一和第二，市场份额占比分别为24%和17%。今年四月起，在国内需求恢复和进口零部件成本增长的市场环境下，许多非公路机械代工商宣布提价，涨价区间为5%-10%。然而，即使在价格竞争策略变化的情况下，出于市场购买力强劲、疫情期间价格谈判有空间和销售压力增大等原因，许多制造商仍继续为客户提供打折优惠。经销商则继续提高价格；压价竞争导致市场扭曲，不利于行业的可持续发展。尽管如此，在经济增长放缓的大背景下，要坚持可持续发展的理念也颇具挑战性。以前，西方机械品牌在市场上占据绝对优势地位，但是，现在它们也在紧盯国内品牌的动向，以制定相应的市场发展战略。为控制新冠疫情，各国纷纷实施了封锁措施，导致西方供应商无法供货，国内出现了零部件缺口，严重影响了国内代工商的生产计划，促进了国内采购活动。为了填补这一缺口，更多国内零部件制造商开始积极进驻供应链，尝试通过提供可替代产品赢取业务机会。这种情况似乎转而影响到了业内投资活动。截至2020年6月，逾2800家新企业进驻了挖掘机行业，其中851家在4月份才开始入行，与三月相比，业内企业的数量增长了26.3%。徐工集团等国有代工商将实施股权结构改革，以混合所有制结构，吸引更多来自私募乃至外商的投资。徐工集团的混改计划拟于2020年6月底完成，募资金额约为157亿元人民币。混改及募资完成后，徐工集团将从市场上汲取具有竞争力的新资源，而且，引入战略投资者也将有益于实现业务的可持续增长。投资者可以带来品牌资产、技术、供应链、数字化专长等资源，助力徐工集团实施扩张。徐工集团目前的国企架构限制了其进一步升级和优化的空间。我们建议，跨国企业主动追踪和理解国内龙头代工商的细微改革动向，才能更好地为现在和将来的竞争做准备。（DF）

农业机械

根据预测，2020年至2025年期间，中国农业机械市场的年均复合增长率将达5.8%。中国是全球最大的

Construction Machinery

China's demand for Construction Equipment has grown at a fast pace in the past decade. In the next decade, both production and demand will continue to grow. The Chinese economy maintains a high-speed growth which has been stimulated by the consecutive increases of industrial output, import and export, consumer consumption and capital investment for over two decades (BW, Construction).

Construction equipment sales in China increased 14% in 2020. The previous expectation was for sales to fall 8% due to the impact of Covid-19, but stimulus measures in the wake of the pandemic are now expected to reverse this trend. Sales of earthmoving, lifting and road building equipment in China total around 418,180 units, compared to 368,115 in 2019. It was previously expected that 2019 would be the high point in the current cycle and that sales would fall to 337,700 units in 2020. Government stimulus was the primary driving force, but a large number of older machines were nearing the end of their lives and needed to be replaced. This demand, along with stricter environmental regulations, are drivers behind the recent market boom (Brown).

With the gradual improvement of the nationwide COVID-19 pandemic coupled with the implementation of a series of policies, regulations and systems issued by the relevant departments of the state and local governments, the majority of enterprises in the construction machinery industry chain saw business stability and growth in the second half of this year. The growth for specific segments (e.g., excavators) will be more robust than others. From observations in the market, the momentum of industrial output has sustained in part due to an increase in fiscal expenditures and investments tilted to the infrastructure construction. The growth rate of infrastructure investment is expected to accelerate, signaling opportunities in 2021 for excavators and other construction machinery. Chinese domestic OEMs enjoyed remarkable growth in recent years. According to CCMA, in 2019, domestic brands have 60% market share in the excavator market; through May 2020, companies like Sany and XCMG experienced top sales, ranking them first and the second with market shares of 24% and 17% respectively. Many off-highway equipment OEMs announced price increases from April amidst rebounding domestic demand and the rising cost of imported components; an increase of 5-10%. However, due to the strong buying power and price negotiation during the pandemic, as well as increase sales pressure, many manufacturers have continued to offer preferential discounts to customers despite competitive pricing policy changes. Dealers continue to implement pricing increases; low-price competition leads to a distortion and prevents a sustainable development of the industry. Nevertheless, it's challenging to carry-through with this philosophy due to the economic slowdown. Western brands used to have absolute advantage in this segment, however, are currently tracking the movements of domestic brands in order to develop market strategies accordingly. Shortage of components provided by western suppliers during the COVID-19 lock-down has significantly impacted the production plan of OEMs in China and accelerated local sourcing. To fill the gap, more domestic parts suppliers are playing an active role in the supply chain, attempting to offer product substitutes to win business. In turn, this appears to have impacted investment within the industry; as of June 2020, more than 2,800 new companies entered the excavator industry, of which 851 were new entrants in April, an increase of 26.3% from March. Other SOE OEMs, like XCMG, will reform its shareholder structure by attracting more capital from private sector and possibly foreign investment in a mixed ownership. The plan is to raise about CNY 15.7 billion in late June 2020. Should this occur, XCMG will obtain new and competitive resources from the market, and strategic investors will benefit from sustainable business growth. These investors with brand assets, technology, supply chain, and digitalization expertise will enhance the expansion of XCMG; currently the framework of state-owned enterprises restricts the company from further upgrading and optimizing. International players in the market are recommended to track and understand the nuances of those reforms incurring in domestic OEM giants to be well prepared for current and future competition (DF).

农机制造国之一，也是全球最大的农机市场。业内企业大多集中在山东省、河南省、江苏省、辽宁省和浙江省。国内市场上最畅销的农机产品类型为大马力、自动化程度高的大型拖拉机和收获机。据估计，在预测期内，中国农机市场将会实现显著增长。前述预测的调研范围包括收获机、收割粉碎机、灌溉机等所有田野农机类型。从简单的供需原理来考虑，农村劳动力成本问题与农业人口占比问题有直接联系，这也影响着中国农机市场。中国等发展中国家的平均农业人口占比更大。然而，随着时间推移，每年都有大量农业人口进城务工，中国农业人口占比已经有所下降。农村劳动力日益缩减导致其成本不断上升。这一因素也是导致预测期内农机需求增长的原因。近2500家农机制造商集中分布于山东省、河南省、江苏省、辽宁省和浙江省。虽然农机产业正经历技术迭代，但也面临人才匮乏和必要基础设施缺乏的问题，没有能力开发与外国产品相媲美的精密农机产品。这是限制农机市场发展的主要因素之一。正因如此，中国才严重依赖高科技农机产品的进口。中国农机产业一直面临着诸多挑战，比如，国家为了促进农业机械化，实施了为期一年的补贴政策，导致市场上出现了大量劣质拖拉机，从而造成了产能过剩和利润率低的问题。由于粮食价格下跌、机械投入的回报下降，农民们采购农机设备的意愿也越来越弱。虽然政府对每台机械设备的补贴有所减少，但出于增强生产力和收益的期望，其对大型拖拉机的优惠倾向更加明显。在华北地区，由于农场面积一般非常广阔，大马力拖拉机的使用规模也较大，而华南地区的农场面积则相当小。大型农用拖拉机非常昂贵，因此许多农民会将收割环节外包给第三方承包商。这些承包商通常舍得对设备进行投资，并看重投资回报。在中国农机市场，为赢得期赢取更多市场份额，企业不仅在产品质量和营销力度层面竞争，还非常注重战略发展。农机市场领军企业采取的主要战略包括发布新产品、建立合作关系和实施收购。国内农机行业存在大量非特种机械制造商，产品多为低技术含量机械。排名前五的农机制造商的市场份额占比不及25%。中国主要的农机企业包括一拖股份、一拖集团和常州东风农机集团。(Modor)

2019年，全国农机企业的总营收为2464.67亿元人民币，同比减少4.43%，平均每家企业的年营收超过2000万元人民币。全国农机产业的利润为103.39亿元人民币，同比减少0.25%。2019年，中国市场大型拖拉机产量为4万台，与2018年相差无几；中小型拖拉机产量为23.8万台，同比增长了17.2%；小型拖拉机的产量为34万台，同比下降了3.7%；收获机的产量预计为25.5万台，同比下降11.2%。由于国产农机的技术含量大幅提升以及对进口产品的依赖减少，中国在农机出口方面占据了极大的优势。2019年，中国农机产品进口量为10945台，同比减少9.1%。同时，受行业萧条、国家第五阶段排污标准的实施和中美贸易战的影响，2019年中国农机出口量同比下降17.2%。至2018年底，中国农机总动力达10.037亿千瓦时，同比增长了1.6%。2020年，农作物综合机械化率为69.1%，同比增长了1.87%；其中，小麦的整体机械化率最高，为95.89%，大米、玉米和大豆产业的综合机械化率均高于80%。在优惠政策的扶持下，中国农作物综合机械化率正逐年提升，预计至2026年将达77%。目前，中国植物保护无人机使用率远低于世界平均水平。2018年国务院发布了《关于加快推进农业机械化和农机装备产业转型升级的指导意见》，拟“积极发展农用航空，规范和促进植保无人机推广应用。”迄今为止，湖北、江西、山东、湖南、安徽、广东及其它省市已开始推行植保无人机补贴，每台植保无人机可获逾1万元人民币的补贴。在中国农机市场，挑战往往伴随着机遇。市场对于大马力拖拉机这类大型、高端、智能化农机的需求呈现了快速增长，原因包括：合作社和农场等集体用户的数量持续增长；年年开展的农垦活动；国家颁布有关翻耕、深耕、土地流转的优惠政策并对农机采购提供补贴。在更为严格的环保要求下，非公路机械的排放标准必将提高，行业准入的技术门槛也将被提高到前所未有的水平。(Cision)

机器人

在有关中国的崛起和美国的“再工业化”的争议中，许多人认为中国会威胁到美国在工业自动化方面的领导地位。这种观点完全错误，且不符合实际。日本和欧洲在先进产业领域的地位早已超越美国，如今全球工业自动化机械的顶级供应商也正是这两大经济体，而不是中国。工业自动化产业的领导地位包含多个层面，其中，工业机器人的发展程度可以同时表明一个国家制造业的成熟度和发展规模。中国还未成为工业机器人的主要生产国，需要依靠大量进口以满足对此类产品的需求。美国也大量进口工业机器人，但进口量远不及中国。自2013年起，中国一直是全球最大的工业机器人市场，至今，其市场规模已经增长四倍。2018年，中国工业机器人安装量占全球装机总量的36%，其次为日本（13%）、美国（10%）、韩国（9%）和德国（6%）。国际机器人联合会最新发布的完整最终版数据为2018年的数据。纳入统计的工业机器人包括用于搬运、焊接、装配、点胶机、清洁室、加工等被广泛认可为工业机器人的机械设备。不包括精密齿轮、传感器、控制元件或软件等零部件。根据地区分类，2018年工业机器人安装量占比数据为：亚太地区67%，欧洲18%，美国13%，其他地区2%。根据行业分类，工业机器人应用的行业分布数据为：汽车行业30%，电子行业25%，金属机械行业10%，塑料及化学品行业5%，食品饮料行业3%，其他行业19%。中国政府积极支持针对先进技术的收购，但却遭到欧美国家的抵制。隶属中国科学院的沈阳新松机器人自动化股份有限公司是国内顶尖的工业机器人制造商。目前为止，收购先进技术的计划已有成效。虽然美国以“脱钩”的名义疏远中国，

Farm Equipment

The China Agricultural Machinery Market is projected to grow at a CAGR of 5.8% during the forecast period (2020 - 2025). China is one of the largest manufacturers of farming equipment and the largest market for agricultural machinery, worldwide. Most of the agricultural machinery industries are mainly concentrated in Shandong, Henan, Jiangsu, Liaoning, and Zhejiang provinces and the bestselling types of agriculture machinery in the country include large tractors and harvesting machinery products with high horsepower and high degrees of automation. China's agricultural machinery market is estimated to grow remarkably during the forecast period. All types of agricultural machinery used in fields, including harvesting machinery, haying and forage machinery, and irrigation machinery and others have been considered with the research scope. The cost of farm labor has a direct relationship with the percentage of the total population of a country employed in agriculture, considering simple demand-supply economics, thereby affecting the china agricultural machinery market. On average, developing economies such as China have larger percentages of the population dependent on agriculture. However, the percentages have decreased over time as a large number of people are migrating to the urban area every year. Due to decreasing agricultural labor, the prices of farm labor are rising. Hence, it is expected to increase the demand for agricultural machinery during the forecast period. Nearly 2,500 agricultural equipment manufacturers are concentrated only in the provinces of Shandong, Henan, Jiangsu, Liaoning, and Zhejiang. Although the agricultural machinery industry is evolving technically, lack of human capital, the necessary infrastructure to develop sophisticated farming machines, which are able to compete with foreign products is some of the major factors restraining the growth of the market. Due to this, China relies heavily on foreign imports for high-tech farming machinery. China’s agricultural machinery had been facing several challenges, like overcapacity and low profit-margins, after the provision of a year-long subsidy scheme for promoting mechanization in the farming, which led to the mass production of low-quality tractors. Farmers’ have become unfavorable toward purchasing equipment due to the decline in grain prices and lower return on equipment investment. Although the subsidies per machine have declined, the system is now more inclined toward large tractors, as the government seeks to enhance productivity and the yields. In northern China, high horsepower tractors are used on a large scale, as the farm sizes are generally large, unlike in southern China, where farm sizes are quite small. Large farm tractors are expensive, so many farmers outsource their cropping work to third-party contractors, who value the performance and profitability of their investment. In the Chinese agricultural machinery market, companies are not only competing based on equipment quality and promotion but are also focused on strategic moves, in order to hold larger market shares. New product launches, partnerships, and acquisitions are the major strategies adopted by the leading companies in the market studied. Mostly the agricultural equipment industry in the country is dominated by a large number of unspecialized manufacturers producing low technology machinery. The top five domestic manufacturers account for less than 25% of the market. Major Chinese agricultural equipment companies include First Tractor, the YTO Group, and Changzhou Dongfeng Agricultural Equipment (Modor).

In 2019, the total revenue of agricultural machinery enterprises (each with annual revenue over 20 million RMB) nationwide was 246.467 billion RMB, a decrease of 4.43% from the previous year, and the industry's profits were 10.339 billion RMB, down 0.25% from a year ago. In 2019, China produced 40,000 large tractors on a par with that in 2018; 238,000 medium-sized tractors were produced with a year-on-year increase of 17.2%; the output of small tractors jumped 3.7% year-on-year to 340,000 units; the harvester output was estimated at 255,000 units, a fall of 11.2% on an annualized basis. China is superior in exporting agricultural machinery amid less dependence on imported products on account of ever better technologies about China-made agricultural machinery. In 2019, China imported 10,945 agricultural machines and fell 9.1% from the previous year. At the same time, China's agricultural machinery exports in 2019 plummeted by 17.2% year-on-year due to the depressed industry, the upgrading of National Emission Standards IV, and the Sino-US trade war. By the end of 2018, the

但中国工业机器人产业还可以从欧洲和日本的企业处获得帮助。(Foster)

中国现有逾800家工业机器人制造商，包括新松机器人和深圳大疆创新科技有限公司等龙头企业。工业机器人的发展是《中国制造2025》宏伟计划的一部分，有助于实现国家制造业技术升级。至2021年，中国的工业机器人出货量占全球的比重将从2019年的39%上升至45%。过去，中国在机器人应用领域落后于其他国家，制造业机器人密度（每1万名工人中机器人的数量）为97台，约为美国的一半水平，为韩国的1/7水平。中国的自动化程度和机器人使用量以呈现不断上升的趋势，新冠疫情的爆发显然让这一趋势的发展更加紧迫。中国的用工成本已经不再低廉，在华美资企业也受到了新冠疫情的重创。涉及大规模装配的行业，如汽车制造业和电子元件制造业，受到的影响最为深刻。(Fannin)

根据“中国制造2025”这一十年计划，中国政府希望实现由制造大国向世界制造强国的转型。“中国制造2025”计划涵盖了进一步增强中国机器人供应商实力、提升国内外市场份额占比等内容。中国希望进一步提升自动化水平，至2020年成为世界十大自动化国家之一。届时，中国的机器人（每一万名员工中机器人的数量）密度将达150台。目前，就机器人密度而言，韩国的机器人密度为531台，领先于亚洲其它地区。美洲地区，美国的机器人密度最高，为176台；欧洲地区，德国的机器人密度最高，为301台。电子元件行业成为中国市场机器人密度近期增长的主要推动力。2016年，工业机器人的销量增长了75%，达到近3万台。约三分之一的工业机器人来自国内供应商，国内产品的销量提升了两倍有余，增幅近120%。对于跨国供应商而言，电器电子领域机器人的销量也呈现了显著增长（增幅为59%）。市场需求引人瞩目，且未来还将进一步增长。各大电子设备代工商已在着手开展自动化生产。半导体和芯片行业早已大力投资发展自动化。对于电动汽车和油电混合汽车的市场需求正不断增长，为了满足这一市场需求，需要配备大型电池生产设施。(IFR)。

中国在制造业方面有其优势，而美国企业可能会将其在华制造业产能转移到越南、马来西亚和墨西哥等国，随着时间推移，如果最终出现中美产业链割裂的情况，美国甚至还会考虑将部分制造业产能转移回国内。如果美国将制造业产能转回国内的目的在于创造国内就业机会，那么中国大力发展机器人产业的举措则说明，美国也将在制造业中大量应用人工智能机器人，以保持竞争力。这意味着对制造业而言，人工岗位将会更少，而机器人的岗位则会更多。多年来，中国一直致力于实现建成世界强国的政治目标，机器人制造产业是实现这一政治目标的重要阵地之一，我们应会很快看到中国在机器人制造产业链的崛起。也许有一天，中国不会再像以前一样供应许多日常用品，美国需要为此做好准备，促进人工智能机器人研究的发展。(Bajarin)

半导体

中国正加大对半导体产业的投资力度。未来5-7年内，中国半导体产业新工厂、新产能的规模将超过1600亿美元，至2025年，中国半导体装备开支将提升至400亿美元以上，其中60%的投资将流向存储芯片工厂。国内半导体装备企业将拓展产品品类，产业未来五年内将出现重要增长契机。国内无厂半导体产业的发展已经取得一定成果，但是某些品类仍然依赖于成品进口。中国政府鼓励全球半导体装备制造商在华建厂，让其既能为中国市场供货，又能以中国为出口基地实现全球供货，以这种方式降低对于一些半导体产品的进口依赖程度。近年来，三星、海力士、英特尔纷纷在华建立存储芯片制造厂，使中国市场存储芯片出口量的年均复合增长率一度走强。然而，由于国内技术需求不断增长、中国品牌在全球终端产品市场的份额不断提升，国内市场对半导体产品的需求已经超过了国产半导体产量的增长速度，对于非国产半导体零部件的需求从而提升，导致中国对半导体产品的净进口出现增长。中国进口的高科技产品中，约70%为半导体产品，中国对于进口半导体零部件的依赖度极高。某些进口半导体产品有利于促进高科技产品（耳机、电信设备、消费电子产品）的出口。在中国市场，大部分半导体和显示器制造设备也依靠进口，目前，中国的实力尚不足以实现制造设备的国产化。所以，中国政府在过去数十年内一直致力于发展国内半导体产业，也不足为奇。在聚焦开发国产半导体的同时，产业也取得了一些成果——近年来，国产（包括跨国厂家在华工厂）半导体产量的年均复合增长率为20%。中国仍是半导体进口大国，因此，我们需要继续专注于发展国内半导体产业。近年来地缘政治形势的发展，尤其是美国将华为、海康威视等多家知名中国企业列入出口管制“实体名单”的举措，让中国鼓励科技产业本土化、降低进口依赖的紧迫性进一步提高。(BW, Semiconductor) total power of China's agricultural machinery had reached 1.0037 billion kW, up 1.6% on a like-for-like basis. The comprehensive mechanization rate of crops for the whole year edged up 1.87 points YoY to 69.1%; wherein, the overall mechanization rate of wheat fetched the highest 95.89%, and the comprehensive mechanization rate of rice, corn and soybean was above 80% apiece. Under favorable policies, the comprehensive mechanization rate of crops in China is rising year by year, expectedly reaching 77% by 2026. At present, China's plant protection UAV penetration rate is far below the world average. It is clearly put forward in the State Council's Guidelines on Accelerating the Transformation and Upgrade of Agricultural Mechanization and Agricultural Machinery & Equipment Industry issued in 2018 to 'actively develop agricultural aviation, regulate and popularize plant protection UAVs'. So far, Hubei, Jiangxi, Shandong, Hunan, Anhui, Guangdong and other provinces and cities have rolled out subsidies for plant protection UAVs each of which is granted more than 10,000 RMB. Opportunities come with challenges in the agricultural machinery of China. The growing number of collective users such as cooperatives, farms, and agricultural reclamations year by year and the policies for subsoiling, deep plowing, land circulation and agricultural machinery purchase subsidies are conducive to the burgeoning demand for large, high-end and intelligent machines like high-power tractors. With stricter environmental requirements, off-road machinery emission standards will be inevitable upgraded and the technical threshold for industry accession will be raised ever (Cision).

Robotics

In the debate over the rise of China and the reindustrialization of America, many claim that China threatens America's lead in industrial automation. But that's plain and simply not the case. Japan and Europe overtook America in the cutting-edge field long ago and they, not China, are currently the world's leading suppliers of industrial automation equipment. There are many aspects to leadership in industrial automation, but industrial robots are an indicator of both the sophistication and scale of a nation's manufacturing. China buys a lot of industrial robots, but it is not yet a major producer. America also buys a lot of industrial robots, but not nearly as many as China. The Chinese market for industrial robots has been the world's largest since 2013 and has quadrupled in size since then. In 2018, China accounted for 36% of total worldwide installations, followed by Japan (13%), the US (10%), South Korea (9%) and Germany (6%). The latest year for which complete and finalized IFR statistics are available is 2018.

The IFR's industrial robot statistics include handling, welding, assembly, dispensing, cleanroom, processing and other machines readily recognized as industrial robots. They do not include components such as precision gears, sensors, control units or software. By region, the breakdown of industrial robot installations in 2018 was Asia-Pacific 67%; Europe 18%; the Americas 13%; and others 2%. By industry, robotics were used in automotive 30%; electrical and electronics 25%; metal and machinery 10%; plastics and chemicals 5%; food and beverages 3%; and not specified 19%. China's government-supported acquisition campaign, which now faces strong headwinds in both Europe and the US, is aimed at advanced technology. Siasun, China's top industrial robot maker, is affiliated with the state-linked Chinese Academy of Sciences. So far, the campaign has been a success. And while America distances itself from China in the name of decoupling, European and Japanese companies are helping to build China's industrial robots (Foster).

Nevertheless, China counts more than 800 robot makers, including major players Siasun and DJI Innovations. Development of robotics is part of an ambitious Made in China 2025 master plan to upgrade the nation's manufacturing technologies. China is on track to account for 45% of all industrial robot shipments by 2021, up from 39% in 2019. In the past, China has lagged behind other nations in robotic workforces, counting 97 industrial robots per 10,000 manufacturing workers, half as many industrial robots as the US and one-seventh as many as South Korea. Clearly, the virus outbreak has put a renewed urgency behind the trend towards increased automation and use of robotics in China. Wages in China are no longer cheap, and US companies with operations in China have been hit hard by the virus. Industries that are most impacted are those with large assembly operations

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such as auto manufacturers and electronic component makers (Fannin).

The Chinese government wants to transform China from a manufacturing giant into a world manufacturing power according to the ten-year national Made in China 2025 plan. The plan includes strengthening Chinese robot suppliers and further increasing their market shares in China and abroad. China intends to forge ahead and make it into the world's top 10 most intensively automated nations by 2020. By then, its robot density is targeted to rise to 150 units – this being the number of industrial robots per 10,000 employees. Today, South Korea is the leader regarding robot density in Asia, with 531 robot units. In the Americas, it is the USA with 176 robot units and in Europe, it is Germany with 301 robot units. The main drivers of the latest growth in China are the electrical and electronics industry. Sales increased by 75% to almost 30,000 units (2016). About one third of the robots were produced by Chinese robot suppliers, who more than doubled sales by almost 120%. All international robot suppliers also increased sales considerably to the electrical and electronics industry (+59%). This remarkable demand will further grow in the future. Major contract manufacturers of electronic devices have already started to automate production. The semiconductor and the chip industries, for example, have strongly invested in automation. Large battery production facilities are being installed to meet the increasing demand for electric and hybrid cars (IFR).

China already has an edge in manufacturing and while the US companies could move much of their manufacturing to countries like Vietnam, Malaysia, India and Mexico, there will be a push to bring much of that manufacturing capability to the US over time, should we end up with a split supply chain. However, if the goal is to bring manufacturing jobs back to the US, China's robotic push hints at the fact that the US would also mostly deploy their version of AI-based manufacturing robotics to stay competitive. That would translate fewer manufacturing jobs for humans and more for robots. Given the political goals of China to dominate the world in so many areas, and robotic manufacturing being one of the significant ones they are pursuing, it does seem that we may soon see this dual supply chain emerge. The US needs to accelerate its own AI robotic research and begin planning for the day when China will no longer be supplying many of the things we need in our daily lives (Bajarin).

Semiconductors

China's rising investment in the semiconductor industry is growing. New fabs or capacity expansion will exceed US$160 billion in China over the coming 5-7 years, driving an increase in China's equipment spending to more US$40 billion in 2025, with 60% of the investments going to memory fabs. The expansion of product offerings by local equipment companies will result in significant growth opportunities over the coming five years. China has made some progress in developing its domestic fabless industry, though is still dependent on importing the final manufactured product in several cases. It has also reduced its import dependence in some areas by encouraging global producers to set up manufacturing within China to serve both its local demand as well as use China as an export base. Most noticeably in recent years has been the setting up of memory plants by Samsung, Hynix, and Intel in China that has resulted in a strong CAGR of memory exports from China. However, given the continued growth of domestic tech demand as well as Chinese brand's rising share of end tech products in the global market has meant that China's demand for semiconductors has outpaced the growth of its domestic semis production and has increased demand for semi parts that it does not locally produce, resulting in larger net import of semiconductors. Roughly 70% of all tech-related imports by China are of semiconductor products, thus, making it highly dependent on foreign-sourced parts. Several of these imported semiconductors are also meant for powering its technology related exports (handsets, telco equipment, and consumer electronics). China also imports most of its equipment required for semi and display manufacturing and currently has limited capability to manufacture any of these equipment companies locally. Thus, not surprisingly, the focus of Chinese authorities, in the past decade or more, has been to develop a local semiconductor industry. While focusing on developing a domestic semiconductor, industry has borne some fruit - local semis production

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has been growing at a 20% CAGR in recent years (including semi production by global players out of their China-based facilities) – China remains a large importer of semiconductors, and hence, the need to continue to focus on developing the local industry. Geopolitical developments in recent years, particularly the inclusion of several Chinese entities (notably Huawei, Hikvision amongst others) by the US on its restricted Entity List, further adds urgency to China's initiatives to localize the tech industry and reduce its import dependence (BW, Semiconductor).

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2.5 Construction and Real Estate

Key Take-Aways

- The most reported impact arising from COVID-19 is the acute shortage of labor.

- China builds two billion square meters of new floorspace each year – if laid out over a single story, that would cover 1.3 times the size of the entire footprint of London.

- Almost half of the world's construction will take place in China this decade.

- The central government has set a goal of having 70% of new buildings green-certified by 2022.

- China's property developers are among the biggest junk bond issuers in Asia.

Covid-19 Repercussions

Officials reported the first case of COVID-19 in Wuhan City in Hubei Province and the city was placed under lockdown by the Chinese Government on 23 January 2020, with other provinces following within days. The seven-day long Lunar New Year holiday was extended to 9 February 2020 in an attempt to contain the outbreak. There were 66 cities in China which were placed into lockdown for a period ranging from 50 to 76 days. The most reported impact arising from COVID-19 is the acute shortage of labor. China's construction industry is heavily dependent on rural migrant workers, as 54 million rural migrant workers are working in the construction industry. Migrant workers who had returned to their hometowns for the Lunar New Year holiday were unable to return to worksites after the lockdown. In a survey conducted by the China Construction Industry Association published in April 2020, 90.55% of respondents said progress was negatively affected and 66.04% reported a shortage of labor (FTI).

Background

China is returning to its stimulus playbook, with local governments borrowing a record amount to spend on infrastructure this year to drag the economy out of its coronavirus- induced slump. In past stimulus cycles -- such as after the global financial crisis -- China splurged on roads, airports, and railways, and racked up huge debt. For the past few years, much of this spending has been funded by bonds tied to projects that are meant to make enough money to repay the debt. The problem is that much of the money looks to be going to build the same kind of construction projects as in past years, which struggle to generate sufficient revenue and end up adding to the debt of local governments. The effect of this spending has also been slow to appear, with infrastructure investment at the end of July still below where it was the same time in 2019. The central government wants the local administration to speed up bond issuance and granted them large quotas; however, it takes time to start a project and to spend the money and it'll take a while for the effects to appear. Local governments had to sell 3.75 trillion RMB (US$550 billion) worth of so-called "special bonds" by the end of the year, with 2.27 trillion RMB issued by the end of July. That's was more than in the whole of 2019. Almost 30% of the money through the end of July is earmarked for industrial parks, town construction and infrastructure, while another 20% is going to be spent on transport, logistics and energy projects. It's getting more difficult for local governments to find qualified and profitable projects to use this money. That's why the funds were also used to finance land reserve and shanty town projects in 2019. Local governments grappled in the past to find profitable projects to use this money, with a lot of the borrowing in 2018 used

2.5 建筑和房地产

关键要点

· 据报道，劳动力极度短缺是新冠疫情对社会产生的最大影响。

· 中国每年新增20亿平方米的建筑面积，如果把它们平铺成单一平面，将是整个伦敦占地面积的1.3倍。

· 在未来的十年里，中国会建造将近全球一半的建筑。

· 中央政府为此设定目标，到2022年力争使70%的新建筑获得绿色认证。

· 中国的房地产开发商是亚洲最大的高息债券发行商群体之一。

新冠疫情所带来的影响

2020年1月23日，政府官员宣布湖北省武汉市发现首例新冠肺炎病例，并在当日下令封城。随后的几天内中国政府宣布封锁其他省份。中国的农历新年假期一般为七天，政府宣布假期延长至2020年2月9日，目的在于遏制新冠疫情的传播。中国有66个城市遭到封锁，时长50至76天不等。据报道，新冠疫情的最大社会影响是劳动力极度短缺。中国建筑业的劳动力主要是农民工。据悉从事建筑业的农民工数量达5400万。返乡过春节的农民工因全国性的封锁无法返回工地。中国建筑业协会2020年4月发布的调查结果显示，90.55%的受访者表示工程进度遭到负面影响，66.04%的受访者表示工地正面临劳动力短缺的问题（FTI）。

背景

中国政府出台大规模刺激政策，其中地方政府今年的融资再创新高，主要用于建设基础设施，使中国摆脱新冠肺炎疫情引发的经济低迷。在过往的刺激周期中（如全球金融危机之后），中国大力投资国内的公路、机场和铁路建设，同时也累积了巨额债务。在过去几年中，政府大部分支出的来源为发行与项目挂钩的债券；设立这些项目旨在赢利，以偿还政府债务。问题在于，筹集到的大部分资金将被用于建设与过去几年同类型的基础设施项目，而这些项目难以产生足够的收益，最终增加了地方政府的债务。这笔支出所造成的影响是长期且不易察觉的。在2020年7月底之前，政府在基础设施上的投资仍低于2019年同期投资。中央政府鼓励地方政府加快债券发行速度，并给予他们大量的配额。然而，项目启动和资金支出需要一些时日，而且项目的成效也要过段时间才能显现。2020年底，地方政府不得不出售价值3.75万亿人民币（约合5500亿美元）的"专项债券"（截至7月底，已发行2.27万亿元人民币的专项债券），比2019年发行的债券总价值还要高。截至7月底，近30%的资金专门用于工业园区、城镇和基础设施建设，另有20%的资金将用于交通、物流和能源项目的建设。对于地方政府而言，找到合格且利润较高的投资项目愈加困难。这也解释了为什么2019年政府将部分资金投入到土地储备和棚户区项目的建设当中。过去，地方政府一直在努力寻找高回报的项目，以使用筹集的资金，并在2018年将大量的借款用于购买建设未来项目的"储备土地"。中央政府明令禁止这一行为，并鼓励地方政府将部分资金用于发展高科技项目，如5G基础设施。在很多项目中，地方政府都通过出售土地来偿还投资者，但疫情导致的经济放缓可能会使土地需求下降，土地价格也将大打折扣，政府偿还债务也因此变得困难重重。为应对新冠疫情的影响，中国地方政府实行税务减免和增加政府支出，其自身预算本已面临压力，因此从长期来看，这种债券的发行会使政府背负更多的债务，让问题变得更为复杂（Chen and Zhu）。

预计至2024年，中国建筑业复合年增长率将达10.0%，总额为86813亿元人民币。2015年至2019年期间，按价值计算，中国住宅建筑业复合年增长率为8.6%。按价值计算，商业建筑市场在预测期内的复合年增长率为12.7%。新冠疫情导致经济下滑，因此预计未来两年内中国的建筑业将出现负增长或低增长。尽管不同建筑部门所受影响各不相同，但预计受新冠疫情影响最大的将会是住宅、商业和工业部门。疫情延缓了重振商业和恢复消费者信心的速度，导致建筑业陷入长期困境。由于住宅建筑领域受到公共和私人投资的共同支持，因此预计经济适用房受到的影响最小。但中高档住宅建筑领域将受到严重影响。预计中国的商业建筑业（尤其是办公楼、零售和娱乐用建筑）将出现负增长。

to buy "land reserves" for future projects. That was banned and the central government is encouraging local areas to use some of the money for high-tech projects such as 5G infrastructure. Many of these projects rely on land sales to repay investors, but a slowing economy will likely hit demand for land and put pressure on prices, making it even harder to service these debts. With the budgets of China's local governments already under pressure from a combination of tax cuts and the need to raise spending to deal with the effects of the Covid-19 pandemic, the higher debt levels from this borrowing will just add to their problems in the long term (Chen and Zhu).

The building construction industry in China is expected to record a CAGR of 10.0% to reach 8681.3 billion RMB by 2024. The residential construction industry in value terms increased at a CAGR of 8.6% during 2015-2019. The commercial building construction market in value terms is expected to record a CAGR of 12.7% over the forecast period. Building construction industry in China is expected to record a period of negative / low growth over the next eight quarters, driven by economic downturn triggered due to Covid-19 outbreak. While impact across building construction sectors varies, residential, commercial, and industrial segments are expected to be worst affected. Business and consumer sentiment is expected to be on a slow track to recover due to pandemic, resulting in prolonged distress building construction sectors. In residential sector, affordable housing is expected to stay least affected, supported by a mix of public and private spending. Mid-tier and luxury residential construction segments is expected to be severely impacted. Growth across commercial building construction in China, especially office, retail, and entertainment is expected to record negative growth (R&M).

Infrastructure Construction

By some estimates, almost half of the world's construction will take place in China this decade. The country already builds two billion square meters of new floorspace each year – if laid out over a single story, that would cover 1.3 times the size of the entire footprint of London. It's an extraordinary figure, especially when you consider that worldwide, the buildings and construction sector accounts for around 39% of carbon dioxide emissions released from energy and industry.

The industry's growth over the forecast period is expected to be driven by investments on new infrastructure projects, which includes investments in the areas of 5G networks, artificial intelligence, Internet of Things and data centers. The country is expected to spend 10 trillion RMB (US$1.4 trillion) on new infrastructure projects between 2020-2025. The industry's growth will also be driven by investments on transport, renewable energy and residential infrastructure projects. The outbreak of the Covid-19 pandemic severely disrupted the country's construction industry in Q1 2020, with projects being temporarily suspended in line with the lockdown restrictions. Subsequently, the industry's value-add recorded a double-digit contraction in the first quarter of the year. With the gradual resumption of construction activities, the industry picked up pace, and recorded an improvement in the second quarter; however, it contracted by 1.9% year-on-year in H1 2020. The Chinese construction industry still grew in 2020, despite the temporary slowdown in construction activities. This is only be a marginal expansion compared to the performance in recent years. China's construction industry value-add grew by 5.6% in real terms in 2019, following growth of 4.8% in the previous year, driven by strong growth in real estate investment, and an increase in fixed asset investments. To mitigate the economic impact of the pandemic, the country fast-tracked the implementation of major infrastructure projects (except the hard-hit Hubei region), resuming 89.1% of major infrastructure projects as of mid-March 2020. In another positive development, real estate and fixed-asset investments have regained growth momentum, following temporary disruption in the first quarter of the year. Moreover, in the first seven months of the year, the National Development and Reform Commission (NDRC) approved 65 fixed-asset investment projects worth CNY532.8 billion (US$78.4 billion) (R&M).

Residential Construction

Demographics in China is expected to continue to spur the growth in residential construction. Rising

基础设施建设

据估计，在未来的十年里，中国会建造全球将近一半的建筑。中国每年新建20亿平方米的建筑面积，如果把它们平铺成单一平面，将是整个伦敦占地面积的1.3倍。这一数字是相当惊人的，尤其是考虑到在全球范围内，建筑和建筑行业二氧化碳排放量约占能源和工业总排放量的39%。

此外，该行业在预测期内的增长还将受到新基础设施项目投资的驱动，其中包括对5G网络、人工智能、物联网和数据中心领域的投资。2020年至2025年间，中国预计将在新基建项目上投资10万亿元人民币（约合1.4万亿美元）。此外，对运输、可再生能源和住宅基础设施项目的投资也将推动中国建筑业实现增长。2020年第一季度，新冠疫情的爆发对中国建筑业带来严重冲击，由于全国性的封锁，不少项目被暂时叫停。随之而来的是该行业增加值在今年第一季度出现了两位数的收缩。随着建筑活动的逐步恢复，该行业加快发展步伐，并在第二季度得到改善。然而，较2020年上半年同比仍收缩了1.9%。尽管建筑活动出现了短期的放缓，但中国建筑业在2020年仍保持增长态势。当然，与近几年该行业的表现相比，这一增长显得微不足道。近年来，房地产投资实现强劲增长固定资产也有所增长，在这两项的带动下，中国建筑业增加值在2019年实际增长5.6%，较2018年的4.8%有所增长。为减少新冠疫情所造成的经济影响，中国加快了重大基础设施项目的实施（湖北重灾区除外）。截止2020年3月中旬，89.1%的重大基础设施项目已恢复建设。另一个积极事态发展为，房地产和固定资产投资在今年第一季度经历短暂中断后，已逐渐恢复了增长势头。此外，2020年1月至7月间，国家发改委批准通过了65个固定资产投资项目，总价值为5328亿元人民币（约合784亿美元）（R&M）。

住宅建筑

中国的人口结构有望继续刺激住宅建筑的增长。家庭收入水平的提高，以及农村人口向城镇的迁移将继续提高人们对住宅建筑的需求。公共和私营部门比以往更重视经济适用房的建设，推动住宅建筑业实现增长。在未来的数年里，非住宅类基础设施也有望实现大幅度增长。中国人口老龄化催生了设立更多医疗设施和医院的需求。预计至2024年，中国建筑业复合年增长率将达7.5%，总额为93974亿元人民币。2015年至2019年期间，按价值计算，中国住宅建筑业复合年增长率为8.6%（AP）。

绿色建筑

在未来的十年里，中国会建造将近全球一半的建筑。中国每年新建20亿平方米的建筑面积，如果把它们平铺成单一平面，将是整个伦敦占地面积的1.3倍。这一数字是相当惊人的，尤其是考虑到在全球范围内，建筑和建筑行业二氧化碳排放量约占能源和工业总排放量的39%。在过去的数十年间，中国经济的快速增长带来了极大的建筑物能源消耗，并给环境带来了巨大挑战。2001年至2016年间，中国建筑业的一次能源消耗增加了一倍有余，相当于每年消耗近10亿吨煤炭。首先，建筑物建造的碳成本（包括整个供应链中使用的原材料和能源）约占中国碳排放的五分之一。在中国，使建筑变得更加绿色环保最为可见的方式是建筑区域内植被丰富，且建筑物周围皆是林木。在城市内植树有助于吸收新建高层建筑排放的二氧化碳，减少城市空气污染。然而，在中国人口稠密的城市地区，空间价格普遍高昂，使绿化的向上扩展——而非向外扩展——变得越来越富有吸引力。中国的许多省份已出台政策，鼓励将绿化纳入到高层建筑不可或缺的组成部分。随意在建筑物内增添植被是不可能取得最佳环保效果的。相反，对建筑物进行绿化需要详细的计划，以确保树木与附近的其他物种有良好的互动，确保树木可成为对动物、鸟类和昆虫友好的永久栖居地。尽管如此，即使垂直森林得到广泛普及，但需花费更多的精力，才能在减少中国建筑业的碳排放量这方面取得进展。使植被成为高层建筑的一部分是对"绿化"建筑最为显而易见的方式，但要改善建筑设计和材料则可能造成更多的碳排放。仅水泥一项，每年的碳排放量就占全球总量的8%。考虑到建筑行业偏爱低能耗的温度调节手段，如果中国建筑行业的工作人员简单效仿西方的节能手段（通常指对室内环境进行更为严格的机械控制），将导致不必要的能耗消耗。想要在中国实践绿色建筑，需要因地制宜，开发出最适合当地条件的技术（Zhang）。

自上而下推动建设更多零碳建筑可减轻中国建筑业对气候变化造成的影响。零碳建筑完全由无碳可再生能源或碳补偿来进行供电。近十年来，中国一直在推广建设更节能的建筑，但实现零碳远比低碳更耗时耗力。当前，中国的工作重点不是零碳项目，而是低能耗项目。十多个省份已公布详细计划，以推广此类建筑及加大补贴力度。中央政府为此设定目标，到2022年力争使70%的新建筑获得依据《绿色建筑评价标准》设立的绿色认证。按照目前的进度来说，中国建筑业将在2040年前后达到碳排放峰值。但是，如果中国加快淘汰大型碳排放开发商，并将重点转向低能耗或无能耗建筑，建筑业的碳排放量将提前15年达到峰值（Yuan）。

因此，中国的环保手段旨在解决两个迫切的环境问题。大规模建设的城市基础设施和住宅已成为中国最大的温室气体排放源之一。实现国家的城镇化目标可

household income levels along with population migration from rural to urban areas is expected to continue to drive demand for residential building construction sector in the country. Increased focus on affordable housing by both public and private sector will drive growth in residential building construction sector. In the years to come, non-residential infrastructure is also expected to grow considerably. The aging population in China is creating demand for the construction of healthcare facilities and new hospitals. The building construction industry in China is expected to record a CAGR of 7.5% to reach 9397.4 billion RMB by 2024. The residential construction industry in value terms increased at a CAGR of 8.6% during 2015-2019 (AP).

Green Construction

Almost half of the world's construction will take place in China this decade. The country already builds two billion square meters of new floorspace each year – if laid out over a single story, that would cover 1.3 times the size of the entire footprint of London. It's an extraordinary figure, especially when you consider that worldwide, the buildings and construction sector accounts for around 39% of carbon dioxide emissions released from energy and industry. Over the years, China's rapid economic growth has significantly increased buildings' energy use and posed a significant challenge for the environment. From 2001 to 2016, the primary energy consumption in China's building sector more than doubled, reaching the equivalent of just under a billion tons of coal. And the carbon cost of constructing buildings in the first place, including the raw materials and energy used throughout the supply chain, makes about a fifth of China's carbon emissions. One of the most visible ways that architecture is becoming greener in China is the most literal one – through vegetation-rich tree-covered buildings. Planting trees in cities would be helpful to counter the new high-rises' CO2 emissions, as well as reducing urban air pollution. But, in China's dense urban areas where space is often at a high premium, the appeal of creating forests that spread upwards, not outwards, is becoming an increasingly attractive option. Many provinces in China have introduced policies that encourage making greenery an integral part of high-rises. But to get the full effect, you can't just add vegetation to a building here and there. Instead, greening a building requires careful planning, to make sure that the trees are well connected with others of their species nearby, to ensure a continuous habitat that benefits animals, birds and insects. Still, even if vertical forests become widespread, it will take a lot more to make a dent in the carbon emissions of China's construction industry. Making vegetation a part of ordinary high-rises is a very visible way to "green" them, but improving their construction and building materials could have a much greater impact in terms of carbon. Cement alone release 8% of the world's global carbon emissions each year. Given this preference for low-energy means of temperature control, if those working in China's building sector simply copy the west's energy-saving practices – which usually mean a tighter mechanical control of the indoor environment – it would lead to an unnecessary rise in energy consumption instead. To practice green architecture in China, technologies need to be designed that best suit the local conditions (Zhang).

A top-down push for more zero-carbon buildings could mitigate the Chinese construction industry's contributions to climate change. Zero-carbon buildings are fully powered through carbon-free renewable energy, or with carbon offsets. China has been promoting more energy-efficient buildings for almost a decade, but zero-carbon is far more ambitious than low-carbon. Currently, China's main focus is not on zero-carbon but low-energy projects, with more than 10 provinces releasing detailed plans for expanding such construction as well as related subsidies. The central government has set a goal of having 70% of new buildings green-certified by 2022 according to its own standard. At its current pace, the country's construction sector should reach its carbon peak around 2040. But if China accelerates phasing out large carbon emitters and pivots toward low- or no-energy buildings, then the industry could arrive at that point 15 years earlier (Yuan).

Thus, China's green approach is designed to tackle two pressing environmental issues. Large-scale construction of urban infrastructure and residential housing has become one of the country's biggest sources of greenhouse gases. Realizing the nation's urbanization goal could produce more

能会额外产生十亿余吨的二氧化碳。与此同时，农村和城市环境都在恶化。中国的大部分城市空气污浊，水质条件差。中国有90%的草原和40%的重点湿地正处在退化过程中。2012年，习近平主席提出并强调"生态文明"理论，认为发展需要把环境成本纳入考虑因素。有时，政府的愿想并不能转化为具体政策。政府关于建设新城市的指导方针中包含"低碳"、"环境保护"等流行语，但几乎未在能源效率和建筑材料方面提出具体要求（Bloomberg）。

房地产

新冠疫情最严重的时刻已经过去，中国经济回暖，房地产业得到迅速反弹。尽管如此，中国政府将正式约束房地产开发商的借贷成本，制定规则以控制与现金流、资产和资本水平相关的债务比例上限。中国的房地产开发商是亚洲最大的高息债券发行商群体之一，去年的发行总额为462.3亿美元，是2018年的两倍。高息债券是非投机债务证券，具有较高的违约风险，因此通常附带较高的利率以抵消该风险。随着中国政府出台相应规则迫使房产开发商限制债务，更多的问题将会浮现。中国房地产开发商明年可能面临越来越高的债券还款压力。澳新银行研究中心表示，到2021年，5260亿元人民币（约合774.6亿美元）的境内债券即将到期，比2020年到期的债券总额高16%。明年还将到期约500美元的海外美元债券，比2020年增加47%。数百亿的美元债券将在2021年到期。分析师提醒道，在当前紧缩的融资条件下，如果开发商需要重新发行债券以筹集现金，他们可能会面临重重困难。国家出台的新规定可能会限制开发商债务延期的能力，从而刺激他们对现金的需求，抑制房地产投资活动。限制银行贷款增长可能会对该行业的增长造成不利影响，尤其是对于志在必得的企业来说。2021年，中国房地产业的美元再融资需求将比以往任何时候都更高。债券发行商还可能面临投资者投资意愿不高的困境（Tan）。

than one gigaton of additional carbon dioxide. At the same time, both rural and urban environments have deteriorated. Most of China's major cities suffer from filthy air and poor water quality. About 90% of China's grasslands and 40% of its major wetlands are experiencing degradation. In 2012, President Xi Jinping began stressing his theory of an "eco-civilization," where development takes environmental costs into consideration. The aspiration hasn't always translated into concrete policies. Government guidelines on building new cities contain buzzwords like "low-carbon" and "environmental protection," but few specific requirements in terms of energy efficiency and building materials (Bloomberg).

Real Estate

China's property rebounded quickly as the economy reopened after the worst of the pandemic passed. Still, authorities are expected to officially rein in on borrowing costs of developers, outlining rules that cap the rations of their debt in relation to their cash flows, assets and capital levels. The country's property developers are among the biggest junk bond issuers in Asia, with a total of US$46.23 billion being issued last year — double that of 2018. Junk bonds are non-investment grade debt securities that carry a high default risk, and therefore, usually come with higher interest rates to compensate for that risk. With the Chinese government also set to introduce those rules that would force companies to limit their debt, that may pose even more problems. Chinese property developers could face mounting bond repayment pressure in 2021. ANZ Research shows that 526 billion RMB (US$ 77.46 billion) of onshore bonds will mature in 2021, that's 16% higher than those due in 2020; while some US$50 billion of offshore dollar bonds are also due next year, or 47% more than 2020. Tens of billions of dollars of bonds are set to mature in 2021, and analysts warn that amid such tightening financing conditions, developers who need to re-issue bonds to raise cash may face obstacles. The new regulations may limit developers' ability to roll over their debts, fueling a demand for cash and dampening property investment activity. Limiting bank loan growth could lower growth prospects, especially for more aggressive players. Dollar refinancing needs are higher than ever for the sector going into 2021. Issuers could also face weak investor appetite (Tan).

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2.6 Resources and Industrial Materials

Key Take-Aways

• China stepped up shale gas development last year, as the country looks to fall back on unconventional output to drive natural gas production growth.

• Plummeting global growth, primarily in China, and the escalating US-China trade war have hurt industrial activity and goods trade in both countries. Although the imposition of blanket tariffs on imports of base metals, alloys and related products by the US caused prices to rise in US markets, this was not replicated elsewhere, including in Europe, where most of the price series is based.

• Iron ore prices soared to multi-year highs mid 2020 as Chinese government stimulus spurred infrastructure building, boosting prices of the commodity even amid a global pandemic.

• Rising tensions with China and the race to repatriate supply chains in the wake of the COVID-19 pandemic have given fresh impetus to US efforts to launch a renaissance in rare earths, the critical minerals at the heart of high technology, clean energy, and especially high-end US defense platforms, but it's not going well.

Covid-19 Repercussions

• The peak impact of Covid-19 on global supply chains occurred in mid-March, forcing thousands of companies to throttle down or temporarily shut assembly and manufacturing plants in the US and Europe. According to a survey conducted by the American Chamber of Commerce in South China, in March, when China was still grappling with the Covid-19 outbreak, 100% of companies said that they had experienced problems in their supply chains. By 2020 September, more than 78% of the 172 companies that took part in the American Chamber of Commerce in South China survey say they no longer face supply chain disruptions.

• The most vulnerable companies were those which rely heavily or solely on factories in China for parts and materials. The activity of Chinese manufacturing plants remained depressed for months.

• China's stranglehold on rare earth metals and their supply chains has been highlighted by the disruption wrought by the coronavirus pandemic, prompting governments and buyers to look for alternative sources.

Background

Many analyses originally compare the COVID-19 epidemic with the SARS epidemic in 2002. This was a mistake since SARS only created just a blip in the global financial markets. China's value in the worldwide economic ecosystem has increased tremendously in the past 18 years. The country has more than doubled its share of trade with the rest of the world in the last 20 years, and many more industries are now heavily dependent on China. The SARS epidemic started in the Guangdong province in 2002 and led to 8,000 cases in 2003. During 2002, the GDP of China represented 4.31% of the world GDP. By contrast, the number of detected cases of Covid-19 has already passed 80,000 and China represents about 16% of the world GDP, an almost four-fold increase. As a result of events such as the 2002-2003 SARS epidemic, the March 2010 Iceland's volcano eruption, Japan's earthquake and tsunami in March 2011, and the flood in Thailand in August 2011, companies increased the amount of inventory they keep on hand. But they still usually carry only 15 to 30 days' worth of inventory. It is possible that the Chinese New Year week-long vacation motivated some companies to increase

2.6 资源及工业原料

关键要点

· 去年，中国加大页岩气勘探开发力度，以非常规领域的加速发展促进天然气增产。

· 全球特别是中国经济增速的急速放缓以及中美贸易战的升级阻碍了两国工业生产与商品贸易活动的推进。尽管美国对进口基本金属、合金以及相关产品全面征收关税，使得金属价格上涨。但其他地区并未仿照这一做法，包括金属价格序列的主要依据——欧洲。

· 尽管全球疫情肆虐，中国政府刺激方案的推行仍促进了基础设施建设，商品价格因而上涨，铁矿石更是于2020年中旬飙升至多年高位。

· 中美关系冲突升级以及新冠肺炎疫情后的供应链争夺赛，为美国重振稀土开采行业提供了新动力。这一重要矿产是美国高科技与清洁能源领域发展的关键，对其尖端防御平台开发至关重要，然而进展并不顺利。

新冠疫情所带来的影响

· 三月中旬，新冠疫情对全球供应链的影响最为严重，迫使成千上万的企业减产或暂时关闭其位于美国及欧洲的装配制造工厂。华南美国商会针对172家会员企业的一项调查显示，今年三月，中国仍在抗击新冠疫情之时，这些企业的供应链均存在问题；而截至九月，超过78%的受访企业表示供应链已恢复运作。

· 其中，首当其冲的是那些严重依赖或完全依赖中国工厂生产零件和材料的企业。数月以来，中国的制造工厂一直萎靡不振。

· 新冠疫情所带来的负面影响凸显了中国在稀土金属及其供应链方面的垄断地位，促使其他政府及采购方寻找替代来源。

背景

起初，许多分析报告将新冠疫情与2002年的SARS疫情进行比较。这是错误的，因为SARS疫情仅对全球金融市场造成了短暂的影响。在过去18年间，中国在全球经济生态系统中的地位大幅提升。二十年来，中国在世界贸易中所占份额至少翻了一番，现在更是有许多产业严重依赖中国。SARS疫情最早于2002年在广东省爆发，2003年共确诊8000例。2002年，中国GDP占世界比重4.31%。然而，如今新冠肺炎确诊病例总数已超过八万例，而中国GDP占世界比重16%，几乎增长了四倍。2002-2003年的SARS疫情、2010年3月的冰岛火山爆发、2011年3月的日本地震和海啸以及2011年8月的泰国洪灾等一系列事件使得各大企业增加库存。但是，它们的库存周转天数通常仅为15天至30天。由于春节的七天长假，一些公司可能将库存周转天数再延长一周。因此，大多数公司的库存量能够满足其两至五周的销售需求，且无需额外增加供应，具体情况则取决于公司的供应链策略（Simchi-Levi）。

据估计，2019年工业原料（IRM）价格指数收缩8.6%，反映基本金属和原油价格下跌。全球特别是中国经济增长率的急速放缓以及中美贸易战的升级阻碍了两国工业生产与商品贸易活动正常发展。尽管美国对进口基本金属、合金以及相关产品全面征收关税，使得金属价格上涨。但其他地区并未仿照这一做法，包括金属价格序列的主要依据——欧洲。重要的是，征收关税预计将导致美国（供应短缺与进口成本增加推动价格小幅上涨）与其他地区（额外供应不再出口美国，价格略有下滑）的金属价格产生差异。2020年，由于新冠疫情阻碍工业发展，IRM价格指数预计将下降6.1%，但库存枯竭与需求量适度增加预计将使其于2021年回升6.8%。面对贸易紧张局势所造成的经济逆风，工业部门发展受阻，现估计2019年基本金属分类指数同比下降10.3%。尽管部分市场收紧，但钢铁等其他市场仍供过于求。2000年至2010年，金属价格飞涨使得投资激增，生产力随之提高，但供过于求的局面仍未改变。随着中美贸易战全面打响，金属价格于2019年初下降。据估计，由于贸易战持续打压商业信心，尤其是运输业、制造业和建筑业，商业价格（除镍外）无法在2019年剩余时间恢复至2018年初高位。然而，中国某些工业材料与金属供应的政策限制以及包括电动汽车在内的关键新兴行业需求持续增长有助于将2019年的基本金属价格维持在最低水平。2021

their inventory coverage by another week. So, for most companies, the inventory coverage they have will allow them to match their supplies with demand, with no additional supply, for between two to five weeks, depending on the company's supply chain strategy (Simchi-Levi).

The Industrial Raw Materials (IRM) price index is estimated to have contracted by 8.6% in 2019, reflecting a fall in base metal and crude oil prices. Plummeting global growth, primarily in China, and the escalating US-China trade war have hurt industrial activity and goods trade in both countries. Although the imposition of blanket tariffs on imports of base metals, alloys and related products by the US caused prices to rise in US markets, this was not replicated elsewhere, including in Europe, where most of the price series is based. Significantly, it is estimated that the tariffs caused metal prices to diverge between the US (where supply shortages and higher import costs pushed prices up slightly) and other economies (where extra supplies, which would otherwise have gone to the US, pushed prices down slightly). The IRM price index is expected to fall by 6.1% in 2020, as the coronavirus pandemic hurts industrial activity and rise by 6.8% in 2021, as depleted stocks and a moderate rise in demand push up base metal prices. The base metals sub-index is now estimated to have fallen by 10.3% year on year in 2019, as economic headwinds created by trade tensions weighed on activity in the industrial sector. Although some markets tightened, others, such as steel, were still plagued by oversupply. Production capacity-bolstered by a surge in investment during a decade-long boom in prices in the 2000s-still exceeded demand. Metal prices sagged in early 2019, as the US and China entered into a full-blown trade war. With the exception of nickel, it is estimated that prices did not recover to their early-2018 highs over the remainder of 2019, as the trade war continued to weigh on business sentiment, particularly in the transport, manufacturing and construction sectors. However, policy-led decisions to rein in the supply of some industrial materials and metals in China, together with continued demand from key emerging sectors - including electric vehicles - helped to keep a floor under base metal prices in 2019. 2021 prices are expected to return to growth, as falling stockpiles and investments in infrastructure raise demand for industrial metals (Research and Marketing).

Supply Chain

Some scholars believe that after the outbreak, mistrust among countries will grow and adjustments to their industrial chain policies are certain such as building a more independent, complete and secure industrial chain of their own. An anti-globalization trend could emerge, but it will harm all countries and spell disaster for the global economy. Some countries might want to reduce their dependence on China industrially, but that will be difficult for the global industrial chain to find an alternative economy to China in the short term. The global industrial chain cannot and should not decouple from China. However, because of rising labor costs, trade frictions and other factors, the cost of China's manufacturing industry has been rising, making it lose its previous competitiveness. For example, some manufacturing enterprises have started moving out to lower-cost Southeast Asian nations. The decline of manufacturing competitiveness may lead to the decline of China's national competitiveness. To establish an independent and complete industrial system after the epidemic, China must not only pay attention to traditional manufacturing, but also master some core technologies, without which China's development will be under the restraint of foreign industrial chains. Manufacturing is the foundation of a country's national economy and without it many so-called high-end industries cannot be developed at all. Excessive real estate investment and development in China in the past few years have led to the flow of bank capital, labor and other resources to the property sector, driving up manufacturing costs. If the country no longer blindly promotes real estate development, it will save large amounts of labor, capital and other resources for the development of other sectors (Cao).

Iron and Steel

Stimulatory measures in China and other countries played a pivotal role in reviving economic activity and, with that, demand for commodities. The sustained rally in iron ore prices comes after the price of the steel-making ingredient tanked to a trough of US$80 a ton in March 2020. The strong gains came after Beijing pumped hundreds of billions of dollars of fiscal stimulus into its economy to help it bounce back from the coronavirus pandemic. Much of this

年，库存减少与基础设施投资将推动工业金属相关需求的增加，金属价格有望恢复上升趋势（Research and Marketing）。

供应链

一些学者认为，疫情肆虐将导致国家之间的信任危机升级，且必然导致产业链政策调整，例如打造更为独立、完整、安全且属于自己国家的产业链。反全球化趋势或将出现，但它将损害所有国家的利益，并造成全球性经济灾难。一些国家可能希望减少对中国工业的依赖，但短期内，中国在全球产业链中的角色无可替代。全球产业链不能也不应与中国脱钩。然而，劳动力成本上升以及贸易摩擦等因素导致中国制造业成本的持续攀升，竞争力大不如前。例如，一些制造企业已经开始逐步向制造成本较低的东南亚国家转移。制造业竞争力的下降可能导致中国国家竞争力的下降。要在疫情后建立独立完整的产业体系，中国不仅要重视传统制造业，还应掌握核心技术。否则，中国的发展将受到国外产业链的束缚。作为国民经济的基础，制造业是许多所谓高端产业的发展源泉与动力。过去几年中，中国对房地产行业的过度投资与开发导致银行资本、劳动力和其他资源流入该领域，制造成本随之攀升。若中国不再盲目地促进房地产发展，节省下来的大量劳动力、资本和其他资源便可用于推动其他行业发展。

钢铁

中国与其他国家的刺激措施在经济活动复苏以及相应的商品需求增长方面尤为关键。2020年3月，炼钢原料价格跌至每吨80美元低点，但随后铁矿石价格却持续走高。这一强劲的增长势头归功于中国政府制定了数千亿美元的财政刺激方案以支持新冠疫情后的经济复苏，其主要投资方向为基础设施建设。2020年7月，中国铁矿石进口总量为11.265亿吨，同比增长24%，环比增长10.8%，创历史新高。与2019年同期相比，中国今年前七个月的铁矿石进口量增长了11.8%。七月，中国的粗钢产量亦达历史新高。大宗商品继续受益于中国的基础设施投资。钢铁产量增长势头惊人强劲，同时钢厂利润的增长有助于在短期内保持生产弹性。铁矿石库存的减少也是因素之一（Tan）。

由此可见，新冠疫情使得中国在全球钢铁生产方面获得前所未有的垄断地位，发展超过半个世纪以来总和。世界钢铁协会估计，实行封锁隔离后，英国四月份的钢铁产量少于全球总产量的0.5%。而中国钢铁产量份额占全球比重由去年的54%跃至今年的62%，超过其他国家的总和。长期以来，中国一直希望能够成为生产强国。中国于20世纪50年代末开展大跃进运动之时，毛主席承诺钢铁及其他工业生产要在15年内赶超英国；截至1996年，中国已在这一领域一马当先。然而，最近这一强劲的增长势头表明，中国政府决心消除全球经济增长疲软所带来的不利影响。疫情期间，尽管欧洲、美国和印度钢厂停产，但中国工厂从未停下生产的脚步，其效率甚至高于2019年。政府实行一系列非公开调控政策，并利用国有或国家注资部门提高产量，而金属产量则是其中的重要指标。

稀土元素

稀土金属共有17种，其中包括镧系元素以及另外两种具有相似性质的元素：钪和钇。稀土元素对于电动汽车和风力涡轮机等现代电子产品以及一系列军事技术均至关重要。新冠疫情所带来的负面影响凸显了中国在稀土金属及其供应链方面的垄断地位，促使其他政府及采购方寻找替代来源。2020年2月，稀土精炼厂生产遭受严重冲击，从农历新年至二月末及三月初均处于停摆状态。稀土供应链的主要问题在于原材料和成品的配送与运输。国内外贸易的延迟交付对整个供应链造成影响，导致某些产品库存紧缺。众所周知，稀土磁体产品优先向国内客户而非国际客户供应，尽管这可能是因为中国许多【稀土】磁体生产商涉足磁体制造之外的领域，选择满足内需而非出口供应。2020年，钕化合物的精炼产品供应紧张，包括镝化合物的其他稀土磁体产品市场依然承压。疫情伊始，人们担心中国是否能够继续供应稀土产品。但随着欧洲和美国开始实行封锁隔离，国外需求成为了新的忧虑。由此，市场总体保持相对稳定态势，因为在春节长假来临之前，世界各国已于2019年底提前获得所需的稀土产品。在此之后，需求量大幅下降。疫情爆发之前，镝和铽产品的供需关系较轻稀土更为紧张。停工停产使得市场上流通的材料变得抢手，价格上涨也说明了这一点。话虽如此，钕和镨产品的市场价格并无明显上浮。欧洲和北美需求回升将带动这两种轻稀土产品的价格上涨（Woodall）。

中国致力于保持合理的产业发展速度，制定循序渐进的生产指标，倡导科技创新，促进高端制造业的协同发展，从而打造稀土行业新格局。中国努力推动行业发展，进军高端应用及高附加值产品领域。同时，政府逐渐充分发挥稀土产品应用的战略价值，推动产业升级，淘汰不可持续的加工方式以减少环境污染。工业和信息化部（NDRC）表示将制定重要措施，整顿稀土市场秩序，改善市场管理，创造更好的商业环境，在稀土相关的关键技术上实现突破，并打击违法犯罪行为。商务部国际贸易经济合作研究院退休研究员金柏松在《中国日报》网站上发表文章时表示："稀土走私活动猖獗，一些出口公司伪造海关证明，绕开出口配额的限制，将产品出口至其他国家。因此，中国稀土产品的出口配额制并未对进口国特别是西方国家产生预期影响。"（Ouyang and Zhong）

同时，中美关系冲突升级以及新冠肺炎疫情后的供应链争夺赛，为美国重振稀土开采行业提供了新动力。这一重要矿产是美国高科技与清洁能源领域发展的关键，对其尖

stimulus would go into infrastructure. In July 2020, China imported a record 112.65 million metric tons of iron ore, a rise of 24% from 2019 and up 10.8% from the previous month. China imported 11.8% more iron ore in the first seven months of the year as compared with the same period in 2019. China also produced a record amount of crude steel in July. Bulk commodities continue to benefit from infrastructure investment in China. Steel production has been surprisingly strong and improving steel mill margins should keep the output resilient in the short term. A depleted iron ore stockpile also helps (Tan).

Thus, the coronavirus pandemic is putting China on course to dominate global steel production to an even greater extent than before, accelerating a trend that has gathered pace for more than half a century. In April, a locked-down UK produced less than half of 1%of the world's steel, according to estimates from the World Steel Association. China, on the other hand, produced 62% — dwarfing every other country combined, and significantly above its 54% share a year earlier. The country has long coveted the status of top producer. In the late 1950s, at the launch of China's Great Leap Forward, Chairman Mao pledged to overtake Britain in steel and other industrial production within 15 years, and by 1996 it had pulled clear of the rest of the pack. But this recent surge is a sign of Beijing's determination to fend off the impact of global economic weakness. While steel mills fell quieter in Europe, the US and India, Chinese producers kept running through its Covid crisis and are producing at an even faster rate than they did in 2019. Production of the metal is an important indicator for an otherwise opaque set of government policies, which draw on an array of state-controlled or state-influenced sectors to lift output (Hume).

Rare Earth Elements

There are 17 rare earth metals, the lanthanide series of elements and two others with similar properties, scandium and yttrium. Rare earth elements are vital to most modern electronic products including electric vehicles, wind turbines, and a range of military technologies. China's stranglehold on rare earth metals and their supply chains has been highlighted by the disruption wrought by the coronavirus pandemic, prompting governments and buyers to look for alternative sources. There was significant disruption to rare earth refinery output in February 2020 with closures at facilities extending from the Lunar New Year and into late February and early March. The main issue for rare earth supply chains has been the distribution and transport of raw materials and finished products. Delays to shipments of products to consumers domestically in China and internationally filter through the supply chain, causing some product shortages. For rare earth magnets, there is an agreement that domestic consumers are being preferentially supplied over international customers, though this is likely more to do with the fact that many [rare earth] magnet producers in China are integrated beyond magnet manufacturing and are consuming magnet materials internally rather than supplying them for export. The refined neodymium-compound supply became very tight in 2020 and markets for other magnetic rare earths, such as dysprosium compounds, remained under pressure. Initial concerns shifted from whether China would be able to continue to supply rare earths as the coronavirus spread to concerns about western demand just as lockdowns came into force in Europe and the US. As a result, the overall market remained relatively balanced since the world got the rare earths it needed at the end of 2019 in anticipation of the Lunar New Year holiday season before demand crumpled. Going into the outbreak, the supply-demand balance was much tighter for dysprosium and terbium in particular than it was for the light rare earths. Shutdowns consumed a lot of the material that was floating around in the market, and price hikes reflected that. But with that said, the neodymium-praseodymium market doesn't operate with a lot of overhang either. An upward momentum behind those two light rare earths was created as demand started to come back in Europe and in North America (Woodall).

China's goal for rare earth development is to form a new pattern for industry with a reasonable development pace, orderly production quotas, efficient utilization, scientific and technological innovation and coordinated development with high-end manufacturing. As China is keen to push the industry to enter the development stage with high-end applications and higher value-added products, the government is gradually giving full play to the strategic value of rare-earth applications to upgrade

端防御平台开发至关重要，然而进展并不顺利。尽管政府制定了一系列推动美国稀土供应链重建的新法案与措施，以帮助美国在关键领域摆脱数十年来对中国及其他外国供应商日益增长的依赖，增强自给自足的能力，但实施进程并不顺利（Gramer and Johnson）。其中一个主要问题来源于中国境外唯一一家掌握稀土化合物分离技术的大规模生产商——莱纳斯（Lynas）股份有限公司。2020年4月，该公司获得五角大楼资助，启动位于得克萨斯州的重稀土分离加工厂建设项目。同时，私营企业MP Materials获得加工设施建筑许可，负责美国唯一运营的稀土矿场，即加州 Mountain Pass的开采。尽管稀土产品具有战略重要性，但军方需求占比可能仅约1%。尽管飞机等大型订单会推动这一占比逐年增加，但稀土需求大多来源于电话和电脑等电子产品以及汽车（Ouyang and Zhong）。

去年年初，中国威胁切断对美稀土供应，同时实现完全自给自足。这印证了美方的观点：若亚洲停止出口重要矿产，美国将手足无措。美国鹰派最近呼吁，美国应采取更强硬的措施，阻止中国崛起，成为与之匹敌的世界大国。这一要求与新冠疫情的爆发使得美国更为坚决地想要摆脱对中国的依赖。过去二十年来，中美两国经济合作密切。而现今以特朗普为首的立法官员及其政府官员，对是否应继续维持这一段关系存有疑虑。相较于电力等处于增长的市场，国防工业对于稀土需求要小得多。虽然如此，五角大楼计划于2021年向稀土矿物开采领域投资4000万美元，但这笔款项将用于单一项目或是整个项目尚不得而知（Cammarata）。

石油和天然气

在疫情封锁状态解除后，全国复产复工，国内生产与进口总量均呈上升趋势。中国政府大力推动天然气生产与消费，减少污染，兑现应对气候变化的承诺，逐步淘汰煤炭。中国有望在2023年超越日本，成为世界上最大的液化天然气（LNG）进口国（Kallanish）。为此，中国国家能源局（NEA）表示将重点加强北部渤海湾近海、西南四川陆上油田、鄂尔多斯盆地以及远西部新疆地区等四大能源基地的勘探力度。同时，它将大力推动可再生能源、燃料乙醇和煤制油等新能源的发展，提高其供给能力，用于替代常规碳氢化合物。该年度计划还设定了一个目标：到2020年，安装非化石燃料发电装机总容量达900千兆瓦左右，且将煤炭在中国一次能源结构中的比重进一步降低至57.5%（Kallanish）。

天然气

一份行业报告显示，随着中国加大能源勘探开发力度，2020年中国的天然气消费量预计将呈上升趋势。国家能源局以及其他两个智库所共同发表的报告表明，到2020年，中国天然气预计消费量约3200亿立方米，同比增加约130亿立方米。2019年，天然气储量和产量增长均创历史新高。同年，油气勘探开发投资金额达3355亿元（约496亿美元），同比增长25.7%。报告表明，2019年，中国进口天然气1352亿立方米，同比增加6.9%，且来源更为多样化。自2019年以来，中国持续推进天然气市场化改革，其中包括有序开放油气勘探开发市场、促进国家统一网络建设以及充分发挥天然气在空气污染防治中的积极作用。根据2018年发布的《打赢蓝天保卫战三年行动计划》，中国力争在2020年将天然气占一次能源消费总量比重增加至10%（Xinhua, China Expects）。

the sector and reduce the environmental effects of unsustainable processing methods. The Ministry of Industry and Information Technology said it will enact key measures to rectify the rare-earth market order, improve management of the market, create a better business environment, make breakthroughs in key rare-earth-related technologies and crack down on violations of laws and regulations. "China's rare-earth export quota didn't have the desired effect on the importing countries, especially Western countries, because smuggling of rare earths was rampant and some export companies falsified customs codes to evade the export quota and continued to export them to other countries," Jin Baisong, a retired researcher at the Chinese Academy of International Trade and Economic Cooperation, said in an article published on China Daily's website (Ouyang and Zhong).

Meanwhile, rising tensions with China and the race to repatriate supply chains in the wake of the COVID-19 pandemic have given fresh impetus to US efforts to launch a renaissance in rare earths, the critical minerals at the heart of high technology, clean energy, and especially high-end US defense platforms. But it's not going well, despite a slew of new bills and government initiatives aimed at rebuilding a rare earth supply chain in the United States that would, after decades of growing reliance on China and other foreign suppliers, restore US self-reliance in a vital sector (Gramer and Johnson). One of the major problems is the only large-scale producer of separated rare earth compounds outside China is Australia's Lynas Corp. Ltd. It was awarded Pentagon funding in April 2020 for a heavy rare earth separation plant in Texas, while privately held MP Materials was likewise chosen for the creation of a processing facility at the United States' only operating rare earth mine, Mountain Pass in California. Despite its strategic importance, the military probably only accounts for about 1% of demand for rare earths. Though that percentage can multiply from year to year with large orders such as aircraft, the bulk of demand relies much more on purchases of electronics like phones and computers as well as cars (Ouyang and Zhong).

China's threat to cut off rare earth exports to the US early last year as well as its move to become entirely self-sufficient have reinforced Washington notions that the US will be left defenseless without critical mineral imports from Asia. The drive to decouple the US from China has been thrown into overdrive by the coronavirus pandemic and new calls from hawks in Washington to take a tougher approach to confronting Beijing's rise as a global rival. Lawmakers and Trump administration officials, starting with the president, are also increasingly leery of maintaining the kind of deep economic integration with China that has marked the last two decades (Gramer and Johnson). While the defense industry's demand for rare earths is a much smaller fraction compared to other growing markets, such as electric That being said, the Pentagon plans to award $40 million for rare earth minerals in 2021, but it's uncertain whether that would apply to a single program or the entire program (Cammarata).

Oil and Gas

The growth in both domestic production and imports follow the resumption of activities after lockdown restrictions were lifted. The Chinese government has pushed for higher production and consumption of gas to curb pollution and advance the country's climate change pledges, moving away from coal. China is poised to surpass Japan as the world's largest importer of liquefied natural gas (LNG) in 2023 (Kallanish). The NEA said it would focus on expanding its four key energy production bases to achieve the goals - one offshore in Bohai Bay in northern China, as well as onshore in Sichuan province in the southwest, in the Erdos Basin and in the far western Xinjiang region. It also aims to push forward development of so-called new energy - including renewables, fuel ethanol and coal-to-liquids - in order to improve its capability to replace conventional hydrocarbons. The annual plan also set a target of having around 900 gigawatts of installed non-fossil fuel power generation capacity in 2020 and further lowering the share of coal in China's primary energy mix to around 57.5% (Kallanish).

Natural Gas

China's natural gas consumption is expected to increase in 2020 amid the country's efforts to step up exploration and development of the energy source, according to an industry report. Consumption of natural gas is estimated to expand

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by 13 billion cubic meters to 320 billion in 2020, according to the report compiled by the National Energy Administration together with two other think tanks. Both reserves and output growth hit a record high in 2019, with investment in oil and gas exploration reaching 335.5 billion RMB (about US$49.6 billion), up 25.7% year on year. During the same period, natural gas imports rose 6.9% to 135.2 billion cubic meters with more diversified import sources, said the report. Since 2019, China has been pushing forward market-oriented reform of the natural gas market, including opening up of the oil and gas exploration and development market in an orderly manner, promoting the building of a unified national network, and giving full play to the positive role of natural gas in air pollution prevention and control. According to a three-year action plan on air pollution control released in 2018, China will boost the share of natural gas in its total primary energy consumption to 10% by 2020 (Xinhua, China Expects).

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2.7 Electricity Generation

Key Take-Aways

- China's interest in climate change has waned in recent years, due to the slowing down of economic growth and the US withdrawal from the Paris agreement. The 2020 public commitment on carbon neutrality has reignited hopes for China's climate action. China's 14th five-year plan (FYP), setting out its national goals for 2021-2025, will arguably be one of the world's most important documents for global efforts to tackle climate change.

- Developing cheap solar and wind energy to replace fossil energy has become the core energy strategy of China to reduce air pollution. China is leaning towards utilizing wind and solar power, something that will alter the country's strategy on mega-dam projects.

- More than 400 wind power companies signed a joint declaration calling for annual wind power capacity additions of 50-60GW to help China reach carbon neutrality by 2060. With the pandemic and the climate crisis still raging, China has been steadily building up its wind warms over land and sea. The coronavirus has impacted 10% of new capacity additions in 2020. However, the bigger challenge for wind developers is the looming deadline for the termination of national subsidies by the end of the year.

- The NEA has reportedly ascertained 47 GW of grid availability for solar in 2020.

Covid-19 Repercussions

China's industrial power demand in 2020 declined by as much as 73 billion kilowatt hours (kWh), as the outbreak of the coronavirus curtailed factory output and prevented some workers from returning to their jobs. The cut represents about 1.5% of industrial power consumption in China. But, as the country is the world's biggest electricity consumer, the loss is equal to the power used in the whole of Chile and it illustrates the scope of the disruption caused by the outbreak. The reduction is the energy equivalent of about 30 million tons of thermal coal or about 9 million tons of liquefied natural gas (LNG), IHS said. The coal figure is more than China's average monthly imports last year while the LNG figure is a little more than one month of imports. Industrial users in 2019 consumed 4.85 trillion kWh electricity, accounting for 67% of the country's total. Industrial operating rates point to a firm reduction in power consumption in China (Xu and Munroe).

Background

In global energy rankings, one country stands out. China is the world's hungriest consumer of energy worldwide — demanding the energy equivalent of almost 3.3 billion tons of oil in 2019. Since 2011, it has burnt more coal than all other countries combined. And its reliance on this fossil fuel adds up: China emits around one-quarter of the world's greenhouse gases, the largest share of any country. But these figures are only part of the story. China is also the world's most prolific producer of wind energy, with the capacity to make more than twice as much as the second-largest generator, the US. And it has about one-third of the world's solar-generation capacity, building more systems in 2019 than any other country.

China's surprising pledge in September 2020 to cut its net carbon emissions to zero within 40 years has reignited hopes of limiting global climate change to tolerable levels. The country is the world's largest producer of carbon dioxide (CO_2), accounting for 28% of global emissions, and its move may inspire other countries to follow suit. But observers warn that China faces daunting challenges in reaching its goals. Kicking its coal

2.7 电力生产

关键要点

· 近年来，受经济增长放缓以及美国政府退出《巴黎协定》的影响，中国应对气候变化的积极性有所下降。2020年，中国公开作出碳中和承诺，重新点燃了人们对中国采取积极气候行动的希望。中国的"十四五"规划明确了2021至2025年的国家目标，可谓是有关全球应对气候变化的最重要文件之一。

· 开发廉价的太阳能和风能来替代化石能源，以减少空气污染，已成为中国的核心能源战略。中国逐渐加大风能和太阳能的开发利用，这将改变中国的大型水电站的发展战略。

· 400多家风电企业签署了联合声明，呼吁每年新增50至60GW风电装机容量，推进中国2060年实现碳中和目标。新冠疫情和气候危机仍在加剧，但中国在稳步推进陆上和海上风电场的建设。2020年，新冠疫情影响了新增10%发电量。不过，风电开发商面临的更大挑战是年底国家补贴将取消。

· 据报道，中国国家能源局确定了2020年太阳能电网消纳空间为47GW。

新冠疫情所带来的影响

由于新冠疫情的爆发，削减了工厂的产量，一些工人无法重返工作岗位，因此2020年中国工业用电需求下降多达730亿千瓦时（kWh）。约占中国工业用电量的1.5%。但由于中国是世界上最大的用电国，下降的用电需求相当于智利全国的用电量，这也说明了疫情的影响相当大。ISH表示，下降的用电需求相当于约3000万吨动力煤或约900万吨液化天然气（LNG）。而中国去年月均煤炭进口低于3000万，而LNG月均进口略低于900万吨。2019年，工业用户耗电量为4.85万亿kWh，占全国总量的67%。工业开工率表明中国企业耗电量减少（Xu and Munroe）。

背景

在全球能源消耗排行榜中，中国排名第一。中国是世界上最大的能源消耗国，2019年能源需求量相当于近33亿吨石油。自2011年，中国的用煤量比其他国家的总和还要多，而且对于这种化石燃料的依赖度也在增加。中国温室气体的排放量约占全球的四分之一，在所有国家中排名第一。这些是能源消耗数据。有关能源产量，中国也是世界上最大风能生产国，产量是第二大发电国美国的两倍多。而且中国太阳能发电量约占全球的三分之一，2019年建成的太阳能发电系统数量超过任何其他国家。

2020年9月，中国出乎意料地承诺在40年内将其净碳排放量减至零，这重新点燃了人们对全球气候变化限制在可承受水平的希望。中国是全球最大的二氧化碳（CO2）排放国，占全球总排放量的28%，中国这一举措可推动其他国家作出类似承诺。但观察人士警告称，中国在实现零碳排放目标的过程中面临着巨大的挑战。实现零煤的过程是痛苦且艰难的。中国此前表示，其CO2排放量将在2030年"左右"达到峰值，大多数分析人士认为中国可实现这一目标。但是，若要在2060年之前实现碳中和，中国必须大幅减少车辆和发电厂的化石燃料使用，并通过碳捕获与封存或植树造林来抵消其余的排放量。中国尚未公布如何实现碳中和目标的具体措施。煤炭行业机遇与挑战并存。2019年，高碳排放燃料约占中国能耗量的58%，发电量的66%。但这需要一个转折点。Myllyvirta及其同事近期的一项研究发现，2019年中国的燃煤发电量增长了约40吉瓦（GW），达到约1050GW。另有100GW装机容量的在建项目，煤炭利益正在游说更多的工厂。尽管煤炭行业存在严重的产能过剩问题，煤电厂的产量不到产能的50%，许多面临亏损。电力市场面临一个相关挑战，它将带来翻天覆地的改变。与煤炭相比，可再生能源的成本越来越具有竞争力，但监管机构分配电厂运行时间，协调供需平衡时，很少考虑经济或环境影响。绝大多数情况下，该系统会偏向使用燃煤发电，部分原因是其不会受到风力和太阳能不稳定性的影响。市场准入的不确定性，使得对可再生能源的投资放缓。鉴于煤炭和建筑利益的影响，相关改革需要有相当大的政治意愿才会实施。此外，扩大核电生产也面临着挑战。2011年，日本福岛核事故引发了中国担忧，中国于是加大安全措施，使得新的核电站造价更加昂贵。此外，公众的反对意见也在与日俱增。中国拥有48座运行中的核电反应堆，另有12座反应堆在建设中。政府的目标是到2020年核电产能达到58GW，但

habit will be particularly hard. China had previously said its CO2 emissions would peak "around" 2030, a target most analysts considered within reach. But achieving carbon neutrality before 2060 will require drastically reducing the use of fossil fuels in transportation and electricity generation and offsetting any remaining emissions through carbon capture and storage or planting forests. China has not yet revealed details of how it will do this. Coal is both the biggest challenge and an opportunity. The carbon-heavy fuel accounted for about 58% of China's total energy consumption and 66% of its electricity generation in 2019. But it will require a U-turn. A recent study by Myllyvirta and colleagues found that China's coal-fired generating capacity grew by about 40 gigawatts (GW) in 2019, to about 1050 GW. Another 100 GW is under construction and coal interests are lobbying for even more plants. This is all despite significant overcapacity in the sector, with plants running at less than 50% of capacity and many coal-power companies losing money. A related challenge will be reforming the electricity market. Renewable energy is increasingly cost competitive with coal, but regulators allocate operational time among electricity plants to match generation to demand, with little consideration of economic or environmental implications. The system overwhelmingly favors coal-fired generation, partly because it doesn't suffer from the variability of wind and solar power. The uncertain market access has already slowed investment in renewables. Given the power of coal and construction interests, the needed reforms will take considerable political will. Expanding nuclear power presents challenges as well. The 2011 Fukushima Daiichi nuclear disaster in Japan sent ripples of concern through China, which mandated additional safety measures that made new plants more expensive. Public opposition is also growing. China has 48 nuclear power reactors in operation and 12 under construction. The government had aimed for 58 GW of nuclear capacity by 2020 but did not get beyond 52 GW. China's Five-Year Plan for 2021–25, being drafted as of this writing, may contain concrete measures to help realize Xi's ambitious target. China's interest in climate change has waned in recent years, due to the slowing down of economic growth and the US withdrawal from the Paris agreement. The commitment on carbon neutrality reignited hopes for China's climate action (Normile).

China will continue to support renewable energy development providing that electricity generated from renewable sources could be absorbed by grids. It aims for total installed capacity of 340 GW of conventional hydropower, with installed capacity of both wind and solar power to reach about 240 GW by 2021. However, about 4% of the electricity generated by wind farms and 2% by solar stations did not connect to China's grid in 2019, thanks to its insufficient power carrying capacity. To push local grid firms to prioritize purchase of clean sources, the agency set quotas early this month for each province's minimum consumption of renewable electricity in 2020 (Xu and Stanway).

Wind Power

China will install 251GW of new wind energy capacity between 2020 and 2029. More than 25 wind bases totaling over 100GW of capacity are already planned and under construction to support near-term wind growth. In the long run, falling levelized cost of electricity (LCOE) is expected to drive capacity additions. Subsidy phase-out is expected to impact only 16% of onshore wind capacity additions. The country's wind power market could reach a cumulative grid connected capacity of 461GW by the end of the decade. The coronavirus has impacted 10% of new capacity additions in 2020. However, the bigger challenge for wind developers was the looming deadline for the termination of national subsidies by the end of 2020 (Nhede).

The world's offshore windfarm capacity could grow eightfold by the end of the decade powered by a clean energy surge led by China. Stronger than expected growth for the offshore wind industry could reach 234GW by 2030, from a global tally of just over 29GW at the end of last year. Governments around the world recognize the role that the technology can play in jumpstarting the post-Covid economy recovery. The offshore wind industry could create 900,000 jobs globally over the next decade, or even more if policymaker's post-pandemic economic stimulus packages to accelerate the sector's growth. The offshore market has grown on average by almost a quarter every year since 2013, led by a flurry of new projects in European waters, which hold 75% of the world's

实际不到52GW。截至本文撰写时，中国正在起草的2021-2025年五年计划可能包含具体措施，以实现习近平主席提出的宏伟目标。近年来，受经济增长放缓以及美国政府退出《巴黎协定》的影响，中国应对气候变化的积极性有所下降。中国的碳中和承诺重新点燃了人们对中国采取积极气候行动的希望。(Normile)

中国将继续支持发展可再生能源，但前提是可再生能源产生的电力能够纳网。中国目标到2021年，常规水电总装机容量达到340GW，风电和太阳能发电装机容量均达到240GW左右。但在2019年，由于中国电力承载量不足，约4%风力发电场和2%太阳能站产生的电力未能纳入电网。为推动当地电网企业优先购买清洁能源，国家能源局本月初制定下发了各省2020年可再生能源电力最低消纳配额（Xu and Stanway）。

风电

2020至2029年期间，中国新增风电装机容量将达到251GW。已规划和在建的风电基地超过25个，总装机容量超过100GW，以满足目前的风电增长需求。长期来说，平准化度电成本（LCOE）不断下降，有望推动产能增加。补贴取消预计仅影响16%的陆上风力发电量的增加。十年后，中国风电市场累计并网量可达到461GW。2020年，新冠疫情影响了新增10%发电量。不过，风电开发商面临的更大挑战是2020年底国家补贴将取消。(Nhede)

在以中国为首推动的清洁能源发展浪潮下，十年后全球海上风力发电厂的产能可能会增长八倍。到2030年，海上风电行业增长可能会超出预期，达到234GW，而去年年底全球统计数据仅略高于29GW。全球各国政府意识到，海上风电技术在疫情过后的经济复苏中将发挥重要的作用。未来十年，海上风电行业可能会在全球范围内创造90万个工作岗位，如果政策制定者在疫情过后制定的经济刺激政策包括加快该行业的发展，甚至会创造更多的工作岗位。自2013年以来，在欧洲的还是风电项目的带动下，境外市场平均每年增长近四分之一，欧洲拥有全球75%的海上风力发电场。但由于亚太地区国家对清洁能源的需求日益增长，预计未来十年的风电增长加快。但十年后，中国预计将拥有全球超过五分之一的海上风力发电机，产能52GW（Ambrose）。

疫情和气候危机仍在加剧，但中国在稳步推进陆上和海上风电场的建设。虽然新冠疫情使全球大部分地区的发展停滞不前，但中国仍在继续开拓可再生能源市场。中国建设的海上风电产能比世界其他地区的总和还要多。自2017年达到1GW创历史新高以来（足够为一亿个家用LED灯供电），中国的海上风电发展十分迅猛。目前中国在新海上风电装机容量方面处于世界领先地位。建设重点除了中国南海，还包括其他海域。海上风电易于传输，海风沿着东部沿海移动，而且工业城市的人口众多，所以海上风电容易消纳。此外，海上风力发电厂的阻力相对较小。中国目前拥有超过13.5万台陆上和海上风机，每年发电量超过235GW。中国也是全球最大的太阳能电池板出口国。到2021年底，中国海上风电行业将超过英国，成为全球最大的风电市场(Vince)。

太阳能发电

中国的太阳能发电公司（在供应链各环节中，它们总共控制着至少60%的全球产能）在山高水险中前进。太阳能行业的发展历史较短，反复出现过繁荣与萧条时期，相关颠覆性技术和政策的发展，不再要求企业投资仅仅数十亿美元。一个太阳能发电企业今天是行业领跑者，明天可能要申请破产。目前，中国太阳能发电行业面临前所未有的困境。成本暴跌使太阳能发电成为世界上部分地区最便宜的能源形式。补贴正在逐步取消，因为太阳能发电比其他能源形式更具竞争性，从而减少了需求量对国家决策的依赖。储能技术的进步带来了更多的可能性，在不久的将来，太阳能有可能在许多领域替代化石燃料。目前，全球产能还远未达到可以满足未来需求的水平。解决方法是创造一种具有长期竞争力的产品。可以通过两种方法切割太阳能硅片，将熔融的硅冷却成一种同质结构，或促使其在不同的时间点结晶。通过第一种方法可以得到单晶硅，电导性更好，效率更高。但单晶硅比多晶硅产品更昂贵，因此与价格低廉的化石燃料发电相比，大多数制造商更青睐多晶硅产品。降低成本并不能解决太阳能行业面临的所有重大风险，包括政治风险。自2010年以来，美国和欧盟定期对中国制造商征收反倾销关税，理由是中国制造商获得中国政府补贴，将产品以低于成本价出售。中美贸易战于2018年拉开帷幕，美国开始对电池板征收关税。由于印度对中国太阳能产品征收的关税即将到期，近期延长了征收期，以削弱中国的经济影响力。尽管如此，中国的太阳能行业仍在迅速发展。截至2019年底，中国电池板年产能为193GW，比该年全球装机容量高60%。随着扩建计划实施，预计中国电池板年产能增加一半以上。此外，太阳能发电最大的问题在于没有阳光不能发电，但这一难题也取得了重大进展。由于电力需求通常在白天达到顶峰，太阳能发电主要作为传统电厂的补充，而这个问题并未受到广泛关注。不过，随着电池板安装量增长，这个问题严重制约了太阳能发电，白天发电过剩，晚上无法消耗。工程师正在不断改进各种储能技术，包括改良电池，建立抽水蓄能系统，该系统白天利用太阳能抽水至水库，并在需要时通过水轮机放水发电。但是，目前尚无有效办法解决太阳能发电面临的问题（Murtaugh和Shen）。

在过去的十年中，太阳能发电迅猛增长，成为世界上发展最快的可再生能源。2019年全球太阳能光伏新增装机约109GW，与2018年大致持平。由于政策支持、技术成

offshore wind farms. However, the rate of growth is expected to accelerate in the next 10 years because of a growing appetite for clean energy in countries in the Asia-Pacific region. But by the end of the decade China is expected to host more than a fifth of the world's offshore wind turbines, equating to 52GW (Ambrose).

With the pandemic and the climate crisis still raging, China has been steadily building up its wind farms over land and sea. Despite Covid-19 grinding much of the world to a halt, China's drive to conquer the global renewable energy market continues apace: it's constructing more offshore wind capacity than the rest of the world combined. Since reaching the one-gigawatt milestone in 2017 (enough energy to power 100 million LED home light bulbs), progress has been rampant. China is now the world's leader in new offshore wind installations. And construction hasn't always been focused on the South China Sea. Offshore is easy to transmit, and the wind along the east coast and the industrial cities is well populated. It's easy for energy consumption. There also tends to be less of a resistance to offshore wind farms. On-or-off-shore, China now boasts more than 135,000 turbines, generating more than 235 gigawatts of electricity per year. It's also the world's biggest exporter of solar panels. China's offshore wind sector is set to overtake the UK market as the world's largest by the end of 2021 (Vince).

Solar Power

Chinese companies that dominate solar—collectively they control at least 60% of global capacity for every step in the supply chain—are playing a risky game. The short history of the solar industry is a tale of repeated boom and bust, with abrupt technological and policy developments rendering multibillion-dollar investments obsolete. Industry leaders one day have, again and again, become bankruptcy filers the next. The bet in China is that this time is different. Plunging costs have left solar the cheapest form of energy in parts of the world. Subsidies are disappearing as it becomes more competitive with other forms of electric generation, making demand less dependent on political decisions. And advances in energy storage are opening a tantalizing possibility: that solar could, in the near future, could replace fossil fuels in many places. Current global production capacity is nowhere near enough to meet the coming demand. The trick is to create a product that could compete in the longer term. There are two ways to make the blocks that solar wafers are sliced from: by cooling molten silicon into one homogeneous structure or encouraging it to crystallize from different points. The first approach, known as mono-crystalline, provides greater conductivity and efficiency. But it's more expensive than multi-crystalline products, which most manufacturers favored in their efforts to compete with cheap fossil fuel generation. Cost-cutting can't fully neutralize the other major threat to China's solar industry: politics. The US and European Union have periodically targeted Chinese manufacturers with anti-dumping tariffs since the early 2010s, claiming that subsidies allow them to sell below cost. The US-China trade war kicked off in 2018 with duties on panels, and India, which is trying to reduce the economic influence of its giant neighbor, recently extended tariffs that had been set to expire on Chinese solar products. China's solar industry is nonetheless growing rapidly. At the end of 2019, Chinese panel factories had an annual capacity of 193 gigawatts, 60% more than was installed worldwide in that year. Planned expansions could increase a total by more than half. There's also been significant progress on the technology's biggest problem: that it can only generate electricity when the sun is out. When solar was primarily a supplement to traditional power plants, that wasn't a major concern, because power demand tends to peak in daytime. But it becomes a serious constraint as more panels are installed, creating a daytime surplus that's not useful at night. Engineers are refining a huge range of storage technologies, from improved batteries to "pumped storage" systems, which use solar electricity to send water uphill during daylight hours, releasing it through turbines when needed. None has yet emerged as a game-changing solution (Murtaugh and Shen).

In the last decade, solar power capacity has grown tremendously to become the fastest-growing source of renewable energy in the world. However, in 2019, around 109 GW of new solar PV capacity was added worldwide, about the same as in 2018. The rapid installations were primarily due to policy support and a sharp decline in technology costs and

本大幅下降以及对环境问题的进一步担忧，太阳能装机发展迅速。然而，由于新冠疫情引发的经济衰退，用户的财务状况不明朗，住宅光伏发电领域的需求将受到严重影响。用户可自由支配开支放缓，着重维持短期现金流，预计对工商用太阳能装机产生不利影响。此外，在公用事业领域，供应链断裂和投资疲软将导致项目投产延期。尽管由于新冠疫情导致2020年经济增长放缓，中期来看，太阳能发电的发展前景非常好。且与其他同类能源相比，太阳能光伏发电的成本越来越低，预测期内有望扩大市场规模（Cision）。

鉴于这一点，国有企业黄河上游水电开发有限责任公司于2020年在西北的青海省沙漠中建成了全球第二大太阳能发电厂。这座太阳能电厂装机容量2.2GW，分五期建成。投资额150.4亿元人民币（22亿美元），储能容量202.8MW/MWh（Bellini）。

截至2020年3月，中国可再生能源累计装机容量为802GW，其中太阳能累计装机容量208GW。国家能源局表示，从累计装机容量来看，太阳能光伏发电领域的增长率为15.6%。近期，国家能源局下达任务，要求电网公司统计2020年电网消纳的风能和太阳能发电的总量，以促进这些行业扩大规模和稳定发展。根据某当地媒体报道，2020年太阳能发电并网量为47GW，而风电并网量将达到37GW。报道还称，由于新冠疫情，海外光伏发电市场处于"基本关停"状态，清洁能源公司已将"主战场"转向国内需求。针对这种情况，政府正在努力确保减少弃光现象，明确电网消纳空间对此十分重要。为解决此问题，国家能源局发布了《关于建立健全清洁能源消纳长效机制的指导意见（征求意见稿）》，目前正在征求意见。值得一提是，多家市场情报公司表示，由于新冠疫情带来的相关挑战，中国太阳能市场将在2020年增长33.4GW至45GW。若预测准确，则电网容量足以消纳2020年太阳能新增装机量（Nairwrite）。根据中国的《可再生能源发展"十三五"规划》，到2020年底，中国可再生能源发电量将达1.9万亿千瓦时，占总发电量的27%（Reve）。

水力发电

本世纪初以来，中国的水力发电产能增加了三倍多，占全球增量的一半以上。中国大力发展丰富的水电资源，水电约占电力总装机容量的17%，促进了经济发展。2019年，水电装机容量增加4.2GW，总容量达到356GW，水电总发电量估计达到1302.00TWh。2019年，由于部分项目停工，抽水蓄能的电站投产容量300MW。原因是电力市场改革进展缓慢，影响了储能项目的投资回报，电价下调压力加大。新冠疫情爆发后，许多水电项目停工，许多建设计划被打乱。随着中国放松社交隔离措施，项目逐渐复工。一批抽水蓄能和电网基础设施项目也慢慢复工，以促进经济复苏。未来五年，中国一批水电项目将投产使用，包括金沙江的乌东德水电站（10200MW）和白鹤滩水电站（16000MW）、以及雅砻江的两河口水电站（3000MW）和杨房沟水电站（1500MW）等大型项目，将于2021年至2022年间完工。乌东德水电站的第一批发电机组已于2020年7月投入使用。近年来，由于经济疲软和电力需求增长下降，年产能增长相应有所放缓，从而导致产能过剩，并抑制可再生能源发展。中国建设了跨省输送渠道，以输出地方过剩电力。2018年，云南省的另外两条输电线路取得了重大进展。云南—广东800kV特高压直流输电示范工程已经投产，输送容量为5000MW。乌东德电站送电广东广西特高压多端直流示范工程已开始施工，这是世界上第一条800千伏特高压多端柔性直流输电线路。抽水蓄能电站对于提高电力系统的灵活性至关重要，并且仍是中国能源转型的重中之重。深圳1200MW储能电站于2018年投产，是中国首座于城市中的大型抽水蓄能电站。琼中600MW电站也已投入运营。另外三个抽水蓄能项目是阜康1200MW电站，句容1800MW电站和永泰1200MW电站，其主要的土建工程已于2018年开始施工。除此之外，中国还投产了一些常规发电项目，包括黄登1900MW水电站、沙坪二级348MW水电站、大华桥920MW水电站和里底420MW水电站。同时，中国长江三峡集团公司建设的白鹤滩16000MW水电项目，是目前世界上最大的在建水电项目，目前已经取得了实质性进展，泄洪洞进水塔顺利封顶。（IHA）

中国的水力发电在世界处于领先地位，每年发电量为1200TWh（2017年数据）。中国年发电量超过俄罗斯、日本和加拿大等发达国家的总发电量。三峡大坝和白鹤滩水电站，将于明年投入运营，这两个大型水电项目全面投产后，可生产大量电力。白鹤滩水电站可在未来两年实现满负荷运行。未来短短十年内，中国将运营世界上一半的大型水力发电厂，全球共十座大型水力发电厂中，五座将位于中国。然而，由于中国政府目前重点发展太阳能和风能，以后可能不会再建设大型水坝项目。中国政府对此的考虑是，首先太阳能和风能的生产成本不断下降，其次，很难找到适合建设大型水电站的地点。然而，中国不会完全停止发展水力发电项目。相反，中国将建造一些小型水电站，作为紧急电力供应源（Geo engineer）。大型水电站建设暂告一段落，中国开始扩张海外市场。波士顿大学全球发展政策中心的研究人员称，自2000年以来，中国大型银行已在全球提供了了近440亿美元的水力发电项目融资。中国水力发电企业在南亚、东南亚、非洲和拉丁美洲的其他国家进行了大量投资（Bloomberg, China's Mega-Dams）。

核电

中国可能不会在今年实现其核电发展目标，但这不会影响其在2030年前成为全球最主要的气候友好能源倡导者的宏伟目标。官方研究人员表示，到2030年，预计中国核电产能增加一倍以上，达到130GW。虽然这只占

growing environmental concerns. However, with the economic downturn induced by the outbreak of Covid-19, demand from the residential PV segment will be severely affected due to the financial uncertainty faced by the customers. Commercial and industrial installations are expected to be negatively affected as discretionary spending will be delayed, and preserving short-term cash flow will become a priority. Further, in the utility segment, supply chain disruptions and weaker investment will lead to delays in project commissioning. Despite the 2020 slowdown due to the coronavirus pandemic's challenges, the outlook for solar remains strong in the medium term, and the market is expected to expand during the forecast period as the cost of generation from solar PV is increasingly becoming cheaper than its alternatives (Cision).

With that in mind, the Chinese state-owned utility Huanghe Hydropower Development finished building the world's second largest solar power project in a desert in the northwestern Chinese province of Qinghai in 2020. The 2.2 GW solar plant was built in five phases. It involved an investment of 15.04 billion RMB (US$2.2 billion) and includes 202.8 MW/MWh of storage capacity (Bellini).

Altogether, the cumulative installed solar power capacity of China till the end of March 2020 reached 208 GW, out of 802 GW renewable energy capacity. On a cumulative basis, the NEA says this is a growth of 15.6% for solar PV segment. The NEA recently tasked its power grid companies to calculate the amount of clean power from wind and solar that can be accommodated into the grid in 2020 with a view to promote the expansion and stable growth of these industries. A Chinese local media report claimed there is enough grid capacity to connected 47 GW of solar in 2020, and for wind it would be 37 GW this year. It added that as overseas PV market has 'basically shut down' due to COVID-19 pandemic, domestic demand is now the 'main battlefield' for companies operating in the clean energy space. In such a situation, knowledge of grid availability is a helpful factor as the administration works to ensure power curtailment is curbed. In this direction, the NEA has launched a draft on establishing and improving a long-term mechanism for clean energy consumption and is seeking public comments. Notably, several market intelligence firms claim the Chinese solar market grew between 33.4 GW to 45 GW in 2020 due to COVID-19 related challenges. If these assumptions are correct, there was enough grid capacity to accommodate the newly installed solar capacity in 2020 (Nairwrite). By the end of 2020, renewable energy will generate 1.9 trillion kilowatt-hours of electricity, which represents 27% of the country's total power generation, according to the government's 2016-2020 renewable energy plan (Reve).

Hydroelectric

China has more than quadrupled its hydropower capacity since the turn of the century, accounting for over half of worldwide growth. The economy has benefitted hugely from the development of its vast hydropower resources, which account for around 17% of total electric power installed capacity. Total hydropower capacity reached 356 GW in 2019 after a further 4.2 GW in capacity was added and China's total estimated hydropower generation reached 1,302.00 TWh. Pumped storage hydropower capacity grew by just 300 MW in 2019, with a temporary pause on new projects. This was due to a lack of progress in electricity market reforms affecting investment returns for energy storage projects, and pressure to reduce electricity prices for consumers. With the outbreak of the Covid-19 pandemic, a number of hydropower projects were halted and construction schedules were disrupted. As China has eased its social distancing measures, construction has since resumed. In addition, a number of pumped storage and grid infrastructure projects have been resumed to stimulate the recovery. In the next five years, China expect to see new hydropower projects being commissioned including mega projects such as Wudongde (10,200 MW) and Baihetan (16,000 MW) on the Jinsha River, as well as Lianghekou (3,000 MW) and Yangfanggou (1,500 MW) on Yalong River will be completed between 2021 and 2022. The first batch of generating units at Wudongde has been commissioned in July 2020. In recent years, annual capacity growth has slowed in line with weaker economic conditions and reduced power demand growth, resulting in overcapacity and renewables curtailment. Inter-provincial power transmission channels have been constructed to export excess hydropower generation and in 2018, two further transmission lines from Yunnan province achieved significant progress. The 800 kV Northwestern

全国发电量的10%左右，但中国在能源市场上的影响力使其每年节省的碳排放量仍相当于德国燃煤、石油和天然气的排放总和。与此同时，中国看来将无法到今年年底实现58GW的核电目标。主要原因与最近几年核能相关问题有关，包括9年前的日本福岛核事故，该事故促使中国放缓新项目的发展步伐，并停止了新核电项目审批。尽管如此，中国仍将在2022年超过法国，成为世界第二大核电生产国；并在此后的四年超过美国，成为全球第一。截至2019年，中国核电装机容量约49GW，预计2020年超过50GW。规划和建设新核电站或在现有核电站增设反应堆，需要数年时间。2019年，中国重启了暂停了三年的核电审批，由于这三年审批冻结期，这十年的核电建设减少。从2021年开始，预计每年中国将启动建设六至八个核反应堆。就业是当前中国领导层工作的当务之急，建设一个典型的1GW反应堆可以创造5万个就业机会。政府监管机构推迟了新增核电机组审批，并在等待新的、在建的国内反应堆类型的完工，以验证其是否能够成功和安全的运行。这很可能会在明年迎来使用国内技术的新一轮核电站许可的热潮。有关审批的数量和速度，中国的官僚体制和内部派别持不同意见，且面临外部压力，接着爆发了新冠疫情。国内封城措施导致电力需求减少，2020年中国广核电力股份有限公司被迫推迟项目并削减开支。因此，中国清洁能源行业稳定发展可能面临其他更严重的问题。中国不断提高技术水平，对太阳能和风能日益重视，核能的前期发展成本高，此前曾出现过核能安全性问题，如果最后核能发展倒退，那可能意味着可再生能源取得了长足的发展（Bloomberg, China to Dominate）。

燃煤发电

中国年温室气体排放量世界第一，煤电发展在中国仍占主导地位。中国建造了全球近三分之二的运营发电厂，世界近90%在建发电厂位于中国。全球50%运营中的燃煤电力产能位于中国。但由于新冠疫情，截至2020年6月底，中国煤电厂投产规模11.4GW，同比下降40%多，去年同期为19.4GW。中国的燃煤发电产能过剩，疫情前，运营中的电厂的产量不到产能一半。尽管如此，中国各省的煤电厂建设审批通过率创下自2016年以来新高（Morton）。

近期数据显示，2020年中国拟建设煤电厂项目将增加电力供应40GW多，与南非现有的全部电厂产能相当。这一消息将加剧人们的担忧，由于新冠疫情封城重创经济，政府迫切采取措施刺激经济，这将会导致全球排放量超过疫情前的最高记录。此外，根据全球能源监测组织（Global Energy Monitor）（和能源与清洁空气研究中心（Centre for Research on Energy and Clean Air）调查数据，截至6月中旬，中国批准建设燃煤电厂容量超过2018年和2019年全年的总和。中国的能源政策对《巴黎协定》的成功实施的具有关建作用，该协定旨在将全球气温上升幅度度控制在2°C以内。省级政府常常把新建的燃煤电厂作为刺激经济的手段，这会不利于中央政府设定的环境目标的实现。2020年第一季度出现了40多年来首次经济负增长。随着工业活动不断增加，出现了燃煤电厂建设审批热潮。中国以外的钢铁生产大国产量下降，但在基础设施建设的推动下，中国今年的钢铁产量创下历史新高。作为《巴黎协定》的签署国，中国承诺到2030年达到碳排放峰值。2016年，中国为应对产能过剩和环境污染问题，暂停了数百座燃煤电厂的建设。但随着经济增长放缓，许多项目重新启动（Hale）。

Yunnan-Guangdong UHVDC power transmission project with a transmission capacity of 5,000 MW was commissioned, and the world's first UHV multi-terminal DC project, the 800 kV Wudongde–Guangdong and Guangxi transmission began construction. Pumped storage is essential to provide flexibility to the power system and continues to be a priority in China's energy transition. The 1,200 MW Shenzhen station was commissioned in 2018 and is the country's first large scale pumped storage built in a city, in addition the 600 MW Qiongzhong station entered into operation. Furthermore, the main civil works of three pumped storage projects (1,200 MW Fu Kang, 1,800 MW Jurong and 1,200 MW Yongtai) began construction in 2018. A number of conventional projects were also commissioned, including 1,900 MW Huangdeng, 348 MW Sha Ping II, 920 MW Dahuaqiao and 420 MW Li Di stations. Meanwhile, substantial progress has been made with the world's largest hydropower project currently under construction, China Three Gorges Corporation's (CTG) 16,000 MW Baihetan project, with the completion of intake towers for spillway tunnels (IHA).

China is the world's leader when it comes to hydropower, generating 1,200 TWh per year (data from 2017). This amount of power surpasses the total electrical power produced in developed countries such as Russia, Japan and Canada. China's two largest hydropower projects, the Three Gorges Dam and the Baihetan Dam (which will be operational by next year) will produce massive amounts of power when they run at their full potential. When the Baihetan Dam reaches its full capacity (within the next two years), China will operate half of the world's biggest hydropower plants (5 out of 10) in just a decade. Nevertheless, no massive dam project will probably be realized from now on in China, since the government is aiming at boosting solar and wind power. This decision comes after considering the decreasing costs of the aforementioned energy sources and the increasing difficulty of finding fitting locations for establishing mega-dams. However, China will not completely abandon hydropower projects. Instead, smaller dam facilities that will generate renewable power for urgent situations will be constructed (Geoengineer). As China's dam builders pack up their tools at home, they are expanding overseas. China's major development banks have financed nearly $44 billion worth of hydropower projects globally since 2000, according to researchers at Boston University's Global Development Policy Center. Chinese hydro companies are investing heavily in other countries in South Asia, South East Asia, Africa and Latin America (Bloomberg, China's Mega-Dams).

Nuclear Power

China probably didn't hit its nuclear energy target in 2020, but that's unlikely to derail a broader ambition to become the planet's chief proponent of the climate-friendly fuel by the end of the decade. Government researchers have said that nuclear capacity could more than double to 130 gigawatts by 2030. While that would be only about 10% of national power generation, such is China's heft in energy markets it would still save the amount of carbon that Germany emits annually from burning coal, oil and gas. In the meantime, China looks like it'll miss its goal of 58 gigawatts of nuclear by the end of this year. Why that is, as with virtually every recent stumble associated with atomic energy, dates to the catastrophe at Fukushima in Japan nine years ago, which has slowed new projects and halted approvals. Still, China will pass France as the world's No. 2 nuclear generator in 2022 and claim the top spot from the US four years after that. China had almost 49 gigawatts installed as of 2019 and should get into the mid-fifties in 2020. New plants, or adding reactors at existing facilities, takes years to plan and construct, and a three-year freeze on approvals that ended in 2019 has thinned the pipeline for this decade. Starting in 2021, China is expected to start construction on six to eight reactors a year. Employment is now the top priority for China's leadership, and a typical 1-gigawatt reactor could create 50,000 jobs. Government regulators have delayed approvals for new units and are waiting for new, domestic reactor-types under construction to be completed and demonstrate successful and safe operation. This is likely to happen in 2021, and should lead to a new round of nuclear plants using domestic Chinese technology. While China's vast bureaucracy and competing fiefdoms create their own risks around the number and pace of approvals, the coronavirus looms large among external pressures. Reduced power demand due to China's lockdown forced CGN Power to delay

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projects and cut spending in 2020. So perhaps the biggest threat comes from elsewhere in China's clean energy stable. The nation's growing expertise and emphasis on solar and wind power, and the chunky up-front costs for nuclear and its troubled safety record, suggest that if atomic energy does end up taking a backseat, it could be due to the broader success of renewable energy (Bloomberg, China to Dominate).

Coal-fired Power

China, the world's biggest annual greenhouse gas emitter, continues to dominate coal power development, having built nearly two-thirds of the world's operating plants and being home to almost 90% of generators under construction. It is home to half the world's operating coal-fired electricity capacity. But the amount of coal power commissioned in China at the end of June 2020 was more than 40% below the same stage last year – 19.4 gigawatts compared with 11.4GWs – because of the coronavirus pandemic. China had a glut of coal-fired power capacity, with fleets running at barely half capacity before the pandemic struck. Despite this, Chinese provinces were granting permits for construction at the highest rate since 2016 (Morton).

New coal plant projects proposed in China in 2020 would add more than 40GW to the country's power supply, according to new data — comparable to the entire existing fleet of South Africa. The news will fuel concerns that urgent efforts to stimulate economies devastated by virus lockdowns will push global emissions to levels higher than those recorded before Covid-19. Survey data from the Global Energy Monitor and the Centre for Research on Energy and Clean Air also show that China approved the construction of more coal power plant capacity in the period to mid-June than in all of 2018 and 2019 combined. China's energy policy will be crucial to determining the success of the Paris climate agreement, which aims to limit global warming to less than 2C. The new coal plants, often used by regional and provincial governments as a means to stimulate their economies, threatens to compromise environmental targets set by China's central government. A boom in coal plant approvals comes against the backdrop of rising industrial activity after growth turned negative in the first quarter of 2020 for the first time in more than 40 years. Infrastructure stimulus has helped push steel production to record levels this year at a time when output from other big producer nations has fallen. China pledged to reach a peak of carbon emissions by 2030 as part of the Paris climate change agreement. In 2016, the government suspended construction of hundreds of coal plants as the country grappled with overcapacity and pollution. But many of the projects were restarted as economic growth slowed (Hale).

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2.8 Logistics

Key Take-Aways

• The modern logistics system is an important carrier connecting consumers and producers, as well as a key part of China's domestic market. And it also provides strong support to build a new model of development in which the domestic economic network takes the primary role, with the domestic and international economic networks complementing each other.

• In the battle against the COVID-19 outbreak, China's logistics system was battered early in 2020 but ultimately withstood the test of pressure and time. However, problems remain such as insufficient supply and the relatively low level of development.

• The nation's first freight airport is being built by SF Express in Ezhou, Hubei province. The logistics hub is expected to come into operation by the end of 2021. Shanghai YTO Dragon Investment Development (Group) Co Ltd, the parent company of YTO Express, is also planning to build an international aviation logistics hub in Jiaxing, Zhejiang province. The hub, which will involve a total investment of 6.61 billion RMB (US$970 million), is expected to have an annual freight handling capacity of 2.4 million tons by 2050 (China Daily, Logistics System).

Covid-19 Repercussions

• As Beijing tried to jump-start an economy hobbled by its coronavirus epidemic at the beginning of the 2020, one of the biggest obstacles was the country's half-paralyzed logistics industry. China has some of the world's biggest and newest seaports and airports, but using them became harder because of roadblocks, quarantines and factory closings. Global shipping was one of the biggest casualties (Bradsher and Chokshi).

• There is a trend towards more direct shipping out of China through digital cross-border shopping channels, which helps alleviate some of the downtrend in Chinese exports driven by the trade wars and increasing political tensions between China and other countries.

• Persistent uncertainty around US-China trade tensions is also pushing Chinese businesses to look at different markets – and different platforms.

Background

Coronavirus continued to wreak havoc on retail supply chains globally, even as China's factories come back online. Parcel volume fell 2.4% among manufacturing customers in February 2020 compared with a year ago. Health-care parcel volume dropped 2.2%, and parcel volume was down 1.8% in the automotive and auto-parts sector. Business looked better by mid-March, but there were still issues affecting cargo movement, including the availability of truck drivers to move cargo to Chinese ports (Thomas). China's logistics sector showed signs of recovery by mid-year as reopening of businesses gained more steam amid further containment of COVID-19, so much so that the logistics performance index, compiled by the China Federation of Logistics and Purchasing (CFLP), was up 2.1% month on month to 53.6% in April (Xinhua, China's Logistics).

Warehousing

Logistics facilities and warehouses are in high demand, with the crisis accelerating growth in what was already the world's largest e-commerce market. During widespread lockdowns due to the COVID-19 pandemic, consumers flocked

2.8 物流

关键要点

· 现代物流体系是连接消费者和生产商的重要载体，也是中国国内市场的重要组成部分。现代物流体系为建设以国内经济网络为主、国内外经济网络相互补充的新型发展模式提供了强劲支持。

· 在2020年初抗击新冠疫情的战役中，中国的物流体系受到了重创，但最终经受住了压力和时间的考验。然而，供应短缺、发展水平相对较低等问题仍然存在。

· 顺丰快递正在建设中国首个货运机场——湖北鄂州机场。该物流中心预计将于2021年底前正式投入运营。圆通快递的母公司上海圆通蛟龙投资发展（集团）有限公司也正筹划在浙江省嘉兴市建设一个全球航空物流枢纽。该项目的投资总额为66.1亿元人民币（约合9.7亿美元），到2050年，航空货邮量将达240万吨/年（China Daily, Logistics System）。

新冠疫情所带来的影响

· 自2020年初以来，新冠疫情使中国经济陷入困境，陷入半瘫痪的物流业成为了中国政府试图重振经济所面临的一大阻碍。中国拥有世界最大和最新的海港和机场，但封路、隔离和停工停产等措施使这些设施难以派上用场。全球海运成为受损最严重的行业之一（Bradsher and Chokshi）。

· 通过跨境电商渠道产生的国内直邮发出呈上升趋势，这在一定程度上缓解了因贸易战和中国与美国等其他国家政治关系日益紧张而导致的出口下行趋势。

· 中美关系依然不明朗-中美贸易关系紧张的局势使中国企业开始关注其他市场和其他平台。

背景

虽然中国的工厂已经开始复工复产，但新冠疫情对全球零售供应链造成的破坏仍在持续。2020年2月，中国消费品制造业包裹量同比下降了2.4%。医疗业包裹量同比下降了2.2%，汽车及汽车零部件行业包裹量同比下降了1.8%。今年三月中旬，物流业务有所好转，但仍存在诸多影响货物流通的问题，比如找不到将货物运至港口的货车司机（Thomas）。今年年中时，随着企业恢复元气、新冠疫情得到进一步控制，中国物流行业出现了恢复的征兆。中国物流和采购联合会编制的物流业景气指数在四月时一度攀升至53.6%，环比增长了2.1%。（Xinhua, China's Logistics）

仓储

新冠疫情加速了中国电商市场的增长，作为全球最大的电商市场，中国市场对于物流及仓储设施的需求非常旺盛。为控制新冠疫情蔓延，政府执行了居家隔离措施，在这期间，消费者蜂拥进行网购。2020年2月，中国执行居家隔离措施最严厉的时期，线上食品百货配送服务呈现了400%的增长。消费者需求激增推动了企业对于仓储空间的需求，这些仓储空间有助于实现快速配送。新冠疫情期间，快递服务扮演了重要角色，彰显了其价值和便利性。用于存放新鲜食品的仓储设施需求增加，投资者认为该行业将出现增长。医疗用品和药品市场的快速增长也将影响对仓储设施的需求。中国已经是全球最大的电子商务市场。据eMarketer统计，2019年，中国电商市场增长规模为4,150亿美元。客观来看，整个美国 2019年的电商市场规模为5,870亿美元。各地增长程度不一。长三角、大湾区、京津冀及成渝等城市群的经济活动将更活跃。这些城市群是仓储业的主要市场。随着经济进一步发展，可以预计更多仓储设施将出现在大城市中心附近的小城市，以期快速将商品配送至发达城市群中的大城市。投资者对这一潜力了然于胸。据仲量联行（JLL）于2019年底进行的一项调查显示，亚太地区35家物流开发商、投资方和租户中的94%计划在未来5-10年内加大其对A级物流企业的投资力度。此外，即使阿里巴巴和京东等电商巨头已经大力投资土地资源，开发自有仓储设施，还是无法得到满足中国庞大的电商销售规模和快速量。大型电商企业在建设自有仓储设施网络的同时，需要保留甚或增加租赁空间。投资者预期，未来一段时间，变革将逐渐明朗化。这一点在大型城市群已经得到证实，城市和区域攀升价值链的规划将使电商巨头们更难获得产业发展用地。投资者可特别关注A级仓储设施资产，这类资产的选址和特定存放条件能够为终端消费者提供高效配送服务。未来十年展望 相较于目前而言，中国的A级仓储设施市场将会变得更大、更复杂、更成熟、也更重要（Huang）。

online to buy goods. Online food delivery and grocery services saw a 400% growth in sales in February 2020 during the most acute stage of China's lockdown. The surge in consumer demand pushed up companies' need for warehouse space in locations that could help expedite deliveries. The prominent role that delivery services played during the COVID-19 pandemic has highlighted their value and convenience to consumers. Investors can expect this sector to grow, with more warehouses required to house fresh food. Medical supplies and pharmaceuticals is another fast-growing market that will impact warehouse demand. China was already the world's largest e-commerce market. In 2019, it grew by US$415 billion, according to eMarketer. To put that in perspective, the size of the entire US market in 2019 was US$587 billion. Growth won't be even. Greater economic activity is expected in urban clusters such as Yangtze River Delta, Greater Bay Area, Beijing-Tianjin-Hebei, and Chengdu-Chongqing. These clusters are major markets for warehouses. With greater economic development, you can expect more warehouses to pop up in small cities just outside major urban centers for quick access to the clusters' biggest cities. Investors are well aware of the potential. A JLL survey of 35 logistics developers, investors and tenants across Asia Pacific in late 2019 reveals that 94% of them planned to increase their investments in Grade A logistics in the next five to 10 years. And, despite investing heavily in land to develop their own warehouses, e-commerce giants such as Alibaba and JD.com are unlikely to fulfil their warehousing needs in the interim period due to the sheer size of China's sales and delivery volumes. Investors should expect a period of gradual change in which big e-commerce players retain and even add to leased space while also building up their own networks. This is especially true in the biggest city clusters, where city and regional plans to climb the value chain make it more difficult for the giants to acquire their own industrial land parcels. Investors are specifically looking for Grade A warehouse assets whose location and specifications permit efficient distribution to end consumers. In the next 10 years. China's Grade A warehouse market will be bigger, more complex, more mature, and even more essential than it is today (Huang).

Cold Chain

A demand for cold chain storage is growing alongside the accelerating urbanization in China. Chinese governments at all levels have beef up investments in cold chain infrastructure, facilitating enlargement of cold chain logistics. In 2019, the Chinese cold chain logistics market was worth 276.37 billion RMB, growing an annual compound rate of 10.5% between 2010 and 2019. As China's policy and standards for cold chain becomes clear, fresh food e-commerce is springing up and financial innovations are further being made, the cold chain logistics industry of China will continue to grow by RMB512.25 billion in 2026, showing a CAGR of 9.4% from 2019 to 2026. Cold chain logistics is driven primarily by meat, aquatic products, quick-frozen food, fruits & vegetables, and dairy products, among which the fruit and vegetables. Cold chain is now the largest market segment in terms of cold chain circulation, and aquatic products have a fast-growing demand for cold chain. What's more, medicines, particularly vaccines, blood products and diagnostic reagents will be a key growth driver for cold chain logistics. The majority of cold chain logistics operators are engaged in both cold storage and cold chain transportation that boast huge cold storage capacity and strong transportation capability domestically. However, the Chinese cold storage market remains scattered and characterized by low concentration and distinct regionality. The top ten cold storage operators had a total of cold warehousing capacity up to 25.15 million cubic meters in 2019, about 17.3% share of the national total (Cision, Cold).

Logistic and Manufacturing Integration

Chinese authorities have announced an action plan to drive the integration and innovation of the logistics and manufacturing sectors and maintain the stability of industrial and supply chains. Efforts are being made to promote a new development pattern in which domestic and foreign markets boost each other, with the domestic market as the mainstay, according to the action plan jointly released by the National Development and Reform Commission and 13 other government departments. The action plan proposed to reduce

冷链

随着中国城市化进程加快，对冷链仓储的需求正在增长。中国各级政府都加大了对冷链基础设施的投资力度，促进冷链物流行业发展壮大。2019年，中国冷链物流市场的规模为2763.7亿元人民币，2010年至2019年间的年均复合增长率达10.5%。随着中国冷链业的政策和标准愈发清晰，生鲜电商开始茁壮成长，更多金融创新模式开始出现，到2026年，中国冷链物流业的规模将增长至5,122.5亿元人民币，2019年至2026年间的年均复合增长率将达9.4%。冷链物流行业的主要增长驱动力为肉类、水产、速冻食品、果蔬及乳制品，其中果蔬 冷链是整个冷链流通市场中规模最大的细分领域，而水产对于冷链的需求增长最快。此外，医药（尤其是疫苗、血制品和诊断剂）将会成为冷链物流的关键助推力量。冷链物流的主要运营商提供冷链仓储和运输业务，通常拥有强大的冷链仓储能力和国内运输能力。然而，中国冷链仓储市场仍然处于格局零散的状态，具有集中程度低、地域性强的特点。2019年，中国十大冷链仓储运营商的冷链仓储总容量高达2,515万立方米，约占全国整体的17.3%。（Cision, Cold）

物流和制造业融合

中国政府公布了一项实施方案，助推物流业和制造业的融合与创新，维护产业链和供应链的稳定。根据国家发改委联同13个其他政府部门共同发布的实施方案，政府正致力于推动形成以国内大循环为主体、国内国际双循环相互促进的新发展格局。该实施方案提出，要推进物流降本增效，促进制造业转型升级，促进物流业和制造业协同发展。到2025年，物流业将在实体经济降本增效、供应链协同合作和制造业高质量发展的进程上扮演更重要的角色。（ATimesCN）

空运

2020年一季度，新冠疫情一度限制了航空货运的运力。此后，积压在各个机场的货物花费了一段时间才被清理完毕。2020年，中国航空公司中宽体客机在国际航线的总使用率下降了近50%，在亚洲航线的下降了54%。中国进口汽车零部件的航空货运量仅为2019年的40%，减少了83,000吨，出口汽车零部件的航空货运量也下降了约70%。仅剩的航空货运运力都优先用于运输医药及其他关键物资，非关键物资的空运活动非常之少，价格也被推得奇高。据传，有些物流运营商将其对货运承包商的付款期限延长至60天，许多货代也试图尽可能地涨价以求生存。长期来看，随着复工复产，供应链会面临更大的压力。（Williams）。

继亚洲地区客机纷纷停运之后，航空货运价格继续飙升，承运商只得争相预定有限的货机舱位。全球半数航空货物通常是利用客机腹舱容量而非专用货机舱位。但由于新冠疫情爆发导致航班数量锐减，市场开始更加依赖于货机。航空货运的价格增长了至少三倍，因为根本没有足够的运力。中美航线运价涨至畸高水平。直至三月底，随着工厂复工复产，中国大陆货运航班到港量终于有所增长。

由于世界各国对于抗击新冠疫情所需的个人防护用品的需求始终不减，中国大陆出境空运价格在四月达到了史上最高水平。来自欧美市场的需求尤其旺盛，以至于为其供货的中国工厂在为期五天的五一劳动节假期期间都在不停开工。世界各国对于个人防护用品的需求高居不下，此外，中欧航线、跨太平洋客运航线停运也导致可利用的腹舱容量巨幅减少，当时的市场环境被货运投资者服务公司（FIS）描述为“极度混乱”。2020年4月，对应急用品的需求一直在驱动着市场增长，来自华南地区的需求一度飙升至历史最高水平。

托运人只得通过取消托运、让利或将压力转嫁给客户的方式来应对愈加严峻的打击。由于客运利润锐减，客运航班大幅缩减了运力。达美航空停飞了700多架飞机，涵盖旗下全线机型。航空货运需求成为了客运航班仅剩的业务来源之一。对个人防护用品运输的需求下降后，空运价格也随之下跌。2020年6月，全球经济体在持续隔离、失业加剧的环境下艰难挣扎，消费者需求也相应呈现下降趋势。整个夏季期间，随着燃油价格上涨，航空公司利润收缩，由客机改装而成的货机（即所谓的“货运客机”）的使用率有所下降。虽然货机飞行时数增加，但是运力仍成问题。在新冠疫情危机最严重的时期，货运客机的出现在一定程度上缓解了运力紧张的情况（Leonard）。

同时，中国政府采取了更多措施来提升国际航线运力，以期维护供应链稳定。李克强总理强调，必须加快发展国际物流快运服务体系，保障供应链通畅运行。在应对新冠疫情的过程中，我国国际航空货运能力的短板明显暴露。李克强表示：“要提前规划、采取有力措施支持物流企业发展全球空运网络。”对货运吞吐量较强的机场，放开高峰时段对货运航班的限制。在粤港澳、成渝等地区具备条件的的国际枢纽机场实行7天24小时无间断通关服务，并提升了安检和通关程序的效率。“制造业是第一个复工复产的行业，在这个过程中积累了一些经验。”李克强称：“企业复工复产过程中面临的主要挑战就是供应链跟不上的问题。”他补充道，需要加强现有机场设施现代化升级改造，完善冷链、快件分拣等设施，推进以货运为主的新机场的建设。（Xinhua, China to further boost）。

costs and enhance the efficiency of the logistics industry amid manufacturing transformation and upgrades, so as to promote the synergy between the two industries. By 2025, the logistics industry will play a more significant role in cost reduction and improvement of efficiency in the real economy, supply chain coordination and high-quality development of the manufacturing industry (ATimesCN).

Air Freight

The coronavirus epidemic everely limited air cargo capacity into and out of China in the first quarter of 2020. The backlog of freight at the airports then took some time to clear. The total international widebody passenger aircraft utilization of Chinese carriers was down nearly 50% from the same time in 2020, while intra-Asia widebody belly capacity has reduced by 54%. Air cargo capacity of auto parts alone into China was 40% of what it was in 2019, equal to nearly 83,000 ton decrease, while capacity out of mainland China is down around 70%. Priority for any available air shipments was going to medicine and other critical shipments, meaning that very little nonessential freight was moving and rates were being pushed up extravagantly. Certain logistics providers were also rumored to be pushing payment terms for freight contractors to 60 days, while freight forwarders are trying to charge customers as much as possible to survive. In the longer term supply chains became you distressed supply chains as production tried to catch up (Williams).

Air freight rates continued to skyrocket after the grounding of many passenger flights in Asia, leaving shippers scrambling to book limited spots on cargo planes. About half of the air cargo carried worldwide normally flies in the belly of passenger jets rather than in dedicated freighters. But deep flight cuts in response to the coronavirus outbreak made the market more dependent on freight haulers. The price at least three times higher because there is just no capacity. Cargo pricing on China-to-US routes had reached abnormal highs. In mainland China, the number of freighter arrivals finally increased by March as factories resumed production (Baertlein and Kirton).

Air freight rates out of China were at their highest levels ever in April as massive global demand for personal protective equipment (PPE) from countries battling the coronavirus disease 2019 (COVID-19) continues unabated. The demand was so strong from Europe and the US that Chinese factories manufacturing vital medical equipment remained open through the May 1-5 Labor Day holidays. On top of the sustained heavy demand for PPE, available cargo space was drastically reduced with the continued suspension of passenger flights on both the China-Europe and trans-Pacific trades, leading to a market environment Freight Investor Services (FIS) has described as “mayhem.” The emergency supplies were driving the market in April 2020, and particularly from South China, were at their highest-ever levels (Knowler).

Shippers dealt with the sticker shock by either canceling shipments, absorbing it in their margins or passing it along to their customers. Passenger airlines slashed capacity since there was little interest in consumer travel. Delta Air Lines temporarily parked more than 700 aircraft across its system, which includes every aircraft type it operates. The demand for cargo had been one of the few bright spots for passenger airlines. The rates began to fall once demand for shipping PPE dropped. Consumer demand was also down by June 2020 as economies across the world struggle amid continued lockdowns and job losses. Freight flights by passenger airlines, dubbed "preighter" flights, became less frequent throughout the summer, though, as the cost of fuel rose and made the trips less profitable for airlines. Capacity remained an issue even as freighters were flying more hours. Converted passenger jets contributed to easing some of the capacity crunch during the peak of the crisis (Leonard).

Meanwhile, China took further steps to boost the country's international air freight capacity to stabilize supply chains. Premier Li Keqiang stressed that development of an international logistics and delivery services system must be accelerated to uphold the smooth running of the industrial chain. In the course of the outbreak response, the weak links in the industry’s air transport capacity have been exposed. "We must plan ahead and harness the initiative of logistics firms in developing an

海运

随着航空货运价格下跌，海运不断提升运力，推高价格。早在二月份，中国的许多码头就已经堆满了到港的集装箱和铁矿石。仓库爆仓，堆满了由于货车短缺而无法出口的货物。由于收不到零部件，许多工厂无法开工。由于中国减少采购石油、铁矿和煤矿，油轮和散货船的日租金环比骤跌逾70%。港口和海关办公室维持着正常运转。困难主要在于货物的码头装卸问题。中国二月份经济一度放缓，美国也经历了类似的情况。江西省、重庆市等地撤除了大部分路障和检查点，这些数不清的路障和检查点多由村镇设置，目的在于拦截感染者向本地输入。上海已放松对货车进出城的健康检查，但是乘坐汽车和巴士抵沪的人士仍需接受繁琐的审查程序，有的情况下还需要接受十四天隔离的安排。今年一月，农历新年前，全国停工停产近一个月，一些工厂目前仍有当时已生产但未能运出的货物库存。海运起重机等设备仍能够正常运行，但货车的短缺使许多港口难以将卸载的货物运输出去。中国三大海港——上海港、宁波港及天津新港——堆满了盛满进口蔬果和冷冻肉品的冷藏集装箱。由于许多工厂仅保留了部分产能，而且许多成品无法通过货车递送，因此集装箱船运企业纷纷停运。船运企业也难以为远航归来的船员提供轮休替岗的机会。全球商船在岗船员中，中国船员所占比例约为七分之一（Bradsher and Chokshi）。就运力管理而言，新冠疫情爆发后的头五个月，货运尚能维持，但自2020年6月以来，货运价格一再被需求推高。电子商务的快速发展和船运旺季的到来更将货运价格推至历史新高，且预计到年底都将居高不下。

铁路运输

价格居高不下、主要货运枢纽堵塞严重，令更多托运商开始考虑利用中欧班列替代空运，对于服装、纸产品、消费品、电子产品及工业零部件等多种货物而言，这种运输方式的成本更低。铁路运输的速度比海运快50%，价格比空运低60%。过去数十年间，铁路运输线路得到了充分发展。原先，物流企业采取铁路运输时需要预定整列集装箱火车，但现在可以选择拼箱、整箱运输。

联通白俄罗斯、哈萨克斯坦和俄罗斯的中欧班列7月集装箱吞吐量达54,200标准箱，同比增长了76%，创历史新高。中国向欧洲出口的货运量翻了一番，进口货运量增长了80%。2020年的头七个月，铁路运输量增长了267%。铁路运输的平均在途时间约为15天，因起点和终点的不同而异。2020年初，基华物流（CEVA Logistics）推出了一项联运方案，将货物用货车从中国运输至越南，再装到高柜集装箱内，通过铁路运输发往欧洲。奥地利货代企业Cargo.partner推出了两条新的零担货物运输线路，其中一条以每周一次的频率直接往返于德国杜伊斯堡和中国合肥之间，另一条则连通奥地利林茨和中国西安。Cargo.partner认为这两条运输路线的需求都将呈现增长。货代企业Davies Turner旗下每周一次从中国到英国达特福德的运输线路预订量也有所增长，其应对方式是 增加从中国到英国伯明翰、布里斯托和曼彻斯特的直运线路。Davies Turner每周一次的铁路运输线路服务从中国铁路运输枢纽合肥出发，到达德国诺伊斯。然后由货车将集装箱运至鹿特丹港口，再由邮轮运至伦敦东部。铁路运输服务提供商DSV Panalpina也表示，在新冠疫情期间，从中国东部出发到达欧洲西部的陆运服务日益受到欢迎。(Kulisch) international air transport network," Li said. Restrictions on peak hour slots for cargo flights were lifted at airports with strong cargo handling capacity. International hub airports in regions with proper conditions such as Guangdong, Hong Kong, Macao, Chengdu and Chongqing provided 24/7 customs clearance services and improve the efficiency of security checks and clearance processes. "The manufacturing sector has been the first to resume operation, and experience has been gained in this process. The major challenge is about the clogged supply chains," said Li, adding existing airports needed to be modernized and better equipped with cold-chain and parcel sorting facilities, and new airports mainly serving freight needs should be developed (Xinhua, China to further boost).

Sea Cargo

As airfreight rates decline, ocean carriers continue to pull capacity, pushing ocean rates up. Some docks in China were clogged as early as February with arriving shipping containers or iron ore. Warehouses overflowed with goods that could not be exported for lack of trucks. And many factories are idle because components are not reaching them. Daily charter rates for tankers and bulk freighters plummeted more than 70% from the previous month as China bought less oil, iron ore and coal. Ports and their customs offices operated fairly smoothly. The difficulties were in getting goods to and from the docks. The slowdown in China in February was also felt in the US. Places like Jiangxi Province and the metropolis of Chongqing ordered the removal of most of the countless roadblocks and checkpoints erected by towns and cities to keep infected travelers out. Shanghai agreed to let trucks enter and leave the city with few health checks, even as people arriving in cars and buses remain subject to lengthy scrutiny and, in some cases, 14-day quarantines. Some factories still have goods that they produced and never shipped in January, before the Lunar New Year holiday that turned into a monthlong nationwide shutdown. Seaport cranes and other equipment seemed to be operate normally in China, although a shortage of trucks made it hard for some ports to distribute goods once they were unloaded. Three of China's biggest coastal ports — Shanghai, Ningbo and Xingang — were clogged with refrigerated containers full of imported vegetables, fruit and frozen meat. With many factories operating at a fraction of capacity, and with trucks not delivering a lot of finished goods, container-shipping lines canceled sailings. Shipping lines also had trouble replacing crews globally after long voyages. About one-seventh of the sailors aboard the world's commercial vessels have Chinese passports (Bradsher and Chokshi). Carrier capacity management in the first five months of the pandemic kept freight afloat, but since June 2020 rates have been driven by demand. The rapid growth of eCommerce and peak shipping season contributed to record freight rates that aren't expected to drop before the end of the year.

Rail Freight

The premium pricing and congestion at major hub led more shippers to consider rail from China to Europe as a less expensive alternative to air for a range of goods, including clothing, paper, consumer goods, electronics, and industrial components. Rail transport is up to 50% faster than sea freight and up to 60% cheaper than airfreight. Railroads have developed several routes over the past dozen years. Initially, logistics companies needed to book an entire block train, but now can offer less-than-container and container-load options.

The railroad joint venture that operates a line through Belarus, Kazakhstan and Russia said July container volume of 54,200 TEU was 76% more than a year ago and set a record. China shipments to Europe doubled and loaded containers from Europe grew by 80%. For the first seven months of 2020, traffic was up 267%. Transit times average about 15 days, depending on the origin and destination points. CEVA Logistics launched an intermodal product that trucks shipments from China to Vietnam and loads them into high-cube containers for rail transport to Europe in early 2020. Cargo.partner, an Austrian forwarder, introduced two new weekly LCL direct connections between Duisburg, Germany, and Hefei, China, as well as between Linz, Austria, and Xi'an. The company says it expects demand to increase in

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both directions. Freight forwarder Davies Turner responded to increased bookings on its weekly fixed rail service from China to Dartford, U.K. by adding direct service to Birmingham, Bristol and Manchester. The weekly service departs the rail hub in Hefei and goes to Neuss, Germany. Containers are then trucked under bond to the Port of Rotterdam and transported by ferry to East London. DSV Panalpina, which offers a rail service, also says its road transport service from eastern China to western Europe has gained popularity during the COVID-19 crisis (Kulisch).

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2.9 Travel and Tourism

Key Take-Aways

• China’s domestic tourism revenue is expected to fall by 52% to 2.76 trillion RMB (US$394 billion) in 2020 as the industry continues to reel from the impact of the coronavirus crisis.

• Travelers from Mainland China were responsible for more than a million border crossings in 2020, with the Special Administrative Region Macau as main destination.

• Due to the travel bans almost no cross-border trips were made during the Dragon Boat Festival holiday in 2020.

• The Chinese aviation industry will need an additional 8,600 new aircraft within two decades according to aircraft. Such demand would be worth US$1.4 trillion based on list prices.

• Domestic tourism figures offer post-pandemic hopes but vaccine still crucial.

Covid-19 Repercussions

The strong rebound of China's domestic travel during the country's annual Golden Week holiday has given international destinations hope that Chinese tourists are still willing to travel and can be a major driver for the recovery of pandemic-hit global tourism, but experts warn this might not occur until a COVID-19 vaccine is widespread. This is clearly a strong sign that Chinese people are very keen to travel again and to engage in tourism activities. Tourism and travel have become inelastic activity and expenditure for the Chinese middle class and it is one of the 'luxuries' and a status symbol. China is getting out of the pandemic faster than other countries around the world, which dealt with the pandemic differently, and as a result domestic tourism removed faster during the Golden Week. China's tourism turnaround has shown the world that Chinese still have enough money to travel and also are not afraid to be in crowded environments like railway stations or national parks. Restrictions on travel introduced in response to the COVID-19 pandemic continue to hit global tourism hard, with latest data from the World Tourism Organization showing a 70% fall in international arrivals for the first eight months of 2020. The drop represents 700 million fewer arrivals compared to the same period last year and translates into a loss of US$730 billion in export revenues from international tourism, which is more than eight times the loss experienced on the back of the global economic and financial crisis a decade ago. The tourism organization numbers over the first eight months of 2020 still include Chinese overseas travel in January, when the Hong Kong and Macao special administrative regions each received more than 2 million arrivals from the Chinese mainland and more than 1 million for Thailand. As Chinese tourists were responsible for one out of eight international trips in 2019, Chinese outbound tourism will be a major force in the recovery of the international tourism market, especially for many destinations that do not have a major domestic market and rely heavily on Chinese visitors. In the short and medium term, outgoing leisure travel will most likely be discouraged as the pandemic is still at dangerous levels in many regions around the world, but in the long run, it is clear that Chinese tourists will contribute to international tourism globally. In a bid to help revive its tourism industry, Thailand has rolled out a special tourist visa scheme, which saw the arrival of two batches of Chinese visitors, after borders were closed to stem the spread of COVID-19 since March. Hong Kong and Singapore opened an "air travel bubble", which allows people to travel between the two Asian economies without requiring restrictive quarantine measures (Wang).

2.9 旅行和旅游业

关键要点

· 2020年，旅游业受新冠疫情影响而一蹶不振，中国的国内旅游收入预计下降52%，为2.76万亿元（3940亿美元）。

· 2020年中国大陆游客出境超过一百万人次，其中澳门特别行政区为主要旅游目的地。

· 因出行禁令，今年的端午节几乎没有出境游。

· 根据波音发布的一份报告，预计未来20年中国航空公司将购买8600架新飞机。该需求量按标价计算，预计价值1.4万亿美元。

· 国内旅游数据给疫情后的旅游业带来了曙光，但疫苗仍是关键因素。

新冠疫情所带来的影响

中国的国内旅游在十月黄金周出现强势反弹，中国游客未减的旅游热情也让国际旅游目的地看到了希望，国际旅游业饱受疫情冲击，中国游客或将成为重振旅游业的中坚力量。不过专业人士表示，这种情况在新冠疫苗大量普及之前不太可能发生。但这也是个明显的信号，说明中国人又开始热衷旅游，乐于参与各种旅行活动。旅游已成为中国中产阶级的一项非弹性活动和开支，一种“奢华享受”，同时也能彰显社会地位和财富。中国采取了不同的疫情应对措施，因而比其他国家更快摆脱了疫情影响。黄金周期间，国内旅游业得以迅速回暖。近期中国旅游业的恢复也向世界表明，中国人的旅游资金仍较充足，诸如火车站、国家公园等拥挤环境依然不为中国游客所惧。为应对新冠疫情而实施的出行限制措施继续重击全球旅游业。根据世界旅游组织的最新数据，2020年前八个月的国际游客人数下降了70%。游客人数与去年同期相比，减少了7亿，这意味着国际旅游业的出口收入减少了7300亿美元，相当于10年前全球经济和金融危机所造成损失的八倍多。2020年前八个月的旅游业数据包含中国人一月份的海外旅行，当时香港和澳门特别行政区分别接待了超过200万名中国大陆游客，另有100万中国游客前往泰国。2019年中国游客占国际旅游人数八分之一，中国出境游将成为国际旅游市场复苏的主要推动力，尤其是对于那些本身国内市场不大、严重依赖中国游客的旅游目的地。中短期内，由于全球许多地区的疫情状况仍处于危险水平，出境休闲旅游极有可能受到限制，但从长远来看，中国游客显然将推动全球国际旅游业的发展。泰国自三月份以来关闭边境以阻止新冠病毒的传播，为了帮助重振旅游业，泰国政府推出了一项特殊旅游签证计划，已吸引两批中国游客抵达泰国旅游。香港和新加坡则开启了“航空泡泡”，允许人们在这两个亚洲经济体之间旅行，而无需经过严格的隔离措施。(Wang)

背景

2020年10月初，也就是中国年度“十一黄金周”假期期间，全国共接待国内游客超过6.37亿人次。据政府估计，国内游客创造了约4660亿元人民币（686亿美元）的旅游收入。2020年中国有两个节日重叠：即庆祝1949年10月1日中华人民共和国成立的国庆节和农历中秋节。因此，原本一周的十一假期延长为八天，因此今年十一黄金周成为一年中最长的假期。尽管今年十一黄金周国内游客低于2019年的约7.82亿人次，但中国仍认为这个数字表明了国内旅游业开始反弹。(Pitelli)

然而，由于今年旅游业受新冠疫情影响而持续一蹶不振，中国的国内旅游收入预计下降52%，为2.76万亿元（3940亿美元）。中国文化旅游部表示，2020年国内旅游人数预计将下降43%，至34.3亿人。去年底，新冠病毒首先在中国爆发，中国随即实行了严格封锁和各种措施以遏制病毒传播，现在看来这些措施已基本奏效，中国已基本重启了经济，人们恢复了正常生活。晚春时，中国开放了“五一”假期休闲旅游，可以说是对中国旅游业的一项复苏测试，假期期间，国内旅游目的地迎来了约8000万名中国游客。今年7月，中国进一步放宽了旅游限制措施，重新开放了跨省旅游，人们认为这是中国为促进旅游业复苏而作的又一项重要措施。(McGregor)

2020年，中国再次成为全球第一大游客来源国，1800万人次国际旅游，约占2019年总国际旅游人次的10%，但其中大部分是1月份旅游。中国大陆游客出境旅行超过一百万人次，其中澳门特别行政区为主要旅游目的地。不过，亚洲其他一些国家也再次向中国游客敞开了旅游大门，包括泰国、老挝、日本、新加坡等。在欧洲申根国家的中国公民也可以在欧洲国家旅行。2019年11月，超过1000

Background

More than 637 million people traveled within China in early October 2020 in celebration of the country's annual "Golden Week." The government estimated domestic travelers generated around 466 billion RMB (US$68.6 billion) in tourism revenue during the holiday period. Two holidays converged in 2020: National Day, which celebrates the founding of the People's Republic of China on Oct. 1, 1949, and the Mid-Autumn Festival, which is set by the lunar calendar. As a result, the usual week-long holiday was expanded to eight days, making Golden Week the longest holiday period of the year. While less than 782 million tourists traveled during Golden Week in 2019, China celebrated the estimates as a rebound for its domestic travel industry (Pitelli).

Nevertheless, China's domestic tourism revenue is expected to fall by 52% to 2.76 trillion RMB (US$394 billion) in 2020 as the industry continues to reel from the impact of the coronavirus crisis. China's Ministry of Culture and Tourism said that it expected the number of domestic tourists to fall by 43% to 3.43 billion in 2020. China, where the coronavirus first emerged late last year, introduced strict lockdowns and measures to curb its spread which are seen to have largely worked, as the country has largely reopened its economy and allowed normal life to resume (Reuters, China's domestic travel). The first major test of China's travel recovery came in late spring, when China opened up leisure travel during its May Day holiday, and some 80 million Chinese travelers took trips around the country. In July, China loosened travel restrictions further and reopened cross-province tourism, considered a final push to get the industry back to normal (McGregor).

China reclaimed its top travel destination in the world in 2020 with 18 million Chinese international trips, most of which however happened in January, representing about 10% of the number for 2019. Travelers from Mainland China were responsible for more than a million border crossings, with the Special Administrative Region Macau as main destination. However, a number of other countries in Asia welcome Chinese visitors again, including Thailand, Laos, Japan, Singapore and others. Chinese citizens within the Schengen region in Europe can also travel between European countries. In November 2019 more than ten million Chinese travelled abroad and other source markets also sent out millions on international business and leisure trips. However, it is important to notice that the often-cited 'light at the end of the tunnel' looks very much like a Chinese lantern (FTNnews).

Airlines

The country's aviation capacity has snapped back to more than 90% of pre-pandemic levels, but the sector is still working hard to recover from the first half of the year, which saw the number of domestic tourists dropping 62% to 1.17 billion on year, and tourism revenue plummet 77%. During the pandemic, self-rescue became the buzz word for travel companies which turned to live-streaming to hawk deals or came up with suburban travel packages and promotion campaigns to encourage consumers to travel. China's lower tier cities had increasingly become a popular choice for local tourists, and they have contributed a larger proportion to domestic tourism consumption (Reuters, China's domestic travel). Notably, the historic Yellow Crane Tower in Wuhan, the city where COVID-19 first broke out, ranked No. 1 on Trip.com's list of most sought-after tourist sites for the October 2020 holiday, followed by Shanghai's Disneyland, and Xi'an's Terracotta Warriors. Travel demand for Wuhan underscores Chinese tourists' confidence in their country's handling of the pandemic and bodes well for China's battered domestic travel industry. At the same time, the Chinese government warned its citizens about the coronavirus risks of international trips, meaning Chinese tourists may continue to put off overseas travel, even as reopened countries try to woo them (McGregor).

Looking ahead, the Chinese aviation industry will need an additional 8,600 new aircraft within two decades according to aircraft manufacturer, Boeing. Despite COVID-19, this estimate is 6.3% higher than Boeing's previous prediction of 8,090 planes in 2019. Such demand would be worth US$1.4 trillion based on list prices, Boeing said in a statement. In October, Boeing cut its 20-year forecast for global airplane demand due to the COVID-19 pandemic. While COVID-19 has severely

万中国游客出国旅游，数百万来自其他客源市场的中国游客进行了国际商务和休闲旅行。然而，值得注意的是，人们经常说的"隧道尽头的曙光"，它看起来很像一个中国灯笼。(FTNnews)

航空业

中国的航空运力已迅速恢复到疫情前的90%以上，但各航空公司仍在努力摆脱上半年的困境。今年上半年国内游客人数同比下降62%，至11.7亿人次，旅游收入暴跌77%。疫情期间，自救成为旅游公司的流行行话，这些公司纷纷转向网络直播来推销优惠活动，或推出郊区旅游套餐和各种促销活动，以此来促进消费者外出旅游。中国的二三线城市越来越成为当地游客的热门选择，占了国内旅游消费的很大份额。值得一提的是，历史悠久的武汉黄鹤楼（武汉是新冠病毒最早爆发的城市），位列Trip.com网站2020年十月假期最受欢迎旅游景点的榜首，位列第二第三的分别是上海迪斯尼乐园和西安兵马俑。武汉的旅游需求反映了国人对政府应对疫情的信心，也预示了遭受重创的中国国内旅游业的良好复苏势头。与此同时，中国政府向中国公民发出国际旅游警告，出境游的新冠病毒风险依然存在，这意味着即便重新开放旅游市场的国家试图吸引中国游客，中国游客也可能将继续推迟海外旅行计划。(McGregor)

根据飞机制造商波音公司发布的一份报告，未来20年中国航空业将购买8600架新飞机。尽管疫情影响，但这个预估数字比波音公司在2019年预测的8090架高出6.3%。波音公司在一份声明中表示，该需求量按标价计算，价值1.4万亿美元。今年10月份，由于新冠疫情的影响，波音公司下调了未来二十年全球飞机需求量预测。虽然全球各客运市场都未能从新冠疫情中幸免于难，但中国市场的基本增长动力仍具有弹性且强劲。波音公司与其欧洲竞争对手空客公司一直在争抢中国市场份额，但它们也面临来自中国的国有飞机制造商中国商用飞机公司日益激烈的竞争。波音公司预计未来20年单通道飞机需求量为6450，而中国将购买1590架新的宽体客机，占总交付量的18%，这一数字比一年前有所下降，因为考虑到全球长途运输的恢复将会是个缓慢过程。(McGregor)

游轮业

许多游轮运营商正在逐步重启航班，同时也密切关注着中国市场和新冠疫情的全球爆发新况。虽然受到新冠疫情的严重影响，但人们的社交需求和游轮业巨大的发展潜力不会因疫情而发生重要变化。游轮是旅游业发展的推动力。今年早些时候，世界各地的游轮成为最早的聚集性新冠疫情爆发地点，迫使游轮运营商停业，各国也相继关闭了游轮港口。嘉年华公司更是在2020年出售了13艘游轮。但上海的政府官员对该行业的前景仍持乐观态度，认为一旦全球摆脱疫情，游轮业即可恢复。在新冠疫情爆发之前，中国曾是最大的新兴游轮市场。游轮公司和各港口为了消除游客的担忧，推出各种措施确保乘客的健康和安全。然而，游轮业的最终命运取决于消费者的看法。许多潜在的游轮乘客都持观望态度。以上海吴淞口为母港的班轮预计将开展岸上旅游活动，为恢复运营做前期宣传。许多游轮公司都表示希望尽快恢复班轮运营。上海吴淞口港口是亚洲最繁忙的码头，也是世界第四大港口。可以同时停靠四艘豪华班轮。

自2011年10月开业以来，吴淞口码头已经接待了2200艘游轮，载客量超过1300万人次。世界顶级游轮公司（嘉年华、皇家加勒比、挪威、MSC和云顶）的几艘班轮正是在吴淞口开启了她们的亚洲首航。为防止新冠疫情的蔓延，自2020年1月起，所有在港口运营的游轮已暂停。班轮恢复后，必须获得国家相关部门的批准，并且必须采取严格的新冠病毒预防措施，游轮才能在港口停泊。根据当地计划，恢复营业的游轮将作为"海上度假地"，邀请游客上船，在船上的剧院、健身房、餐厅和游泳池开展娱乐休闲活动，但所有活动都必须在严格的新冠病毒防范措施下进行。新冠疫情期间大多数班轮港口都暂停运营，外国船员禁止在外国港口下船。今年四月，"海洋量子"号上的中国船员在海上滞留了60天多天，最终在吴淞口港口获准入境。新班轮曾仅向新加坡居民开放。游轮运营商表示，他们将确保执行严格规程，包括人员检测和筛选、升级通风和空调系统、加强过滤系统、严格的清洁措施、降低载客量以实现更大的社交距离和专业的船上医疗护理。船上的表演观众将减少。自助餐暂时取消，取而代之的是用餐时间错开，坐席用餐，以更好地保持社交距离。水疗、游泳池和儿童活动等设施在任何时候都将限制人数。(Hu and Yang)

预计亚洲仍将是个增长型市场，这主要得益于其不断壮大的中产阶级数量，他们越来越愿意花钱旅游。自2013年以来，亚洲的客运量一直在增长，2019年超过400万人次。CLIA澳大拉西亚和亚洲总经理JoelKatz表示："我们预计，时机成熟时，游轮业可能会在严格管控期间，特别是在国际旅游受到限制的情况下，在区域范围内恢复运营。在不同地区，这可能涉及国内游轮、短程航班，或区域"航空泡泡"项目运营。各国政府和国际卫生部门正在引导游轮业做好重启运营的准备。疫情爆发前，游轮旅游曾是旅游业增长势头最猛的行业。近年来游轮的需求日益增加。2017年，游轮旅游约2670万人次。2018年上升到了2850万人次，预计到2020年将达到3200万人次。不过，很显然这些并没有如预期发生。但是，游轮乘客往往是回头客，82%的游客可能会在下次度假时再次预定游轮。(Chen) impacted every passenger market worldwide, China's fundamental growth drivers remain resilient and robust. Boeing and its European rival Airbus have been jostling to increase market share in China, but they also face rising competition from state-owned plane maker Commercial Aircraft Corporation of China. Boeing projected a need for 6,450 new single-aisle airplanes over the next 20 years, while China's widebody fleet will require 1,590 new planes, accounting for 18% of the total deliveries, which fell from a year ago due to anticipation of a slower recovery in global long-haul traffic (Newshub).

Cruises

Many cruise operators are gradually returning to sailing, with a watchful eye on the China market and new global outbreaks of COVID-19. Though impacted heavily by the COVID-19 outbreak, the nature of people to pursue social togetherness and the huge potential of the cruise industry will not be reversed by the pandemic. Cruises are a driving force of the tourism industry. Cruise ships around the world were the sites of the earliest clusters of infection earlier this year, forcing cruise operators to shut down operations and countries to close their ports of welcome. Carnival Corp removed 13 ships from its fleets in 2020. Shanghai officials, however, remain upbeat about the future of the industry once the world emerges from the pandemic. China was the largest emerging cruise liner market before COVID-19 struck. To allay consumer fears, cruise ship companies and terminals are going all out to demonstrate steps they are taking to ensure the health and safety of passengers. However, the ultimate fate of the industry depends on consumer sentiment. Many potential cruise passengers are taking a wait-and-see attitude. Liners that use Wusongkou as their home port are expected to launch onshore tourist activities to publicize their return to operation. Many cruise companies have expressed their hopes of restoring operations as soon as possible. The Wusongkou terminal is the busiest in Asia and the fourth-largest of its kind in the world. It can berth four luxury liners at one time.

Since its opening in October 2011, the terminal has welcomed 2,200 cruise ships carrying over 13 million passengers. Several liners from the world's top cruise liner companies — Carnival, Royal Caribbean, Norwegian, MSC and Genting — have made their maiden voyages in Asia from the Wusongkou terminal. All cruise liners operating at the port have been suspended since January 2020 to prevent the spread of the coronavirus outbreak. When cruises resume, ships will be allowed to berth at the port only under strict coronavirus prevention measures, with the approval of national authorities. According to local plans, returning cruise liners will serve as "floating resorts," inviting tourists to go onboard and use their theaters, gyms and restaurants and swimming pools, all under strict COVID-19 prevention measures. With operations of most cruise liner ports suspended during the pandemic, foreign crews have been forbidden from disembarking on foreign shores. The Wusongkou terminal allowed entry of Chinese crew members of the Quantum of the Seas liner in April, after they had been at stranded at sea for over 60 days. The new sailings were exclusive to residents of Singapore. Cruise operators said they will ensure rigorous protocols that include testing and screening, upgraded ventilation and air-conditioning systems, enhanced filtration, stringent cleaning practices, below-capacity passenger numbers for greater physical distancing and expert onboard medical care. On board, performance audiences will be smaller. Buffets are out for the time being, replaced by seated dining and staggered meal times to allow for social distancing. Facilities such as spas, pools and children's activities will be limited in number at any one time (Hu and Yang).

Asia is expected to remain a growth market, thanks largely to the region's expanding middle class, which is increasingly willing to spend on travel. Passenger capacity in the region had been growing since 2013, topping 4 million in 2019. Joel Katz, CLIA's managing director for Australasia and Asia, said: "When the time is right, we envisage cruise operations are likely to resume in controlled phases and on a regional basis, particularly while international travel is restricted. In different regions this may involve domestic cruises, short itineraries, or operations within a regional bubble." Governments and international

酒店与住宿

2020年4月中国恢复了跨省团队旅游，各地的酒店和民宿在经历了新冠疫情带来的长期低迷后，预定量出现了激增。中国旅行社携程网的数据显示，7月21日到30日，酒店入住人数较6月同期大幅增加。暑假期间，海南、云南和四川等传统旅游目的地的酒店入住率有所回升。业内人士预测，至2021年，酒店预定量将持续增长。随着酒店业的复苏，民宿业务也已加入了市场竞争。(Yuan)

中国酒店业疫情后的复苏速度将继续领先，据万豪等酒店预计，其在中国的收入最快将在2021年重回2019年的水平。尽管中国酒店入住率的回升仍出现偶尔波动的迹象，但相比于中国的偶尔下降，专家人士更担心世界其他地区的酒店业状况。考虑当前的情形，入住率还不算太低。2020年10月初，中国的酒店入住率仅不足60%。比去年同期下降了超过13%，但相比于过去28天，2019年的入住率仅比平均水平下降了约4%，今年的降幅较大。越来越多酒店业主对中国应对疫情的表现充满信心，所以客房供应量增加，这也是入住率下降的原因之一。如今中国的客房供应量比2019年下降了约7%。在中国疫情最严重的时候，约35%的客房均为线下供应。虽然越来越多酒店业主对市场充满信心，但这也意味着，在中秋节等需求低迷期间，更多酒店客房向客人开放，导致更多客房量计入入住率。截止本文撰写之时，本周的最终酒店数据尚未公布，但早期的游客消费数据显示，2020年的十一黄金周，即便与中秋假期重叠，也实现了相关消费增长。海南省的免税品销售额比2019年增长了近150%。在酒店业复苏速度方面，中国仍明显快于美国等世界其他地区。尽管中国的旅游业经济因政府成功控制新冠疫情以及其庞大的国内旅游人口基数而继续远超世界其他国家，但由于外国游客仍是中国大城市的重要游客来源，旅游业仍面临入住率低的问题。拥有大型会议设施的高端国际酒店的城市，尤其广州、深圳等一线城市，仍面临严峻考验，而面向国内市场(特别是休闲旅游目的地)的中高档现代酒店预计实现优异业绩。(Sperance)

酒店业咨询公司LodgingEconometrics的分析师在最新发布的《全球筹建酒店趋势报告》中表示，中国的筹建酒店项目仍呈上升趋势，达3574(647704间客房)，创历史新高。项目量同比增长19%，客房量同比增长9%。目前中国有2282个在建酒店项目(408403间在建客房)。计划于2021年7月前开工的项目达842个(132469间客房)，其中项目量同比增长105%，客房量同比增长57%，均创历史新高。而其中的原因，一是创记录数量的新中高档酒店项目发布，二是在2019年下半年发布的新建酒店项目因新冠疫情而于2020年初停滞。随着中国建筑业的恢复，这些酒店项目预计将在未来几个季度开工。前期规划阶段的项目为450个(106832间客房)，其中项目量和客房量同比增长分别为11%和6%。2020年第二季度，中国仅101新家酒店开业，总客房量为14150间，为历史最低水平。广州的酒店筹建项目达140个(27753间客房)，领先全国，也是其历史最高水平。紧随其后的是成都，134个项目(27073间客房)，也创下新高。其次分别是125个项目(23666间客房)的上海，102个项目(14010间客房)的武汉，以及95个项目(16714间客房)的西安。大多数主要城市的酒店筹建项目将在2021年前复工。因此，今年第二和第三季度将出现一轮建筑热潮。许多开发商预计，项目仅延期几个月。(Evans) health authorities are guiding the cruise industry on the appropriate pathway to a restart. Before the pandemic emerged, cruise tourism was the travel industry's fastest-growing sector. Demand for cruises has risen in recent years. In 2017, some 26.7 million people went on a cruise. The number rose to 28.5 million in 2018 and had been expected to reach 32 million in 2020. That, obviously, did not happen. Still, cruise travelers tend to be repeat customers, with 82% likely to book a cruise again for their next vacation (Chen).

Hotels and Accommodations

After the resumption of trans-provincial group tours in April 2020, hotels and homestays across China saw reservations surge following a long period of bleak earnings due to the COVID-19 pandemic. Data from Chinese travel service provider Ctrip showed that between July 21-30, the number of hotel check-ins had significantly increased compared with the same period of June. Hotels in traditional holiday destinations such as Hainan, Yunan and Sichuan saw increased check-in rates during the summer vacation. Business insiders forecast that hotels will continue to see an increase in reservations into 2021. With the recovery of hotels, the homestay business has also joined the market competition (Yuan).

China continues to be the hotel industry's biggest pandemic recovery success story, as companies like Marriott anticipate revenue there could be back to 2019 levels as early as 2021. While China's hotel occupancy recovery still shows signs of occasional volatility, experts aren't as concerned with the rare drop-off in numbers in China as in other parts of the world. Occupancy is not that bad considering what's going on right now. Hotel occupancy rates in China were just shy of 60% in early October 2020. That's down more than 13% from the same time in 2019 — a notable drop from the average being only about 4% off 2019 occupancy figures for the last 28 days. The supply explanation for the occupancy dip is that more hoteliers are confident in how China is performing. The room supply in China today is about 7% off from 2019 levels. Roughly 35% of the room supply was offline during the worst of the pandemic in China. While that shows more hotel owner confidence in the market, it also means there are many more open hotel rooms counting toward occupancy figures during low-demand periods like the Mid-Autumn festival. While finalized hotel data for the week isn't public as of this writing, early tourist spending data shows Golden Week 2020 was still a success even if it overlapped with another holiday. Duty-free sales in the leisure Hainan Province were up nearly 150% from 2019. China is still pacing significantly better than other parts of the world like the US in terms of a hotel recovery. While China's travel economy continues to outperform the world due to its containing the virus and a strong domestic travel base, it still faces occupancy issues in bigger cities due to so much of the supply targeting foreign travelers. High-end international hotels with large convention facilities, particularly in the tier-1 cities such as, Guangzhou and Shenzhen will continue to face challenges while modern hotels in the mid- to upper-midscale segment geared towards the domestic market — particularly in leisure destinations — are expected to perform very well (Sperance).

According to the latest China Construction Pipeline Trend Report, analysts at Lodging Econometrics (LE) reported that, China's total hotel construction pipeline continues to trend upward to an all-time high of 3,574 projects/647,704 rooms. Up 19% by projects and 9% by rooms year-over-year. China has 2,282 projects/408,403 rooms presently under construction. Projects scheduled to start construction before July 2021 experienced a massive increase of 105% by projects and 57% by rooms YOY, to stand at a record-high 842 projects/132,469 rooms. New highs can be attributed to the announcement of a record number of new upper midscale and midscale projects into the pipeline as well as delays in new construction projects that were announced in the second half of 2019 and were stalled at the beginning of 2020 due to COVID-19. These projects are expected to advance over the next few quarters as construction in China has resumed. Projects in the early planning stage stand at 450 projects/106,832 rooms, up 11% by projects and 6% by rooms YOY. In the second quarter of 2020, China only opened 101 new hotels with a record-low number of rooms totaling 14,150. Guangzhou leads China's pipeline with 140 projects, a record-

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high number of projects, having 27,753 rooms. Chengdu, also at an all-time high project count, follows with 134 projects/27,073 rooms. Next is Shanghai at 125 projects/23,666 rooms, then, Wuhan with 102 projects/14,010 rooms and Xi'an with 95 projects/16,714 rooms. Hotel construction projects in most major cities resumed before the start of 2021. Then, a flurry of construction to occur during the second and third quarters of this year. Many developers are estimating a delay in projects of only a couple of months (Evans).

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2.10 Merchandising

Key Take-Aways

• Throughout 2020 e-commerce has become one of the most rapidly growing areas of commerce in China.

• E-commerce has expanded heavily in rural areas.

• Corporate chains have adopted online commerce and embraced it as a new market.

• E-commerce has proven especially beneficial for the fresh food market. They have used the online apps to deliver fresh goods during the pandemic.

• Live streaming has become one of the fastest growing industries in China and is a strong platform for products to be presented.

• The night economy has continued to grow and develop despite the fears of the pandemic.

• The Chinese retail market has been turbulent due to the pandemic.

• Because of the changing conditions in the nation, the Chinese government is reevaluating its policies on starting new businesses and adapting new policies to deal with emerging outlets such as live streaming.

Covid-19 Repercussions

• Purchases rose drastically as consumers in China are spending more time indoors to avoid infections relating to the COVID-19 pandemic.

• The Ministry of Commerce says E-commerce has shown strong vitality and resilience in 2020, and has played an important role in fighting COVID-19, ensuring the supply of materials, assisting in the resurgence of work, and promoting the replenishment of consumption.

• During the pandemic, live streaming rapidly grew in China. Live streaming on e-commerce platforms boosted consumption and transformation in certain industries in China, as consumers switched to online-purchasing amid the COVID-19 pandemic.

• Despite the pandemic, the night life has grown throughout 2020.

Background

The year 2020 will be remembered as one of extraordinary challenges. The novel coronavirus has caught many countries flat-footed, extracting devastating human cost, crippling economies, grinding social life to a halt, and leaving numerous companies struggling to stay afloat. The International Monetary Fund has again downgraded its global growth forecast — to minus 4.9% — for 2020. But the international economic cloud has a silver lining. China's economy grew by 3.2% in the second quarter of 2020, back into positive territory from minus 6.8% growth in the first quarter, making China the first major economy to recover from the devastating effects of the pandemic. China's main economic indicators rebounded across the board, with industrial output rising by 4.4% and services by 1.9%. How did this turnaround come about in just a few months? Three key factors are responsible for that: strong leadership, targeted macro policies, and continued commitment to reform and opening up. Containing the virus and reopening the economy has been a delicate balancing act. With containment measures in place, China rolled out a combination of macro policies to support people's livelihoods, provide relief for companies, and revive economic growth. China's economic response adds up to a package with significant scale and intensity but without a massive stimulus. Fiscal funds have

2.10 销售

关键要点

· 2020年期间，电子商务成为了中国商贸行业增长最快的领域之一。

· 电子商务在农村地区深度扩张。

· 连锁企业纷纷展开线上商贸业务，瞄准这一新市场。

· 电子商务令生鲜食品市场受益良多。疫情期间，供应商利用APP配送生鲜食品。

· 直播成为中国增长最快的行业之一，成为重要的产品推销平台。

· 虽然疫情令人担忧，但“夜经济”仍不断增长和发展。

· 中国零售市场因疫情波动不断。

· 由于国情变化，中国政府正重新评估创业政策，并制定新政策规范直播等新兴业态的发展。

新冠疫情带来的影响

· 为预防新冠病毒感染，消费者在家呆的时间变长，网购量显著增长。

· 据中国商务部称，2020年，电子商务行业展现了强劲的活力和韧性，在抗击新冠疫情、确保物资供应、协助复工复产和促进消费复苏方面发挥了重要作用。

· 疫情期间，直播行业在国内快速发展。电商平台直播促进了消费和某些行业的转型，疫情期间，更多消费者选择网购。

· 虽然2020年疫情肆虐，但人们的“夜生活”仍不断发展。

背景

2020年是充满巨大挑战的一年。新冠疫情席卷全球，许多人感染死亡，经济濒临瘫痪，社会生活陷入停滞，许多企业在生存边缘苦苦挣扎。国际货币基金组织已将2020年的全球增长预测再次下调至-4.9%。全球经济形势一片晦暗下存在着一缕曙光。2020年二季度，中国经济增长了3.2%，由一季度的负6.8%恢复到了正增长，中国成为了第一个从新冠疫情恢复过来的国家。中国各项主要经济指标都有所反弹，工业产值增长了4.4%，服务业产值增长了1.9%。那么，中国是如何在短短几个月之间实现经济复苏的呢？主要在于三个关键因素：强大的政府领导力、精准的宏观政策和坚持改革开放。控制疫情和经济重启之间的平衡恰到好处。各项防控措施到位后，中国政府实施了一系列配套宏观政策来支持民生、帮扶企业、刺激经济增长。中国采取的一揽子经济恢复措施，规模和力度都很大，但没有大规模刺激措施。中国政府大幅增加财政资金的投入，将赤字率提高到了3.6%，为改革开放四十年来的最高水平。国家还发行了规模达1万亿元人民币（约合1433.8亿美元）抗疫特别国债。政府还采取了许多货币工具来促进经济恢复，包括降低银行法定存款准备金率，提高再贷款再贴现额度，鼓励商业银行让利2.5万亿元人民币，允许困难企业延期偿还贷款。中国政府推出了特殊转移支付机制，绕过层层机关，让财政资金直达地方政府，用来救助人民。政府还为企业提供财政补贴，让企业能够继续稳定支付工资。除了常规社保以外，中国政府还推行了临时补贴，扩大失业保险的覆盖层面，为困难群体提供特殊救助服务。在抗击疫情的困难时刻，中国政府一再强调，优先发展“国内循环”但这并不意味着中国将会闭关锁国，关起门求发展。相反，新的发展战略旨在更好地整合国内外市场，充分利用内需来巩固长期经济增长的基础。中国政府宣布，将会坚持改革开放不动摇（Fan）。

been markedly scaled up, and budget deficit has been raised to more than 3.6% of GDP, the highest in the 40-odd years of reform and opening-up. And special treasury bonds of 1 trillion RMB (US$143.38 billion) are being issued to contain the virus. Monetary tools have been marshaled, from cutting banks' required reserve ratio, raising re-lending and re-discount quotas to urging commercial banks to give interest concessions worth 2.5 trillion RMB and deferring loan repayment for hard-hit companies. The government has created a special transfer payment mechanism that bypasses layers of bureaucracy to channel fiscal funds straight to the local governments in order to aid the people. Fiscal subsidies are being extended to enterprises to keep payrolls stable. On top of the regular social security schemes, the government has introduced temporary subsidies, expanded the coverage of unemployment benefits and provided special aid for vulnerable groups. During these trying times, the government has repeatedly emphasized, prioritizing the domestic cycle does not mean that China will develop behind closed doors. Rather, the new strategy aims to better integrate the domestic and international markets and tap the potential of domestic demand to strengthen the foundations for China's long-term growth. China touts that it remains resolute to continue reopening (Fan).

E-Commerce

By the end of July 2020, China's online retail sales reached 5.15 trillion RMB (about US$736.7 billion) in the first half of 2020, up 7.3% year on year, according to the Ministry of Commerce (MOC). The MOC elaborated that E-commerce has shown strong vitality and resilience and has played an important role in fighting COVID-19, ensuring the supply of materials, assisting in the resurgence of work, and promoting the replenishment of consumption. The growth rate of online retail sales increased for four consecutive months, with this June 2020 seeing year-on-year growth of 18.6%. It appears that during turbulent times, e-commerce continued to be an anchor stabilizing the consumption market, with its scale expanding and its role becoming more prominent. The number of e-commerce users in China rose by 100 million compared with 2019, and the number of stores on major online retail platforms went up 3.8% year on year according to data from the MOC (Xinhua, China's Online Retail Sales Hit 5.15 Trillion Yuan in H1).

China's e-commerce sector expanded steadily in rural areas during the first half of the year, with rural online retail sales rising 5% year-on-year to 766.85 billion RMB (US$109.86 billion). E-commerce has played a positive role in facilitating poverty alleviation and boosting rural vitalization. The country's online sales of agricultural products totaled 193.77 billion RMB, rising markedly by 39.7% year-on-year. China has been promoting the development of e-commerce in rural areas in recent years, as it can boost household consumption, reduce inequality and bring to rural residents the convenience, variety and low prices enjoyed by urban dwellers (Xinhua, China's Rural Online Retail Sales Expand 5% in H1).

China's e-commerce giant Alibaba Group reported year-on-year revenue growth of 34% to 153.8 billion RMB (US$21.76 billion) for the quarter that ended on June 30, 2020. The company's net profit attributable to shareholders was 47.59 billion RMB. The profit surge was mainly due to strong performances in online retailing and cloud computing. By June, Alibaba's annual active consumers on Chinese retail marketplaces reached 742 million, almost half of China's total population. Mobile monthly active users reached 874 million by the end of June, 28 million more than the number in March 2020, with a large number of new consumers coming from less developed regions, the company said. Alibaba believes that its domestic core commerce business has fully recovered to pre-COVID-19 levels across the board, while cloud computing revenue grew 59% year-over-year (Xinhua, Alibaba Reports 34% Surge in Quarterly Revenue).

The rapidly developing services sector and services trade have become new drivers of the Chinese economy. In 2019, growth in China's services sector accounted for 53.9% of the country's gross domestic product, contributing 59.4% to overall economic growth, according to a report published by the China Association of Trade in Services. Import and export volumes of trade in services hit 5.42 trillion RMB (US$790 billion), up 2.8% year-on-year and ranking second globally

电子商务

据商务部发布的数据显示，截至2020年7月底，中国线上零售销售额达5.15万亿人民币（约合7367亿美元），同比增长了7.3%。据中国商务部称，2020年，电子商务行业展现了强劲的活力和韧性，在抗击新冠疫情、确保物资供应、协助复工复产和促进消费复苏方面发挥了重要作用。线上零售销售额已连续四个月增长，2020年6月录得同比增幅18.6%。市场动荡期间，电子商务似乎已经成为了消费市场的稳定器，规模不断扩大、地位日益重要。据商务部发布的数据显示，全国网络购物用户人数比上一年增长了1亿人，主要网络零售平台店铺数同比增长了3.8%（Xinhua, China's Online Retail Sales Hit 5.15 Trillion Yuan in H1）。

2020年上半年，电子商务在中国农村地区稳步扩张，农村地区线上零售额同比增长了5%，达7668.5亿元人民币（约合1098.6亿美元）。商务部指出，电子商务在助力消除贫困、提高农村经济活力方面发挥了积极作用。国内农产品线上销售额合计达到1937.7亿元人民币，同比大幅增长39.7%。近年来，国家一直在推动电子商务在农村地区的发展，因为其有助于鼓励家庭消费，减少不平等现象，让农村居民也能享受到城市居民拥有的购物便利以及多样和低价的消费选择（Xinhua, China's Rural Online Retail Sales Expand 5% in H1）。

据中国电商巨头阿里巴巴集团发布新财报，公司二季度（截至2020年6月30日）实现营收1538亿元人民币（约合217.6亿美元），同比增长34%。归属于普通股股东的净利润475.9亿元人民币。阿里巴巴披露，公司利润飙升的主要原因是线上零售业务和云计算业务的业绩表现强劲。截至今年六月，阿里巴巴集团旗下零售电商平台的年均活跃用户数达到7.42亿，几乎为全中国总人口的一半。公司财报显示，截至6月底，阿里巴巴旗下手机软件的月均活跃用户数为8.74亿，相较于2020年3月增长了2800万，大量新用户来自欠发达地区。阿里巴巴表示其国内核心商贸业务已完全恢复到疫情前的水平，云计算业务实现了同比59%的增长（Xinhua, Alibaba Reports 34% Surgein Quarterly Revenue）。

快速发展的服务业和服务贸易已成为中国经济的新动力。据中国服务贸易协会发布的一份报告显示，2019年，中国服务业在国内生产总值中的比重为53.9%，对全国整体经济增长的贡献为59.4%。服务贸易进出口额达5.42万亿元人民币（约合7900亿美元），同比增长了2.8%，连续六年排名全球第二。此外，该报告还详细探讨了推动服务业和服务贸易制度性开放以及促进双边和区域性服务贸易自由发展。该报告发布于2020年中国国际服务贸易交易会期间，该交易会目前正在北京举办（Xinhua, Services Sector, Trade Become New Drivers of Chinese Economy: Report）。

连锁超市运营商包括如物美集团等均已认识到电子商务对传统零售的影响正日益加深，这些企业不仅将会在业务布局中融入新的线上销售渠道，还计划把网购打造为新的增长动力。物美集团敞开怀抱迎合科技潮流，而非抵制这种趋势。物美集团采取了许多措施来迎合传统零售领域出现的科技潮流，包括上线了"多点"APP。目前，物美集团80%的营收来自"多点"。在后疫情时代，数字消费将成为不可忽视的发展趋势，电子商务也将成为中国经济增长的支柱之一。中国电子商务行业正飞速发展，在抗击新冠对经济的冲击当中起到了日益重要的作用，并将有助于促进社会经济发展。2020年对电子商务行业是尤为特别的一年，因为今年电子商务行业对社会经济发展做出了杰出贡献。今年前七个月期间，中国线上零售销售额同比增长了9%，达6.08万亿元人民币（约合8899亿美元）。其中，商品线上零售同比增长了15.7%，达5.1万亿元人民币，占社会消费品零售总额的25%。商务部宣布，国家已正式建立了15个新的电子商务示范基地，以促进全国产业发展。这些示范基地为电商企业和孵化平台等产业聚集地。商务部自2012年起一直在甄选国家电商示范基地，旨在推动传统产业数字化转型，孵化中小型电商企业，鼓励新技术应用（Yukun）。

生鲜食品和电商

随着2020年电子商务蓬勃发展，人们开始利用手机软件等电商基础设施网购生鲜食品。实际上，为预防新冠病毒感染，消费者们在家呆的时间变长，网购量显著增长。消费者可以使用每日优鲜、京东到家、叮咚买菜等APP采购蔬果、海鲜、肉类、米面粮油、鸡蛋、调味品和其他日常用品。据北京贵士信息科技有限公司发布的数据显示，2020年春节期间（1月24日至2月2日），盒马鲜生的日均活跃用户数同比增长了逾127%。贵士信息科技为一家追踪手机互联网行业的企业。盒马鲜生为阿里巴巴集团旗下生鲜食品连锁店。2020年1月20日至2月18日期间，京东旗下生鲜业务京东生鲜售出了88000公吨生鲜食物，同比激增了230%。此外，疫情也促使许多新的消费者群体（如老年人）转向网购。现在，这些新的消费者群体也成为了生鲜购物APP的目标用户。达达集团旗下地区按需零售平台"京东到家"联合沃尔玛、永辉超市、华润万家超市、山姆会员店、Ole、七鲜超市等连锁超市，成立了"到家安心采购联盟"。该业务旨在提供价格稳定、供应充足的食品供应服务，并保障北京市内的安全配送服务。京东到家发布的数据显示，2020年6月12日至18日期间，通过该APP的北京市销售额同比增长了85%。生鲜食品电商的渗透率低于服装和家电电商，目前仍有增长的空间。而新冠疫情极大地刺激了人们对于生鲜食品的需求。现在的问题在于，疫情结束后，这些APP如何能够留住用户（Feifei）。

for the sixth consecutive year. The report also discusses in detail the promotion of institutional opening-up in the services sector and trade, as well as bilateral and regional free trade in services. The report was published at a forum during the ongoing 2020 China International Fair for Trade in Services in Beijing (Xinhua, Services Sector, Trade Become New Drivers of Chinese Economy: Report).

Companies such as Wumart Group are aware of the growing influence of e-commerce on traditional retail and the supermarket chain will not only integrate the new sales channel into its operations but make online shopping a new growth engine. Wumart Group would embrace the technology wave rather than stay away from it, doing a lot of things to embrace the technology wave in the traditional retail sector, including the starting of a new application called Dmall. Currently 80% of Wumart's revenue comes from the new app. In the post-COVID-19 era, digital consumption is a trend that no one can ignore, and e-commerce is poised to become a pillar of economic growth in China. The rapidly developing e-commerce industry in China is playing an increasingly important role to mitigate the COVID-19 effect on the economy and will help boost social and economic development. 2020 became a special year for the e-commerce industry as it has made several outstanding contributions to economic and social development. During the first seven months of this year, China's online retail sales increased by 9% on a yearly basis to 6.08 trillion RMB (US$889.9 billion). Out of the total sales, online retail sales of goods grew by 15.7% on a yearly basis to 5.1 trillion-RMB, accounting for 25% of the retail sales of social consumption goods. The Ministry of Commerce said 15 new national e-commerce demonstration bases have been set up to foster industrial development in the country. The bases are industry clusters that cover both e-commerce companies and incubation platforms. The ministry started selecting national e-commerce demonstration bases from 2012 onward with a view to promote digitalization in traditional industries, incubate small-and medium-sized e-commerce companies and encourage the adoption of new technology (Yukun).

Fresh Foods and E-Commerce

As e-commerce boomed during 2020, citizens took advantage of the electronic infrastructure to purchase fresh food via mobile apps. In fact, such purchases rose drastically as consumers in China are spending more time indoors to avoid infections relating to the COVID-19 pandemic. Apps such as Miss Fresh, JD Daojia and Dingdong Maicai allow consumers to buy vegetables, fruit, seafood, meat, cooking oil, rice, eggs, seasonings and other groceries. Data from Quest Mobile that tracks the mobile internet space showed the daily active users of Hema Fresh, a fresh food chain backed by Alibaba Group Holding Ltd, increased by more than 127% over the Lunar New Year holiday (Jan 24 to Feb 2), compared with the same period in 2019.

JD Fresh, the fresh food arm of JD, sold 88,000 metric tons of fresh produce from Jan 20 to Feb 18, surging 230% year-on-year. In addition, the epidemic has persuaded new groups of consumers, such as elderly people, to convert to e-commerce. They now figure among fresh food apps' target user groups. In response, JD Daojia, the local on-demand retail platform of Dada Group, has partnered with Walmart, Yonghui, CR Vanguard, Sam's Club, Olé, 7Fresh and other supermarket chains to establish the "Daojia Secured Sourcing Alliance". This feature ensures a sufficient supply of goods at stable prices and guarantees secure delivery services in Beijing. Sales via the app in the city from June 12 to 18 increased 85% compared with the same period last year, according to JD Daojia. The penetration rate of fresh produce e-commerce is lower than that of clothing and home appliances, so there is still huge room for growth. However, the COVID-19 outbreak bolstered demand for fresh food. Now, the question is how these apps plan to retain users once the pandemic ends (Feifei).

Live Streaming

During the pandemic, many people turned towards alternative outlets and media for expression and income, including live streaming online. Live streaming is a rapidly developing medium in China. Live streaming on e-commerce platforms

直播

疫情期间，许多人开始找寻其他渠道和媒介来宣泄自己的情绪或者赚取收入，其中包括线上直播。作为一种媒体形式，直播在国内快速发展。电商平台直播促进了消费和某些行业的转型，疫情期间，更多消费者选择网购。商务部发布的数据显示，今年上半年国内直播超1000万场，活跃主播数超40万，上架商品数超2000万。据一份由新榜和第一财经商业数据中心联合发布的全平台直播电商主播带货总榜显示，今年七月，阿里巴巴集团旗下电商平台淘宝的两大顶尖带货主播薇娅和李佳琦预估销售额分别达到17亿元人民币（约合2.456亿美元）和12.7亿元人民币。短视频平台快手主播辛有志（昵称："辛巴"）在国内电商带货主播榜单上排名第三，预估销售额为5.589亿元人民币。据该榜单，七月单月带货超1亿元人民币的主播有16位，以美妆和服饰类别为主。由于带货能够刺激消费，主播这一职业在诸多领域逐渐受到认可。例如，由于扶贫带货的突出贡献，淘宝主播薇娅近期当选全国青年联合会委员。薇娅的带货品类涵盖化妆品到农产品等。薇娅拥有超过6000万粉丝。2020年4月，在年初为助力湖北疫后经济恢复举办的直播活动中，薇娅为湖北带货约25亿元人民币。8月18日，快手平台签约的草根主播辛有志（辛巴）在广州建立了直播基地。辛有志在快手平台拥有逾5500万粉丝，2020年6月，他曾经创下单场直播带货12.5亿元人民币的记录。辛有志称，落地广州的辛选直播基地占地面积为1.2万平方米，将通过提供培训、货源、品控、发货、售后等配套服务来吸引全国人气主播和品牌入驻。以化妆品带货出名的知名主播李佳琦目前全网拥有超过1亿粉丝。越来越多化妆品企业开始与李佳琦展开深度合作，包括产品设计初期。中小企业依靠主播来吸引更多消费者，国际大牌通过主播的庞大粉丝群开拓新销售。2020年7月，直播销售员成为国家人力资源和社会保障部正式认证的新职业，人气主播开始从事更多产品营销乃至商品生产和设计方面的工作，有助于推动某些产业产业升级转型，让产品更加贴合用户需求（Liubing）。

直播在抗击新冠疫情、提升零售业销售额的过程中发挥了重要作用。据一份业内报告显示，虽然今年上半年广告业整体出现了衰退，但今年二季度快速变化的消费品市场已呈现稳定恢复的趋势。央视市场研究发布了最新的中国媒体、广告营销以及中国消费市场发展趋势，指出中国媒体呈现出以粘性、刚性及弹性为特征的多元格局。该报告显示，媒体的融合传播策略也加速向账号化、网红化转化。反映出营销环境正从从传播场景向需求场景进阶。企业在尝试直播带货的同时，也需始终关注品牌价值的重要性。中国广告市场在2020年上半年同比下滑19.7%，为了应对新冠危机，广告商对营销推广的投入更为谨慎。中国快速消费品市场自第二季度起呈现稳步恢复态势，定位健康安全、快乐愉悦和居家餐饮有关的品类增长显著。关注健康、可持续发展和理性消费逐渐成为中国消费者的新常态（Zhuoqiong）。

夜经济

自八月起，随着夜间气温升高，中国消费者的夜生活热情也随之高涨。2020年夏季，阿里巴巴旗下线上旅游业务平台飞猪推出的夜玩类商品数同比激增20%。飞猪发布的数据显示，90后是夜玩族的消费主力军，占比过半。夜经济的活跃程度是衡量城市活力的重要标准。夜体验产品能够满足年轻用户本地游和周边游的需求。对于疫后提振城市文旅复苏很有帮助。疫情以来，越来越多人倾向于利用周末时间进行本地游或周边游，夜体验活动，包括民宿和度假村的含早套餐十分火爆。万豪、香格里拉、苏宁宝丽嘉等奢华酒店相继推出了派对、酒吧畅饮和健身活动等夜间游玩活动，以满足都市年轻人的夜间娱乐需求。浙江湖州、广东广州、宁夏中卫沙坡头等多地民宿运营商纷纷推出户外露营、观星、篝火弹唱等活动，以吸引更多游客。此外，不少主题乐园趁势增加夜游场次。上海海昌海洋公园、广州长隆水上乐园、北京欢乐谷、上海欢乐谷和武汉欢乐谷等乐园夜场票销售火爆。对旅游业而言，增加夜游项目有助于实现产品转型，扩张旅游产品品类，增加增值服务，提振相关领域的发展。自然景区、主题公园、博物馆、历史遗址和室内景点等大部分国内景区的夜间开放时间通常是晚上七点到十点，十点后仍开放的景区非常少（Wenqian）。

出于对疫情的顾虑，人们尽量避免进入餐厅和商场，路边摊再度兴起。中央政府督促地方政府为商贩提供摆摊的场所，让地摊经济能够可持续发展。作为"非正式经济"的重要组成部分，地摊经济在疫情过后逐渐回到街边巷尾。"非正式经济"指未受保护、欠缺监管以及缺乏社会价值认同的经济形式。据国际劳工组织发布的数据显示，2018年"非正式经济"从业人数超过20亿人，超过全球就业人数的61%，主要分布在新兴国家和发展中国家。地摊经济的复兴蓄势已久。地摊经济也带来了许多令人头痛的问题。地摊经济的门槛成本低，对人们尤其低收入人群而言，是就业机会和收入来源。地摊经济使城市生活更便利，有助于提振内需。在年轻人众多、气候适宜户外聚会的粤港澳大湾区，地摊经济和活跃的夜间地摊商贩商贩和市场相当契合。近期，人们对于地摊经济到底是中国经济恢复的解决方案还是仅仅是权宜之计进行了激烈的讨论。不禁令人想起，十多年前，非正式企业曾经不受限制地发展，但最终不得不为中国的快速城市化发展让路，小商贩被清除出了大城市的街头巷尾。一些国家政府为符合资质的商贩颁发营业执照，确保其产品质量（HKEdition）。

零售

因受疫情影响，2020年期间中国零售市场动荡不安。2020年9月，中国零售业销售额年内首次扭负为正。消费开支增长是最能体现经济恢复的指标。这是自疫情爆发

is boosting consumption and transformation in certain industries in China, as consumers tend to switch to online-purchasing amid the COVID-19 pandemic. According to the Ministry of Commerce, more than 10 million sessions of livestreaming were held in China in the first half of the year, with about 400,000 live streamers participating, and introducing over 20 million commodities. A list of rankings compiled by newrank.cn and CBN data shows that live streamers Viya and Li Jiaqi, or Austin Li, on Alibaba's e-commerce platform Taobao, were China's top two live streamers in July, reaching estimated sales of 1.7 billion RMB (US$245.6 million) and 1.27 billion RMB, respectively. Live streamer Xin Youzhi, dubbed Simba on short video app Kuaishou, ranked at third place with estimated sales of 558.9 million RMB. Sixteen live streamers on the list boasted individual estimated sales surpassing 100 million RMB in July alone, with most of those sales in the beauty and costume categories. Live streamers, for their contributions in boosting consumption, are getting recognized in a wide range of fields. For example, Viya, a top seller of products ranging from cosmetics to farm produce on e-commerce platform Taobao, was elected a member of the All-China Youth Federation recently for her contributions to charities and poverty alleviation. With more than 60 million fans online, Viya sold about 250 million RMB in goods from Central China's Hubei province in April 2020, as part of the province's recovery from the novel coronavirus at the beginning of the year. Xin Youzhi, or Simba, a grassroots live streamer on the Kuaishou platform, launched his live streaming base in Guangzhou, South China's Guangdong province, on Aug 18. With more than 55 million fans on the platform, Xin sold goods valued at 1.25 billion RMB during a single live streaming session in June 2020. The Guangzhou base covering an area of 12,000 square meters, will attract popular live streamers and brands nationwide by providing services such as training, goods supply, quality control, delivery, and after service, Xin said. Li Jiaqi, or Austin Li, a well-known live streamer who emerged first in the cosmetics industry, now has more than 100 million fans on various platforms. More and more cosmetics enterprises started in-depth cooperation with him from the very beginning of product design. Small-and-medium companies are relying on these live streamers to attract more consumers, while international brands are chasing new sales from their huge fan bases. As live streaming, or online marketing, was officially recognized as a new profession by the Ministry of Human Resources and Social Security in July 2020, popular live streamers are engaging more in product marketing, and even commodity production and design, which helps the upgrade and transformation of certain industries to make their products more user friendly (Liubing).

Live streaming has played an important role in coping with the impact of the COVID-19 epidemic — as well as promoting sales for retail companies — as the fast-moving consumer goods market has shown a steady recovery in the second quarter despite advertising witnessing a decline in the first half of 2020, according to an industry survey. According to a report on recent trends in China's media, advertising and consumption markets released by CTR Market Research, a leading market research company, China's media is transferring to a diversified pattern characterized by stickiness, rigidity and resilience. Media's integrated communication strategy is also becoming more account-based and KOL-based, according to the report. It reflects the marketing environment has been transferring from a promotion scenario to a demand scenario. Companies should always keep in mind that brand value is of greatest significance when developing livestreaming e-commerce. Advertisers have become more prudent in investing in marketing and promotion in response to the pandemic, as China's advertising market has witnessed a 19.7% year-on-year drop in the first half of 2020. As China's fast-moving consumer goods market has shown steady recovery since the second quarter, categories related to health and safety, pleasure and home dining have grown significantly. Focusing on health, sustainable development and rational consumption has gradually become Chinese consumers' new normal (Zhuoqiong).

Night Economy

Since August, Chinese consumers' enthusiasm to venture out at night has risen along with the daytime temperatures. In the summer of 2020, the number of available nighttime travel products on Fliggy, the online travel arm of Alibaba Group,

以来，中国零售业销售额增速首次扭负为正。最新指标显示，消费开支增长逐渐追上了国家宏观经济恢复的速度。新增感染病例减少后，中国经济出现了恢复势头，政府大力开展基础设施建设项目也有助于促进经济活动。八月份消费品零售总额达到了3.36万亿元人民币（约合4920.8亿美元），同比增长0.5%。截至八月底，国内消费品零售总额达23.8万亿人民币（约合3.5万亿美元），较前七个月缩减了1.3%（Xinhua, Chinese Retail Sales Grow amid Signs of Wider Economic Recovery）。

促进消费是扩大内需的重要举措。国内消费是中国经济的基础，占国民生产总值增量的60%。只有消费稳定，才能保证经济稳定。近年来，国内消费的问题越来越突出。2019年国内消费实际增长率为6.36%，同比下滑了1.7%。国内消费对经济增长的贡献率为57.8%，较2018年的65.9%下降了8.1%。2019年消费增长率下降导致经济下行的压力更大。此外，新冠爆发也对国内居民消费行为产生了不利影响。一月至四月期间，国内消费品零售总额下滑了16.2%。网购产品和服务作为新的消费驱动力，销售额仅同比增长了1.7%，相较于2019年一季度16.5%的增幅下滑了14.8%。今年一季度，消费对国民生产总值的贡献率为-4.36%，占国民生产总值的逾60%。一方面，新冠疫情对经济造成的不利影响还将持续一段时间，失业风险也将增长。截至四月，全国城镇新增就业人数同比下降了22.9%，调查失业率攀升至6%。家电等耐用品的消费是2020年上半年消费行为延迟的表现，而非零售增长。人们不会因为上半年没有买电视或冰箱，就在下半年买两台。总体而言，已经造成的损失是无法弥补的。就大部分消费品品类而言，消费者不会在下半年自动自发地加购，来弥补上半年未能进行的购买行为。宏观经济政策也需要更贴近稳定居民资产负债表的目标。具体措施应包括进一步加大对劳动密集型行业的支持，提高就业率和就业质量，努力稳定居民收入。同时，政府应考虑实施降低利率的货币政策。目前的利率水平基本与2009年持平，但经济增长率已经不同，家庭和企业负债的利息压力仍然相对较大。最后，为了弥补城镇居民消费不足带来的影响，政府应让财政政策在政府消费方面发挥更大作用。一方面，提升政府消费能够提升总消费额。另一方面，保障民生仍有助于减轻居民资产负债表压力（Ze）。

法律、法规、指导意见和改革

2020年期间，中国颁布了许多与商品贸易相关的法律法规。比如，浙江省网商协会颁布了《直播电子商务服务规范（征求意见稿）》，向公众征求意见。这是全国首个直播电商行业管理规范。如前所述，直播电商行业正飞速发展，尤其是在年初新冠疫情爆发后。据中国互联网络信息中心于四月发布的第45次《中国互联网络发展状况统计报告》显示，截至三月底，国内直播用户数量已飙升至5.6亿，占中国居民人口的62%。据媒体研究机构艾媒网发布的数据显示，2019年中国直播电商行业的市场规模为4338亿元人民币（约合613.1亿美元），预计2020年增长率将超过100%。由于疫情已深刻地改变了中国人民的消费习惯，低成本、无需接触的优势让直播电商行业的未来前景显得一片光明。但是，直播电商行业缺乏监管，也令人感到担忧。前述管理规范草案明确规定了直播电商服务相关各方的责任与义务，包括平台、商家、主播以及培养网红的各种网络渠道和组织。该管理规范草案还特别列举了主播需避免的“负面行为”清单。包括发布违法、不良信息，推广禁限售、假冒伪劣商品，发布构成虚假广告和不当竞争的不实信息，侵犯他人隐私、虚假交易和非法广告等。该管理规范草案还强调平台责任，规定平台应规范商家和主播行为，改善信用评估系统，保护消费者权益（Zhuoqiong）。

为增加就业、扩大消费、改善人民生活，中国政府发布了《关于开展小店经济推进行动的通知》。该通知由商务部会同其他六部委联合发布，详细阐述了实现至2025年在全国范围内打造1000个小店集聚区这一目标的措施。该通知指出，国家将采取措施促进小店聚集区的转型升级，小店可以延长营业时间、开展数字化市场营销活动，为居民提供多种多样的服务。该通知指出，应鼓励电商平台、物流企业、商贸企业和中央厨房与小店展开合作，助力小店降低成本。该通知还指出，应贯彻落实减税降费等优惠政策，助力小店发展。截至2019年底，全国注册小店数量超过8000万家，创造约2亿个就业岗位（Xinhua, China Vows Support for Small Stores）。

为了使困难时期企业开办更简便，中国政府计划精简企业开办手续。国务院于8月26日做出决定，国家将努力确保年底前做到企业开办全程网上办理，以进一步实现政府职能转变，保护和激发市场主体活力。中国政府称，深化企业制度改革极其重要。国家市场监督管理总局发布的数据显示，2019年，平均每天有2万家新企业登记成立。截至2020年7月底，全国登记市场主体达1.32亿家，较去年年底增长了6.7%。政府已定下目标，要在2020年底之前做到企业开办全程网上办理。政府将开展住所与经营场所分离登记试点，一家企业可登记多个经营场所。围绕便利企业生产经营、扩大对外开放、支持农业农村发展等，取消49项有重复审批情况的行政许可事项，将4项审批下放至省级部门。对其中需要修改法律的提请全国人大常委会修法后施行（Yue）。

jumped 20% on a yearly basis. The main consumers of night tour products are those born in the 1990s, and they accounted for more than 50% of the total, Fliggy said. The liveliness of the night economy is an important measure of urban vitality. The offering of nighttime events and travel products meets demand from young consumers who take tours locally and in neighboring areas. They will help boost the recovery of urban culture and tourism since the outbreak of COVID-19. With more people preferring to take weekend trips locally and to nearby regions, this has fueled the popularity of nighttime events at bed-and-breakfast homestays and resorts. Some luxury hotels, such as Marriott Group, Shangri-La Hotels and Resorts and Bellagio Shanghai, have launched nighttime activities such as parties, drink-one's-fill at bars and workout events to satisfy the entertainment demand of urbanites after the sun goes down. Some domestic bed-and-breakfast businesses in Huzhou and Guangzhou, and Zhongwei in the Ningxia Hui autonomous region, have launched nighttime events such as outdoor camping, stargazing and bonfire parties to attract more travelers. Meanwhile, some theme parks are accelerating efforts to boost nighttime sessions. Shanghai Haichang Ocean Park, Chimelong Ocean Kingdom in Zhuhai, Guangdong province, as well as Happy Valley in Beijing, Shanghai and Wuhan have seen red-hot sales of their nighttime admission tickets of late. For the tourism industry, the introduction of more nighttime travel and leisure products can help transform and enrich travel lineup offerings, increase value-added services and boost other related sectors. For most domestic sightseeing attractions, including natural scenic areas, theme parks, museums, cultural heritage sites and indoor spots, evening opening times are mostly between 7 pm and 10 pm, with only very few places remaining open after 10 pm (Wenqian).

Street vendors are making a comeback as people shun restaurants and shopping malls amid the COVID-19 pandemic. Local governments are urged to give vendors a level playing field to enable them to develop sustainably. Referred to as part and parcel of the "informal economy", which is not protected, regulated or often socially valued, street vendors are back making their mark on post-pandemic streets. According to the International Labor Organization, more than two billion people, or over 61% of the world's working population, were engaged in the "informal economy" in 2018, mainly in emerging and developing countries. The impetus for a street-vending renaissance remains as old as time. So do the headaches that informal businesses often create. The street vendor economy, with its low entry cost, can be a new source of jobs and a fountain of wealth for particularly low-income populations. It makes urban life more convenient and helps pump up domestic demand. Riding high on large young populations and climates perfect for outdoor gatherings, the street vendor economy fits in well with the lively night-time businesses and markets in the Guangdong-Hong Kong-Macao Greater Bay Area. The recent nationwide debate on the street vendor economy as a solution, if not a stopgap measure for China's economic recovery, revokes memories of the unbridled development of informal businesses decades ago that ultimately gave way to the country's rapid urbanization, with most of the vendors being cleared from the streets in mega cities. Governments, in particular, grant such licenses to credible and qualified vendors to ensure the quality of products they sell (HK Edition).

Retail

The retail market was turbulent in China during 2020 due to the pandemic. Chinese retail sales grew for the first time in 2020 during the month of September, and the rise in consumer spending was the latest indicator of wider economic recovery. China's retail sales returned to growth for the first time since the coronavirus outbreak, a sign that consumer spending was catching up with the country's wider economic recovery. The recovery gained momentum after new cases of the virus slowed to a trickle and government infrastructure projects helped to support economic activity. In August, the total retail sales of consumer goods reached 3.36 trillion RMB (US$492.08 billion), rising 0.5% year on year. In the first eight months, the total retail sales of consumer goods reached 23.8 trillion RMB (US$3.5 trillion), down 8.6% year on year, narrowing by 1.3 percentage points compared with that in the first seven months (Xinhua, Chinese Retail Sales Grow amid Signs of Wider Economic Recovery).

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An important part of expanding domestic demand is to increase consumption. Domestic consumption is the base of China's economy, accounting for 60% of the GDP increase. Only when consumption is stabilized can economic stability be guaranteed. Problems of China's consumption have become more prominent in recent years. The actual growth rate of consumption in 2019 was 6.36%, a decrease of 1.7 percentage points from 2018. Contribution of consumption to economic growth was 57.8%, down 8.1 percentage points from 65.9% in 2018. The decline in consumption growth had led to increased downward pressure on the economy in 2019. Furthermore, the novel coronavirus outbreak has had a negative impact on consumption of China's residents. China's total retail sales of consumer goods from January to April had seen a 16.2% decline. As a new driving force for consumption, sales of online goods and services only increased 1.7% year-on-year, down 14.8 percentage points from the 16.5% growth rate in the first quarter of 2019. In the first quarter of this year, consumption dragged negative GDP growth by 4.36 percentage points, accounting for more than 60% of the negative GDP growth. On the one hand, the coronavirus impact on the economy will continue for a period of time, which will increase the risk of unemployment. As of April, the accumulative number of new jobs in urban areas declined by 22.9% year-on-year, and the surveyed unemployment rate rose to 6%. The consumption of durable goods such as home appliances was a delay in consumption in the first half of 2020, not a retaliatory growth. People will not buy two TVs or five refrigerators because they did not purchase in the first half of the year. In general, what has been lost has been lost. In most consumer categories, consumers will not automatically increase their purchases in the second half of the year to make up for the lost consumption in the first half of the year. Macroeconomic policies also need to be more targeted to stabilize residents' balance sheets. Measures should include further increase in support for labor-intensive industries, improvement in the quantity and quality of employment, and efforts to stabilize residents' income. At the same time, government can consider a monetary policy that lowers interest rates. The current interest rate level is basically the same as that in 2009, but the economic growth rate is not the same, so the burden of interest on household and corporate debt is still relatively large. Finally, in order to make up for the insufficiency of residents' consumption, fiscal policy should play a larger role in the field of government consumption. On the one hand, increasing government consumption can increase total consumption. On the other hand, protecting people's livelihood can also partially ease the pressure on residents' balance sheets (Ze).

Laws & Regulations & Guidelines & Reforms

As 2020 moved on, laws and regulations developed impacting the merchandising in China. An example would be a draft regulation for the e-commerce livestreaming industry introduced by the Zhejiang E-Business Association who solicited public opinion on it, the first such attempt in the country. As previously mentioned, E-commerce livestreaming is a rapidly growing industry, especially after the novel coronavirus epidemic broke out at the beginning of this year. According to the 45th China Internet Development Report issued by China Internet Network Information Center in April, by the end of March the number of livestreaming users in China had risen to 560 million, accounting for 62% of China's netizens. Statistics by iiMedia Research, a media research organization, show that the market scale of China's livestreaming e-commerce industry was 433.8 billion RMB (US$61.31 billion) in 2019, and the growth rate in 2020 is expected to be over 100%. As the novel coronavirus outbreak has drastically changed most Chinese people's consumption habits, the future of the livestreaming e-commerce industry appears promising thanks to low-cost and no-contact advantages. However, there is concern about the lack of regulation. The draft regulation clearly states the obligation and responsibility of various parties involved in livestreaming e-commerce services, such as platform, producer, livestreaming anchor, and the multi-channel network organization that cultivates online key opinion leaders. In particular, the draft makes a list of "negative" behaviors that livestreaming anchors should avoid. These include promoting illegal or harmful information banned according to the law, promoting information of fake and/or shoddy products, promoting incorrect information such as false advertisement, unfair competition practices, violation of other's privacy, fake transactions and illegal advertisements. It also

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stresses the platforms' responsibility in regulating producer and anchor behavior, improving credit evaluation system and safeguarding consumers' rights and interests (Zhuoqiong).

Chinese authorities have released a circular aimed at supporting small stores as part of efforts to increase employment, expand consumption, and improve people's livelihoods.

The circular, jointly issued by the Ministry of Commerce and six other government departments, detailed measures to develop 1,000 clusters of small stores nationwide by 2025.

Measures will be taken to promote the transformation and upgrade of small store clusters, said the circular, adding that such stores may extend business hours and digitalize marketing activities to offer residents multiple services. E-commerce platforms, logistics firms, trading enterprises, and central kitchens are encouraged to cooperate with small stores to reduce their costs, according to the circular. The circular also noted that preferential policies related to small stores, such as tax and fee cuts, should be fully implemented. China had over 80 million small stores by the end of 2019, creating jobs for about 200 million people (Xinhua, China Vows Support for Small Stores).

To make opening businesses easier in these trying times, China plans to help by cutting some of the red tape. The State Council decided on Aug 26 that China will work to ensure that opening a business will be processed entirely online before the end of the year, as part of efforts to further transform government functions with a view to preserving and reinvigorating market entities. The Chinese government says they place great importance on deepening reform of the business system. Figures from the State Administration for Market Regulation showed that in 2019, as many as 20,000 new businesses were registered in China on an average day. By the end of July this 2020, 132 million market entities were registered nationwide, up by 6.7% from the end of last year. It was decided that business openings will be processed entirely online before the end of 2020. Separate registration of corporate domicile and business premise will be piloted, and a company may register more than one business premise. To ease business operations, expand opening-up and support agriculture and rural development, administrative licensing over 49 items with overlapping permit requirements will be canceled, and the approval authority over four items will be delegated to the provincial level. Where law revision is needed, these new measures will be implemented after the Standing Committee of the National People's Congress approves the proposed law revisions (Yue).

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2.11 Consumer Goods

Key Take-Aways

- There are growing concerns over the sustainability of China's Dual Circulation strategy as the economy continues to change during the pandemic.

- China is experimenting with expanding the possibility and accessibility to duty free goods.

- China is placing a great importance on increasing its recycling capacity.

- Controversies surround TikTok further strained US and China trade relations.

- China's factories stepped up production and retail sales expanded in August for the first time in 2020, showing a sign of economic recovery.

- Recovery in Chinese consumer spending remains weak and has been led mainly by high-end consumption, leading analysts to wonder if the momentum is sustainable in the fourth quarter.

Covid-19 Repercussions

- Sales of China's consumer and export goods were heavily decreased early in 2020 due to the pandemic.

- The largest producer of Christmas goods faces drastic losses due to the pandemic.

- Due to the coronavirus, global spending is down, impacting the production and sales of Chinese products.

- Later in the year, China's 1.4 billion consumers gradually began to show their willingness to spend again on certain goods and services.

Background

President Xi Jinping pledged to open China's service industries wider to foreign competitors as it began to reopen during the pandemic. Chinese leaders are emphasizing development of tourism, retailing and other services. They are part of a campaign to nurture economic growth driven by consumer spending instead of exports and investment. China will "relax market access for service industries" and "actively expand imports of high-quality services," Xi said at the China International Fair for Trade in Services. China's manufacturers are flexible, efficient global competitors, but its fledgling tourism, finance, health care and other service industries lag their Western counterparts. Regulatory barriers limit the ability of foreign banks and other providers to compete in China two decades after Beijing joined the free-trading World Trade Organization. US officials who are waging a tariff war with Beijing over its trade record point to services, in which the United States runs a surplus with China, as a promising area. China, where the pandemic began in December 2019, was the first economy to shut down and the first to begin the struggle to revive business after the ruling party declared victory over the disease in March. Factories, office towers and shopping malls have reopened but visitors to public buildings in Beijing still are checked for fever by masked guards (McDonald).

Concerns Over China's Dual Circulation Strategy

In 2020, China, the world's second-biggest economy was facing a major problem – weak consumer spending as a result of a state-led growth model. And the lack of consumer purchasing power is flying in the face of Beijing's new economic plan of creating a massive domestic market to reduce the nation's reliance

2.11 消费品

关键要点

· 疫情期间经济形势持续变幻，越来越多人质疑中国提出的"双循环"发展策略的可持续性。

· 中国正在试行扩大免税商品的适用范围。

· 中国愈加重视提升自身的回收能力。

· 围绕海外版抖音的争议进一步加剧中美之间紧张的贸易关系。

· 中国工厂加快生产脚步，8月份零售额实现2020年来的首次增长，中国经济呈现复苏迹象。

· 中国消费者支出复苏仍旧乏力，且以高端消费为主，因此顶级分析人士认为第四季度可能难以保持上升势头。

新冠疫情带来的影响

· 受疫情影响，中国2020年初消费品及进口商品销售额大幅下降。

· 疫情使最大的圣诞商品生产商遭受损失。

· 新冠疫情的阴霾笼罩下，全球消费下滑，中国产品生产与销售也因此受影响。

· 今年年末，中国14亿消费者逐渐显露回购特定商品和服务的意愿。

背景

习近平主席表示，疫情期间，随着中国各地逐步重启经济，中国的服务行业要进一步向外国竞争者开放。中国领导人强调旅游、零售及其它服务行业的发展。这是促进经济增长主要依靠内需而非投资和出口的举措之一。习主席在中国国际服务贸易交易会上表示，中国将"放宽服务行业的市场准入"并"积极扩大高质量服务的进口"。参与国际市场竞争的中国生产商非常灵活高效，但中国的旅游、金融、医疗保健及其它服务行业却才刚刚起步，与西方同行的差距较大。加入以促进自由贸易为宗旨的世界贸易组织20年后，中国的监管壁垒仍使外资银行及其它服务提供商在中国的竞争活动受限。正在与中国就过去贸易问题进行关税战争的美国官员指出，服务业的前景广阔，而美国在这一领域的对华贸易顺差巨大。2019年12月，新冠疫情爆发，中国是第一个采取封城措施的经济体。2020年3月，在中国政府宣布克服新冠肺炎病毒之后，中国也率先踏上艰难的复苏之路。虽然工厂、办公楼和商场已重新开放，在北京，戴口罩的保安还是会为进入公共大楼的访客测量体温。经历了第一季度6.8%的萎缩后，中国经济在6月季度迅速回弹，实现了3.2%的增长，中国也成为今年首个恢复增长的经济体（McDonald）。

对中国"双循环"发展战略的担忧

2020年，由于增长模式由国家主导，全球第二大经济体中国面临消费疲软这一重大问题。中国推出新经济计划，强调扩大内需，以减少对出口的依赖，而消费者购买力不足成为实现该计划的首要障碍。今年5月，习近平主席提出，"双循环"新战略会更多地关注国内市场，这将是中国在日益紧张多变的国际局势下谋求生存并走向繁荣的战略方针。在研究人员表示，该战略能否成功仍是个未知数。据国务院发展研究中心9月发布的一份报告预测，到2024年，中国人均国内生产总值将达1.4万美元，到2025年，中等收入水平群体的规模将超过5.6亿人，国内市场规模将超过美国。不过，如果中国不对增长模式和财富分配体系进行大刀阔斧的改革，一些人认为中国难以真正将增长引擎从国家引导的投资和出口转移至消费。据一些专家分析，就提振消费、促进经济再平衡这一点而言，"双循环"战略也不过是"旧瓶装新酒"，此外，为实现这个计划，需要将大量的国家财富转移至居民手中，这个过程并非轻而易举。许多中国消费者的购买力正在持续下降。奢侈品与食品的销售额已经在逐步下滑，便宜且接地气的食品如豆腐的销售额却有所增长。商品零售额通常作为衡量总体商品服务消费的指标。官方数据显示，自2019年至2020年的前7个月期间，中国的商品零售额萎缩了约10%。不过，这包括了政府对商铺及餐饮行业的补贴，因此，消费的实际萎缩幅度可能更大。中国消费疲软的根本原因，偏向国家与富人的财富分配制度造成巨大的贫富差距。若中国无法拉动内需，国家还是要依赖国外需求以维持工厂运营。万博新经济研究院是北京的一家

on exports. President Xi Jinping announced in May that a new "dual circulation" plan, focusing more on the domestic market, would be China's strategic approach to surviving and thriving in an increasingly unstable and hostile world. Whether the strategy will be a success remains an open question among researchers. A report issued in September by China's Development Research Centre under the State Council predicted that the nation's per capita gross domestic product will reach US$14,000 by 2024, and that China's market will be bigger than that of United States by 2025, with at least 560 million "middle-income" consumers. But others doubt whether China can truly shift its growth engine from state-led investment and exports to consumer spending without painful reforms of its growth model and wealth-distribution system. According to some experts, this new strategy is really just an old plan to rebalance the economy towards consumption, but the plan would require a massive wealth shift from the state to households – a process that will not be accomplished easily. For many consumers in China, their purchasing power is weakening. Luxury goods and foods have gradually dropped in sales while cheaper, more rustic foods such as bean curd have increased in sales. Official figures show that China's retail sales of goods, often used as a gauge for overall consumer spending on goods and services, shrank about 10% in the first seven months of 2020 from 2019. But the real decline in consumer spending could be even deeper, as the retail sales figures include government spending at shops and restaurants. Beneath the surface of China's weak consumer spending is a national wealth-distribution system that favors the state and the wealthy instead of average households, resulting in an increasingly widening wealth gap. If China's domestic demand proves insufficient, the nation will have to rely on demand from abroad to keep its factories humming. Teng Tai, the director of a Beijing-based private think tank studying supply-side reforms, was quoted recently by the official Securities Times as saying that it is impossible for China to rely solely on the domestic market to sustain its massive manufacturing apparatus.

Food and Beverages

In an attempt to encourage sugar reduction in China, Stevia firm SweeGen eyes a nationwide boom in China on the back of the government's 'Healthy China 2030' goal. SweeGen is eyeing China as a major new market due to the local government's Healthy China 2030 public health goal, which looks to significantly reduce sugar consumption in the country. According to formal documentation on the healthy China 2030 movement, the government aims to cut local sugar consumption by at least 17% compared to 2012 numbers – so the goal would be for Chinese consumers to be consuming not more than 25g of sugar per person by 2030, as compared to 30g previously. At present, China consumes approximately 15 million tons of sugar annually, but sugar intake is expected to decrease because of China's 'Healthy China 2030 initiative. As a result of this initiative as well as evolving consumer trends, achieving good health, wellness and weight management are on the minds of most consumers in China when choosing their snacks and beverages. So with this ongoing consumption upgrade happening among the majority of consumers in China, SweeGen believes more local CPG brands will join the global trend of sugar reduction, leading to a need for alternatives such as stevia. SweeGen aims to reduce sugar and artificial sweetener consumption which is a major goal in the 'Healthy China 2030' objective and hope that their stevia sweeteners can replace artificial sweeteners in many food and beverage applications. The firm has partnered with state-owned agency China Commercial Foreign Trade Group (CCFT), which owns the China Commerce Sugar Industry Co, one of the largest sugar distributors and trading partners both in China and internationally. SweeGen hopes to make use of the CCFT distribution channels to expand their regional application capabilities to support and collaborate closely with firms to enable unique local uses and distribution of stevia. SweeGen is expecting their Reb M stevia to be approved for use in the China market and hope to collaborate with Chinese manufacturers to create products with little to no sugar. Stevia as a sweetener has been in use for some time in China but SweeGen hopes that their stevia produced by a proprietary bioconversion process will appeal to the Chinese market (Neo).

专注研究供给侧改革的民办智库机构，其院长滕泰曾表示，中国庞大的制造业单纯依靠国内市场无法持续维持。证券时报官方网站近期引用了这一言论。

食品饮料行业

中国的《"健康中国2030"规划纲要》鼓励减少糖摄入量。美国甜菊糖公司SweeGen看到了这背后中国代糖市场的广阔前景。根据该规划纲要，中国政府目标显著减少全国居民糖摄入量，SweeGen公司因此将中国视为重要新市场。根据"健康中国2030"行动的正式实施文件，政府的目标是到2030年，全国居民糖摄入量较2012年的30克降低至少17%，中国居民人均每日糖摄入量不超过25克。目前，中国每年消耗约1500万吨糖，不过，随着"健康中国2030"行动的实施，预计中国人的糖摄入量减少。由于这一行动的实施以及日新月异的消费趋势，中国大部分消费者在选择零食和饮料时，开始考虑健康、养生及体重控制等因素。SweeGen相信，随着中国大多数消费者的消费升级，会有越来越多中国快速消费品（CPG）品牌会加入这场减糖大行动，推动甜菊糖等糖替代品的需求增长。SweeGen致力于减少糖和人工甜味剂的摄入，这与"健康中国2030"行动的主要目标不谋而合。该公司希望其生产的甜菊糖甜味剂能替代许多食品和饮料中的人工甜味剂。国有企业中商外贸有限公司（简称中商外贸）旗下的中商糖业有限公司是中国乃至全球最大的糖业经销商和贸易商之一。SweeGen已与中商外贸建立合作伙伴关系。SweeGen希望借助中商外贸的经销渠道，扩大其区域应用能力，支持其与多家企业展开紧密合作，从而打造独特的本地甜菊糖需求和经销方案。SweeGen预计其Reb M甜菊糖将在中国获准上市，并希望与中国制造商合作开发低糖及无糖产品。甜菊糖在中国早已不是新鲜事物，但SweeGen希望其使用独有专利生物转化工艺生产的甜菊糖产品能获得中国市场的青睐（Neo）。

免税商品

尽管新冠疫情使全球旅游和贸易行业遭受沉重打击，但许多中国消费者对进口奢侈品的购买热情并未减退。政策制定者计划挖掘这方面的巨大需求，推动实现疫情冲击下的经济复苏。位于中国南部海南省的三亚市是知名沿海旅游城市。自7月1日以来，随着国内新冠疫情形势缓解，三亚免税店的日销售额猛增至10万元人民币（约14617美元）。随着新冠疫情的阴霾消散，拥有独特热带风光、免税产品琳琅满目的海南岛再次迎来了大批游客。中免集团是一家国有专营公司，其运营的三亚海棠湾免税购物中心在7月1日至8月18日期间接待了74万名顾客，同比增长70%。期间售出了香水、化妆品、奢侈手表和箱包等共计458万件商品，同比增长1.5倍。这家免税店也因此创造了49天内销售额破50亿的全球行业记录。为进一步推动建设世界级自由贸易港策略，海南省近期推出了一系列政策改革措施，促使游客到三亚免税店大肆购物。2020年，中央政府发布了几份政策文件，旨在鼓励国内消费，推动中国经济复苏。随后海南省出台相关政策提振免税消费。政府今年还还实施了其他空前措施，新发放了三张免税牌照，使更多企业拥有免税店经营资质。而在过去40年年间，政府仅发放了七张免税牌照。深圳市国有免税商品集团是中国免税零售商之一。据深国免集团的报告显示，预计未来三年中国免税零售市场增长至2000亿元。这是当前500亿元零售额的4倍。在中国95.8万亿的经济总量中，零售业贡献了12.5万亿元。海南的一系列离岛免税购物新政策于7月1日正式执行，这些政策放宽了限制，允许游客购买更多免税商品。根据新政策，每年每人免税购物额度由原来的3万元提高到10万元，离岛免税商品种类也由38种增至45种，新增免税品包括手机、平板电脑和酒类产品。放宽或取消对单次免税购物数量限制。新政策下，预计有更多持有免税经营执照的零售商在海南开店。根据中国政府为海南制定的转型战略，海南将打造为能够与香港、巴黎和伦敦匹敌的区域性商业中心。海南免税零售业的改革是该战略的一部分。这也反映出，中国在努力促进国内消费，以应对疫情以及与美国贸易关系紧张带来的经济发展挑战。分析人士表示，随着各国为应对疫情纷纷采取限制出行措施，中国政府希望借此机会将国内居民对外国产品的消费需求引导至国内市场，并且在不断地放宽免税零售市场的限制，这是实现这一目标最简便的方法。尽管中国近年来已经降低了众多产品的进口关税，但关税与非关税壁垒仍使得国内外高端消费品之间存在巨大价格差距，促使中国消费者走出国门消费。大多数消费者转向开设在机场和边境口岸的免税店，或干脆出国购物。据中国商务部统计，2018年中国居民在海外购买免税产品的金额超过1800亿元人民币，约为中国境内免税品销售额的4.6倍。分析人士表示，近期实施的免税零售政策旨在将中国消费者吸引回国内市场。近年来，随着住房和汽车等领域的消费逐渐冷却，中国国内零售业的发展脚步放缓。为避免支付高昂关税，许多中国人近几年来都选择出国购物，特别是购买奢侈品。根据中信证券统计，2018年内地游客的海外消费额达2773亿美元，其中有1100亿美元用于购物，免税产品的购买额约占37%。1980年代，中国出现了第一家免税零售商店，从那以后，中国的免税零售市场一直由七家国有企业牢牢把持。中免集团作为龙头老大，长期占有近90%的市场份额。规模较小的深圳市国有免税商品集团和日上免税行则受到经营地点或产品种类等方面的限制。一名受访高管表示，尽管疫情阻挡了出行的脚步，中国消费者仍在一个月内花费了6至7亿美元用于购买韩国的免税美容产品，主要购买渠道是代购，这是一种处于灰色地带的私人商户。他还表示，需要进一步放松市场限制，让巨大的市场潜力得到充分释放（Xinyue et al.）。

Duty Free Goods

The COVID-19 pandemic has disrupted global travel and trade, but it has not changed many Chinese shoppers' appetite for luxury imported products. Policymakers plan to tap into this huge demand to help the virus-hit economy recover. Since July 1, the domestic COVID-19 outbreak wanes, while daily sales in duty-free shops in Sanya, the popular coastal resort city in the southern province of Hainan, surged above 100,000 RMB (US$14,617) a day. As COVID subsides, travelers flocked to the island for its unique tropical scenery and greater variety of duty-free products. Sanya's Haitang Bay Duty Free Shop, operated by state-owned China Duty Free Group, served 740,000 customers between July 1 and Aug. 18, 70% more than in the same period a year ago. They purchased 4.58 million items -- from fragrances to cosmetics to luxury watches and bags -- 150% more than the previous year. The store set a global industry record with 5 billion RMB of sales in 49 days. Fueling the shopping spree at the store are recent policy changes to increase duty-free shopping in Hainan, part of a broader strategy to develop the province into a world-class free-trade port. This move to invigorate Hainan's duty-free shopping followed several central government policy documents issued in 2020 to encourage domestic consumption and drive recovery of China's economy. The government also made unprecedented moves to issue three new licenses this year allowing companies to operate duty-free shops. Previously, only seven licenses were issued over four decades. The industry expects China's duty-free retail market to expand to 200 billion RMB in three years, reports the Shenzhen State-Owned Duty-Free Commodity Group, one of the country's duty-free retailers. That would be four times the current 50 billion RMB. China's retail sector accounts for 12.5 trillion RMB in a 95.8 trillion-RMB economy. On July 1 in Hainan, a set of new policies took effect allowing visitors to purchase more duty-free products with fewer limits. Under the new rules, the quota for individuals on duty-free purchases in Hainan was tripled to 100,000 RMB a year while the duty-free product catalog increased from 38 items to 45, adding new products such as mobile phones, tablets, and wine. Previous limits on the number of items that could be purchased per customer were increased or eliminated. More licensed duty-free retailers are expected to open shops in Hainan under the new rules. The revamp in Hainan's duty-free retail sector is part of China's strategy of transforming the island province into a regional commercial hub that can compete with Hong Kong, Paris, and London. It also reflects Beijing's efforts to bolster domestic consumption to counter economic challenges from the pandemic and trade tensions with the United States. With travel restrictions amid the pandemic, Chinese authorities hope to channel residents' desire for foreign products into the domestic market and are easing restrictions in the duty-free retail market as the easiest way to accomplish this. Although China has cut import tariffs on a wide range of products over the past few years, taxes and nontax barriers still cause large price gaps between many high-end consumer goods sold in China and abroad, encouraging Chinese consumers to shop overseas. Most of them turn to duty-free shops at airports, land border crossings or trips aboard. According to the Ministry of Commerce, Chinese residents spent more than 180 billion RMB on duty-free products overseas in 2018 -- about 4.6 times the volume of duty-free sales inside China. Recent policies targeting duty-free retail are designed to lure Chinese consumers back to the domestic market. China's domestic retail sector has slowed in recent years with cooling demand for housing and cars. To avoid high import taxes, Chinese in recent years have gone abroad to shop, especially for luxury products. According to Citic Securities, travelers from the mainland spent US$277.3 billion overseas in 2018, including US$110 billion for shopping. About 37% of the purchases were duty-free. Since the country's first duty-free retailer appeared in the 1980s, China's duty-free retail market has remained a closely guarded sector shared by seven state-owned companies. The dominant player, China Duty Free Group, controls nearly 90% of the market. Smaller rivals like Shenzhen State-Owned Duty-Free Commodity Group and Sunrise Duty Free are restricted by business locations or product selections. Although the pandemic halted travel, Chinese consumers still spent US$600 million to US$700 million a month on South Korea's duty-free beauty products, mainly through private merchants that operate in the daigou gray area. Further market liberalization is needed to unlock significant market potential (Xinyue et al.).

消费品回收

消费也伴随着浪费。2020年，全球最大的塑料垃圾生产国中国雄心勃勃地启动了旨在减少污染和研发替代产品的五年计划。到2020年底，一项禁止生产和销售一次性发泡塑料餐具、一次性吸管和一次性塑料棉签的禁令将会生效。随着政府污染防治攻坚战的展开，中国智能塑料瓶回收机领域的先驱盈创回收公司也计划将其回收能力提升3倍。盈创回收公司位于北京，母公司是香港上市的国有地产开发商远洋集团，在天津拥有一间每年可处理5万吨回收塑料饮料瓶的工厂。塑料饮料瓶经过工厂的清洗和切碎处理后成为聚酯切片，而这种切片是各类消费品的原料。盈创回收计划在未来3到5年投资10-15亿元人民币（约1.5-2.2亿美元），在中国南部和西南部建立新厂，将其回收处理能力提升到15万吨，即原来的3倍。非生物降解塑料袋的禁令将在今年分阶段实行，到2025年实现全国推行。到2025年，宾馆酒店不得免费提供一次性塑料用品，快递公司不得使用非生物降解塑料包装。盈创回收表示其为中国内地唯一一家具备食品级再生聚酯切片生产能力的公司，这种聚酯切片可用于生产饮料瓶，从而实现充分循环的商业模式。该公司拥有经过卫生部质量检验局认证的生产工序，并且是除可口可乐和达能等国际饮料生产商以外，拥有符合美国食品药品监督管理局要求的生产工序的非饮料生产企业。自2012年以来，盈创回收主要在北京等地区安装了6000多台回收机，其工厂能够回收处理5700多万个回收塑料瓶。为鼓励消费者使用回收机，在没有生产者押金制度的情况下，该公司通过移动电子钱包记账的方式，为每个回收到的瓶子向消费者支付5到10分钱。盈创回收还创立了一个生活时尚产品品牌，该品牌的产品均由再生聚酯切片制成，既迎合了年轻消费者，又实现了环保理念。生产每件T恤需要用13个塑料瓶，生产每件雨衣、手提袋和背包则分别需要38、7和18个塑料瓶（Ng）。

大量圣诞商品订单取消

新冠肺炎疫情的笼罩下，中国义乌市的圣诞商品出口行情惨淡，到处都是"今年没法挽救了"的无奈。2019年1至10月期间，义乌出口了价值19.2亿元人民币（约2.82亿美元）圣诞商品，相比2018年增长了23.9%。2020年的数据尚未公布，但在新冠肺炎疫情几乎导致全球商务出行瘫痪的情况下，情况显然是一片惨淡。在中国东部的义乌富业圣诞商品工厂，工人们正在缝制、测试圣诞老人玩具，检查它们在按下按钮后能否响起圣诞歌。全球80%圣诞商品都来自义乌。对于这家义乌富业工厂而言，圣诞歌是冬季最悦耳的音乐。义乌将一年四季都奉献给了圣诞节，随处可见的工厂、展销厅和商店将圣诞装饰品和玩具送往世界各地。据政府统计，义乌去年1月至10月期间出口了价值19.2亿元人民币（约2.82亿美元）圣诞商品，同比增长23.9%。新冠肺炎疫情导致一些公司失去了近一半客户，很多圣诞产品厂商都担心无法挽救2020年新品销售惨淡的局面。义乌各大市场的圣诞商店里堆满了驯鹿玩具、塑料圣诞树、唱唱跳跳的圣诞老人玩偶等其他圣诞商品。展出的这些商品旨在吸引从美国、巴西等国家远道而来的客户，他们通常会在夏季光临义乌，大批量订货，为圣诞期间的供应做准备。正常情况下，2020年夏季，义乌的工厂都会开足马力，为在10月前往国外发货做准备。即使今年未像往年那样增加产量，许多卖家手上仍有过多库存。寻找替代买家一直以来都很艰难。鉴于中国并无圣诞节传统，国内电商平台对这些圣诞商品兴趣寥寥。在亚马逊或全球速卖通等跨境电商网站上销售圣诞商品并不可行，因为大额订单才能抵消运费成本，而圣诞饰品的批发价很便宜，通常一件小商品的售价只有几美元。不幸的是，尽管价格低廉，仍有人担心产品的需求不足（Reuters）。

海外版抖音与贸易

美国总统唐纳德·特朗普是否会在海外版抖音出售之前封杀这家总部位于中国的大企业?关于这个问题的讨论贯穿了整个2020年。这也引发人们对于中国可能将众多外国企业列入黑名单的担忧。因为这场围绕海外版抖音的纷争，中国政府发布了规定，以阻止所有涉嫌危害中国国家安全的企业的进出口和投资活动。这项黑名单计划细节不明，未有任何公司纳入名单，它似乎只是针对特朗普政府将海外版抖音和微信等中国应用软件从美国应用平台下架而实施的报复。中美关系在2020年始终处于极度紧张的状态，加剧了双方经济和外交关系的螺旋式恶化。两国关系紧张的焦点在于贸易和技术政策以及台湾、香港、人权等其他相关问题。针对美国的许多行动，中国方面在经济和军事等方面采取了反制措施。除了禁止海外版抖音和微信外，特朗普政府还禁止数十家中国企业购买美国产品。美国商务部在2019年将中国技术巨头华为列入制裁实体名单，限制华为使用美国原产芯片、软件及其它技术。中国商务部于今年9月份发布类似的《不可靠实体清单规定》，但未将任何特定公司或个体列入清单。这些规定自发布之日起即施行，禁止被列入清单的海外实体从事与中国有关的进出口活动或在中国境内投资。否则相关企业可能会面临罚款，其员工可能会被禁止入境中国或被取消在中国境内的工作许可。中国商务部还谴责了特朗普政府针对微信和海外版抖音采取的行动，并表示这种"霸凌行径"已经损害了美国作为外国投资目的地的形象。中国是世界上最大的生产制造国，并且在全球范围内主导着包括稀土金属和消费电子产品等众多美国所需产品的供应。但是，中国发出的限制出口的威胁也可能损害其作为可靠产品供应国的声誉。跨国公司已将中国作为生产基地，在中国快速高效且低成本的生产商品。中国的外商投资不仅为国家带来数千万就业岗位，还提供了大量技术。海外版抖音的最终归宿将如何影响紧张的中美关系仍有待观察（Bradsher and Zhong）。

Recycling Consumer Goods

With consumption also comes waste. In 2020, China, the biggest producer of plastic waste on the planet, kicked off an ambitious five-year plan to reduce and replace the pollutant. By the end of 2020, a ban will take effect on the production and sale of disposable foamed plastic tableware, straws, and plastic cotton buds. Incom, Chinese pioneer of 'smart' plastic bottle collection machines, plans to triple recycling capacity as Beijing aims to stamp out the pollutant. The Beijing-based firm, a unit of Hong Kong-listed, state-backed property developer Sino-Ocean Group, owns a plant in Tianjin with an annual capacity to process 50,000 tons of used plastic drinking bottles. It cleans and shreds the material and turns it into polyester chips – the raw material for a variety of consumer goods. Incom plans to invest 1 to 1.5 billion RMB (US$150 million to US$220 million) in the next three to five years to triple the capacity to 150,000 tons, by building plants in southern and southwestern China. Non-biodegradable plastic bags began in phases starting in 2020, expanding nationwide by 2025. Hotels must stop handing out free disposal plastic products, while couriers are instructed to stop using non-biodegradable plastic packaging by 2025. Incom claims it is the only firm in mainland China capable of producing food-grade recycled polyester chips that can be used to make drink bottles, giving it a "fully circular" business model. Its production process has been certified by the Ministry of Health and Quality Inspection Bureau and met the requirements of the US Food and Drugs Administration, besides those of international beverage makers including Coca-Cola and Danone. Incom has installed some 6,000 collection machines – mostly in Beijing – since 2012, enabling the recycling of over 57 million plastic bottles at its own processing facility. To encourage consumers to use its machines, in the absence of a manufacturers' deposit scheme, the company pays them 5 to 10 fen per bottle by crediting their mobile e-wallets. Incom has also created a brand of lifestyle products made from its recycled polyester chips, catering to the young and environmentally conscious. Each T-shirt it sells requires the recycling of 13 plastic bottles, compared to 38 for a raincoat, seven for a handbag and 18 for a backpack (Ng).

Christmas Has Been Canceled

Coronavirus dampened Christmas spirit in China's Yiwu export showroom with 'no way to save this year.' In 2019, Yiwu exported around 1.92 billion-RMB (US$282 million) worth of Christmas products between January and October, up 23.9% from 2018. Data for 2020 has not yet been released, but the evidence is bleak after the global coronavirus pandemic all but halted international business travel. At the Yiwu Fuye Christmas factory in eastern China, the jingles are the only seasonal cheer in the factory in the city of Yiwu, which produces 80% of Christmas consumer goods exported globally. Yiwu is a city dedicated to Christmas all year round, filled with factories, showrooms and stores that deliver decorations and toys to destinations all around the world. Last year, Yiwu exported around 1.92 billion RMB (US282 million) worth of Christmas products between January and October, up 23.9% from the previous year. Various Christmas factory owners knew there is no way to save 2020's product release due to some companies losing nearly half their clients due to the coronavirus pandemic. Christmas shops in the city's markets are piled high with samples of reindeer toys, faux Christmas trees, singing-and-dancing Santa Claus figurines and other baubles. The displays are designed to attract clients from as far afield as the US and Brazil, who usually descend on Yiwu in the summer months to make bulk orders in preparation for the holiday season. Yiwu would normally have been in high production mode by summer 2020, preparing to send products abroad by October. Even without the usual ramp-up in production in 2020, many sellers were left holding excess stock. Finding alternative buyers was difficult. There is little interest from domestic e-commerce platforms given Christmas is not traditionally celebrated in China. Sales to cross-border sites such as Amazon or AliExpress were not feasible because of the large quantities needed to justify the shipping costs. Wholesale prices for the decorations are modest, usually a few US dollars each for smaller pieces. Unfortunately, despite these low prices, there was not enough demand for the product (Reuters).

中国工业产出有所增长

根据国家统计局的数据，尽管顶着疫情和近期洪灾带来的双重压力，随着工厂加紧生产，零售额在2020年8月首次实现增长，中国经济得以保持稳定复苏。根据国家统计局，外需强劲，疫情进一步缓解以及经历洪灾后的需求反弹等因素共同推动了八月份销售额的强势增长。国家统计局的数据显示，中国的工业增加值自7月份增长4.8%之后开始加速，至8月份同比增长了5.6%，实现了过去8个月以来的最快增长。8月份工业产出环比增长1.02%，高于7月份0.98%的增长率。2020年前八个月的工业产出比2019年增长了0.4%，而1月至7月期间则下降了0.4%。消费品零售额是衡量消费增长的重要指标。国家统计局的数据显示，中国8月份的消费品零售额同比增长0.5%。零售业的销售增长迅速摆脱了七个月的下滑趋势，并打破了分析人士的零增长预期。国家统计局的数据显示，全国固定资产投资在1至8月份期间下降了0.3%，降幅较前七个月的1.6%有所收窄。固定资产投资包括用于基础设施、物业、机械和其他有形资产的资本。8月份固定资产投资环比增长4.18%。今年前8个月的固定资产投资总额为37.88万亿元人民币（约5.55万亿美元）。根据国家统计局的数据，全国房地产开发投资在2020年的前八个月内同比增长了4.6%，而在前七个月的增幅为3.4%。摩根士丹利首席中国经济学家邢彦宏（Robin Xing）表示，鉴于近期房地产融资政策微调，房地产投资可能保持最慢的增速。邢彦宏预计，在出口和内需"双引擎"的驱动下，第四季度GDP将恢复至疫情爆发前约6%的潜在增长。国家统计局的数据显示，在此期间，国有部门的投资增长了3.2%，而私营部门的投资则减少了2.8%，降幅较前七个月缩小了2.9个百分点。近期，出口和采购经理人指数（PMI）等指标均表明经济活动和制造业正在持续复苏。以美元计算，中国8月份的出口额同比增长9.5%，实现了自2019年3月以来的最大增幅。中国八月份的制造业采购经理人指数为51，高于荣枯线。但是，受中国南部的严重洪灾影响，增长速度略低于预期。中国8月份居民消费价格指数同比上升2.4%，比7月份下降0.3%，主要原因是食品价格涨幅有所下降。同时，中国8月份工业生产者出厂价格同比下降2%，表明中国工业正从新冠疫情中持续恢复（Cheng）。

潜在反弹

随着中国经济从新冠疫情造成的低迷中实现恢复，14亿消费者逐渐显露回购特定商品和服务的意愿。中国领导人正在大力推动国内消费增长，以促进经济发展，同时应对后疫情时代中美关系紧张造成的外部压力。汽车、化妆品和珠宝（均为自主消费品）9月份的销售额显著增长，推动第三季度的商品零售额增长0.9%，实现今年以来的首次季度增长，并促进了中国七至九月份期间的整体经济增长，同比增长达4.9%。尽管如此，中国的消费复苏仍旧乏力且不均衡，以高端消费为主，这不禁让人怀疑所谓的"报复性消费"（购买需求受到限制而后的疯狂消费行为）对近期的增长是否真正起了推动作用。此外，中国经济仍面临着结构性挑战，例如家庭收入下降、贫富差距扩大以及债务负担不断增加，这些因素都增加了第四季度的消费者是否能保持同样增速的不确定性。根据国家统计局的数据显示，在消费者信心增强、大力度折扣优惠和新能源汽车本身的吸引力等因素推动下，9月份汽车销售额（占整体商品销售额的比重最大）比去年同期增长了11.2%，连续五个月实现两位数增长。与去年同期相比，9月份化妆品和珠宝的销售额分别增长了13.7%和13.1%。上个月的香烟和酒品销售额也出现强劲反弹，分别增长了22%和17.6%。在新冠疫情期间出行限制措施的强力推动下，线上销售继续蓬勃发展，今年前三个季度增长了15.3%，比上半年增长了一个百分点，增速远快于总体零售的增长速度。考虑通货膨胀因素，上述所有因素共同推动了9月份零售额的同比增长2.4%，实现了今年以来首次月度增长。国家统计局周一表示，包括了产品和服务支出的最终消费支出为中国第三季度4.9%GDP增长贡献了1.7个增长百分点。完全逆转了第二季度2.3%的消费增长拖累经济增长的颓势。强劲的消费趋势似乎一直持续到第四季度，这在很大程度上要归功于10月初长达八天的国庆和中秋双节小长假。但是，消费支出还未恢复至平均水平，高端产品消费比重远远超过中低端价格品牌。酒类产品的销售额增长依然主要为高端品牌。顶级茅台白酒（一种广受欢迎的烈性酒，酒精含量高达60%）的单瓶零售价从2019年的2400元飙升至9月的3099元（约466美元）。专家推测，疫情期间被抑制的婚礼和返乡需求可能与烟酒消费的急剧增长有关。消费者支出也存在地域分布不均的情况。政府数据显示，中国沿海金融和经济中心上海8月份的零售额增长了11.5%，而东北部吉林省的零售额则下降了8.7%。专家警告称，尽管中国经济呈现复苏的迹象，但总体恢复水平仍然较低，还需进一步发展才能恢复至正常水平（Wang）。

TikTok and Trade

Throughout 2020 a prevalent issue was whether US President Donald Trump would ban TikTok, a large company based out of China, before its eventual sale. This led to concerns that China would blacklist various foreign companies. Due to the conflict over TikTok, Beijing issued rules that would allow it to halt exports, imports and investments by businesses accused of endangering Chinese national security. The plan for a blacklist, which was short on details and included no companies' names, appeared to be retaliation for the Trump administration's decision to ban the Chinese-owned apps TikTok and WeChat from American app stores. Tensions between Beijing and Washington have intensified throughout 2020, accelerating a downward spiral in economic and diplomatic relations. The confrontation encompassed the two countries' policies on trade and technology, as well as in Taiwan, Hong Kong, human rights and other issues. Many actions by the United States in 2020 have prompted countermoves by China, both economic and military. Along with banning TikTok and WeChat, the Trump administration has prevented dozens of Chinese companies from buying US products. The Commerce Department in 2019 added the Chinese tech giant Huawei to its "entity list," which curbed the company's ability to use American-origin chips, software, and other technology. China's Ministry of Commerce published rules in September that outlined a similar "unreliable entities list," though it did not name any specific companies or individuals that would be included. The rules, which went into immediate effect, indicate that overseas entities on the list might be barred from exporting or importing anything from China or investing in the country. The companies could also be fined, and their employees might be blocked from entering China or working there. The Ministry of Commerce also condemned the Trump administration's actions against WeChat and TikTok, saying that such "bullying" had damaged the United States' image as a destination for foreign investment. China is the world's largest manufacturer by a wide margin, and it dominates the global supply of a long list of products that the United States needs, from rare earth metals to consumer electronics. But Beijing's threat to curtail exports could hurt China's own reputation as a reliable supplier. Multinationals have made China their base for production to produce goods quickly, inexpensively, and efficiently. Foreign investment in China has not only created tens of millions of jobs in the country but also expanded its technological know-how. It would remain to be seen how the eventual sale of TikTok would affect these strained relations (Bradsher and Zhong).

China's Industrial Output Grows

China's economy has sustained a steady recovery as factories stepped up production and retail sales expanded in August for the first time in 2020, in spite of the dual pressure of the epidemic and recent flooding. Strong external demand, a further recovery from the pandemic and pent-up demand from the floods all contributed to the robust activity data. The country's value-added industrial output went up 5.6% year on year in August, marking the fastest gain in eight months. It accelerated from a rise of 4.8% registered in July. On a month-on-month basis, industrial output rose 1.02% in August, higher than July's 0.98% increase. In the first eight months, industrial output expanded 0.4% from 2019, compared with a decline of 0.4% in the January-July period. China's retail sales of consumer goods, a major indicator of consumption growth, rose 0.5% year on year in August. Growth in retail sales snapped a seven-month downturn and beat analysts' forecast for zero growth. China's fixed-asset investment edged down 0.3% year on year during the January-August period, with the decline narrowing from the 1.6% drop seen in the first seven months. The fixed-asset investment includes capital spent on infrastructure, property, machinery, and other physical assets. On a month-on-month basis, FAI rose 4.18% in August. In the first eight months, the FAI amounted to 37.88 trillion RMB (about US$5.55 trillion). China's investment in property development rose by 4.6% year on year in the first eight months of 2020, widening from the 3.4% increase in the first seven months. Property investment may stay on its slowest speed, given the recent policy fine tuning on property financing, according to Robin Xing, chief China economist at Morgan Stanley. Xing expects that the GDP would return to the pre-COVID-19 potential growth of around 6% in the fourth quarter as the momentum

此页留白

of the dual engines of export and domestic consumption has extended. Investment by the state sector went up 3.2% during the period, while private-sector investment fell 2.8%, with the drop narrowing 2.9percentage points from that in the first seven months. Recent indicators, including exports and purchasing managers' index (PMI), have pointed to a sustained recovery in economic activity and manufacturing. China's exports rose by 9.5% year on year in August in US dollar terms, marking the strongest gain since March 2019. China's manufacturing PMI stood at 51, above the expansion/contraction threshold of 50. However, the pace of expansion slightly missed expectations, with impacts from heavy floods in the south of the country. China's consumer inflation rose by 2.4% from a year earlier in August, contracting by 0.3 percentage points from July, mainly due to easing food price inflation. Meanwhile, China's factory deflation fell by 2% in annual terms in August, suggesting the country's industries are continuing to recover from the COVID-19 outbreak (Cheng).

Potential Rebound

As China's economy rebounds from the doldrums of the coronavirus pandemic, its 1.4 billion consumers are increasingly showing their willingness to spend again on certain goods and services. And Chinese leaders are counting on a big uptick in domestic consumption to help drive economic development while resisting external pressure amid tensions with the United States in a post-coronavirus world. In September, a significant increase in the sales of cars, cosmetics and jewelry – all discretionary spending items – helped retail sales of goods grow by 0.9% in the third quarter, marking the first quarterly rise this year and contributing to an acceleration in the nation's overall economic growth rate of 4.9% in the July-September period, year on year. Still, the recovery in Chinese consumer spending remains weak and uneven, mainly led by high-end consumption, raising questions about the extent to which "revenge spending" – the result of pent-up demand for purchases by shopping-deprived consumers – is responsible for the recent improvement. Additionally, there have been structural challenges to the economy such as a decline in household income, the widening wealth gap and mounting debt burdens, creating uncertainty about whether consumer spending will continue at the same pace in the fourth quarter. Boosted by stronger consumer confidence, heavy discounts and the appeal of new-energy vehicles, the value of auto sales – the largest component of overall goods sales – rose 11.2% in September from a year earlier, the fifth straight month of double-digit growth, according to figures from the National Bureau of Statistics (NBS). Sales of cosmetics and jewelry also climbed 13.7% and 13.1%, respectively, in September, compared with a year prior. Purchases of alcohol and tobacco also rebounded vigorously last month, respectively jumping 22% and 17.6%. Online sales, which received a major boost during coronavirus lockdowns, continued to thrive, increasing 15.3% in the first three quarters of the year – a full percentage point more than during the first half, and significantly faster than the pace of overall retail sales growth. All of the above boosted the growth rate in retail sales to 2.4% in September from a year earlier after adjusting for inflation – the first monthly growth seen this year. Final consumption expenditures – a combination of spending on goods and services – contributed 1.7% points to China's 4.9% gross domestic product (GDP) growth rate in the third quarter, the NBS said on Monday. That was a sharp reversal of consumption's 2.3% drag on growth in the second quarter. The trend of strong consumer spending appears to have continued into the fourth quarter, thanks largely to the eight-day National Day and Mid-Autumn Festival holiday period in early October. However, the recovery in spending has not been even, with purchases of high-end products significantly outpacing those of moderately priced brands. The sharp rise in alcohol sales was also led by high-end brands. The retail price of a top-of-the-line Mao-tai brand baijiu – a widely popular spirit with alcohol content as high as 60% – rose to 3,099 RMB (US$466) a bottle in September from 2,400 RMB in 2019. Experts speculate that pent-up demand for weddings and hometown visits may be related to the sharp rise in tobacco and alcohol spending. The uneven consumer-spending picture was also evident from a geographical perspective. Retail sales in Shanghai, the coastal financial and economic center of China, rose by 11.5% in August, while sales in the province of Jilin, in the country's

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northeastern rustbelt, dropped 8.7%, according to government figures. While there is evidence of a recovery trend, exports warn that the overall level is still low and has further to go before the Chinese economy returns to normal (Wang).

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2.12 Food Services

Key Take-aways

- Use of food delivery apps drastically increased over the course of 2020. This also led to conflict between the apps and restaurants over commission prices.
- The boom of takeout created a large amount of plastic waste in China.
- Dine in restaurants have seen a sharp decrease in business in 2020.
- China may potentially become the largest importer of US meat in the world.
- China is attempting to cut down on wasted food.

Covid-19 Repercussions

- Covid-19 caused China's booming restaurant businesses to face a drastic loss in sales due to lockdowns and fears of potential spread of the pandemic. This led to an increase in takeout meals.
- China faced fears of imported goods and meats potentially bringing more outbreaks.
- The price of food has gone up due to scarcity, leading to inflation across China.
- Food vendors have had to find alternate means to sell and distribute food goods.

Background

The trends of the food industry in China during 2020 can be summed up as a period of growth and of shortage. In 2020, China's economic status has reflected its food supplies. The economy suffered a 6.8% economic contraction in Q1, followed by a 3.2% rebound (anemic by Chinese standards) in Q2. Relations with the United States (one of the largest food exporters to China) remain tense and complicated. On top of that, heavy rains have caused massive flooding that has wiped away billions of dollars of value in China, washing up factories, homes, and agricultural land in a frothy tide of destruction. This last is important. While China supports over 20 percent of the world's population, according to the World Bank it has a little over 12 percent of its arable land. Heavy rains and floods are bad enough; add in an African Swine Fever resurgence in some parts of southern China and the question of food security gains some traction as something to watch. In a confirmation of increasing concern over food, in August President Xi Jinping launched a new initiative "operation empty plates," targeting wasted food in China. Food, large populations, and good governance are built into China's history. Indeed, the national story has often been defined by a dynastic cycle in which the old order becomes corrupt, fails to maintain key infrastructure like canals and irrigation, and eventually is unable to keep public order or defend the frontier. The scope of the food security problem facing China is complicated and touches on several factors. Although China has considerable stocks of corn, rice, and wheat, it remains dependent on imported soybeans and has a shortage of pork, a traditional staple. African Swine Fever forced a major culling of the hog herd in China in 2019 and the 2020 floods have hurt efforts to rebuild them. And while China has diversified its sources of soybeans (to include producers like Brazil and Argentina), it is still dependent on imports. The floods in the Yangtze River basin, the source of most of China's rice, have impacted production and transportation and left behind a fair amount of land under water. According to the China General Administration of Customs, China's grain imports have risen by 22.7

2.12 餐饮服务业

关键要点

· 2020年期间，外卖应用软件的使用量巨幅增长。这也导致外卖应用软件与餐厅之间就佣金抽成的比例产生了冲突。

· 随着外卖盛行，相伴产生的大量塑料垃圾也不容小觑。

· 2020年，堂食客流明显下降。

· 中国可能会成为美国肉类的全球最大买家。

· 中国正努力减少粮食浪费。

新冠疫情所带来的影响

· 新冠疫情爆发以来，由于隔离措施和对于传染的担忧，中国繁荣的餐饮业面临销售额急剧下滑的局面。外卖用餐开始增多。

· 中国担忧进口货物和肉类会输入病毒。

· 因供应短缺，食品价格上涨，中国市场出现通胀现象。

· 食品销售商不得不寻求其他途径销售、分销食品。

背景

2020年中国餐饮业趋势可以用成长与不足并存来概括。2020年，中国的经济状况反映在了食品供应上。一季度经济收缩了6.8%，此后在二季度反弹到3.2%（以中国标准来衡量，情况并不乐观）。美国是对华食品出口第一大国，中美关系仍然处于紧张、复杂的状态。此外，暴雨造成的洪涝灾害使中国蒙受了数以亿万计的损失，冲垮了工厂、家园、农业用地，造成了巨大破坏。最后一点非常重要。据世界银行的统计，虽然中国人口占世界人口的比例超过20%，但中国的可耕地比例仅略高于12%。暴雨、洪涝已经造成了很大的破坏，雪上加霜的是，非洲猪瘟在华南各地又开始蔓延，食品安全问题也愈发引人关注。为表示对食品问题的愈发重视，国家主席习近平于今年八月发起了新的"光盘行动"，旨在减少餐饮浪费。民为国基，谷为民命，这是刻在中国历史上的教训。中国的国家故事往往就是这样的一个动态循环：旧秩序腐朽后难以维持运河、灌溉系统等关键基础设施，最终无法维持公共秩序，或导致前线失守。中国面临的食品安全问题范围很广，涉及许多因素。虽然中国有相当数量的玉米、大米、小麦库存，但大豆仍依赖进口，且存在猪肉短缺的问题，而猪肉是中国人民的传统主食。2019年中国被迫通过扑杀生猪群的方式抑制非洲猪瘟的蔓延，而2020年的洪水则使中国无从努力来弥补这部分损失。此外，虽然中国开始推进大豆进口来源多元化（包括从巴西和阿根廷进口大豆），但大豆依赖进口的状态仍未有改变。长江流域是中国的大米之乡，洪涝灾害妨害了生产和运输，大量耕地被淹。据中国海关总署的统计，2020年1月至7月期间，中国的粮食进口同比增长了22.7%（达7,451万吨）。同期，小麦和玉米的进口量呈现了显著增长。粮食进口的重要性可能会持续一整年。中国的食品生产情况还受到了虫害的打击。据美国农业部农产品外销局记录，今年六月，中国的玉米作物受到了秋叶蛾虫害的严重损害。随着食品价格上涨，今年七月，中国通胀率由六月的2.5%攀升至2.7%，通胀压力来自供给侧，在猪肉和鸡蛋价格上尤其显著。虽然短期前景黯淡，但中国并不会陷入饥荒状态，至少目前不会。中国政府始终将历史教训铭刻在心。2020年8月17日，中国社科院指出"无需担心"中国存在粮食短缺的问题。但是，社科院也指出，除非进行重大农业改革，否则中国到2025年将会面临"粮食缺口"（MacDonald）。

外卖和快递

自隔离措施开始执行以来，许多人试图囤积食品和执行定量配给，但是食品消耗的速度显然不及隔离期持续的时间。城镇居民无法出门，越来越担心如何获取新鲜食品。幸运的是，中国庞大的外卖骑手网络前来救驾了。虽然中国的送货上门服务体系早已存在，但是其在疫情期间才更加声名鹊起。人际接触无法进行，只能够通过互联网实现沟通。城镇居民从农民、小商贩或超市处网购日常生活必需品，社工协助快递员将商品派发到户。新冠疫情隔离措施执行前，网购餐饮、必需品和网上支付已经成

percent (to 74.51 million tons) in between January and July as compared to the same period in 2019. Wheat and corn imports over the same period saw significant increases. The importance of grain imports is likely to last through the year. China's food production has also been hit by insects. According to the U.S. Department of Agriculture's Foreign Agricultural Service, corn crops fell victim to an intense infestation of Fall Armyworm, a type of moth, in June. China's consumer inflation accelerated to 2.7 percent in July from 2.5 percent in June, pushed along by rising food prices. This pressure has come from supply-side problems, which have been particularly evident in pork and egg prices. Despite a gloomy short-term outlook China is not heading into a famine; at least not right now. The Chinese authorities are keenly aware of historical. On August 17, 2020, the Chinese Academy of Social Sciences made note that "there is no need to worry" when it comes to the country having enough food. However, it also warned that unless major agricultural reforms are made, China could face a "food shortfall" by 2025 (MacDonald).

Takeout and Delivery

As the lockdown began, many people tried to conserve and ration food, but it became apparent that the lockdown may outlast the food. Citizens who were confined to their homes grew concerned about how they would obtain fresh food. Fortunately, China's vast network of delivery drivers came to the rescue. While China had a home delivery system in place, it found greater prominence in use during the pandemic. Human contact was limited to the internet. Residents placed orders online with farmers, small merchants, or supermarkets to buy daily necessities, and community workers helped distribute the goods from deliverymen. Buying and paying for meals and supplies online was already second nature for many Chinese before the Covid-19 lockdown. The supply and delivery networks that were already in place were able to work with the authorities in cities like Wuhan. Citizens reported relief as purchasing groups organized by community workers and volunteers emerged on WeChat within days of the lockdown. People reported feeling relief that China boasted a strong system for food delivery. Thanks to a high population density in urban areas, affluent labor force and people's openness to digital life, China has built a well-developed home delivery network. Extensive funding from technology companies was invested in hardware infrastructure, software to improve logistics and big data and cloud computing to help predict consumers' behavior. Industry experts believe that China was in a unique position for food industries to survive and potentially thrive due to their food delivery infrastructure. Before the crisis, China had started to embrace digital technology in daily life whether it is in consumption, business, government, and smart cities and use of third-party payments. All these things had been in place for a long time and the crisis tested its agility and capability to deal with peak demand. Food providers took advantage of the e-commerce infrastructure in place to connect farmers and restaurants with consumers. Throughout 2020, food delivery services such as Ele.me said that they say a 600% increase in frozen food deliveries and a 500% growth in delivery of pet care products. Fresh food deliveries rose by 181% while drink and snack deliveries climbed by 101% and 82%, respectively. Employees from restaurants, general retail and other service businesses were "loaned" to food delivery companies, which faced manpower shortages during the outbreak. These arrangements not only ensured the continuity of the delivery service but also helped businesses to retain employees during the shutdown (Cai and Chik).

Downside of Takeout and Delivery

With more people using food ordering apps naturally comes more problems and customer complaints. Complaints against food delivery apps have surged fivefold during the 2020 pandemic. For instance, customers are reaching out to the Hong Kong Consumer Council for help with issues ranging from wrong orders to poor service quality. The Consumer Council recorded 172 complaints against food delivery platforms in the first half of this year, compared with 34 similar complaints over the same period last year. Most of the cases were related to delayed or unsuccessful deliveries and missing orders. Customers have also noted that the logo on the takeaway bag, including that on cups, did not match the delivery company's name nor the brand ordered. Long wait times and poor order qualities

为许多中国人的习惯。已经存在的供应和快递网络与武汉等地的政府达成了合作。隔离期开始数日内，社工和志愿者就开始通过微信组织团购，让居民们大大松了一口气。据报道，中国强大的食品快递系统使人们的紧张情绪得到了缓解。得益于城区的高人口密度、充沛劳动力和人们对数字生活方式的开放态度，中国已打造了非常发达的送货上门网络。科技公司重金投资发展硬件基础设施、有助于改善物流的软件以及助力预测消费者行为的大数据和云计算技术。业内专家认为，由于存在发达的食品快递基础设施，中国食品业有独特的实力能够度过难关，甚至还可能会迎来繁荣局面。新冠疫情爆发前，中国就已开始将数字科技渗透到日常生活中，这体现在消费、企业、政府、智能城市和第三方支付软件的使用等等方面。以上所有基础都早已打好，新冠疫情更是检验了其灵活性和处理高需求的能力。食品供应商借助电商平台将农民、餐饮企业和消费者联系在一起。据"饿了么"等外卖服务提供商提供的数据显示，整个2020年期间，冷冻食品配送量增长了600%，宠物护理用品的配送量增长了500%。新鲜食品的配送量增长了181%，饮料和零食的配送量分别增长了101%和82%。餐饮、零售及其他服务类企业的员工被"借调"到外卖企业，以解决疫情期间人手不足的问题。这种安排不仅确保了外卖服务的持续性，也有助于企业在停工期内留住员工（Cai and Chik）。

外卖和快递的缺点

随着越来越多人开始使用订餐软件，问题和客户投诉也自然越来越多。2020年疫情期间，针对外卖软件的投诉量飙升了五倍。比如，香港消费者协会接到了涵盖订单出错到服务质量差的种种客户投诉求助。今年上半年，香港消协接到针对外卖平台的投诉172件，去年同期仅为34件。大部分投诉的内容是配送不及时或不成功以及漏单。还有客户报称外卖包装和杯子上的图标和快递公司、发货品牌的不符。等待时间长、订单质量差也是受到投诉的主要问题。还有客户报称在即使已经付费的情况下，还没取到订单，食品就已经被扔掉。多家外卖服务平台计划重新评估客户服务标准和相关条款。香港消协建议客户仔细阅读所使用的外卖软件的条款（Magramo）。

新冠疫情期间，随着使用量上升，外卖软件也开始受到餐饮业的抵制。众多餐饮企业开始抱怨外卖软件的佣金抽成过高，并开始搭建自己的外卖订餐数字平台。据某餐饮协会发表的公开信显示，美团每单佣金抽成高达23%，"饿了么"每单佣金抽成高达20%。一些餐饮企业称，他们在疫情期间的利润大部分都流向了外卖软件。因此，越来越多餐饮企业开始搭建自有在线平台，借助快递公司的服务来向客户配送外卖。餐厅老板开始使用其他替代性渠道来配送外卖，比如按照骑手里程数计价的闪送。五公里内配送服务的成本约为十元，比美团等知名软件的收费便宜得多。据DCCI互联网研究中心近期发布的一则报道，虽然餐饮企业努力吸引客户使用替代性软件，但2019年近一半中国网民都使用过外卖服务，其中67%为美团的常客。一位"饿了么"发言人表示，自从疫情爆发以来，"饿了么"已经四次降低或取消了佣金抽成，通过免费提供广告资源的方式支持餐饮企业，"饿了么"投放广告的渠道包括户外展板、酒店电视等。"饿了么"还采取了许多其他措施来协助餐饮业度过疫情难关。新冠疫情爆发以来，餐饮业因停业、员工流失、经济紧缩等原因受到重创，其对外卖软件的批评也愈发强烈。今年四月，广东餐饮协会发布了一封致美团的交涉函，敦促美团降低对外卖的佣金抽成，取消要求餐饮企业与其独家合作的不公平条款。由于以上种种情况，一些餐饮企业开始通过自己的员工直接向当地买家提供配送服务（Yau）。

在新冠疫情爆发前，中国的外卖市场就已经十分繁荣，2019年，每天通过各种食品相关应用软件产生的外卖超过5,000万单。疫情期间，这一指标更是飙升。外卖订单的绝对数量如此惊人，也引发了对于每单外卖产生的垃圾量的担忧。研究表明，每单外卖平均要用到至少3个外卖盒或包装袋。也就是说，中国每天因外卖产生的塑料垃圾总量达1.5亿件，而且大部分为不可生物降解的垃圾。一些餐饮企业正积极开发可回收包装，助力解决垃圾增多的问题（Ng）。外卖和快递数量的增加产生了大量被丢弃的塑料箱和包装材料。随着外卖行业的繁荣，相伴而来的负面影响阻碍了中国近期在减少垃圾方面的努力。因外卖订单而增多的垃圾数量已经到了让一些社区难以处理的程度。许多大城市开始严格执行垃圾分类政策，以助解决垃圾处理问题（T. Wang）。

堂食

在新冠疫情爆发前的2019年，中国餐饮业正处于前所未见的增长期。增长率和利润都处于快要超过美国的水平。那段时间，餐饮业快速增长、盈利能力快速提高，投资繁荣、新店频现（Swift）。不幸的是，新冠疫情的爆发改变了这一切。2020年初，大部分中国餐厅都因疫情而停业。虽然城区隔离措施放松了，但空无一人的街道和商店预示着对于服务业来说，新冠疫情爆发带来的影响可能比预想的更深远、更长久。由于担心疫情再度来袭，许多餐厅、咖啡馆和酒吧仍处于停业状态。即使许多餐饮场所采取了防疫保护措施，但出于对疫情的担忧，往常人满为患的地区和餐厅还是出现了人流量骤减的情况。许多服务业从业者表示，这样的情景仿佛不真实一般，非常担心这样的情况会没完没了。疫情期间，甚至连肯德基等大型知名快餐店也遭受了销售额损失。专家指出，居民仍然担心疫情尚未结束，这种情绪妨碍到了重新开张的餐饮企业的盈利状况。出于对下一波疫情的高度警觉，城区的许多餐厅、咖啡馆和酒吧仍然没有开业。而已经开业的餐饮场所也顾客寥寥（O. Wang, "Beijing's Empty Restaurants Show Coronavirus Scars Remain"）。

have also been reported. Another problem that has occurred is that customers report the food being disposed of before they were able to pick up their orders, despite having paid for the order. Various food service platforms plan to reevaluate their customer service and terms and conditions. The Consumer Council advises customers to thoroughly read the terms and conditions for the various apps they use (Magramo).

As the use of delivery apps grew during the Covid-19 pandemic, so did the backlash they received from restaurants. Restaurants grew to complain about the high commissions that these apps charged and took steps to build their own digital platforms for takeaway orders. An open letter by a restaurant association revealed Meituan levies commission of up to 23%, while Ele.me takes up to 20% of each order. Some businesses reported seeing what profits they would have made during the pandemic go to the delivery apps. As a result, more restaurants in China began creating their own online platforms and using all-goods delivery companies to get takeout orders to customers instead. Restaurant owners have started using alternative sources, such as FlashEx, which charges by the distance covered by the driver. It costs around 10 yuan for distances within 5km. It is much cheaper than the larger apps such as Meituan. Despite attempts to get customers to use alternative apps, a recent report by data analytics platform the Data Centre of China Internet (DCCI) found that almost half of the country's internet users used online delivery services in 2019, with 67 per cent being regular users of Meituan. A spokesman for Ele.me said it has reduced or waived commission four times since the pandemic began and supports restaurants by providing them with free advertising resources, such as on outdoor billboards, hotel TVs and other channels. Its other measures have been aimed at helping the sector ride out the pandemic. Criticism has grown more intense because of the Covid-19 pandemic, with restaurants being hit hard by business suspensions, staff exoduses and a strained economy. In April, the Guangdong Restaurant Association published an open letter to Meituan, urging it to slash commission on deliveries and to drop what it calls unfair terms that require restaurants to sign exclusively with its platform. As a result some businesses are using their own staff to directly deliver meals to local patrons (Yau).

Even before the Covid-19 pandemic, food deliveries in China was a booming market, with over 50 million takeaway meals being delivered through food apps each day in 2019. That number would spike during the pandemic. Apart from the sheer quantity of orders, one aspect of concern is the amount of waste that each order generates. One study found that the average order used at least 3 plastic boxes or bags. That adds up to over 150 million pieces of plastic waste generated in China each day, most of which is not biodegradable. Some companies are being proactive in developing recycling kiosks to help deal with the increase in waste (Ng). The increase in takeout and delivery has created vast amounts of discarded plastic containers and wrapping materials. This unwanted side effect of the food delivery boom has undercut China's recent efforts to reduce such waste. The increase in waste from takeaway orders has led to an amount of trash that is difficult for some communities to handle. Many major cities are instituting strict garbage-sorting policies to aid in combatting this glut of waste (T. Wang).

Dine In Restaurants

In 2019, prior to the Covid-19 pandemic, China's restaurant industry was in the middle of a period of unprecedented growth. It was on the verge of overtaking the United States in growth and profit. It was a period of rapid growth and profitability that made investing and opening new restaurants in China (Swift). This unfortunately changed when the pandemic struck. Early in 2020, the majority of Chinese restaurants were shut down due to the pandemic. China's urban lockdown has eased, but deserted streets and stores suggest that for the services sector, the impact of the coronavirus outbreak could be deeper and longer than expected. Many restaurants, cafes and pubs remained closed for fear of another wave of infections. Normally crowded districts and restaurants are seeing far less traffic than they normally would for fear of the pandemic, despite businesses taking precautions to prevent infection. Service sector workers said the situation

由于疫情持续肆虐，国家和各地政府纷纷颁布了各种餐饮业相关的政策。最大的变化发生在堂食方面。针对堂食服务的限制各种各样，从完全禁止到允许半数开放。餐厅通常会被要求采取严格的防疫措施，如每桌仅允许坐两个人。政府还鼓励企业主允许员工在家办公，试图减少午饭时间在外就餐的人群数量（L. Cheng）。

涉足外卖领域的其他行业

新冠疫情严重阻碍了航空旅游业，对中国航空公司和机场都造成了不利影响。旅游业的停滞使中国航空公司产生了许多过剩的供给品，包括飞机餐。各家航空公司和机场开始向当地社区推广和销售机上商品和飞机餐，试图弥补机票销售额方面的损失。国泰航空近期开始向东涌附近的社区和家庭提供送餐上门服务。国泰航空旗下餐饮业务可在一天内为293架飞机的乘客准备83,000份餐食，折算下来，平均每架飞机的餐食为283份，但是目前香港每天只有十几趟航班仍在运行。送餐服务起初只针对机场工作人员提供，但随后拓展到了附近的东涌区，为想要品尝飞机餐的人们提供简餐。同样从事航空餐饮业务的佳美航空也采取了类似的做法，开始转而为机场附近的社区提供送餐服务，以保证其厨房能够继续营业。甚至有一些顾客表示，飞机餐比他们买到的许多成品外卖更便宜、更优质（Lee）。

进口食品

今年六月出现了新一波新冠疫情，为应对疫情的二次爆发，中国政府开始进一步严查进口食品，中国餐饮业局面更不明朗。由于全球出现肉类加工厂病毒感染的案例，越来越多企业出于自愿或被禁止向中国出口产品。疫情期间，由于餐厅和商店需求下降，中国市场进口量也有所减少。在华南地区，"叫嚎"等大型连锁餐厅及其他类似的小餐馆都非常留意新一波疫情爆发的风险，如果真的出现新一波疫情，受损的将不仅是中国餐饮业，全球农产品贸易也会受损。今年六月底，由于出现新冠感染案例，巴西牛肉出口商Agra Agroindustrial De AlimentosS.A.和英国猪肉加工厂Tulip自愿暂停了对中国的出口。目的在于阻止疫情蔓延到中国。同样在六月，在发现新冠病毒感染案例后，中国下令禁止从美国泰森食品公司进口鸡肉，并停止从德国屠宰企业通内斯肉联集团进口产品。肉类加工厂成为全球新冠病毒感染的重灾区，可能会导致中国对农产品进口采取进一步的限制，中国可是有着14亿人口的巨型消费者市场。仅2019年这一年，中国市场的猪肉消费量就已经是欧盟猪肉出口量的近一半。中国已加强海关检查，对到港的几乎所有进口肉类产品集装箱进行防疫检测，通关速度显著放缓。疫情期间，中国市场和消费者也担心与进口肉类相关的病毒风险。中国一向依赖于进口肉类来填补国内供应缺口。据中国海关统计，今年一月至四月期间，中国进口了177万吨猪肉、690,000吨牛肉，分别同比增长了107.4%和52.9%。北京新发地市场进口三文鱼砧板上检测出新冠病毒后，国内对于进口食品安全的担忧达到了顶峰。新发地市场疫情与北京出现的群体感染有直接关联。此后，中国和挪威政府的调查结果显示，挪威三文鱼不太可能是新馆病毒的源头，专家也表示病毒通过食品传播的可能性极低。国家食品安全风险评估中心微生物实验室主任李凤琴指出，虽然新冠病毒不太可能会在食品间传播，但是仍有可能会受到水、包装和加工过程的污染（O. Wang, "China's Food Companies Face Fresh Disruption on New Virus Fears"）。

虽然中国政府和人民疑虑仍存，但一些业内专家仍对中国进口食品的状况保有信心。到2022年前，中国可能会超过日本，成为美国牛肉最大的进口国。虽然有一些行业的进口在2020年出现了下降，但美国牛肉的进口量反而逆势攀升。原因之一在于中国目前还不能像美国一样快速高效地生产谷饲牛肉。新冠疫情发生前，中国市场对于牛肉的需求一直呈增长态势，国内产能无法满足市场需求，必须依靠进口。中国中产阶级的牛肉消耗量有所增长，对牛肉的市场需求呈现了全国性的增长。虽然进口问题仍未有定论，但2020年中国在全球肉类贸易中的占比仍达到36%，2019年仅为26%。据美国肉类出口协会今年夏季发布的一份报告显示，"自三月份中美第一阶段经贸协议生效以来，中国对美国牛肉的进口需求出现了明显增长。七月出口量达到了历史性的2,350公吨，同比增长了160%，出口额达1,490万美元（同比增长92%）。整个七月间，出口量较去年水平高出95%（达9,262公吨），出口额比去年高出82%（达6,890万美元）。"如果疫情引起进口贸易进一步暂停，或是中美之间无法达成贸易协议，那么中美进出口增长可能会被打断（Bloom）。

粮食短缺和浪费

严重的洪涝灾害、虫害以及新冠疫情使中国2020年出现了粮食短缺的情况。国家主席习近平在8月11日的讲话中对杜绝食品浪费作出重要指示，他指出，餐饮浪费现象"触目惊心、令人痛心"。为响应习主席的号召，节约食品资源，中国餐饮企业采取了减少餐品份量的措施。习近平表达了对2020年期间中国食品供应安全的担忧。他特别指出，要厉行节约、反对浪费。有人认为，由于中国今年接连遭受了疫情、洪涝灾害和虫害，可能会出现粮食危机。但是由于中国政府没有披露相关信息，因此无从查证粮食危机到底有多严重。有若干指标揭示了中国面临的形势严峻。近几个月，华南地区洪涝肆虐，长江3,900英里沿线和各支流水位纷纷涨至警戒线。虽然夏季多暴雨，但今年的降雨量远超往常，长江流域面临了四十年来最严重的洪涝灾害。到目前为止，洪涝灾害已摧毁了1,300万英亩农田，致使6,300万人受灾，造成经济损失260亿美

was surreal and that they were worried that there was no end in sight. Even major successful fast-food chains such as KFC have lost sales during the pandemic. Experts note that there is a fear among citizens that the pandemic is not over and that is hindering profits for businesses that are reopening. Many restaurants, cafes and pubs remained closed in urban areas, where vigilance remains high about a further waves of infections. Among those that were open, they reported low numbers of customers (O. Wang, "Beijing's Empty Restaurants Show Coronavirus Scars Remain").

As a result of continued Covid-19 activity, both national and local governments have instituted a variety of policies related to the food service industry. The most changes have occurred in dine in restaurants. Restrictions have ranged from complete bans on dine in services to establishments operating at half capacity. Restaurants are often required to take stringent epidemic-prevention measures, such as allowing only two people per table. There has also been encouragement from the government to urge employers to allow employees to work from home, in an attempt to lessen the large amount of people that eat lunch out (L. Cheng).

Industries Adapting to Food Delivery

The pandemic has greatly hindered air travel, impacting Chinese airlines and airports. The slowdown in travel has left Chinese airlines with a surplus of supplies including in flight meals. Airlines and airports have begun promoting and selling plane merchandise and inflight meals to local communities to partially compensate for the loss of ticket sales. Cathay Pacific Airways has started offering doorstep food deliveries to nearby homes in the Tung Chung community in recent weeks. Its catering arm used to prepare 83,000 meals for passengers on 293 flights a day, or an average of 283 meals per flight, but there are now just a few dozen Hong Kong flights per day. The meals-on-wheels idea initially only targeted airport workers but was expanded to cover the nearby Tung Chung district, offering simple in-flight food for those craving airline meals. A similar tactic has also been adopted by rival airline caterer Gate Gourmet, which turned to deliverable meals for the airport community so its kitchens there could continue running. Some customers even reported that the inflight meals were cheaper and better quality than many of the prepared and delivered meals they have been receiving (Lee).

Import Foods

During the 2020 Covid-19 pandemic, China's food service industry faced uncertainty after authorities stepped up scrutiny of imports in response to a new virus outbreak in June. A growing list of companies have either voluntarily halted exports to China or had products banned due to virus infections at meat processing plants around the world. Imports were also lessened at points during the pandemic due to declining demand at restaurants and stores. Major restaurant chains such as Oyoyster, and other small food businesses like it in southern China, underscore the looming risks associated with additional virus outbreaks, which could hurt not only China's dining sector, but the global trade of farm goods. For instance, in late June, Brazilian beef exporter Agra Agroindustrial De Alimentos S.A. and British pork plant Tulip voluntarily halted exports to the country because of coronavirus infections. They did so to halt the spread of Covid-19 to China. In that same month, China said banned poultry imports from America's Tyson Foods and suspended imports from Toennies, a German slaughterhouse, after Covid-19 outbreaks were detected. Meat processing plants have emerged as hotspots for coronavirus around the world, pointing to the possibility of further restrictions on agricultural imports to China, a vast consumer market home to 1.4 billion people. In 2019 alone, China consumed roughly half of the European Union's pork exports. China has stepped up customs checks, which would now cover almost all containers of imported frozen meat entering China, significantly slowing clearance times. There is also a fear among Chinese markets and buyers about the dangers associated with imported meats during the pandemic. China relies on foreign meat to fill the gap in its domestic supply. It imported 1.77 million tons of pork and 690,000 tons of beef in the January-April period, up 170.4 per cent and 52.9 per cent respectively from a year ago, according to the Chinese customs data. Concerns about the safety of foreign food spiked after coronavirus

元。长江流域大米产量为全国的70%，据中资券商申万宏源的预测，洪涝灾害可能导致中国大米产量同比下跌了5%。随着暴雨不见停歇，总计损失可能比此预测还要糟糕。洪涝灾害还对谷物等其他关键粮食造成了不利影响。粮食价格同比上涨了10%，玉米价格同比上涨了20%，大豆价格同比上涨了30%。玉米是喂猪的主要饲料。去年的非洲猪瘟对中国的生猪总量造成了40%的损失，今年中国生猪业有所恢复，生猪产量逐渐增长。洪涝灾害则使非洲猪瘟疫情再现。非洲猪瘟是一种会造成生猪死亡的瘟疫。据美国农业部农产品外销局发布的报告显示，今年六月的秋夜蛾虫害也导致玉米作物受损严重。据中国政府公布，目前中国战略粮食储备为大米6,250万吨、玉米5,000万吨，大豆逾760,000吨。这被认为是政府正在对抗粮食短缺的又一个征兆。中国还开始大量进口各种作物：2020年前六个月，中国进口了7,400万吨谷物，同比增长了22%。美国为对华最大出口国，对华出口了逾900万吨大豆，100,000吨小麦和65,000吨玉米。据美国农业部数据显示，今年八月，中国共采购了195,000吨美国玉米。人们愈发担忧出现粮食短缺情况，农民开始囤积小麦，期望小麦价格会随着供给短缺而上涨（J. Cheng）。

随着货物可获得性降低，相应的通胀也随之出现。经过2020年一系列混乱的事件之后，到2020年7月，受到食品价格上涨的推动，中国的通胀率上升了2.7%。2020年7月，中国消费者物价指数同比上升了2.7%，六月该指标的同比上升幅度为2.5%。七月，中国的工业品出厂价格指数同比下降了2.4%，六月该指标的下降幅度为3.0%。根据所发布的数据，今年七月，中国的通胀率上升了2.7%，继六月的2.5%升幅又有所上升。消费者物价指数的升幅差于分析师预期的2.5%通胀率。前述升幅与中国2020年遭受的严重洪涝灾害有关（Mullen）。

粮食浪费和损失问题已困扰中国多年。据Future Direction International统计，中国每年浪费和损失的粮食达3,500万吨，为中国粮食产量的6%，足以养活1亿人口。据中国科学院统计，其中，每年约一半（1,700万-1,800万吨）的浪费发生在供应链的最后一个环节，即零售和消费。2020年，以上问题因新冠疫情而更加恶化了。隔离封锁、运输限制等措施使供应链产生波动，粮食损失和浪费情况显著增多，尤其是果蔬、鱼类、肉类和乳制品等易腐农产品。此外，餐饮业停业、学校停学也导致生产商丢失市场，使情况变得更糟。对于愈发严重的粮食损失和浪费问题，习近平主席感到非常担忧。他于近期作出指示，推动针对粮食浪费问题的"光盘行动"。他表示"浪费可耻"，并提醒大家"对粮食安全要保持危机意识"。习近平对粮食安全的评价并不是巧合。粮食安全一直是中国国家政策中的重要战略话题。中国有充足的粮食储备，至少可以满足国内一年的需求。但是，防止和减少粮食损失和浪费将能创造更多经济和环境效益，最终有益于整个中国社会。减少粮食损失和浪费将能降低运营成本，由此最终降低物价，从而减轻中国有限的土地资源和水资源所面临的压力，不用生产那么多不会最终被消耗的粮食。从全球角度来看，中国人口占全球人口的20%，而中国的可耕地仅为全球的7%，通过减少粮食损失和浪费，推广负责任的、可持续的粮食生产和消耗，中国将能够为全球消除贫穷、饥荒和改善气候变化问题作出极大的贡献。如同许多新兴经济体和越来越多的城市社会一样，中国供应链终端的粮食浪费也越来越多，尤其是消费环节。必须执行抵制粮食浪费的法律法规，中国政府已经在这方面采取了若干措施（Liping）。

中国政府采取的各项措施中，其中一项略显不同寻常的措施聚焦在一种独特的浪费现象上。为响应习近平主席对杜绝粮食浪费问题的指示，中国网信办于今年八月封禁了13,600个吃播账号。这是政府第一次在打击网络违法低俗内容的活动中将吃播作为重点关注对象。中国网信办于周三在其微信官方公众号上发布的通知显示，吃播账号被封禁的原因是违反了关于抵制粮食浪费的国家政策。吃播（Mukbang）这一术语来自韩国，意味着直播大吃大喝，最早于2010年在韩国通过AfreecaTV等直播渠道开始流行起来。这种直播流派在中国也开始日益流行，在抖音、快手等短视频分享平台和直播软件拥有大量观众。习近平主席上个月对制止餐饮浪费作出了指示，并称中国的餐饮浪费问题"触目惊心、令人痛心"，因此，虽然越来越多视频直播内容创作者依靠在镜头前大量进食这种形式来赚钱维持生计，但这些吃播主播近来成为了批评对象。早在中国网信办成立之前的2013年，中国政府就已经启动"光盘行动"，旨在制止政府接待中产生的餐饮奢侈浪费。在习近平主席对制止餐饮浪费问题作出指示的同一周，中国中央电视台CCTV发声批评展示主播大吃多吃、甚至将吃掉的食物再吐出来的吃播节目，称其为"粮食浪费的极端案例"。中国经历了艰难的一年，洪涝灾害、虫害和新冠疫情引起的供应链波动使中国开始面临粮食供给问题，而此时针对吃播的禁令也表明，在计划未来粮食资源时，中国正在考虑一切可能的选择（Xue）。

was discovered on chopping boards used for imported salmon at Beijing's Xinfadi market, which was been linked to a cluster of infections in the capital. Chinese and Norwegian authorities have since concluded that Norwegian fish was not the likely source of the virus, while experts say the risk of coronavirus transmission in food is extremely low. However, according to Li Fengqin, director of the Microbiology Laboratory at China's National Food Safety Risk Assessment Centre, there was still opportunity for food to become contaminated through water, packaging, and food processing (O. Wang, "China's Food Companies Face Fresh Disruption on New Virus Fears").

Despite the fears among Chinese citizens and the government, some industry experts remain hopeful about the state of imported food in China. By 2022 China could potentially surpass Japan as the largest importer of US beef. While some import industries have declined in 2020, importation of beef from the US has risen. One reason for this is that China cannot readily produce grain-fed beef as quickly and effectively as the US can. Prior to the pandemic, there was a growing demand for beef in China that could not be met domestically, therefore imports are necessary. Beef has seen an increase in consumption by China's growing middle class, leading to more demand for beef nationwide. Despite hesitation towards importation, in 2020 China still accounted for 36% of all the meat trade in the world, compared to 26% in 2019. According to a U.S. Meat Export Federation (USMEF) report published in the summer of 2020, "Since its March implementation, the U.S.-China Phase One Economic and Trade Agreement has sparked growth in China's demand for U.S. beef. July exports were record-large at 2,350 metric tons, up 160% from a year ago, valued at $14.9 million (up 92%). Through July, exports were 95% above last year's pace in volume (9,262 metric tons) and 82% higher in value ($68.9 million)." The main things that could disrupt this growth would be imports being increasingly halted due to the pandemic or trade deals failing (Bloom).

Food Shortages and Wastes

Severe flooding, insect infestation and Covid-19 may have contributed to a food shortage in China during 2020. Restaurants in China have been cutting down on portion sizes in conjuncture with a speech President Xi Jinping made Aug. 11 calling for the country to stop wasting food—a problem he called "shocking and distressing"—in order to persevere the country's food resources. Xi has expressed concerns about the security of China's food supplies during 2020. He is especially concerned with waste of what supplies they have. Some believe China may be facing a food crisis as it deals with the fallout of the pandemic, massive floods, and insect infestations. But observers do not know its severity since the government has not released much information. Several indicators reveal the looming problem facing China. In recent months, heavy flooding has inundated large areas of southern China and caused the 3,900-mile-long Yangtze River and its tributaries to rise to dangerous levels. While heavy rains are typical in the summer, this year's rainfall has far exceeded the norm, causing the worst flooding at the Yangtze in four decades. So far, the deluge has destroyed 13 million acres of farmland, affected 63 million people, and caused nearly $26 billion in economic damage. The Yangtze River basin accounts for 70 percent of the country's rice production, and the Chinese brokerage firm Shenwan Hongyuan estimated the floods could cause the country to lose 5 percent of its rice production compared to last year. Yet the total damage could be much worse, as heavy rainfall is expected to continue. The flooding is also affecting vital crops such as grain. Food prices have increased by 10 percent compared to a year ago, with the price of corn 20 percent higher and the price of soybeans up by 30 percent year-on-year. Corn feeds China's growing pig population, which is recovering from the African Swine Flu, a fatal disease that killed 40 percent of the country's pig population last year. The floods have also spawned dozens of new cases of the disease, which is fatal for pigs. Corn crops also fell victim to an intense infestation of Fall Armyworm, a type of moth, in June, according to the U.S. Department of Agriculture's Foreign Agricultural Service. In another sign that Beijing is combating a shortage, it has released 62.5 million tons of rice, 50 million tons of corn, and more than 760,000 tons of soybeans from its strategic reserves, which is more than the amount released in all of 2019. China has also turned to importing large amounts of crops: In the first six months of

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2020, it imported 74 million tons of grain, up 22 percent from a year ago. The United States was its biggest exporter with more than 9 million tons of soybeans, 100,000 tons of wheat, and 65,000 tons of corn. In August, Chinese buyers struck deals to buy 195,000 more tons of American corn, according to the USDA. Concerns towards grain supplies are rising as farmers are hoarding their wheat, expecting an increase in prices due to shortage (J. Cheng).

As the availability of goods decreased, inflation for such items increased. As a result of the turbulent events of 2020, China inflation rose 2.7% in July 2020, driven by higher food costs. China's consumer price index (CPI) rose 2.7% from a year earlier in July, up from a 2.5% gain in June. China's producer price index (PPI) fell 2.4% year on year in July after declining 3.0% in June. Based on data released, China's inflation rate rose 2.7% in July, up from the 2.5% gain in June. The rising consumer price index (CPI) was slightly worse than the inflation rate of 2.6% expected by analysts. The rise in consumer goods has been linked with the severe flooding that struck China in 2020 (Mullen).

Waste and food loss are issues that have concerned China for many years. According to Future Direction International, more than 35 million tons of food, 6 percent of China's food production are lost or wasted in the country annually: enough to feed 100 million people. And about half of it 17-18 million tons is wasted at the last stage of the supply chain, that is, at the retail or consumption stage every year, according to the Chinese Academy of Sciences. The COVID-19 pandemic has further aggravated the situation in 2020. The disruptions in supply chains which resulted from the implemented lockdown and transport restrictions have significantly increased food loss and waste, especially of perishable agricultural produce, such as fruits and vegetables, fish, meat, and dairy products. Moreover, the closure of much of the catering and food service industry and schools has resulted in a loss of markets for producers, making the situation even more challenging. Concerned about the increasing scale of the issue, President Xi Jinping has recently helped boost a campaign targeting food waste called "Clean Plate", saying "Waste is shameful", and reminding everyone that, "We should still maintain a sense of crisis about food security". His reference to food security is no coincidence. Food security has always been an important strategic objective of China's policy. China has sufficient food reserves to meet its domestic demand for at least one year. However, preventing and reducing food loss and waste would generate several economic and environmental gains, which will eventually benefit the entire Chinese society. Reducing food loss and waste would reduce operating costs, and thus, eventually, consumers' end prices. Which in turn would reduce the pressure on China's limited land and water resources for producing food that is ultimately not consumed. From a global perspective, with 20 percent of the world's population but only 7 percent of the world's arable land, China can significantly contribute to the global battles against poverty, hunger and climate change by cutting food loss and waste and promoting responsible and sustainable production and consumption. As in many other emerging economies and increasingly urban societies, more food in China is wasted toward the end of the food supply chain, particularly during consumption. Implementing legislative and regulatory measures that discourage food waste is necessary, and the Chinese government has already taken several measures in that regard (Liping).

One of the more unusual measures that the Chinese government has taken focuses on a unique form of waste. The Cyberspace Administration of China shut down 13,600 mukbang accounts the accounts in August, following President Xi Jinping's call to end the country's food waste problem. It marked the first-time online eating shows were highlighted by the agency in its campaign to rid China's internet of illegal and lowbrow content. The Cyberspace Administration of China (CAC) said the accounts it shut down were found to have breached the government's policy against food waste, according to a notice posted by the agency on its WeChat account on Wednesday. Mukbang, a Korean term that translates to "eating broadcasts", initially gained popularity in South Korea in 2010 via online streaming channels such as AfreecaTV. It is a genre that has also become popular in China, where there is a vast audience hooked on short video-sharing services and live-streaming

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programs on platforms like Douyin and Kuaishou. While a growing number of streaming video content creators make a living by consuming large quantities of food on camera, they have become a target of criticism after President Xi Jinping last month called for an end to the country's "shocking and distressing" problem of food waste. In 2013, a year before the CAC was founded, Beijing launched its "Clean Plate Campaign" to curb food waste in the lavish feasts and receptions of government officials. In the same week that Xi highlighted the problem, Chinese state broadcaster CCTV criticized online eating programs that show participants consuming an excessive volume of food, and even spitting out the food after eating, describing them as "an extreme example of food waste." The ban on mukbang videos, which comes after a tough year for China's food supply due to flooding, insects and disrupting in supply lines due to Covid-19, shows that China is considering all of its options as it plans for the future of its food resources (Xue).

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2.13 Culture, Sports and Entertainment

Key Take-aways

- Cultural and sporting events across China were cancelled or forced to reschedule for later in the year.

- Online medias such as e-sports and live streaming have rapidly increased.

- The winter sports market was able to resurge in China.

- Genshin Impact became the biggest global launch of a Chinese game in history.

- The Chinese film industry continues to expand with a strong focus on domestic films.

Covid-19 Repercussions

- Due to the pandemic, many sporting events were cancelled or pushed back to later in the year.

- Due to lockdowns, consumption of online media, such as live streams saw rapid increases in popularity.

- Theater and media revenue dropped over the course of the year due to the pandemic and fears of contamination.

- China's rapid response to the pandemic likely lessened the damage to and hastened the recovery of media outlets.

Background

Due to the COVID-19 pandemic, almost all major domestic and international sporting events were rescheduled or canceled in the first half of the year. People were reluctant to go outside, and most sports companies struggled to do business. Some did not survive. The 2020 China Sports Show was also affected. The annual sports business show had originally been scheduled in May but had to be postponed to September. For the same reason, the number of international participants was much smaller than last year. The COVID-19 pandemic brought unprecedented challenges to all industries. Sporting goods companies, including sports giants Nike and Adidas, were facing big pressure in sales. However, there was also good news. The sales of fitness equipment have been increasing. According to the Suning platform, sales of dumbbells, hula hoops and yoga mats increased by more than 300% over the same period of 2019. Thanks to effective COVID-19 control measures, more and more companies began to regain their energy in the second half of 2020. The 2020 China Sport Show attracted more than 1,200 companies, one of which is Airgoal Sports. The company has been focusing on soccer-related equipment, and it has served more than 40,000 schools all around the world. Airgoal is paying more attention to the domestic market, given the fact that China has been promoting school sports in recent years. More than 10,000 schools in China are using their products. Some in the industry see the COVID-19 pandemic can also be an opportunity for the sports industry. The special situation during the pandemic forced people to find new ways of doing sports, such as online sports competitions, online training classes and sports broadcasting shows have become more popular. That also led to faster development of hi-tech sporting equipment. Experts predict that the new technologies will bring dramatic changes to the sports market, and sports companies should follow the trend and find new opportunities (Xinhua, "Winter Sports Economy Gains Momentum amid Epidemic Control").

2.13 文化、体育和娱乐

关键要点

· 中国各地文化和体育活动被迫取消或改期至今年晚些时候举行。

· 电子竞技、直播等在线媒体迅速增长。

· 中国冬季运动市场实现复苏。

· 《原神》成为有史以来全球发行规模最大的中国游戏。

· 中国电影行业持续扩张，国产电影更是势头强劲。

新冠疫情所带来的影响

· 受疫情影响，许多体育赛事被迫取消或推迟到今年晚些时候举行。

· 受封锁措施的影响，直播等在线媒体的消费热度与日俱增。

· 受疫情和病毒感染恐慌的影响，电影院和传媒的营收在今年出现下滑。

· 中国对疫情作出了快速反应，可能减少传媒机构遭受的损失，并加速其复苏。

背景

受新冠疫情的影响，今年上半年国内外几乎所有大型体育赛事都改期或取消。人们不愿出门，因而大多数体育公司都惨淡经营。有些公司甚至倒闭。2020年中国国际体育用品博览会同样受到影响。这项年度体育商业展会原计划于5月举行，但不得不推迟至9月。出于相同原因，国际参展商也比去年少了许多。新冠疫情给所有行业都带来了前所未有的挑战。包括体育巨头耐克和阿迪达斯在内的体育用品公司都面临着很大的销售压力。然而，并非全是坏消息。健身器材的销量呈上升趋势。据苏宁平台统计，相比2019年同期，哑铃、呼啦圈和瑜伽垫的销量增长超300%。新冠疫情管控措施有效，得益于此，越来越多的公司于2020年下半年开始有所起色。2020年中国国际体育用品博览会吸引了超过1200家公司，其中包括爱高体育。该公司致力于足球相关的体育器材，并已为全球四万多所学校提供服务。由于中国近年来一直在推动校园体育，目前，爱高将目光转向国内市场。中国有10000多所学校正在使用爱高公司的产品。一些业内人士认为，新冠疫情也可能给体育行业带来机遇。疫情期间的特殊情况迫使人们找到新的运动方式，如网上体育竞赛、网上体育培训班和体育广播节目正日益普及。这也使得高科技体育器材发展更加迅速。专家预计，新技术的引入将给体育市场带来巨大的改变，运动公司应该抓住这一趋势并从中发现新的机遇（Xinhua, "Winter Sports Economy Gains Momentum amid Epidemic Control"）。

根据艾媒咨询的数据，2019年中国电子竞技市场规模达到982.2亿元（140.3亿美元），成为全球最大的电子竞技市场，也成为电竞领域技术和商业创新的重要推动力。1至5月，北京市"文化+互联网"行业的营收比去年同期增长了20.7%，拉动文化行业营收增长9.1%；"文化+互联网"行业占全市文化行业营收的56.3%，同比提高了12.3个百分点（Xinhua, "E-Sports Beijing 2020" Exhibition to Be Held in Mid-August）。

据全球会计师事务所普华永道的最新报告，预计今年中国娱乐和传媒行业的总营收约为3310亿美元，同比下降2.8%，随着新冠疫情的影响逐步消退，该行业可能会出现V型反弹。据报告称，2020年至2024年，中国娱乐和传媒行业的年均复合增长率为5.2%，高于5.1%的全球增长率。新冠疫情正从消费者生活的方方面面改变他们的行为，并加速传统渠道向数字渠道转变的进程。举例来说，在疫情期间，越来越多的消费者通过基于开放互联网的视频服务平台观看新上映的电影，欣赏音乐会直播或线上虚拟现实的演出以及参加线上活动。娱乐和传媒公司应该迎接新的商业模式，以迎合消费者行为的变化，并促进营收增长。报告称，2020年至2024年，中国基于开放互联网的视频市场将日趋成熟，年均复合增长率达12.2%，预计2024年的营收将达161亿美元。受到疫情影响，一些

According to iiMedia Research, China's e-sports market reached 98.22 billion yuan (US$14.03 billion) in 2019, making it the largest e-sports market in the world and an important driving force for technological and business innovation in the field. From January to May, the revenue of Beijing's "culture plus Internet" sector increased by 20.7% over the same period last year, driving the growth of cultural industry revenue by 9.1%; it accounted for 56.3% of the city's cultural industry revenue, marking an increase of 12.3 percentage points year on year (Xinhua, "E-Sports Beijing 2020" Exhibition to Be Held in Mid-August).

The total revenue of China's entertainment and media industry is estimated to be around $331 billion this year, down 2.8% on a yearly basis, with the sector likely to experience a V-shaped rebound as the COVID-19 gradually recedes, according to a new report from global accounting firm PwC. The compound annual growth rate of the country's entertainment and media industry will reach 5.2% from 2020 to 2024, which is higher than the global rate of 5.1%, the report said. The COVID-19 pandemic is changing how consumers behave across every aspect of their lives and accelerating an ongoing shift from traditional to digital channels. For instance, during the outbreak consumers increasingly watch new movies through over-the-top (OTT) video platforms, enjoy live concerts or virtual reality performances online and participate in online events. Entertainment and media companies are encouraged to embrace new business models to cater to changes in consumer behavior and increase revenue growth. The report said China's OTT video market will increasingly mature from 2020 to 2024, with compound annual growth rate reaching 12.2% , and revenue is expected to reach about $16.1 billion by 2024. Due to the impact of the pandemic, some film distributors have skipped theatrical releases and gone directly to streaming media. It is expected that China's subscription-based video-on-demand revenue will exceed cinema box-office revenue in 2020 for the first time. As various platforms provide users with more high-quality services and bundled membership services, China's video-on-demand market will maintain rapid growth. Meanwhile, the report estimated that due to the pandemic, China's movie revenue will plummet by 78.1% year-on-year to about $2.26 billion in 2020 and the number of moviegoers will drop from 1.8 billion in 2019 to just 400 million. In addition, reports estimated that Chinese video games will generate $31.2 billion in revenue in 2020. The figure is expected to reach as high as $38.5 billion by 2024, with a compound annual growth rate of 5.4% from 2020 to 2024. Among them, social or casual games, which are gaining traction among females and retirees, have a stable market share. During the pandemic period, players established social gaming communities, which increase user stickiness, allowing them to become more inclined to play the same games their peers play (Feifei).

Expanding Culture and Copyright

An international cultural industries forum in Beijing, gathering policy makers and researchers, examined future trends and the vitality of the ever-growing sector. The annual forum was hosted by Peking University, and experts discussed the future development for China's cultural sector. Themed as "New Mission: Culture and Creative Development in the Well-off Society of China", it featured a dozen sessions, panel discussions and academic seminars. The forum gives policy makers, researchers, and practitioners from home and abroad the opportunity to discuss the high-quality development of China's creative cultural sector in the new era. Mei Song, director of the Beijing Cultural and Creative Industry Promotion Center, spoke from a policy-making perspective: "Among the recurring keywords of cultural policies in recent years, we found that the most frequently used are 'intellectual property'. Without the protection of intellectual property, cultural and creative industries cannot make progress." Therefore, the next step to promote China's cultural industries is to work on cultural legislation and innovation to stimulate the vitality of the industries. The forum also expressed a hope that the many international students studying in China would spread positive views of Chinese culture when they return home from abroad. Researchers and professors at the forum also view education as an important factor to boost cultural creativity. The cultural industry is also predicted to become an important factor for rural revitalization and, copyright will become a focus of the cultural industries (Yuezhu)

电影发行商跳过院线发行，直接转战流媒体。预计2020年中国订阅式视频点播营收将首次超过影院票房营收。随着各大平台为用户提供更多优质服务和捆绑会员服务，中国视频点播市场将保持蓬勃发展。与此同时，报告估计，受疫情影响，2020年中国电影的营收将同比锐减78.1%，约达22.6亿美元，观影人数也将从2019年的18亿人次降至仅有的4亿人次。此外，报告估计，2020年中国电子游戏将创收312亿美元。预计到2024年，这一数字将高达385亿美元，2020年至2024年的年均复合增长率为5.4%。其中，社交或休闲类游戏，倍受女性和退休人员欢迎，市场份额稳定。疫情期间，玩家建立起了社交游戏社区，既强加用户粘性，同时玩家又能够与同龄人玩相同的游戏（Feifei）。

文化行业发展和版权保护

中国文化产业新年论坛是一年一度在北京举行的盛事，决策者和研究人员汇聚一堂，共同探讨文化产业的未来趋势和持续发展活力。今年论坛由北京大学于主办，与会专家就中国文化产业的未来发展进行了讨论。本届论坛以“新使命：大国文创与文化小康”为主题，共有十几场主题会议、专家对话和学术研讨会等。论坛上，国内外决策者、研究人员和从业者探讨了新时代下如何实现中国创意文化产业高质量发展。北京文化创意产业促进中心主任梅松从决策者的角度发表演讲：“近些年来，有一些文化政策关键词反复出现，其中‘知识产权’出现的频率最高。如果不保护知识产权，文化创新产业就无法取得进步。”因此，为促进中国文化产业发展，下一步就是要推进文化立法和文化创新，从而激发文化产业的活力。本届论坛还提出一个愿景，希望在华学习的众多留学生在学成归国后，能够帮助传播积极的中华文化。出席专家教授强调教育是提高文化创造力的重要因素。预计文化产业也将成为农村振兴的重要推动力，而版权将成为文化产业中的重要一环（Yuezhu）。

在线音频

在线音频分享兴起，并火速在国内蔓延。根据喜马拉雅公司发布的公告，平台主播人数突破千万。2019年，通过“万人十亿计划”，主播从喜马拉雅共获得16.34亿现金分成。新经济产业第三方数据挖掘和分析机构艾媒咨询的数据显示，2019年中国在线音频市场的用户数量已达4.89亿，预计今年将增长至5.42亿。根据艾媒咨询，超过70%的用户已为在线音频付费，这意味着在线音频行业，也就是所谓的"耳朵经济"，具有进一步发展的潜力。在线音频如此受欢迎的原因之一是，人们可以在做其他事情的同时收听自己选择的节目，在快节奏的现代生活中，这是一个便利的选择。在线音频平台的内容涉及各个领域。因而能吸引各个年龄层以及各行各业的听众。根据中国新闻出版研究院的全国国民阅读调查，2019年，有31.2%的中国公民经常收听有声读物，成人的比例为30.3%，同比增长4.3%。技术将音频带入汽车、智能家居设备和智能可穿戴设备，从而进一步推动了“耳朵经济”的发展。喜马拉雅FM在九月发布的报告显示，智能音箱和车载设备越来越受夜听用户的欢迎，分别同比增长31.3%和23.08%。为适应新的市场趋势，喜马拉雅FM与多家汽车生产商、家电制造商以及互联网公司合作，以实现硬件解决方案的市场布局。科大讯飞（中国人工智能公司）已推出了多种智能音频产品，包括车载语音助手、扬声器和机器人。科大讯飞表示，随着智能家居系统和智能终端（如智能手表、眼镜和皮带等可穿戴设备）的兴起，对于语音这种更为自然的人机交互需求将会增长（Xinhua, "China’s Online Audio Market on Path to High Growth"）。

体育行业

新冠疫情爆发很明显对体育界产生严重的影响。然而，中国探索其他形式的体育运动和体育展，甚至在向成为2020年最大的冬季运动市场迈进。新冠疫情爆发对世界范围内的体育行业都造成了不同程度的影响。在黑龙江省东北部的齐齐哈尔市，互联网为体育产业发展提供了新的契机。齐齐哈尔是中国著名的冰球之乡，冬季运动的发展前景广阔。在直播期间，齐齐哈尔市体育局与一些公司签署了项目合同。近年来，齐齐哈尔市通过冰球等体育项目大力发展体育产业。越来越多的当地居民参与到冰雪运动中来，齐齐哈尔的体育竞赛也越来越多。在过去几年内，齐齐哈尔每年都会举办上百场国际或国内冰球比赛。2020年的夏季比赛则有些特别。6月10日，全国冬运会冠军齐齐哈尔男子冰球队进行了一场“闭门”的队内比赛。这场比赛在某短视频平台上进行了现场直播。为满足更多粉丝的需求，组织者随后加办了两场比赛，三场比赛的总在线观看数超过7万（Xinhua, "City in NE China Develops Sports Industry Online - Xinhua | English.News.Cn"）。

中国体育总局副局长李颖川在2020年国际冬季运动（北京）博览会上表示，中国是世界上增长迅速的冬季运动市场，预计到2022年市场规模将达到8000亿元（1170亿美元），到2025年将实现1万亿元的目标。中国政府制定了一个远大的目标：带动3亿人参与冬季运动。随着滑雪运动在中国的兴起，高素质的滑雪教练严重短缺。奥地利滑雪培训机构SNOW51参与了由中国和奥地利政府发起的“千名中国滑雪教练”培训计划。2020年，SNOW51与奥地利经济代表团组织的五家公司共同参与了中国国际服务贸易交易会。他们正在寻找能够支持“千名中国滑雪教练”项目的合作伙伴，培养出千名中国教练，促进更多人能参与滑雪运动。由于2022年冬奥会将要举办，冬季运动行业正在蓬勃发展，并将持续发展。从2015至2020年，从事冬季运动行业的中国公司数量从1950家增加至4650

Online Audio

The emergence of online audio-sharing has spread rapidly across the country. More than 10 million presenters have registered on Ximalaya FM, according to a statement by the company. In 2019, presenters on the platform received a total of 1.63 billion yuan ($246 million) in cash from an incentive plan. Data from iiMedia Research, a third-party data-mining and analysis organization for new industries, shows that the number of users in China's online audio market had reached 489 million in 2019, and it is expected to increase to 542 million this year. More than 70% of the users have paid for online audio, which means the online audio industry, also called the "ear-economy", has potential for further development, according to iiMedia Research. One reason for its popularity is that people can listen to their chosen programs while doing other things, a convenient choice in a fast-paced modern life. Online audio platforms include content from various fields. It is attractive for audiences of all ages and industries. According to a survey on reading from the Chinese Academy of Press and Publication, in 2019, 31.2% of Chinese citizens regularly listened to audiobooks, while the rate for adults was 30.3%, up 4.3% year-on-year. Technologies that bring audio to automobiles, smart home devices and smart wearables further fueled the development of the "ear-economy". A report published by Ximalaya FM in September shows that intelligent loudspeakers and vehicle devices are becoming increasingly popular among users who listen to audio at night, up 31.3% and 23.08% year-on-year, respectively. To adapt to new market trends, Ximalaya FM has been cooperating with several automobile manufacturers, home appliance makers and internet companies to lay out their market plan for hardware solutions. An artificial intelligence company in China, iFlytek, has launched a variety of intelligent audio products, including vehicle voice assistants, speakers, and robots. iFlytek says that with the surge of intelligent home systems and terminals, like wearable devices, such as watches, glasses and belts, the demand for voice, a more natural method for human-computer interaction, will increase (Xinhua, "China's Online Audio Market on Path to High Growth").

Sports Industry

The COVID-19 outbreak has understandably left a large impact on the sports world. However, China has sought out alternative methods of playing and exhibiting sports and is even on route to become the largest winter sports market of 2020. The COVID-19 outbreak has affected the sports industry worldwide to varying degrees. However, in the city of Qiqihar in Northeast China's Heilongjiang province, the internet provides new chances for the industry to develop. Qiqihar is famous for ice hockey in China, with bright prospects for the development of winter sports. Qiqihar Sports Bureau signed project contracts with some enterprises during the live broadcast. In recent years, Qiqihar City has vigorously developed the sports industry through the promotion of ice hockey and other sports. More and more local people participate in ice and snow sports, and there are more and more sports competitions in Qiqihar. In the past few years, Qiqihar has hosted hundreds of international and domestic ice hockey tournaments every year. 2020's summer's games are a little special. On June 10, the Qiqihar men's ice hockey team, the champion of the Chinese National Winter Games, had an intra-team match behind closed doors. The game was broadcast live through a short video platform. To meet the needs of more fans, the organizer then held two more games, and the total number of online views in the three games exceeded 70,000 (Xinhua, "City in NE China Develops Sports Industry Online - Xinhua | English.News.Cn").

China is a fast growing winter sports market in the world, with the market size expected to reach 800 billion yuan ($117 billion) by 2022, and will realize a target of 1 trillion yuan by 2025, said Li Yingchuan, deputy head of the General Administration of Sport of China, at the World Winter Sports (Beijing) Expo 2020. The government has set a very ambitious target which will bring 300 million people to the winter sports. With the rise of skiing in China, there is a severe shortage of highly qualified ski instructors. The SNOW51, an Austrain company, has participated in a project launched by Chinese and Austrian governments to train 1,000 Chinese ski instructors. In 2020, the ski training institute along with another five companies organized by the economic delegation department of Austria participated in China International Fair for Trade in Services. They are looking for more partners who

家。截至6月底，全国已建成并投入运营了35家以上的室内滑雪馆和400家以上的冰场馆，到今年年底，它们将分别达到45和500。中国的冬季运动行业市场，风险与机遇并存。随着中国经济的发展，滑雪、水肺潜水等小众运动正在兴起。作为奥地利运动品牌海德在大中华区的总代理，南京边城体育用品公司也在服贸会展出了其冬季运动的装备。吴家明（音译）表示，中国滑雪市场仍是个初级市场，公司正致力于开拓中国的滑雪装备市场，力争在未来三年内抢占30%的市场份额。此外，该公司还计划搭建一个户外游乐园和一个室内体育场，将极限运动体验带进中国（Jie）。

尽管中国继续实施新冠疫情防控措施，冬季运动率先开始复苏，其巨大的发展潜力在2020年北京举办的服贸会上引起了广泛关注。超300家海外冬季运动公司和制造商以及行业内超100家国际体育组织与外国代表齐聚一堂，就冬季运动经济展开讨论。专家们在讨论会中达成共识，尽管出现了疫情，但中国冬季运动产业已经成为拉近中国体育服务贸易与外国同行距离的新纽带。IDG资本中国区副总裁张莉在服贸会论坛上表示，近年来，中国冬季运动行业的年增长率保持在15%以上，2019年全国的冬季运动场馆共吸引了超过2345万名消费者。新冠疫情爆发后，冬季运动行业受到冲击，全国1100多家滑雪场和溜冰场相继倒闭。但随着疫情形势的好转，相关运动中心也逐渐复苏并终于兴盛起来。以南方城市广州为例，6月开始营业的一家冬季运动中心，在开业首日就接待了30万顾客。预计到2020年，中国冬季运动产业的规模将扩增至8000亿元人民币（约1170亿美元），其总规模将于2025年达到1万亿人民币。冬季运动产业有利可图，全世界的商业投资者也纷纷涉足其中。奥地利索道制造商Dopplemayr在今年的服贸会展出了最新研发的索道系统和吊舱。作为世界上最早的索道研发公司之一，Dopplemayr已经在全球建造了约15000条索道。为满足消费者多种多样的需求，完善产业链，许多海外大型运营商都将先进的管理技术和滑雪设备制造技术引入中国市场。与此同时，国内运营商也在积极推动，促使行业形成了“双循环”的发展新格局。社会资本不断流向冬季运动场馆附近的房地产市场、旅游项目和文化演出，使得冬季运动服务贸易扩增，也促进了场馆的可持续发展。中国政府支持北京建设国家服务业扩大开放综合示范区，而冬季运动服务贸易将为全球交流发展注入全新活力（Xinhua, "Winter Sports Economy Gains Momentum amid Epidemic Control"）。

电子竞技

据中国新闻网报道，随着近年来电子竞技的发展，游戏陪练，即通过教人们玩电子游戏来赚钱的专业人士变得愈加炙手可热。某电子游戏陪练平台的数据显示，2019年有超2700万电子游戏玩家寻找“大神”陪自己打游戏，其中约67%的玩家为95后。这一巨大需求促使很多电子游戏玩家以教他人玩游戏为职业。根据某游戏陪练APP，去年有290万名游戏陪练入驻该平台，其中129万名游戏陪练通过分享游戏技能得到了经济收益。该APP的全职游戏陪练的平均月收入为7857元人民币，而兼职陪练的平均月收入为2929元。电子游戏陪练在年龄方面没有过多限制。在某平台上，游戏达人的平均年龄为23.3岁，最大的是39岁。相比电竞行业的其他从业者，39岁相对年长了些。随着游戏陪练这一职业越来越受追捧，中国通信工业协会电子竞技分会在2019年发布了相关职业技能标准，这表明国家正式认可了这一职业，并对其做出规范。职业技能标准将从业者分为初级、中级和高级。考生必须通过理论和技能考试，才能获得专业技能证书。据估计，截至2月1日，约有5万人报名或预报名参加电子竞技培训讲师考试，其中2500至3000人获得了证书（People’s Daily Online, "Demand for Video Game Trainer on Rise in China - People’s Daily Online"）。

在中国，专业电竞比赛领域正蓬勃发展。许多国际品牌正在借助电竞来吸引精通数码产品的中国年轻消费者。由于新冠疫情，传统体育赛事退居二线。2020年初，人们蜗居在家，导致观看和玩电子游戏的人数都急剧增加。根据Streamlabs和Stream Hatchet的报告，作为游戏流媒体平台的翘楚，Twitch在2020年第二季度的观看时长记录为50亿小时，比第一季度增长了62%，同比增长了83%。中国音像与数字出版协会下属的游戏出版工作委员会最近的一份报告也反映了这一趋势。报告显示，受疫情影响，今年上半年中国游戏市场实际销售营收达到1390亿元人民币（200亿美元），比去年同期增长20%以上。GPC报告还发现，在疫情期间，电子竞技是游戏市场增长的推动力，中国有近6.6亿游戏玩家，其中4.8亿人是电子竞技爱好者。近期，豪车品牌劳斯莱斯与腾讯游戏合作，在《QQ飞车》（国内热门的赛车游戏）上线劳斯莱斯曜影。《QQ飞车》还上线另一辆虚拟汽车，一款名为“2035款劳斯莱斯未来车QEX”的假想模型。特斯拉公司也与腾讯合作，在第一人称射击类手机游戏《和平精英》中，上线特斯拉“皮肤”。宝马与中国电竞组织FPX电子竞技俱乐部和全球其他类似组织达成了赞助协议，以扩大其在电竞圈的影响力。电子竞技十多年前兴起，发展速度很快，收益也更为丰厚，部分原因是在越来越多人在YouTube和Twitch上观看玩家直播游戏。根据游戏和电竞分析和市场研究公司Newzoo的《全球电竞市场报告》，预计2020年全球电竞市场的营收将达到10亿美元，2023年将达到16亿美元。Newzoo估计，中国电竞粉丝占全球总人数的30%，中国是世界上电竞粉丝人数最多的国家（Zhu）。

统计数据显示，去年中国电竞市场产值突破1000亿元人民币（约149亿美元），预计2020年中国电竞玩家将超过4亿。年轻的中国消费者是电竞游戏玩家的主流群体。各品牌纷纷希望通过电竞比赛来直达这一群体。今年英雄联盟世界锦标赛决赛（S10）于10月31日，在上海新

can support the "1,000 Chinese skiing coaches" project to bring that many Chinese instructors in order to have more people going to snow in the future. The winter sport industry is growing and has to grow because of the 2022 Winter Olympic Games. The number of companies engaged in winter sports industry in China increased to 4,650 in 2020 from 1,950 in 2015. By the end of June, the country has built and put into operation more than 35 indoor ski resorts and 400 ice arenas, and the figures will reach 45 and 500, respectively, by the end of this year. China bills itself as a market where risks and opportunities co-exist in the winter sports industry, and as the country's economy grows, the niche sports such as skiing, and scuba diving are on the rise. The Nanjing company, which is Austrian sport brand HEAD's general agency in Greater China, also showed its winter sports equipment at the CIFTIS. Wu said the ski market in China is a primary market, and the company is committed to developing the country's ski equipment market to strive to grab 30% of the market share in next three years. Moreover, the company plans to set an outdoor paradise and an indoor stadium to bring experience of extreme sports to the country (Jie).

With China attempting to contain the spread of the COVID-19 epidemic, winter sports are leading the recovery and their untapped potential has drawn widespread attention at the 2020 China International Fair for Trade in Services (CIFTIS) held in Beijing. More than 300 overseas winter sports companies and goods manufacturers, as well as over 100 international sports organizations and foreign representatives in the industry gathered to discuss the winter sports economy. Experts reached a consensus during the panel discussions that China's winter sports sector has become a new link that brings the country's service trade in sports closer to its foreign counterparts despite the pandemic. China's winter sports industry has maintained an annual growth of 15% over recent years, and winter sports venues across the country saw more than 23.45 million consumers in 2019, said Zhang Li, vice-president of the China branch of IDG Capital, at a CIFTIS forum. The industry was struck by the outbreak of COVID-19, followed by the nationwide closure of more than 1,100 ski resorts and ice rinks, but as the situation improves, related sports centers gradually recovered and ultimately thrived. A winter sports center that started business in June in the southern Chinese city of Guangzhou, for example, welcomed 300,000 customers on the first day of opening. It is estimated that the size of China's winter sports sector will expand to 800 billion yuan (about $117 billion) in 2022 and the total industrial scale will reach 1 trillion yuan by 2025. The profitable sector also appeals to worldwide business players. Austrian ropeway manufacturer Dopplemayr exhibited its newly developed ropeway system and cabins during this year's CIFTIS. As one of the world's first ropeway research and development companies, Dopplemayr has constructed around 15,000 ropeways across the globe. Many major overseas operators are introducing leading management skills and ski equipment manufacturing techniques into the Chinese market to meet the diversified demand of customers and help complete the industrial chain. Meanwhile, domestic players are driving the industry so that a new development pattern known as "dual circulation." Social capital continues to flow into the property market, tourist projects and cultural performances near winter sports venues, which has expanded the winter sports service trade and ensures the sustainable development of the venues. As China pledges to build its capital city of Beijing into a demonstration zone that will deepen its opening up of the service industry, the winter sports service trade will inject new energy into the development of global exchanges (Xinhua, "Winter Sports Economy Gains Momentum amid Epidemic Control").

E-Sports

Video game trainers, or professionals who earn money by teaching people how to play video games, have become more popular in recent years with the development of e-sports, www.chinanews.com reported. Data from one video game teaching platform showed that over 27 million video gamers looked for professionals to teach them in 2019, about 68% of whom were from the post-1995 generation. The enormous demand has prompted many video gamers to take a career in teaching others to play games. According to a game teaching app, 2.9 million game teachers joined the platform last year, 1.29 million of whom earned money by sharing their gaming skills. The average monthly income of full-time game trainers in the app reached 7,857 yuan, while the figure for part-time practitioners

建的浦东足球场举行。在决赛中，韩国英雄联盟冠军联赛（LCK）的DWG战胜了英雄联盟职业联赛（LPL）的中国电竞战队苏宁电竞俱乐部（SN）获得总冠军。超过300万粉丝预约了决赛门票，而只有6300多人才能有幸亲临现场。与往年的锦标赛不同，受新冠疫情的影响，今年更多的人选择在家观看比赛。由于传统体育退居二线，电子竞技的玩家呈激增的趋势。根据今年电子竞技发展的行业报告，疫情期间，中国新增了2600万名电竞玩家。近年来，中国电子竞技行业走上了发展的快车道。2018年和2019年，中国队伍获得了英雄联盟世界锦标赛的冠军。拳头游戏首席执行官Nicolo Laurent表示，中国将电竞产业视作体育产业的未来，因而非常重视电子竞技的发展，并出台了很多扶持政策。地方政府抓住机遇，大力发展电子竞技产业。2019年，上海颁布了电竞产业扶持措施，建设"全球电竞之都"。数据显示，中国将超过北美，成为世界最大的电竞市场，2020年中国电竞的市场份额占全球营收的35%。拳头游戏宣布，2021年英雄联盟世界锦标赛仍将在中国举行（People' s Daily Online, "China Expected to See over 400 Million E-Sports Gamers in 2020"）。

传媒与娱乐业

从2016年至2019年的持续增长到今年疫情影响下的积极复苏，中国电影行业展现了强大的发展活力，2019年中国成为全球最大的电影市场。据电影信息追踪系统Beacon的数据显示，尽管疫情造成突然的停滞，但自7月20日中国电影院重开以来，截至10月28日，今年的电影票房收入已经达到142.8亿元人民币（21.3亿美元），赶超了北美地区，自10月中旬以来，中国已经确定成为了全球最大电影市场。根据中国电影行业最高监管机构国家电影局的统计数据显示，2016年中国电影总产值457亿元，2019年相比2016年增长了40%，达643亿元。据国家电影局统计，2016年中国共制作了772部长篇电影，2017年增至798部，2018年增至902部。2019年，这一数值跃至850部。如果算上其他类型，如科教片和纪录片等，2019年中国年产电影数达1037部。尽管受新冠疫情的影响，但截至10月15日，国产电影总票房已达110亿元，占电影总销售额的近85%。虽然好莱坞的超级英雄和视觉效果震撼的大片仍是最引人关注的进口电影，如《复仇者联盟3》和《复仇者联盟4》就在国内大受欢迎，但非西方的进口影片在中国市场也有一定增长，如印度热门影片《摔跤吧！爸爸》和黎巴嫩影片《何以为家》就是两个最成功的例子。中国电影市场扩张的另一个方面是其对影院建设的狂热。1月24日，中国影院因新冠疫情而关闭，7月20日影院重开，而在此之前，中国已有1万多家影院，共安装了近7万块银幕，其中大部分能够放映3D电影。娱乐技术创新公司IMAX在中国大陆构建巨幕网络，将巨幕从2016年的381块扩大到目前的约670块。2019年中国年度影院入场人数达17亿人次，大多数分析人士认为如果能在中西部建设更多的影院，中国电影观众人数将进一步增长（Fan）。

另一个增长可观的领域是中国游戏市场，尤其是米哈游公司的《原神》广受欢迎，并获得了成功。《原神》是一款开放世界动作冒险类游戏，用户在游戏中扮演年轻的魔法召唤师。《原神》成为有史以来发行规模最大的中国游戏。分析人士称，米哈游公司开发的《原神》的成功，标志着中国在电子游戏领域的技术和营销能力不断提升。业内专家表示，免费动作冒险类游戏《原神》在发售日的总收入超过了中国的抖音，在Twitch上的浏览量也超过了《堡垒之夜》，这意味着《原神》成为有史以来全球发行规模最大的中国游戏。备受期待的《原神》由上海米哈游公司开发，在移动端、PC端和PlayStation 4端联合推出，该游戏一经发布，就在中国乃至全球掀起一波热浪。游戏发布仅几小时后，在直播平台Twitch上就吸引了超11万名观众同时在线观看，这比艺铂游戏公司推出的大逃杀类型的热门游戏《堡垒之夜》更为火爆。分析人士表示，《原神》的大获成功标志着中国在电子游戏领域的技术和营销能力不断提升。此外，米哈游公司不仅单独在中国市场发布新游戏，更是在全球多个平台同时发布，这凸显了米哈游公司想要捕获全球玩家的雄心。根据应用程序追踪公司七麦数据的统计，《原神》在一个月里霸占苹果应用商店中国区榜二，领先于字节跳动公司下属的短视频热门APP抖音[国际版叫TikTok]。根据七麦数据评估，在一个月内，该游戏在iSO平台狂收184万元美元。这款游戏在推出之前就受到了资深玩家的热烈关注。有近530万国外玩家在官方网站进行了预注册。共1600万中国玩家通过三个平台进行预注册（Ye）。

stood at 2,929 yuan. E-sports is very flexible when it comes to the age of game trainers. The average age of game gurus at one platform is 23.3, with the oldest being 39, a relatively old age compared to other practitioners in the e-sports industry. With the popularity of game trainers growing, the China Communications Industry Association Electronic Sports Branch issued a standard on the profession in 2019, which indicates that the occupation has been officially recognized and regulated by the country. The standard divides practitioners into primary, intermediate, and advanced levels. A candidate must pass examinations on theories and skills before being certified for their professional skills. It is estimated that about 50,000 people had registered or pre-registered to take the examinations to become an e-sports trainer by Feb. 1, with 2,500 to 3,000 gaining the certification (People’s Daily Online, “Demand for Video Game Trainer on Rise in China - People’s Daily Online”).

Global brands in China are looking to esports, the booming field of professional video game competitions, to reach digital-savvy younger Chinese consumers. With traditional sporting events sidelined due to COVID-19, the number of people playing and watching video games has increased dramatically as people sheltered at home earlier in 2020. Twitch, the leading streaming platform for gaming, recorded 5 billion hours watched in the second quarter of 2020, a 62% increase from the first quarter and an 83% year-over-year increase, according to a report by Streamlabs and Stream Hatchet. The trend is echoed in a recent report by the Game Publishing Committee (GPC) of the China Audio-Video and Digital Publishing Association. Due to the pandemic, the actual sales revenue of the Chinese game market reached 139 billion yuan ($20 billion) in the first half of this year, an increase of more than 20% over the same period last year, according to the report. The GPC report also found that esports are the driving force in game market growth, with 480 million of the nearly 660 million gamers in China being esports enthusiasts during the period. Luxury car brand Rolls-Royce has recently collaborated with Tencent Games to allow players the option to download a Rolls-Royce Dawn in QQ Speed, a popular racing game in China. Another virtual car, an imaginary model called "2035 edition Rolls-Royce QEX" is also available in the game. Tesla also partnered with Tencent to offer players the chance to buy a Tesla "skin" for their avatar's vehicles in the first-person shooter mobile game Peacekeeper Elite. BMW has struck sponsorship deals with the Chinese esports organization FunPlus Phoenix and other similar organizations worldwide to expand the German carmaker's presence in esports. Esports have been around for more than a decade and have rapidly become more popular and lucrative, partly thanks to the growing popularity of being able to watch gamers playing live on YouTube and Twitch. The global esports market is projected to generate revenues of $1 billion in 2020, and $1.6 billion in 2023, according to the Global Esports Market Report by Newzoo, a game and esports analytics and market research company. Newzoo estimated that Chinese esports fans account for 30% of the global total, which makes China the largest concentration of esports fans (Zhu).

Statistics show that China’s e-sports market value surpassed 100 billion yuan (about $14.9 billion) last year, and the number of the country’s e-sports gamers is expected to exceed 400 million in 2020. Brands have been looking to e-sports competitions to reach young Chinese consumers, the mainstream group of e-sports gamers. On Oct. 31, South Korea’s DWG of League of Legends Champions Korea (LCK) beat Chinese e-sports team Suning (SN) of League of Legends Pro League (LPL) in the final of this year’s League of Legends World Championship (S10) in the newly-constructed Pudong Football Stadium in Shanghai. Over 3 million fans registered for the event in the hope of being one of more than 6,300 spectators selected to attend the event live. The Championship 2020 is different from those of previous years due to the COVID-19 epidemic, with more people staying home because of the outbreak. With traditional sporting events sidelined, the number of e-sports players has seen a dramatic increase. According to an industrial report on this year’s e-sports development, China saw about 26 million new e-sports gamers during the epidemic period. The country’s e-sports industry has embarked on a fast track of development in recent years. Chinese teams won the League of Legends World Championship in 2018 and 2019. China attaches great importance to the development of e-sports, as it sees the sector as the future of the sports industry, and has introduced many supporting policies, said Nicolo Laurent, CEO of Riot Games. Local governments have seized the

此页留白

opportunities given to them to develop the e-sports industry. In 2019, Shanghai announced measures to support the industry and build itself into "the international capital of e-sports." Data shows that China will surpass North America to become the world's top e-sports market in terms of revenue, accounting for 35%of the total global revenue in 2020. Riot Games announced that the 2021 League of Legends World Championship will still be held in China (People's Daily Online, "China Expected to See over 400 Million E-Sports Gamers in 2020").

Media and Entertainment

From a sustained expansion between 2016 and 2019 to the promising recovery in the wake of COVID-19 this year, the Chinese film industry has demonstrated a strong vitality, with the country recently becoming the world's largest movie market in terms of box-office sales in 2019. In spite of an abrupt halt caused by the epidemic, since Chinese cinemas reopened on July 20, this year's movie-ticket revenue has reached 14.28 billion yuan ($2.13billion) as of Oct 28, exceeding that of North America and securing China's status as the world's largest movie market since mid-October, according to movie-information tracker Beacon. Statistics from the China Film Administration, the country's top sector regulator, show that China grossed 64.3 billion yuan in 2019, up 40% compared with 45.7 billion yuan in 2016. According to the administration, China produced 772 feature-length dramas in 2016, with the total output increasing to 798 features in 2017 and 902 in 2018. In 2019, the number fell slightly to 850. Coupled with other genres, including science education and documentaries, China's annual production reached 1,037 films in 2019. Despite the effects of the COVID-19 outbreak, Chinese films had grossed 11 billion yuan as of Oct 15, accounting for nearly 85% of total sales. While superheroes and visual effects-studded blockbusters from Hollywood continue to be the most appealing imported content, exemplified by the overwhelming popularity of Avengers 3 and 4, non-Western imports have also seen growth in local markets, with the Indian hit Dangal and Lebanese film Capernaum as two of the most successful examples. Another aspect of expansion in China is its spree of cinema construction. Before Chinese theaters were closed due to the COVID-19 outbreak on Jan 24 and reopened on July 20, nearly 70,000 screens had been installed in more than 10,000 cinemas, with most capable of screening 3D formats. Entertainment-technology innovator IMAX has seen its giant-screen network expand from 381 in 2016 to about 670 screens at present on the Chinese mainland. Most analysts believe China's annual theater admissions, which reached 1.7 billion in 2019, indicate the country has huge potential to draw more moviegoers if more cinemas can be constructed in central and western China (Fan).

Another area that has seen considerable growth is the Chinese gaming market, particularly the overwhelming popularity and success of miHoYo's Genshin Impact. Genshin Impact is an open-world, action adventure game that lets users play as young, magic-conjuring warriors, and it just had the largest game launch in Chinese history. Analysts say success of miHoYo-developed game is another sign of the growing technical and marketing prowess of China in the video games space. Grossing more than China's TikTok and nabbing more views on Twitch than Fortnite on launch day, the free-to-play action adventure game Genshin Impact marks the biggest international launch of a Chinese game in history, say industry experts. Launched on mobile, PC and PlayStation 4, the much-anticipated Genshin Impact, developed by Shanghai-based miHoYo, is off to an explosive start in China and across the world. Just hours after launch, the game had more than 110,000 concurrent viewers on live-streaming platform Twitch, making it more popular than Epic Games' battle royale hit Fortnite for the day. Analysts said that the high-flying success of Genshin Impact is yet another sign of the growing technical and marketing prowess of China in the video games space. Furthermore, miHoYo's push to launch its game across multiple platforms, not only in China but also across the world, underlines the ambition of leading Chinese developers to reach a global audience. According to app tracking firm Qimai Data, within a month, Genshin Impact is already the second top-grossing app on Apple's App Store in China, ahead of ByteDance's Chinese short-video hit Douyin [the sister app of international version TikTok]. Within a month, the game had grossed more than US$1.84 million on iOS according to Qimai's estimates. The game was subject to intense interest among seasoned gamers prior to launch. Outside China, the game saw close to 5.3 million people preregister

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on the official website. In China, the preregistration number reached 16 million across three different platforms (Ye).

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此页留白

2.14 Healthcare

Key Take-aways

- China's public-sector expenditure on health care increased almost 14-fold between the SARS outbreak in 2003 and the end of 2018.

- Healthcare system is too "hospital-centric," fragmented and volume-driven, according to a joint report by the World Health Organization and World Bank.

- When epidemiologists were still struggling to find the cause and transmission path of the coronavirus, Chinese authorities resorted to the simplest way to block its spread, locking an estimated 50 million people under quarantine. Now, as the focus of the global pandemic shifts offshore from mainland China, the country's technology companies are using their participation in the world's largest health crisis to turbocharge the deployment of so-called HealthTech solutions

- Online sales of insurance products are likely to accelerate as technology takes center stage during Covid-19 pandemic.

- Chinese biotechs, flushed with funds and armed with ideas, join the race to find a coronavirus cure as pandemic ravages the world.

- Greenland, Vanke, Sunac among developers planning health care facilities in new residential projects as Covid-19 changes mindsets and lifestyles.

- Incidences of cancer in China, the highest globally, are expected to grow to 5.1 million by 2025, from 4.4 million in 2019.

- China is creating a 'special health care zone' in Hainan to capitalize on the growing medical tourism market. Preferential policies will allow Hainan to import medical devices, technology and drugs that are hard to come by in the mainland.

Covid-19 Repercussions

- To block the spread of Covid-19, China locked down tens of millions of people.

- The cases in Wuhan inspired China to institute medical reforms.

- China's major healthcare companies have rallied to fight the pandemic.

- China's investment in health care AI helps it deal with the coronavirus crisis.

- Imaging machines have been used to help identify Covid-19 n X-Rays.

Background

The story of 2020 in China is one written in an aging healthcare system that has been forced to change and adapt with the horrific events that have unfolded over the course of the year. To plan for the future, China found it prudent to look to events of the past. In the early spring of 2003 patients filled Beijing hospitals with feverish coughs and chest pains, doctors had little clue on how to deal with the mystery disease spreading through the Chinese capital. Befuddled, doctors reached out to the Chinese authorities, as well as the US Centre for Disease Control (CDC) and the World Health Organization (WHO) for help. Based on their advice, the hospitals did their best to give patients comfort while the medical world looked for answers. Officialdom eventually named the disease the Severe Acute Respiratory Syndrome (SARS) to distinguish it from other types of respiratory tract infections. The disease, caused by a coronavirus, spread to 17 regions and countries, afflicting 8,098 people with a death toll of 774. Seventeen years later in 2020, China is again the epicenter

2.14 医疗保健行业

关键要点

· 从2003年非典疫情爆发到2018年底，中国公共卫生支出增长了近14倍。

· 据世界卫生组织和世界银行联合发布的一份报告显示，中国的医疗保健体系过于“以医院为中心”、分散、且追求数量。

· 当传染病学家还在努力弄清新冠病毒的源头和传播路径时，中国政府已经采取了最简单的方式来阻止疫情蔓延，对近5000万人采取了隔离措施。目前，随着全球疫情焦点从中国转向海外，中国科技公司正通过参与应对这场最严重的全球公共卫生危机，推动医疗科技解决方案的发展。

· 新冠疫情期间，科技占据了舞台中心，保险产品线上销量有望增长。

· 中国的生物技术企业获得了大量投资，积极献计，纷纷加入到了抗击全球疫情、寻求疫情防控和治疗方案的战斗当中。

· 疫情改变了人们的思考方式和生活方式，绿地、万科、融创等房地产开发商拟在新建住宅项目中配置医疗保健设施。

· 中国为全球新发癌症最多的国家，预计到2025年新发癌症病例数将由2019年的440万例增至510万例。

· 中国正致力于在海南省打造“国际医疗旅游先行区”，开拓日益增长的医疗旅游市场。政府优惠政策将使海南省获准进口国内其他地区难以获得的医疗设备、技术和药品。

新冠疫情所带来的影响

· 为了阻断新冠疫情的蔓延，中国政府对数千万人实施了隔离措施。

· 起源于武汉的新冠疫情让中国开始反思医疗卫生体制改革的重要性。

· 中国各大医疗保健企业纷纷投入到了抗击疫情的战斗中。

· 中国在医疗保健人工智能领域的投资对于应对新冠危机起到了积极作用。

· 医学影像技术被用于新冠诊断和X光分析。

背景

2020年，中国的医疗卫生体制经受了痛苦考验，实施改革、应对这一年来的严重公共医疗卫生事故刻不容缓。为了规划未来，中国政府审慎地反思了过去的经验和教训。2003年早春，北京的医院挤满了发热、咳嗽、胸痛的患者，对于在整个首都地区迅速蔓延的疫情，医生束手无策。迷茫无助之下，医生向中国政府、美国疾控中心和世界卫生组织请求援助。在各方助力下，北京各医院竭力救治患者，医疗界则全力研究治疗方案。这次疫情最终被官方命名为“严重急性呼吸综合症”（即非典），将其他肺炎感染区别开来。非典也是一种由冠状病毒引起的传染病，后来蔓延至17个国家和地区，8098人感染，其中774人死亡。17年后的2020年，中国再度成为全球冠状病毒传染病的中心疫区。虽然经济发展放缓，但中国仍在努力维持目前的卫生支出水平，中国下一阶段的卫生体制改革将会如何推进，备受全球关注，尤其是寻求中国市场投资契机的投资者。据估计，至2030年，中国医疗保健市场的规模将增长至16万亿元人民币（约合2.3万亿美元）。新冠疫情展示了中国抗击非典的经验与教训。对于此次危机，政府从最初的否认到飞速采取行动控制疫情蔓延，对约5000万人实施了隔离措施。中国政府不吝代价地建设医护设施，10天内建成了一家拥有1000个床位的医院，闻名全球。辉煌纪录暂且不提，新冠疫情爆发也暴露了中国卫生

of a global coronavirus epidemic. As the slowing economy struggled to maintain the current growth level in health spending, how China proceeds with the next phase of the country's health care reforms will command the world's attention, especially for investors looking for opportunities in a market that is expected to grow to 16 trillion RMB (US$2.3 trillion) by 2030. The outbreak of Covid-19 has been a show case of what China learned from SARS. After an initial period of denial, the government moved quickly to quarantine an estimated 50 million people to contain the pathogen's spread. No expenses were spared to build care facilities, famously completing a 1,000-bed hospital in 10 days. Record aside, the outbreak also exposed the shortcomings of capacity and capability in China's health care system, such as limited inpatient capacity of the top-tier hospitals, insufficient capacity to diagnose and treat severe cases, and the imperfect reporting system. The government was also able to afford universal health care insurance for citizens, a creed for the ruling Communist Party even as it gradually replaces cradle-to-grave welfare and jobs under communism with privatized systems in a market economy. A six-year, 850-billion-RMB program in 2009 ultimately provided almost 100% health insurance to citizens, a feat that was championed by the WHO's March 2019 report Healthy China: Deepening Health Reform in China released with the World Bank. An area of concern is that China does not have enough doctors, with 1.8 physician – both general practitioners and specialists – for every 1,000 people. That is lower than 2.4 in the US, 2.8 in the UK, 2.4 in Japan and 2.3 in Singapore. Even the training for medical doctors is distributed unevenly to the detriment of the primary care system, the first line of defense for illnesses and injury. China has 2.2 general practitioners (GPs) for every 10,000 people, according to 2018 data. That compares with 12 family doctors for every 10,000 Americans. As a result, specialists at Chinese hospitals are often underpaid and overladen with general practice, where 12-hour days are the norm. The Chinese government had laid out plans to cut the out-of-pocket payments to 25% by 2030, from 30% of the 2016 total medical expenditure, according to The Healthy China 2030 health care blueprint. The government will also strengthen primary care services, and encourage the development of commercial health insurance (Sito, "What Did China's Health Care Learn from the SARS and Covid-19 Outbreaks?").

Pandemic Response

During the initial days of the pandemic, when epidemiologists struggled to find the cause and transmission path of the then little-known disease, Chinese authorities resorted to the most primitive way to block its spread, locking an estimated 50 million people under quarantine across dozens of cities. Now, as the focus of the global pandemic shifts offshore from mainland China, the country's technology companies are using their participation in the world's largest health crisis to turbocharge the deployment of so-called HealthTech solutions. Remote access to health services, from consultations to the sales of medical products, is the entry point into the nascent, fast-expanding HealthTech market, especially in a country with the world's largest population of smartphone users. There are at least seven platforms in the market that connect doctors with patients. TTD, which claims to connect 450,000 certified doctors with 17 million patients in a single platform, offered online consultation to Wuhan residents – who were put into quarantine on February 11 – for a token 1 RMB, instead of the usual 49 RMB. That enabled TTD to quadruple its consultations during the first five days of the Lunar New Year, compared with the same period last year. Digital health care solutions have long been a key application within China's internet technology boom, even before the current pandemic changed the way people interact, live and work. Targeting medical needs unmet by China's hospital-centric health care system that lack primary general care, online health care platforms including 111 Inc's 1 Clinic, WeDoctor, Spring Rain Doctor and Haodaifu Online sprang up in the past decade. Telemedicine is also a nascent development in the US, held back partly by the fact that physicians are licensed by states. In China, lengthy waits for services have long been the features of hospitals, where health care takes up 9% of government spending, less than half of the budget in Britain, Japan, and Germany. Many rural residents often make long trips to big city hospitals due to the concentration of the nation's best medical resources there, despite health care reforms including the assignment of city doctors to rural communities. Doctors are however experimenting with online consultations. Doctors are not allowed to arrive at a diagnosis for patients online without physical check-ups or prescribe drugs under existing regulations in mainland China. This means most health care services are

体系的缺陷，如顶级医院收治入院能力有限、重症诊断和治疗能力不足、信息报送机制不完善等。中国政府有能力负担全民医保，这也符合中国共产党的执政宗旨。不过，中国政府正逐步引入市场经济下的保险私有化体系，以取代“从摇篮到坟墓”的社会福利保障体系和就业保障体系。2009年，中国开始实施投资8500亿元人民币的医疗改革，经过六年时间，最终实现了医保近100%全覆盖。2019年3月，世界卫生组织和世界银行联合发布的报告《健康中国：深化中国医药卫生体制改革》肯定了中国医改的成就。中国医药卫生体制面临的一个问题是医生短缺，平均每1000名居民仅拥有1.8名执业医生。根据世界银行的统计，该指标低于美国的2.4名、英国的2.8名、日本的2.4名和新加坡的2.3名。医生培训资源分布不均匀，导致疗伤治病的“第一道防线”——基层医疗体系不完善。2018年的数据显示，中国每万名居民拥有2.2名全科医生。而美国每万名居民拥有12名家庭医生。医生短缺导致医院的专家医生收入过低，他们忙于普通临床执业，每天工作12个小时是常态。根据《“健康中国2030”规划纲要》中国政府目标到2030年将个人卫生支出占卫生总费用的比重从2016年的30%降至25%。政府还将加强基层医疗服务，鼓励商业医疗保险的发展（Sito, "What Did China's Health Care Learn from the SARS and Covid-19 Outbreaks? "）。

应对新冠疫情

新冠疫情爆发初期，大家都对这种新型疾病一无所知，正当传染病学家努力弄清病毒的源头和传播路径的时候，中国政府已采取了最原始的方式来阻断疫情蔓延，对数十个城市约5000万人采取了隔离措施。目前，随着全球疫情焦点从中国转向海外，中国科技公司正通过参与应对这场最严重的全球公共卫生危机，推动医疗科技解决方案的发展。中国拥有全球最多的智能手机用户，新兴医疗科技市场正飞速扩张。涵盖医疗咨询到医疗用品销售的远程医疗服务成为了进入医疗科技市场的敲门砖。目前，市场上至少有七个提供医患互联服务的平台。自2月11日起，武汉实施封城。企鹅杏仁向武汉居民提供了1元线上咨询服务，而平台收费标准通常为49元。企鹅杏仁是一家号称聚集45万名注册医生和服务1700万名患者的线上医疗平台。春节前五天，企鹅杏仁的咨询量相较于去年同期提升了四倍。早在疫情改变人们互动、生活和工作的方式之前，随着中国互联网技术的蓬勃发展，数字医疗解决方案已经是互联网技术的关键应用领域。中国以医院为中心的医药卫生体制在基础医疗方面存在缺陷，导致无法满足人们的医疗需求，针对这种情况，1药网、微医、春雨医生、好大夫等线上医疗平台在过去十年间开始兴起。远程医疗在美国也属于新兴行业，远程医疗执业医生的许可需由州政府颁发，一定程度上限制了该行业的发展。在中国，就诊等待时间长一直是医院就医的痛点，卫生开支在政府开支的占比为9%，不到英国、日本和德国的一半。虽然医改内容包括城市医生下基层，但全国医疗资源还是集中分布在大城市，许多农村居民需要长途跋涉到大城市的医院求医治病。不过，越来越多医生开始尝试提供线上看病咨询服务。根据国内现行法规，医生不得通过线上看诊未进行体检患者进行诊断或开具处方药。这意味着大部分医疗服务还是在线下展开的。除了连接医患之外，技术深入广泛地运用于新冠治愈方法的研究。阿里巴巴旗下研究机构达摩院研发了一款分析工具，可以通过患者肺部CT影像区分新冠肺炎和其他肺炎。达摩院研发的另一款分析工具成功将新冠肺炎诊断用时由数个小时缩短到30分钟。该分析工具已在阿里巴巴总部所在地杭州市的26家医院推广应用，且已向法国和意大利提供。机器人也应用于识别人群中的疑似新冠病毒携带者。面对医疗产业链数字化，拥有科技背景的企业高管和来自医疗界的高管可能会采取不同的发展方式（Ng, "China's Big Tech Use Coronavirus Record to Turbocharge HealthTech"）。

疫情期间，面对重大突发性传染病，保险和保费支付机制也遭受了考验。在2018年10月推出的相互宝平台，加入相互宝的成员几乎无需支付任何费用，就可以与其他成员分摊大病账单，保障范围涵盖数百种重大疾病，保额高达30万元。2019年相互宝全面上线期间，每位互助成员的分摊金额为29.17元人民币，比在上海买一杯星巴克或者在伦敦买一个中号麦当劳汉堡的花费还少。今年，相互宝的运营商蚂蚁金服宣布该平台的人均分摊金额不会超过188元，并将提供高达10万元的免费新冠保障金。采取P2P商业模式的网络互助保险平台已经自主发展成为一个小产业，从业企业超过数十家，参加互助保险计划的成员约为3亿人，几乎是美国总人口。运用科技手段的保险业务被称为保险科技产业，其发展正改变着中国医疗健康行业。中国政府发布的数据显示，2017年中国卫生总费用为5.16万亿元人民币（约合7270亿美元）。中国实施市场经济改革四十年来，“从摇篮到坟墓”的社会福利保障制度已经很大程度上被私企和营利性企业所提供的保险服务取代。保险业也获得了蓬勃发展，中国的保险市场已经由单一的国有保险公司发展到现在的90家寿险公司和82家一般保险公司。但是，根据世卫组织发布的数据，2015年，中国商业保险覆盖的医疗支出占比为3.6%，仍然不及德国的3%和英国的5.5%。在美国，商业保险覆盖的医疗支出占比为39.6%。政府数据显示，2019年全国医疗保险销售额增长了约30%，达到7060亿元人民币。据中国银保监会联合其他12个部委发布的一份报告显示，至2025年，全国医疗保险销售额将达2万亿元人民币。私营医疗保险机构有望在未来数年发挥更大的作用。新冠疫情的爆发使人们对于更好的医疗保险的需求出现爆发性增长，情况和2003年非典疫情爆发后很相似。中国政府能够迅速有效地实施财政和行政手段，因此在疫情爆发初期，面临医院床位紧缺，中国能够在十天内建成一家拥有1000个床位的医院，并在一个月内将医用口罩的产能提升了450%，以应对公共卫生危机，这个成就闻名全球。中国现有三大基本医疗保险制度，1998年的时候，医保仅覆

still provided offline. Besides connecting patients with doctors, technology is also going deeper and broader into the search for a cure for Covid19. Damo Academy, Alibaba's research unit, has an analytical tool that can distinguish Covid-19 from other strains of respiratory tract infections through computerized tomography (CT) scans of patients' lungs. A second tool cuts the diagnostics time to 30 minutes, from several hours. The analytical tools, deployed at 26 hospitals in Alibaba's hometown in Hangzhou, are also being offered to Italy and France. Robots were also deployed to pick out suspected coronavirus carriers from a crowd. When it comes to digitalizing the health care supply chain, executives with a technology background may have different approaches from those coming from the medical field (Ng, "China's Big Tech Use Coronavirus Record to Turbocharge HealthTech").

One area that has been re-examined during the pandemic is how payment and insurance for such events work. Members of Xiang Hu Bao pay nothing to enjoy up to 300,000 RMB of insurance-like coverage each for some 100 serious illnesses on the platform launched in October 2018 and split the bills whenever one goes for treatment. In its first full year of operation in 2019, each member paid 29.17 RMB, less than the price of a cup of Starbucks coffee in Shanghai or a mid-sized Big Mac in London. This year, the operator Ant Financial Services has capped the cost at 188 RMB per head and provides free Covid-19 coverage for up to 100,000 RMB. As a peer-to-peer business model, mutual-aid insurance platforms have now grown into a mini industry on its own, with more than a dozen companies corralling an estimated about 300 million members – approaching the entire population of the US. The growth in insurtech – as the use of technology to enhance insurance is dubbed – is disrupting the health care industry in the world's most-populous nation, which rang up 5.16 trillion RMB (US$727 billion) in medical bills in 2017, according to government data. Four decades after China embarked on the road of market economic reforms, the cradle-to-grave social welfare infrastructure has been mostly replaced with private-sector and for-profit companies. The insurance industry has blossomed from a single state-controlled insurer into a market of 90 life insurers, and 82 general insurers. Still, private insurers covered only 3.6% of medical bills in China in 2015, a drop in the bucket compared with 3% in Germany and 5.5% in the UK, according to the World Health Organization. The level in the US was 39.6%. Sales of health insurance policies in China rose by about 30% to 706.6 billion RMB in 2019, according to government data. By 2025, the size should reach 2 trillion RMB, according to a report by the China Banking and Insurance Regulatory Commission and 12 government departments. Against these numbers, privately-run health insurers are expected to enhance their role in the coming years. That demand for more and better health care coverage is in the throes of explosive growth because of the coronavirus pandemic, similar to the aftermath of the 2003 outbreak of the severe acute respiratory syndrome, or SARS. Using the financial and administrative heft at its disposal, the Chinese government famously built a new hospital with 1,000 beds within 10 days to cope with demand for beds at the onset of the coronavirus outbreak, stepped up surgical mask production by 450% within a month to cope with the public health crisis. China has three public health insurance schemes, expanding from covering urban workers in 1998 to rural folks in 2003 and included homemakers, children, and the elderly in 2007 – funded by employers and employees and the government. The state-run social insurance program, though, is also in need for a revolution of sorts, especially in funding. The urban workers scheme, for example, is forecast to accumulate 735.3 billion RMB of losses by 2024, according to the China Medical and Health Services Development Report in 2014. Peer-to-peer insurance platforms come with risks. They are not licensed by the CBIRC, and do not need to follow the tough capital requirements or other risk management rules like traditional insurers. One of the success factors for peer-to-peer platforms is to build credibility and gain trusts from customers. The issues of abuses and corporate governance lapses of P2P lending, or peer-to-peer lending, triggered millions of losses in China. Only platforms run by reputable and financially strong groups can endure (Yiu).

As the pandemic progressed, China's medical and pharmaceutical industries change to adapt to the new needs of the nation. Hong Kong researchers join US start-up to remotely monitor Covid-19 patients in world's first trial of its kind. I-Mab and Cansino are among a growing number of start-

盖城镇居民，到2003年，医保覆盖范围扩大到了农村居民，到2007年，覆盖面涵盖了职工、儿童和老人。医保资金来自于企业、职工和政府。然而，国家社保计划仍需要各方面的改革，尤其是资金方面。据《中国医疗卫生事业发展报告2014》显示，到2024年，城镇职工基本医疗保险将出现基金累计结余亏空7353亿元的严重赤字。P2P保险平台也存在风险。这些平台没有银保监会颁发的许可证，不需要像传统保险公司一样遵守严格的资本要求或其他风控规定。P2P保险平台的成功因素之一在于其建立了信誉并获得了客户的信任。P2P借贷的滥用问题和企业治理存在漏洞，已经在全国范围内造成了数百万元的损失。只有信誉度高、资金充沛的企业才能支撑下去（Yiu）。

随着疫情发展，中国的医疗和医药行业也发生了变化，以适应国家新的需求。有香港专家加入美国初创企业，远程监测新冠患者，这在世界范围内首创。过去十年间，接受过西方教育的杰出中国科学家创建了许多初创企业，包括天境生物和康希诺生物。这些企业通过风投和上市募集了数十亿美元资金，在中国医药行业从仿制药、专利过期药生产商华丽转型为创新药生产商和行业投资者的进程中，这些企业始终跑在最前面。过去15年，中国一直是仿制药生产大国和原料药进口大国，不过近些年才开始大力投资发展创新药。去年大约有301款仿制药获批上市。据中国医药创新促进会发布的数据显示，2018年医药行业生产的医药产品价值达3.57万亿元人民币（约合5040亿美元），国内医药销售额为1.71万亿元人民币。2019年国内有51款创新药获批，其中10款为国内研发，较2018年增长了11%。此前，2007年至2017年的十年间，国内研发的创新药仅有38款。近年来，中国的医药审批制度改革极大地推动了医药企业和相关投资者。国家医保体制现在配备了更多资金，可以负担创新药的报销，新药审批效率得到极大提升，药品开发项目的可用资金大幅增加。中国的新兴生物技术行业奋勇进军肿瘤学市场，这也是全球创新的集中领域之一。许多医药企业表示将继续研发新冠病肺炎治疗方案（Ng, "Chinese Biotechs Join the Worldwide Race to Find a Coronavirus Cure"）。

新冠疫情没爆发前，武汉就已备受医学界关注。早在2019年3月，在一场由海峡两岸医药卫生交流协会承办、世界家庭医生主办的会议上，与会人士表示，作为华中地区最大的城市，武汉急需实施医疗卫生改革。当时他们认为武汉的医院不堪重负，亟需增容，需要发展门诊网络，作为满足患者看病需求的第一线。相关改革可以复制推广至中国其他地区。不幸的是，这些分析最终成为了现实。随着疫情在武汉和国内其他地区不断蔓延，中国政府也的确提出了许多措施，且正在被全球其他国家的政府效仿：封城、限制出行、生产通风设备和洗手液等卫生用品。这些措施对疫情防控发挥了巨大作用。中国政府的最近一轮医改在约十年前开始实施，目标是实现全民医保，到2020年为全国人民提供可负担的医疗卫生服务。新冠疫情让线上医疗服务提供商有机会填补上一轮医改留下的一些空白，在未来十年内，中国加强医疗卫生基础设施建设的过程中，将需要发挥这些线上医疗服务提供商的作用。英国和加拿大的医疗卫生支出约占GDP的10%，新加坡和香港的该指标分别为5%和6%。中国的医疗卫生支出占GDP的5%，且正不断提升。据世卫组织和世界银行于去年新冠疫情爆发之前联合发布的报告，2030年至2035年间中国的年均医疗卫生支出有望超过收入2.9个百分点。因此，中国政府希望建设“更平衡”的医疗体制，让私营医疗卫生机构提供优质服务、分担公共医疗卫生部门的负担。3月5日，中国政府颁布了《关于深化医疗保障制度改革的意见》，提出了2030年前建成相对完善的医疗卫生体制的目标。根据该意见，中国将建设更完善的医疗保险制度，建立市场主导的药品定价机制、推进大数据应用和“互联网+医疗”等新型服务模式的发展。数字化将发挥重要的作用，推动家庭医疗卫生制度的建设，让基层医疗当好家庭健康的守门人。新冠疫情的爆发促进了国内线上医疗平台的发展。目前在国内提供数字医疗服务的私企包括平安好医生、丁香园、春雨医生，服务内容涵盖自我诊断、科普、疑似病例评估(Sito, “How Wuhan and the Coronavirus Are Shaping China’ s Medical Reforms”)。

该领域还已经吸引到了诸多大型企业，如集团企业复星国际。但是，仅凭这些平台本身，不能够解决中国的医疗保健体制问题。中国需要建设综合性医疗保健生态，以严格的政策、监管框架和完善的财政制度为基础，提供医疗保健服务。需要实现商业医疗保健服务和公共医疗卫生服务的平衡。医生短缺是目前医疗保健行业面临的一个问题。科技，尤其是人工智能，将能够发挥巨大作用，解决医生短缺的问题。随着医疗保健服务需求增长，人工智能辅助诊断将会变得更为普遍。但是医生短缺的问题仍将存在，亟需解决。世界家庭医生组织与中国医师协会合作建设了医学院，进行医师培训和制定相关标准。世界家庭医生组织还计划协助中国建立一个类似香港医学会的法定监管组织，负责符合资质的执业医师登记、发布执业准则和指导规范以确保医疗卫生服务质量和安全。中国医疗卫生体制改革的最大难点在于公立医院层面。中国不缺私立医院和私立诊所。但是私立医院缺乏信誉积累，这也是患者纷纷涌向知名公立医院的原因（Sito）。

社区医疗保健中心

绿地香港控股有限公司正在中国云南省昆明市建设“绿地 · 滇池国际健康城”。新冠疫情的爆发极大地增加了人们的医疗保健的需求。上海最大的房地产开发商绿地集团计划在其高端住宅项目中配套医院、诊所等医疗保健设施，打造高端物业新维度。国内第三大房地产开发商万科以及保利、融创等竞争对手纷纷着手开发配套医疗卫生设施的住宅项目，绿地也投身到了这场竞赛当中。近期，融创披露了的22个住宅项目中，包含首个配套了医疗卫生设施的项目。该项目坐落于青岛市，配套

ups founded in the past decade by accomplished Chinese scientists trained in the West. Armed with billions of dollars in venture capital investments and funds from initial public offerings, these companies are at the forefront of the Chinese pharmaceutical industry's stunning rise from generic, off-patent producers to innovators and inventors. China has been a major generic drugs manufacturer and exporter of raw materials for the past 15 years, with little investment in innovative drugs development until recently. Some 301 generics were granted marketing approval in 2019. The industry produced 3.57 trillion RMB (US$504 billion) of pharmaceutical products in 2018, with 1.71 trillion RMB in domestic sales, according to China Pharmaceutical Innovation and Research Development Association. Of the 51 innovative drugs approved in China during 2019, 10 were locally developed, an 11% increase from 2018. Before that only 38 were developed in the decade up to 2017. The entrepreneurs and their backers have been greatly encouraged by Beijing's health care and drugs approval system reform in recent years. The state health insurance system now has more money to cover the cost of innovative drugs, approval for new drugs is greatly expedited and the financial viability of drug discovery projects has vastly improved. The nation's young biotechnology industry has made major inroads into the oncology market, which is also where most of the innovation is focused globally. Many of these companies have pledged to continue researching and developing treatment for the Coronavirus (Ng, "Chinese Biotechs Join the Worldwide Race to Find a Coronavirus Cure").

Wuhan was already a cause for concern among doctors long before it became synonymous with the novel coronavirus pandemic. In as recent as March 2019 a meeting organized by the Cross Straits Medical Association and backed by the World Organization of Family Doctors, came to the conclusion that Wuhan, the biggest city in central China, was in urgent need of health care reform. Its already overburdened hospitals needed to be augmented and supported by a network of clinics, which would function as first ports of call for patients. The reforms could even serve as a blueprint for other parts of China. Unfortunately, their analysis proved to be prophetic. Covid-19. And as the pandemic tapered off in Wuhan and mainland China, a blueprint did in fact emerge, which is being followed by governments across the globe: entire cities were locked down, travel restrictions have been put in place and the production of medical items ranging from ventilators to hand sanitizers has assumed paramount importance. In the last round of reforms Beijing carried out about a decade ago, it targeted universal health insurance coverage and the provision of affordable health care services for all by 2020. The coronavirus pandemic drew in online medical service providers to fill some of the gaps left behind by the last round of reforms – and it is these services and providers that China is expected to call upon as it strengthens its health care infrastructure over the coming decade. Health expenditure accounts for about 10% of GDP in the UK and Canada, and about 5% to 6% in Singapore and in Hong Kong. In China it accounts for 5% and is rising. Even before Covid-19, its annual health care spending was expected to outpace revenue by 2.9 percentage points between 2030 and 2035, according to a World Health Organization-World Bank joint report released last year. That is why Beijing says it wants a "more balanced" system, with the private sector providing high-quality services and sharing the public sector's burden. China issued "Opinions on Deepening the Reform of the Medical Security System" in March 2020, with the aim of having a relatively mature health care system in place by 2030. This system will be built on a more developed medical insurance sector, market-led pricing mechanisms for medicines, more use of big data, as well as new internet and medical services. Digitalization has a key role to play, as it will drive the implementation of family medicine, allowing general practitioners to play a gate keeping role. The Covid-19 outbreak has accelerated the growth of online medical platforms in China. Private digital medical services providers such as Ping An Good Doctor, Ding Xiang Yuan and Chunyu Doctor provide such services as self-diagnosis, science popularization and assessment of suspected cases (Sito, "How Wuhan and the Coronavirus Are Shaping China's Medical Reforms").

Big players such as Chinese conglomerate Fosun International have also been drawn to the sector. But such platforms cannot solve China's health care problems on their own. China needs to develop an integrated health care ecosystem that could provide medical services underpinned

有一个诊所，还有茶馆等休闲场所，目标客户为老年人。绿地集团旗下上市公司绿地香港正在中国西南地区云南省昆明市开发一个超大型地产项目，该项目投资306亿元人民币（约合44亿美元），是一个开创性的"医疗保健城"项目。该项目占地面积为300万平方米，配套有一个医疗商城和两家世界级医院，既有康复也有娱乐设施。绿地香港发布了"H1"大健康品牌，并计划将该品牌推广到全国各地的其他项目中。绿地集团下属企业中，只有香港上市的绿地香港目前专注于打造配套医疗卫生设施的地产项目（Ren）。

医疗保健投资者

今年，医疗保健企业加快了在香港和国内资本市场募资的步伐，一是因为政府政策支持，二是因为投资医疗保健行业的投资者大增。为抗击新冠疫情，政府加大了相关财政开支，全球展开了疫苗研发竞赛，更多的消费者使用科技医疗服务，医院人满为患问题得到缓解。在这个过程中，医疗保健公司趁势获得了极大发展。从开年到现在，医疗保健行业相关企业在港交所、上交所和深交所通过公开发行和其他股权交易募资79亿美元，较2019年的27亿美元大幅增长。新冠疫情的爆发促使中国政府加大对突发公共卫生事件处置机制的投入，加强医疗卫生体制，防范疫情。过去五年间，中国政府还实施了一系列政策支持医疗保健行业的发展，包括加快新药审批速度和提升创新药的医保报销比例。这是第一次中国政府在研发方面的开支超过美国（Tudor-Ackroyd）。

科技进步

在强劲的投资者需求的推动下，医疗保健行业企业纷纷寻求上市。总部位于上海的放射医疗服务提供商海吉亚医疗控股有限公司就是其中之一，海吉亚医疗拟于港交所上市前募资3-4亿美元。海吉亚医疗的业务网络包括10家肿瘤专科医院，分布于国内六座城市，可容纳2000张床位。私募股权投资公司华平投资通过下属机构持有海吉亚医疗17.2%的股权。据一位交易知情人士透露，海吉亚医疗正与其他数家基石投资者洽谈最终条款，拟于7月底前在香港主板上市。据称，以2020年放疗相关服务收入为衡量指标，海吉亚医疗是国内最大的肿瘤科医疗健康集团。2019年，海吉亚医疗旗下医院网络的就诊患者人数达94万，同比增长了24%。公司向位于国内9个省的15家医院合作伙伴提供放疗服务。据弗若斯特沙利文咨询公司发布的预测数据，2019年，中国新增癌症患者总数为440万，至2025年将增至510万，为全球最多（Lee）。

中国已启动建设国家放射影像数据库，这是中国首个标准化医学影像平台，旨在促进患者信息分享，并进一步推动基于人工智能数据训练的智能医疗保健行业的发展。该平台建设项目在一个行业会议上正式启动，将有350到400家医院参与。该平台由国家卫健委立项审批，中华放射学会承建。核磁共振成像（MRI）和计算机轴向断层（CAT）扫描等放射影像技术被广泛应用于辅助疾病诊断。肺部CAT扫描是诊断新冠肺炎病例的关键方法之一。医疗数据是避免误诊和促进临床研究发展的有效工具。大部分临床诊断都依赖于医学影像，而能够处理海量数据的人工智能技术将会是医生进行临床诊断的得力工具。比如，中国使用超级电脑配合人工智能诊断系统分析胸片，对新冠初期患者进行诊断。这种方法能够在10秒内分析300张CAT扫描影像，而一位有经验的医生需要约15分钟才能完成这个工作（Feng）。

人工智能的发展

2017年，中国公布了首批国家新一代人工智能开放创新平台名单，其中腾讯公司的任务是带头研发用于医疗诊断的计算机影像技术。很快，腾讯推出了一个能够诊断多种疾病的人工智能医疗影像平台和一个供国内医疗人工智能公司共享与合作的云生态系统。同年，科大讯飞公司开发的一款智能机器人通过了中国执业医师资格考试，人们认为它能够改变中国紧张的医疗体系的发展格局。这些进展是人工智能在医疗领域一系列应用的其中例子，人工智能正在帮助中国应对新冠疫情。专家表示，许多技术在控制疫情方面发挥了非常重要的作用。反过来，这又将大大丰富新兴技术在中国的应用场景，并促进整个市场发展。据《南华早报》的一份报道，鉴于大量患者以及他们产生的数据所提供的"相当大机会"，诊断是中国医疗行业大多数人工智能新项目的焦点领域。事实证明，此类应用对医院有帮助，因为医院通常人满为患，而且有更多人急于知道自己是否感染了新冠病毒。平安科技公司联合重庆和深圳的卫生部门研发了一个人工智能疾病预测模型，其准确率超过90%。此外，中国人工智能初创企业云图科技、电信设备供应商华为以及阿里巴巴（《南华早报》股东）正在提供人工智能支持的服务，帮助分析医院用于诊断疑似新冠患者的CAT图像（Dai）。

医疗旅游

中国计划开拓广阔的医疗旅游市场，将地处热带的海南省打造成顶尖医疗旅游目的地。为了建设海南自由贸易港，中国政府还在海南省设立了"医疗特区"，实施了一系列优惠政策，让海南能够进口内地难以获得的医疗设备、技术和药品。据海南博鳌乐城国际医疗旅游先行区管理局副局长刘哲峰介绍："国人去美国和日本做大手术，去泰国进行辅助生殖治疗，去乌克兰做美容注射，去韩国整容。""国人对海外医疗旅游的需求非常巨大，但是完全没有必要。"根据国家主席习近平的指示，要到本世纪中叶将海南自由贸易港打造为具有国际影响力的高水平自由贸易港。乐城先行区是海南自由贸易港的11个重

by a solid policy and regulatory framework and a sound financing system. It should aim for balance between private and public services. One concern is the limited amount of manpower available in the healthcare industry. This is an area where technology can play a huge role, especially AI, which can alleviate such shortages. AI-assisted diagnoses will become more common because of rising demand for health care services. But the shortage of doctors will remain and needs addressing. The World Organization of Family Doctors has worked with the Chinese Medical Doctors' Association to establish an Academy of Medicine responsible for postgraduate training and standards. It also plans to assist China with the establishment of a statutory regulatory organization like Hong Kong's Medical Council, which will handle the registration of qualified eligible medical practitioners and issue the code of professional conduct and guidelines to ensure quality and safety of medical services. The most difficult reforms will involve the perception of China's public hospitals. The country does not lack private hospitals or clinics. But private hospitals lack the accumulation of reputation, which explains why patients rush to famous public hospitals (Sito).

Healthcare Centers in Communities

Greenland Hong Kong is building what it calls 'health care towns' in Kunming, in China's Yunnan province. Greenland, Shanghai's largest developer, is looking to add a new dimension to its high-end residential properties by building medical facilities such as hospitals and clinics, as Covid-19 ushers in a wave of stronger demand for health care. The Shanghai-based developer is joining a race against a clutch of rivals including China Vanke, the mainland's third-largest home builder, China Poly and Sunac China in developing residential complexes that include health care facilities. Sunac has recently unveiled the first of 22 planned projects that will include medical facilities. The residential project in Qingdao contains a health clinic as well as leisure facilities such as tea houses, geared towards the elderly. Greenland Hong Kong, the Hong Kong-listed unit of Greenland Holdings, is ploughing 30.6 billion RMB (US$4.4 billion) into a mega project in Kunming, in southwest China's Yunnan province, in what it described as a pioneering move to build a "health care town". The 3 million square-meter development will be home to a medical mall – where habilitation and entertainment facilities live side by side – and two world-class hospitals. Greenland Hong Kong has launched a brand, H1, for its health care services and plans to expand it to other projects across the nation. It is only the group's Hong Kong-listed unit currently focusing on creating developments that include health care amenities (Ren).

Healthcare Investors

Health care companies raised capital at a faster clip in 2020 in Hong Kong and mainland China, encouraged by supportive government policies and investors clamoring to participate in the sector's growth. The companies were riding on tailwinds created by increased government spending in the fight to contain the coronavirus pandemic, the race to find a vaccine and rising consumer adoption of technologies designed to supplement China's overcrowded hospitals. Healthcare-related firms raised US$7.9 billion in Hong Kong, Shanghai and Shenzhen via initial public offerings and other equity sales so far in 2020, up from US$2.7 billion in the same period in 2019. The coronavirus pandemic has triggered a wave of investment by Beijing to cope with the emergency and fortify its health care system against future pandemics. Beijing has adopted a raft of policies in the past five years to support growth in the industry, including faster new drugs approval processes, and allocation of more funds to pay for innovative drugs from the national health insurance scheme. For the first time, the Chinese government is outspending the US in terms of R&D (Tudor-Ackroyd).

Technological Advances

Hygeia Healthcare is seeking to raise US$300 million to US$400 million prior to a listing in Hong Kong, as the Shanghai-based radiotherapy service provider joins a flurry of IPOs launched by companies in the medical sector riding on strong demand from investors. The company, in which private equity firm Warburg Pincus owns a 17.2% stake through an affiliate company, operates a network of 10 oncology hospitals in six provinces in China, providing over 2,000 beds. The company

点园区之一，现有数十家医院。海南省正实施减税政策吸引企业前来发展，并为游客提供高额的免税补贴。这一发展规划还有助于开拓中国难以穿透的医疗行业。海南省政府官员表示，乐城先行区将能提供许多特许医疗服务，包括VenaSeal静脉曲张腔内闭合手术系统和源自美国企业Impulse Dynamics的新一代心脏收缩力调节器（Optimizer Smart）植入手术。乐城先行区还将提供领先的癌症疗法。乐城先行区现有200款进口医疗解决方案，新产品审批时限缩短到了一个工作日。到2020年底，乐城先行区的年均接待能力将达20万人次，包括患者和游客，较去年的7.5万人次大幅提升，医疗创收将达6.4亿元人民币（约合9050万美元）（Huifeng）。

is in the process of finalizing terms with several cornerstone investors, according to a person familiar with the deal, adding that it is aiming to list on the main board before the end of July. Hygeia Healthcare claims to be China's largest oncology health care group in terms of revenue generated from radiotherapy-related services in 2020. In 2019, it recorded more than 940,000 patient visits among its network of hospitals, up 24%. It provides radiotherapy services to 15 hospital partners in nine provinces. Incidences of cancer in China are expected to grow to about 5.1 million by 2025, up from about 4.4 million in 2019, which is the highest in the world, according to a projection by consultant Frost & Sullivan (Lee).

China has initiated a national radiology image database, the country's first standardized medical image platform, to facilitate the sharing of patient information and take a further step towards smart health care powered by data-trained artificial intelligence technology. The project, officially initiated at an industry-wide conference over the weekend, will involve 350 to 400 hospitals. It has been approved by the National Health Commission and will be built by the Chinese Society of Radiology (CSR). Radiology imaging, such as magnetic resonance imaging (MRI) and CAT scans, is widely used to help diagnose diseases. CAT scans of lungs have been one of the key methods of detecting Covid-19 cases. Medical data is a valuable tool to avoid misdiagnosis and to help advance clinical research. Most clinical diagnoses depend on imaging, and AI will be a very handy tool to help doctors with diagnostics if it is trained with a large pool of data. For example, one of China's supercomputers was used in conjunction with an artificial intelligence diagnostic system to help in early identification of Covid-19 patients based on a chest scan. It can analyze 300 images generated by a CAT scan in about 10 seconds, something that would take an experienced doctor about 15 minutes to do (Feng).

AI Growth

When China announced its initial team of national artificial intelligence (AI) champions in 2017, Tencent Holdings was tasked with leading the development of computer vision for medical diagnosis. Soon after, the company launched an AI medical imaging platform capable of diagnosing a broad list of illnesses, and a cloud-based ecosystem for sharing and collaboration between domestic health care AI companies. The same year, an intelligent robot developed by iFlyTek passed China's written national qualification exam for doctors, in what was hailed as a game changer for the country's strained health care system. These developments are among a range of AI applications in health care which have helped the country's response to the coronavirus outbreak. A lot of technologies have played a very important role in containing the outbreak, experts say. In return, this will largely enrich the application scenarios of emerging technologies in China and will promote the development of the entire market. Diagnosis is the focus of most AI initiatives in China's health care sector, given the "sizeable opportunity" presented by the large number of patients and the data they generate, according to the Post's report. Such applications are proving useful at hospitals, which are beset with plenty of patients and more people anxious to know if they could be infected with the virus that causes Covid-19. A prediction model developed by Ping An Technology, for instance, is helping health care authorities in Chongqing and Shenzhen predict outbreaks ahead of time with accuracy rates of more than 90%, according to the report. Meanwhile, Chinese artificial intelligence start-up Yitu Technology, telecommunications gear supplier Huawei and Alibaba Group Holding – the parent company of the Post – are offering AI-backed services to help analyze the computerized axial tomography (CAT) scans used by hospitals to diagnose patients suspected to have the coronavirus (Dai).

Medical Tourism

China plans to tap its vast market for health tourism by transforming tropical Hainan into a destination for cutting-edge medical treatment. As part of its ambitious plan to turn the island into a free-trade port, Beijing has established a special health care zone that under preferential policies will allow it to import medical devices, technology and drugs that are hard to access in the mainland. "Chinese go to the United States and Japan for major operations, Thailand for

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infertility treatment, Ukraine for beautification injections and South Korea for plastic surgery," said Liu Zhefeng, a deputy director of the Boao Lecheng International Medical Tourism Pilot Zone. "The demand for overseas medical tourism is huge, but totally unnecessary." The medical park, which is also known as Boao Hope City and currently consists of about a dozen hospitals, is one of 11 key zones underpinning President Xi Jinping's vision to create an internationally influential free-trade hub by the middle of the century. Hainan is cutting taxes to lure businesses and providing generous duty-free allowances to tempt shoppers. But part of the plan also includes a bold opening up of China's difficult-to-penetrate medical sector. Officials in Hainan have claimed Lecheng will offer a number of exclusive treatments in China, including VenaSeal, a therapy from Medtronic designed to treat patients with varicose veins, and Optimizer Smart, a heart therapy treatment from US firm Impulse Dynamics. There will also be cutting-edge treatment for cancer. The special health care zone now has 200 imported medical solutions and the approval period for new products could be as short as one day. By the end of 2020, the zone should be able to accommodate 200,000 visitors a year, including patients and tourists. That would be a huge jump from the 75,000 people that visited last year, helping to drive revenues of 640 million RMB (US$90.5 million) from medical treatment (Huifeng).

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2.15 Education Industry

Key Take-Aways

• While the Communist Party has adopted many of the same sanitation and distancing procedures used elsewhere, it has rolled them out with a characteristic all-out, command-and-control approach that brooks no dissent. China's top-down, state-led political system allows the party to drive its vast bureaucracy in pursuit of a single target — an approach that would be nearly impossible anywhere else in the world.

• The business-to-business (B2B) segment of the total K-12 after school education market is projected to surpass 100 billion RMB by 2025.

• The NPC declared that starting in 2021, schools should conduct 'age-appropriate sex education for minors', helping them protect themselves against abuse and sexual harassment.

• China's private education market is booming, set to grow at 9% year-on-year until 2020 to reach a value of US$330 billion. This market growth will occur not just in the quantity of education but also in quality.

Covid-19 Repercussions

The novel coronavirus swept across China in January 2020, with the Chinese New Year celebration underway. By late March, as U.S. schools were just beginning to shut down, Chinese schools had already been closed for about 10 weeks—and some were beginning to reopen.

The education sector was squarely in the middle of China's fight against COVID and the after effects continue to be felt: In early April, the government announced it would delay important exams, including the gaokao, the university entrance exam in China. Few countries have central governments that literally call the shots for the private sector. China does. Officials made many big decisions about when schools and education companies would open or close, and what resources were available to support learning. China's Ministry of Education (MOE) issued school closure policies for the entire country between January 20 and February 8, affecting China's 278 million students across primary and postsecondary grades. Wuhan, the epicenter of the epidemic, was locked down on January 23. Tutoring centers and daycares closed. The central government suggested K-12 and higher-ed delay starting the new semester and postpone any regional and national exams. But along with shutting down bricks and mortar schools, China also beefed up two existing virtual ones. One platform, Empower Learning, was built by the government, in collaboration with China's seven largest edtech companies, offering digital K-12 curriculum. The platform provides live streaming courses that students can tap into from their phone or computer at home. The MOE also created its own site: Educloud. This site features videos, teaching plans and communities of the best teachers' lessons recorded over the past eight years. Although both platforms existed before the COVID crisis to provide free online learning resources to students, they added scheduling tools to help educators select and share materials with students and widely circulated them to the public once the schools closed. After February 8, the MOE worked with provincial education departments to pick dates for reopening schools. Although not all schools opened at the same time, the government sent clear signals about changes. Not all students either can—or will—show up for online classes. And especially in remote China, where access to bandwidth and even to computing devices is uneven. Worried about students who are unable to access digital content, the MOE announced that educators were prohibited from introducing new curriculum until the new semester started. The Ministry did encourage educators to use online

2.15 教育产业

关键要点

· 在各地推广卫生防疫和社交隔离等措施的同时，中国共产党在抗击疫情方面也展现了其全力以赴、令出必行、不容置疑的独特风格。中国这种由上至下、政府占据领导地位的政治制度使中国共产党能够集中力量办大事——这在全球其他地方几乎是无法实现的。

· 据估计，至2025年，整个基础教育（K12）阶段课后辅导市场中，企业对企业（B2B）细分领域的市场规模预计将超过1000亿人民币。

· 据全国人大常委会宣布，自2021年起，学校应展开"针对未成年人的适龄性教育"，以助未成年人防范性侵和性骚扰。

· 中国私立教育市场正蓬勃发展，2020年该市场的规模将同比增长9%，总值达3300亿美元。教育市场的增长将不仅体现在数量层面，还将体现在质量层面。

新冠疫情所带来的影响

2020年1月，正当中国人民欢庆春节之际，新冠疫情席卷了全国。到三月底，美国学校刚刚开始停课的时候，中国学校已经停课约10周——但已有部分学校开始复课。教育行业实实在在地处在了中国抗击新冠疫情的战斗之中，相关事后影响不断浮现：四月初，中国政府宣布将会延期举办许多重大考试，其中包括中国的大学准入考试——高考。除了中国以外，其他国家的中央政府很少会对私人领域有如此实质性的决断权力。中国政府对许多重大问题有决定权，包括学校和教育机构何时开课、何时停课，提供哪些资源来支持教育和学习的继续发展。中国教育部颁布政策，要求全国各地的学校在1月20日至2月8日期间停课，涉及到2.78亿中小学生。疫情重灾区武汉于1月23日开始封城。教辅中心和托儿所遭关停。中央政府建议中小学及高中、大学推迟新学期开始日期，并延期举办区域性、全国性考试。中国政府关停实体学校的同时，也加大了对于两类网校的支持。中国政府与国内最大的七家教育科技企业合力打造了网络云课堂平台，提供K12课程。该平台提供直播课程，学生可以通过手机或电脑在家上课。此外，教育部还创建了专属网站：华为云（Educloud）该网站有视频、备课等功能，并云集了过去八年内的各种名师课程录像。这两个平台在新冠危机爆发前就已经存在，为学生提供免费的学习资源。疫情的爆发导致学校停课后，平台新增了课表工具，协助教育工作者选择教辅资料、与学生分享并将其公布出来。2月8日以后，教育部与各省级教育部门协商确定学校复课的日期。虽然并非所有学校同时复课，但政府已宣布要调整停课相关的政策。并非所有学生都有条件上网课，也并非所有学生都愿意上网课。尤其是在中国偏远地区，网络宽带不普及、电脑设备分布不均。出于对无法上网课的学生的关爱，教育部宣布，在正式开学前，学校不得提前进行新学期课程网上教学。但教育部也鼓励学校安排一些个人健康防护，如心理健康、寓教于乐方面的网上学习内容。学生和家长可以自由选择在学校或教育机构学习其他课程。在这方面，广东省教育厅的举措显得更为严苛，其制定了详细的工作指引，规定每节网课不得超过20分钟。（Ning新闻）

背景

古语云："富家不用买良田，书中自有千锺粟"，确实有不少中国人执着于追求教育方面的成就，更准确地来说，大部分中国人认为，刻苦学习能给人带来成功。相比其他新兴市场中的家庭，即使中国家庭的孩子更少，在同等收入水平下，中国家庭在教育方面的花费通常是其他国家的两倍有余。富裕家庭大多会付钱送孩子入读私立学校或出国上大学。不过，对于不那么富裕的家庭来说，市场上也有各种各样名目繁多的服务，包括课后辅导、兴趣班等，这些服务成为了渴望孩子成才的家长们新的战斗前线。新东方、VIPKID等企业搭建的在线教育平台已通过深度挖掘服务需求而打造出了价值百万的品牌。从更宏观的角度来看，这是因为中国社会存在着一种过度追求孩子成才的文化——有时候，这种追求显得有些走火入魔了。许多中国家长甚至在孩子达到学龄正式入学之前就开始为其上大学做准备了。对于孩子而言，父母的这种期望似乎有点过头了，但事实上，随着孩子年龄的增长，其背负的压力是越来越重的。有时候，会出现灾难性的后果。中国最好的高中生通常在全国性考试中得分更高。评论家常常提到一个根深蒂固的说法：相比其他群体，受孔子儒家学说影响深刻的群体，对学校教育更为重视。孔子（公元前552-479年）是一位中国古代哲学家，可以说是中国历史上最有影响力的人。孔子倡导的社会道德体系一直留存至今。孝道、仁义是其哲学思想的核心信

content concerning personal well-being, such as mental health and entertainment resources. Students and parents had leeway to take classes in other subjects from their school or edtech providers. The Department of Education of Guangdong province went even further, releasing detailed guidance limiting each online class to 20 minutes (Ning).

Background

An old saying in China is that 'to enrich your family, there is no need to buy good land, as books hold a thousand measures of grain' and it's true that many Chinese are fixated on educational achievement, or perhaps more accurately by the view that people who study hard get ahead in life. Households there typically spend more than twice as much of their income on education as families in other emerging markets, despite the fact that they have fewer children. The wealthiest pay for their kids to go to private schools or send them abroad to university at a later age. But there's a huge range of services available to families of lesser means too, including after-school tutoring and internet-based teaching, which has emerged as another new frontier for parents who want their kids to study hard. Online platforms from companies like New Oriental and VIPKID have built up multi-billion-dollar brands by tapping into deep demand for their services. The bigger picture is of a culture that is captivated by personal improvement – and probably one that gets a bit too crazy about it at times. Parent often start preparing their college before they even enter a traditional classroom. That sounds over the top for such a young child but the pressure on kids to succeed actually increases with age. The results can sometimes be disastrous. The best of China's high-school students generally score highly in standardized tests at an international level. Commentators often seize on a deep-rooted explanation: that 'chopsticks societies', or those with Confucian heritage, put a higher value on schooling than others. Confucius, a philosopher who lived from 552 to 479BC, is arguably the most influential person in Chinese history. He introduced a system of social ethics that has survived into the modern day. Filial piety and moral behavior were the core tenets in his philosophy but he was also a huge exponent of education. Before Confucius, schooling and study was reserved for aristocrats, but the great sage broke the ruling class monopoly by arguing for education for all. In the traditional Confucian view, education is interpreted in a broader way, however. The family is the main place for children to learn and the primary goal is that they grow into adults that contribute to the world around them, ridding themselves of childish whims. Taking that approach in households higher up in the society might mean aspiring to educational achievement in its more academic sense. But at a lower level, it was more likely to imply the mastering of a skill so that the person could contribute financially to the family's wellbeing (WIC Education in China).

Labor Education

In March, China issued a guideline to improve the country's "labor education" as part of efforts to advance education reform and improve the quality of compulsory education. Referring to it as the "biggest shortcoming" in China's education system, the guideline looks to extend labor activities, ranging from household chores to on-campus labor and voluntary community services, to primary and secondary schools and even higher levels. The guideline says it aims to encourage kids and youngsters to participate in more manual labor to boost their spirit of hard work. The policy is the latest undertaking in a broader initiative to reform the Chinese education system to promote modernization. President Xi said priority should be given to education to speed up its modernization and develop education that meets people's needs. Xi stressed on education in striving for China's national rejuvenation, social progress and national innovation capability. By the end of 2020, China aims to build itself as one of the most innovative countries, and by 2030 it aims to be a leading innovator so as to be a world-leading power in science and technology by 2049. To realize the goals, the guideline issued in March asked schools to nurture and protect students' curiosity and imagination, arouse their interest in learning, and encourage them to be more creative and innovative. Chinese government's funding on education remained above 4% of its GDP in 2019, the eighth consecutive year, according to a

条，同时，孔子也是教育的大力拥护者。在孔子之前的时代，私塾、学习都是贵族的特权，但孔圣人倡导有教无类，打破了统治阶级对教育的垄断。但是，从传统儒家思想角度看来，教育的意义更广泛。家庭是孩子学习的主要场所，学习的首要目标是长大成人、为社会做贡献、褪去童真。从更高的社会层面来说，学习意味着追求更贴近学术意义上的教育成就。但从比较接地气的层面来说，学习的目标更贴近于掌握一门技术，从而为家庭福祉做出经济上的贡献。

劳动力培训

今年三月，政府发布了关于加强"劳动教育"的指导意见，以期促进教育改革和提高义务教育的质量。根据该指导意见，劳动教育为中国教育体系的"最大不足"，应当在中小学乃至更高学段的学生中广泛开展劳动活动，包括家务、校园劳动、社区服务等。该指导意见旨在鼓励儿童和青少年更多地参与到劳动实践中去，培养其艰苦奋斗精神。该政策与中国近期开展的教育体系现代化改革一脉相承。国家主席习近平称，必须优先发展教育，加速实现教育的现代化改革，发展符合人民需求的教育体系。习近平强调，教育对于实现中华民族伟大复兴、社会进步和增强国家创新能力有着重大作用。中国提出了到2020年进入世界创新型国家行列、2030年跻身世界创新型国家前列、到2049年建成世界科技强国的目标。为实现这一目标，三月份发布的指导意见要求学校培养并保护学生的好奇心和想象力，提升学习兴趣，鼓励学生培养创造力和创新能力。据教育部2020年6月发布的数据显示，到2019年，中国政府对教育的投资已连续八年保持在高于国民人均生产总值4%的水平。2019年，全国教育开支约为5.01万亿人民币，相较于2018年增长了8.74%。中国政府很清楚地知道，为了实现打造世界教育强国的宏伟目标，需要解决城乡教育差距的问题以及贫困家庭、地区退学率高的问题。习近平反复强调，教育是阻断贫困代际传递的关键途径，我们必须保证贫困地区儿童接受良好教育的公平机会。决策者正逐步提升对贫困地区儿童的资助。仅2018年，全国获财政补贴的贫困地区学生人数已接近1亿名。国家还鼓励更多年轻人入读中等职业教育学校，学习工作技能、为进入劳动力市场做好准备，培养高质量的职业技能。全国共有近347所中等职业教育学校，惠及各地极端贫困学生近60万名，2017年，约有14.2万名中专毕业生找到工作，就业率提升至逾90%。(CGTN)

私立学校

受新冠影响，学校停课，许多家长对私立学校提供的线上课程感到不满，要求退还学费。中国教育部于2020年4月发布通知，禁止学校提前收取学费。然而，对于私立学校而言，预收学费是维持其运营的唯一途径。因疫情导致的收入减少已经使一些私立幼儿园处在停业的边缘。家长希望学校尽量提供与线下教学对等的线上教学服务。但他们也抱怨道，线上教学对家长造成了"过度"负担，因为家长必须全程陪同孩子听课。许多家长的英语技能不够好，无法辅导孩子的功课。(Nikkei)

尽管如此，新冠疫情并未对中国私立学校2020年的营收造成过于严重的不利影响，因为退还学费的风险还是很低的。随着更多机会出现，财务灵活性较强的私立学校考虑实施海外扩张。惠誉评级 (Fitch Rating) 的观点认为，中国私立学校的收入高度集中于对学费的收取，因此退还学费的风险很低。学校停课期间，私立学校采取了线上课程教学的方式，并计划在重新开学后通过周末补课和暑假补课的方式来补上因疫情而缺少的学时。私立学校面临的现金流挑战也不大，因为私立学校通常有很稳固的财务报表，它们盈利能力强，学费收入稳定、及时且可预收，因此它们的经营性资金流可保持为正，且杠杆水平相对较低。对于租赁资产占比重的私立学校来说，自由现金流水平尤其强劲。然而，2020年，私立学校的营收增长有所放缓，原因是录取率增长减缓，经济下行环境下收取学费的能力降低，来自餐饮、游学等副业的收入减少。幼儿园面临的营收下降问题则尤为显著，因为政策不允许幼儿园进行线上课程教学，而且幼儿园通常是最后复课的。比起从中小学，家长也更容易做出让孩子从幼儿园退学的决定。虽然各地政府公布了各种各样的措施来扶持幼儿园，比如直接补贴、减免租金和税收优惠待遇等，但这些政策主要惠及的是全包型幼儿园。一些幼儿园难以处理长期现金流紧张的问题，尤其是那些按月收费的幼儿园。预计在中期看来，财务灵活性强的中国私立学校将持续探索合适的海外收购目标。近年来，处于领先地位的中资国际学校运营商一直在扩张海外业务，作为它们的长期增长战略。中国最大的国际学校运营商博实乐教育集团于2019年收购了三家英国私立学校，使旗下海外学校数量达到33家，海外学校营收对其总营收的贡献率由2019年的7.1%提升至了2020年的33.9%。枫叶国际学校也于今年年初收购了马来西亚一家私立学校运营商。

学生辅导以及课外活动

2012年至2016年期间，中国英语辅导市场翻了一番，达850亿人民币 (约合120亿美元)。预计到2021年，该市场的市场规模将扩大至2400亿人民币。然而，受新冠疫情影响，市场对于传统课堂教学的关注大不如前，中国封锁边境线的措施也造成了英语母语外教人手不足的问题。中国的英语教学中心通常以外教为噱头收取更高的学费。许多辅导机构根本无法维持运营。其中包括大型美资企业迪士尼的下属企业——迪士尼英语。迪士尼英语于2008年进驻中国市场，填补了中国私立教育领域的早教这一细分市场，其提供以课堂为基础的课程教学服务，专注于通过唱歌、角色扮演和互动游戏等方式进行英语

release by the Ministry of Education in June 2020. In 2019, the total spending on education in China was around 5.01 trillion RMB, up by 8.74% from 2018. To achieve the ambitious goal of shaping itself into a world education powerhouse, the Chinese government is well aware that it needs to address the urban-rural education gap and the relatively high drop-out rate in the most-deprived families in poverty-stricken areas. Xi has repeatedly said education is key in breaking the inter-generational transmission of poverty. Children living in poor areas must be ensured fair access to quality education, Xi has said time and again. Policy-makers are increasing financing for children living in poverty. In 2018 alone, nearly 100 million students from families with financial difficulties were subsidized nationwide. It also encourages more youngsters to register in secondary vocational schools to help upskill and integrate young people into the labor market and provide high quality technical skills. There are now 347 secondary vocational schools enrolling nearly 600,000 students in various areas hit by extreme poverty, with 142,000 vocational graduates from these schools landing jobs in 2017, bringing the employment rate to over 90% (CGTN).

Private Schools

Private international schools in China are being asked for refunds from parents unhappy with online learning programs provided by schools that are closed due to the coronavirus pandemic. China's Ministry of Education issued a notice in April 2020 forbidding schools to charge tuition in advance. But for many private schools, advance payment was the only way to keep operations going. Lost revenue during the epidemic has already put some private kindergartens at risk of closing. Parents wanted the school to offer online teaching equivalent to offline classes as much as possible. But they also complained that the online education created an "overwhelming" burden for parents, who have to sit through classes with younger children. Many parents do not have good enough English skills to help their children with lessons (Nikkei).

Nevertheless, the coronavirus pandemic did not significantly depress most Chinese private schools' revenue in 2020, given the low risk of tuition refunds. Private schools with strong financial flexibility saw overseas expansion as more opportunities arise. Fitch Ratings believes there is low risk of tuition refunds for most Chinese private schools, whose revenues are highly concentrated in tuition fees. Private schools have been offering online academic courses during school closures and are planning make-up weekend and summer classes after school restarts. Cash-flow challenges are also low for private schools, which generally have strong financial profiles, supported by robust profitability and positive FFO generation resulting from stable, recurring, upfront-paid tuition fee revenue, and modest leverage. Free cash flow is particularly strong for those with a high proportion of rental properties. However, private schools' revenue growth slowed moderately in 2020, caused by weaker enrolment growth, reduced ability to raise tuition fees during the economic downturn, and reduced fees from ancillary service, such as food and study tour fees. Kindergartens, however, faced a significant revenue drop as they are not allowed to offer online courses were the last to re-open. Parents were also more likely to withdraw kindergarteners from school. Although local governments have announced various measures to support kindergartens, such as direct subsidies, rental deductions and preferential tax treatments, those policies mainly benefit inclusive kindergartens. Some kindergartens struggled to cope with the prolonged cash-flow strains, especially those that collect tuition fees month by month. Chinese private schools with strong financial flexibility are expected to continue to explore suitable overseas acquisition targets over the medium term. Leading international school operators in China have been expanding overseas in recent years as a part of their long-term growth strategies. Bright Scholar, China's largest international school operator, acquired three private schools in the UK in 2019, pushing its revenue contribution from overseas schools to 33.9% of total revenue in 2020, from 7.1% in 2019. Maple Leaf also acquired a private school operator in Malaysia earlier this year (Fitch).

沟通教学。但是，尽管迪士尼英语搏出了一片新天地，得以发展壮大，却免不了受到新冠疫情的致命打击。迪士尼英语于2020年6月宣布停业，据称停业是针对消费者偏好转变所作出的举措，越来越多学生开始转向线上学习，而新冠疫情的肆虐加速了这一趋势。这则新闻标志着迪士尼在华发展道路上一次罕见的倒退。迪士尼英语的目标市场向来是规模较大、较为富裕的城市，自2020年初开始，迪士尼英语的课堂分布在北京、上海、广州、深圳、成都和南京。迪士尼英语的主要客户为2-12岁学龄儿童，每年学费约为2万美元，约含100个学时。新冠疫情爆发后，教育机构被迫转向线上教学。今年三月，迪士尼英语一度尝试转上线上教学，但一直难以适应这种转变。不仅教师难以适应新的教学形式，而且迪士尼英语的教学风格和课程内容也没有很好地过渡到线上教学，客户体验也令人不甚满意。虽然迪士尼英语是较早进入儿童英语辅导市场的玩家之一，但如今已难以跟上市场的变化节奏。除了更传统的课程之外，家长们现在还希望辅导机构提供一系列直播课程。其他教育平台的崛起导致相应线上学习工具的需求增加，这些工具通常与微信和其他社交媒体相结合。有评论家认为，虽然迪士尼英语的课程内容在过去被认为是很有创造性的，但是却并不适合在应试教育中帮助学生提高考试分数。迪士尼的知识产权使其可以在课程中使用米老鼠、小美人鱼等形象。实际上，加快迪士尼英语退出在华业务步伐的原因，可能在于迪士尼糟糕的二季度报表：2020年二季度，每股盈利较2019年1月-3月期间的数据下降了91%。鉴于母公司迪士尼希望节约成本，便不再对本就面临发展困难的在华教育业务进行补贴了。(WIC Minnie)

线上学习

线上学习使家长得以了解孩子课堂学习的情况。通过在短期内开发师生皆可使用的线上学习工具，大型科技公司得以在新冠疫情中获得发展。(Ning新闻) 到2025年，中国K12课后辅导市场获得的新冠补贴将达1.4万亿人民币（约合2000亿美元），加上新技术的发展和线上线下教育活动不断融合，预计该市场还将呈现快速增长。随着5G及其他技术的应用，预计到2025年，企业对企业（B2B）细分市场的规模将超过1000亿人民币。中国近100万家K12课后辅导培训机构都提供B2B模式的产品和服务。中国K12课后辅导培训领域主要包括辅导班、提升班和英语培训机构。新冠疫情使线上教育蓬勃发展，随着课后辅导机构积极寻求应用技术来应对新冠疫情带来的影响，预计到2020年，线上教育市场在整个教育市场的占比将达20%，同比增长5%。今年二月，政府要求学校采取录音、直播、云平台等方式进行线上教学，使学生足不出户即可接受教育。许多K12线上教育服务提供商都提供了免费的线上教育工具和内容资源，以支持课后辅导培训机构的发展。不少科技巨头也参与开发了免费线上教育工具。腾讯控股开发了腾讯课堂，阿里巴巴集团则开发了“叮叮”应用软件，来协助学校进行远程教学。教育学习转向线上，使教育科技公司获益良多，成为了新冠疫情影响之下的最大赢家。随着线下教学逐渐恢复，线上教学工具的活跃用户数逐渐下降，但仍比2019年同期高得多。(Hue)

高考

2020年3月的最后一天，中国教育部宣布一年一度的大学入学考试——高考将因疫情延期举办，这是恢复高考40年以来第二次推迟高考日期。自1979年以来，高考每年都在同一天举办。一直到2002年，高考一直是7月7日和7月8日，2003年的酷暑天气使当年高考提前一个月举办。2020年高考延期的消息在全社会引起了轰动，因为高考每年都在固定日期举办，绝少改期。对高考延期的消息，大部分家庭松了一口气，但是也有少部分家长表示不愿意再多经受一个月的高考压力了，尤其是在考生自二月初起就一直在家学习的情况下。疫情导致学校停课还揭露了中国数字资源不协调的问题。拥有电脑、智能手机和良好无线网络环境的家庭可以通过线上的方式继续学习，比如听常任教师的直播课或远程学习。但是对于许多家庭来说，这种学习方式压力很大——线上学习需要更紧密的家长监督，依赖良好的网络连接，而且可能面临技术方面的小故障，尤其当教师不太精通电脑的时候。对于收入较低以及在乡村地区、网络环境差的家庭，线上学习显得尤为困难。三月前，国内iPad库存一直处于低位，原因是受疫情影响，线上学习的需求大幅增长，而苹果的生产线还没有恢复正常。(WIC Screen)

2020年在各种意义上都是特别的一年。今年高考前，几乎所有高三考生都上了两个月的网课。高三考生通常会为高考复习一整年，与SAT或ACT考试不同的是，高考每年仅有一次机会。如果对高考分数不满意，那么就需要再花一年复读，在下一年重新参加高考。高考通常会持续三到四天，每日安排不同科目的考试。除语文、数学和英语为必考科目外，考生可灵活地选择其他科目，包括化学、物理、生物、政治、历史和地理。每科考试的时间介于90-150分钟，其中语文考试时间最长。而且，由于仅在每科考试之间才有休息时间，因此考生最多要在两个半小时内保持精神高度紧张，而学校也会安排专门训练使考生适应这种考试强度。通常，高考招生全凭考试分数决定是否录取。每个省份、每所大学的录取分数线都不一样。比如，今年清华大学在北京市的录取分数线为687分。清华大学是全国最好的大学之一。高考满分为750分，任何分数高于687分的北京考生均可录取清华大学。但是，如果一位考生取得了686分，即使只比录取分数线低一分，录取清华大学的可能性也几乎为零。通常来说，好一些的大学录取分数线也更高。因此，大部分中国人认为高考是一项公平的考试，鲜少会出现因为特权而被录取的考生。但是，线上教学挑战了人们对高考的公平性的看法。(Strauss)

Tutoring and Extracurricular Activities

Between 2012 to 2016, the market for English tutoring in China doubled to 85 billion RMB (US$12 billion). It is set to swell to 240 billion RMB in 2021. However, interest in studying in traditional classrooms has been hard hit by Covid-19, while the closing of China's borders has led to shortages of native English teachers, that teaching centers often employ to justify higher fees. A number of the tutoring businesses simply weren't able to sustain their businesses. One such company was Disney English, a subsidiary of the US giant. After arriving in the Chinese market in 2008, it filled an early niche in China's private education sector, with lessons that were classroom-based, focusing on communication through singing, roleplay and interactive games. But although Disney English emerged from that battle in reasonable shape, it has taken a fatal body blow from the coronavirus. The company announced its closure in June 2020, explaining that it was responding to changes in consumer preferences in which more students are moving towards learning online, "a trend which the global epidemic has exacerbated," it said. The news marks a rare reversal for Disney in China. Its education business targeted bigger, richer cities, and it was operating classrooms at the beginning of 2020 in Beijing, Shanghai, Guangzhou, Shenzhen, Chengdu and Nanjing. Aimed at children aged 2 to 12, its lessons cost about US$20,000 a year for about 100 hours of instruction. Then the pandemic stuck, forcing education companies to migrate to online instruction. Disney English tried to do the same in March but the switch was a struggle. Teachers had difficulty adapting to the new format; the style and content of the Disney curriculum didn't transition well; and the user experience was deemed unsatisfactory. While Disney's unit was one of the earliest English language tutors for children, it was already struggling to keep pace with the times. Parents now expect that tutoring companies must offer a suite of live broadcast classes alongside their more traditional lessons. The rise of other education platforms has also increased demand for accompanying learning tools online, integrated with WeChat and other forms of engagement on social media. Some critics have argued that while Disney's course content was once regarded as creative – its IP gave it the exclusive rights to deploy the likes of Mickey Mouse and the Little Mermaid in lessons – its material was not as suitable for helping children to get better scores at exams. But what may have hastened the closure of Disney English in China was Disney's dire second quarter results: earnings per share collapsed 91% on the same January-to-March period in 2019. With the parent company looking to make savings, the struggling Chinese education unit could no longer be subsidized (WIC Minnie).

On-Line Learning

Online learning gives parents a window into the classroom. Large technology companies have capitalized on the crisis by quickly developing new online educational tools to support teachers and students (Ning). China's K-12 after-school education market is expected to see rapid growth after the Covid-19 pandemic subsides, reaching 1.4 trillion RMB (US$200 billion) by 2025, driven by new technology and the continued merger of offline-online educational activities. With the deployment of 5G, AI and other technologies, the business-to-business (B2B) segment of the total market, comprising products and services for China's nearly one million K-12 after-school training institutions, is projected to surpass 100 billion RMB by 2025. China's K-12 after-school training sector primarily includes tutoring, enrichment education, and English-language training companies. The pandemic has been a boost for online education, with its share of the overall education market expected to reach 20% in 2020, up from 5% in 2019, as after-school training institutions actively seek technology to cope with the impact of the pandemic. In February, Chinese authorities asked schools to use online education to allow teaching and learning at home via recordings, live streaming, and cloud-based platforms. Many K-12 online education service providers have offered free access to online tools and content resources to support the after-school training institutions. Tech giants have also pitched in with free tools. Tencent Holdings provided Tencent Classroom and Alibaba Group offered its DingTalk app to help schools cope with remote learning. The online move has made ed-tech companies some of the biggest beneficiaries of the pandemic. As offline teaching gradually returned,

性教育

全国人大常委会于2020年10月宣布，包括幼儿园在内的各学校应开展"针对未成年人的适龄性教育，加强未成年人面对性侵害和性骚扰的自我保护意识和能力。"虽然政府发布性教育相关的政策已有数十载，但这些政策并没有得到很好地执行。性教育改革的拥护者表示，学校开展的性教育聊胜于无，落后于当今的科学认知。性教育改革的拥护者认为，性教育应超越生理教育的范畴，教导学生如何处理两性关系和看待性取向问题。据北京市联合国教科文组织协会的工作人员李红艳表示，政府对于改变教育方针非常谨慎，尤其是性教育，因为这可能会涉及到助长个人主义，从而引起反效果。李红艳一直在为性教育的改革积极奔走。许多拥护者认为，联合国教科文组织关于性教育的指导纲要"综合且详尽"。但是，国内性教育是应该遵循国际指导纲要，还是应该用一种"带有中国特色的性教育"，这些议题也引起了讨论。据中国计划生育协会与清华大学于2020年联合发布的调查结果显示，54580名受访大学生中，52%称其接受过性教育（路透社）。

高等教育

过去数十年来，中国留学生一直是美国高等教育领域的神话之一。2009年至2019年间，在美中国留学生人数增长了近三倍。2018至2019学年，在美中国留学生超过了36万名，占国际留学生的约三分之一。据商务部估计，2018年，这些中国留学生为美国经济贡献了约150亿美元。在新冠疫情爆发前，留学热衰退已初显迹象。"经过多年的两位数增长，中国留学新生入学人数开始趋于平缓"各大高校也知道，如此繁荣景象不会永远持续下去，但是它们也难以料到美国总统特朗普的负面言论以及对签证的威胁会对留学生录取造成如此严重的影响，更别提新冠疫情的影响了。美国总统特朗普关于移民政策的威胁性言论让家长为孩子和他们的工作签证倍感担忧。美国政府开始以国家安全问题为由，缩短某些领域的中国留学生毕业后的签证有效期。有新闻爆出，美国伊利诺伊州立大学香槟分校商学院和工程学院专门针对"保持中国留学生的数量"投了一份保险。该校因中国留学生数量众多而闻名。（Rauhala） the number of active users of online education declined, although it was still significantly higher than the same period in 2019 (Hue).

Gaokao

On the last day of March 2020 China's Ministry of Education announced that for only the second time in over 40 years the annual college entrance exams – the gaokao – would be postponed due to the coronavirus outbreak. Since 1979 the gaokao has been held on a fixed date. Until 2002 that was July 7 and 8, but it was moved forward by a month in 2003 so that students could avoid the summer heat. 2020's announcement was greeted with shock simply because the exams are such an immovable fixture on the annual calendar. Mostly families were relieved—although a few parents did say they didn't want to live through an extra month of gaokao stress, especially since having their children at home since the end of January. One thing the outbreak's mass closure of schools has revealed in China is the digital divide. Families with computers, smartphones and decent WiFi have been able to continue their studies online – either via livestreaming with their regular teachers or through e-learning. For many, this has been stressful – online study can require more parental supervision, it relies on a good internet connection and there can be technical glitches, especially if the teacher isn't tech savvy. For people on lower incomes and those living in rural areas with poorer internet access, the process is more challenging. By March, supplies of iPads were running low in China because of the massive increase in online learning and the fact that Apple's production lines were still to resume normal service after the pandemic (WIC Screen).

The year 2020 stands out in many ways. Almost every high school senior in China took two months of online classes before taking the gaokao. High school seniors traditionally take this exam after one year of preparation, and unlike the SAT or ACT exams, they only get one chance to take the exam each year. If they are unsatisfied with the score obtained, then they must spend one more year in high school and retake the exam the following year. Gaokao lasts three to four days, with different subjects tested on each day. Besides Chinese, math and English, the student has some flexibility in terms of the other three subjects, which include chemistry, physics, biology, politics, history and geography. Each subject test ranges between 90 and 150 minutes, the Chinese test being the longest. In addition, since breaks occur only between each subject test, the student needs to concentrate for up to two and a half hours, and schools train students to embrace this intensity. Typically, the admission officers judge the student entirely by the score obtained. For each province, universities have different score requirements. For example, the Beijing score requirement of Tsinghua University, one of the best universities in China, is 687 this year. The highest composite score is 750, and any Beijing student who gets more than 687 is guaranteed a place at Tsinghua. However, if a student gets 686, even one point below the score requirement, the possibility of getting into Tsinghua is extremely slim. In general, better universities have higher score requirements. As a result, most Chinese people regard gaokao as a fair exam, which allows less privileged students to enter the best universities. However, moving classes online challenged this perception (Strauss).

Sex Education

The NPC Standing Committee declared in October 2020 that schools, including kindergartens, should conduct "age-appropriate sex education for minors, increasing their awareness and ability to protect themselves against sexual abuse and sexual harassment". Although the government has issued policies on sex education for decades, implementation has been limited. Advocates say that what little sex education is taught lags behind current science. Some urge going beyond biology to teach students how to navigate relationships and sexuality. Li Hongyan of Unesco Beijing, who lobbied for the change, said the government was cautious when making changes to education, especially on sexuality, which could be viewed as promoting individuality or could prompt a backlash. Many advocates refer to Unesco's "comprehensive sexuality education" guidelines. But there is discussion around whether international guidelines should be adopted, or if there should be a form of "sexuality education with

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Chinese characteristics". Survey results published 2020 by the China Family Planning Association and Tsinghua University found 52% of the 54,580 university students polled said they had received sex education (Reuters).

Higher Education

For more than a decade, Chinese students have been one of the biggest stories in American higher education. Between 2009 and 2019 Chinese students in the United States nearly tripled. There were more than 360,000 Chinese students in the United States in the 2018-2019 academic year, making up about a third of international students. According to a Department of Commerce estimate, these students put US$15 billion into the U.S. economy in 2018.Even before the coronavirus hit, there were signs of a slowdown. After years of double-digit growth, new Chinese student enrollment is leveling off. Universities knew the boom would not last forever, but few anticipated the impact of tough talk and visa threats from President Trump — not to mention a pandemic. The Trump administration's immigration threats led parents to worry about student and work visas. The U.S. State Department started to shorten visas for Chinese graduate students in certain fields, citing national security concerns. News broke that the business and engineering colleges at the University of Illinois at Urbana-Champaign, known for having a huge number of Chinese international students, had taken out an insurance policy on its Chinese student population (Rauhala).

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2.16 Financial Sector

Key Take-Aways

- Banks in China are likely to record greater declines in profits in the second half of 2020 as bad loans were set to rise further as a result of the coronavirus pandemic.

- Chinese authorities aim to dispose 3.4 trillion RMB (US$497 billion) worth of bad loans from the banking sector this year — only one-third of that have been written off.

- China has been making it easier for foreigners to buy its stocks and bonds — something many fund managers are required to do now that major index compilers are including Chinese assets in their gauges.

- The financial integration between China and the US has entered a new stage, which is mainly determined by the high-quality opening-up of China's capital market and the profit-seeking behavior of the US capital.

Covid-19 Repercussions

The outbreak and spread of coronavirus since the start of the year has triggered the deepest global slump in decades. It exacerbated the global economic slowdown amid increasing policy uncertainties, trade tensions and geopolitical instabilities. The World Bank forecasts that the pandemic will cut global GDP by 5.2% in 2020 with projections of recession twice as deep as the economic collapse from the 2008 financial crisis. As countries begin the "flatten the curve" and slow the spread of the disease, they are re-starting their economies. Although the introduction of aggressive stimulus measure has led to signs of recovery, the Chinese economy continued to face multi-faceted pressures in 2020. In confronting the lingering external and domestic headwinds, China actively recalibrated its macroeconomic and financial policies to enhance its resilience to adverse shocks while achieving sustainable growth and financial stability. At the same time, the COVID-19 pandemic has accelerated the adoption and application of digital technologies in the financial service industry (FC).

Background

In 2019, the Chinese economy experienced a cyclical slowdown followed by a structural recession. The cumulative GDP growth slowed, and the year-on-year growth rate of total retail sales of consumer goods and investment in fixed assets decreased. Because of China-US trade disputes, the growth of domestic exports and imports was relatively slow. The fluctuation in market sentiment caused by trade disputes weakened the RMB against the US dollar, which partially offset the tariff impact from the United States. To cope with the downturn the central bank cut the reserve requirement ratio (volume) and reduced the interest rate (price) in order to reduce financing costs. The lower price of funds affected the interest rate spreads of banks. In addition, the further opening up of the financial system, the introduction of FinTech strategy planning, and the launch of compliance management of financial holding companies will continue to weigh on the development of the industry. In respect of operating performance, the asset scale of the six major domestic banks reached a higher level; the operating income increased steadily; the provision contributed positively to the profit; the non-performing indicators declined to different degrees; the overall profitability was healthy. In the face of economic downward pressure, the countercyclical adjustment was strengthened and the LPR reform was enhanced to reduce the financing costs of the real economy, which also built pressure on the banks' loan

2.16 金融业

关键要点

· 据惠誉评级数据显示，由于受新冠疫情冲击，不良贷款进一步上升，今年下半年，中国各大银行的利润可能会出现更大幅度的下滑。

· 中国有关部门计划在本年度清收处置3.4万亿元（约合4970亿美元）银行不良贷款——但目前仅三分之一完成核销。

· 不少大型指数编纂机构已将中国资产纳入其衡量指标，因此，中国不断出台措施以便利外国投资者购买国内股票和债券——要求基金管理公司执行相关要求。

· 中美双边金融一体化已迈向新台阶，这主要是由中国资本市场的高质量开放及美国资本的逐利行为所决定的。

新冠疫情所带来的影响

自今年初以来，新冠疫情爆发并不断蔓延，引发了数十年来最为严重的全球经济衰退。在政策不确定性因素不断增加、贸易关系紧张及地缘政治不稳定的大环境下，全球经济受疫情冲击进一步加剧放缓。世界银行预测，新冠疫情将导致2020年的全球GDP下降5.2%，衰退规模是2008年金融危机导致经济崩溃的两倍。各国在采取措施促进"曲线扁平化"并阻断疫情传播的同时，开始重启经济。尽管出台的积极刺激措施已使中国经济呈现复苏迹象，但2020年仍继续面临来自多方面的压力。面对持续存在的内外部矛盾，中国积极调整宏观经济和金融政策，确保在实现可持续增长和维持金融稳定的同时，不断增强抗冲击能力。与此同时，新冠疫情还加速了金融服务业对数字技术的引进和应用（FC）。

背景

2019年，中国经济在遭受结构性衰退后，呈现出周期性的减缓趋势。GDP累计增速放缓，社会消费品零售总额、固定资产投资同比增速下降。中美贸易冲突加剧，导致进出口增速相对缓慢。贸易冲突引发的市场波动导致人民币兑美元汇率走低，部分抵消了美国关税的影响。为应对经济低迷，央行通过降低存款准备金率（成交量）和降低利率（价格）来降低融资成本。资金价格下降，影响了银行利差。此外，金融体系的进一步开放，金融科技战略规划的实施，以及各大金融控股公司实施合规管理，将持续拖累金融业的发展。关于经营业绩，国内六大银行的资产规模达到较高水平；营业收入稳步增长；坏账准备对利润产生了积极作用；各项不良指标有不同程度的下降；整体盈利状况良好。面对经济下行压力，加大逆周期调节力度，加强LPR改革，降低实体经济的融资成本，这也对银行贷款收益率造成压力。存款竞争压力不断加剧，将持续影响削减成本的效果。国内银行业普遍认识到数字化转型的必要性，以数字化转型作为银行客户服务的切入点，运用数字化手段，构建综合全面的高质量金融服务，增强数字化运营能力，提升应对突发事件和风险的能力。严格的监管和先进的技术，引领着银行全面风险管理体系的未来发展。各银行应继续加强风险治理框架，优化投资组合全面分析和资产配置能力，深化数据管理和应用，拓展和完善定量分析工具，并强化以客户为中心的风险管理策略和合规安全管理。零售银行的敏捷转型，对传统固化的组织运作模式造成带来巨大的挑战。其敏捷的关键在于迭代迅速和不断试错。有意识地运用积攒的技能和优势是实现预期目标的必要条件。最后，通过智能运营加强银行业务内部发展，是在金融科技的快速发展下应对市场竞争的必然选择，重塑银行整体价值创造体系和商业模式，这是一项自上而下的复杂工程。各银行应及时达成改革共识，深入评估转型过程中遇到的各种困难，未雨绸缪。新冠疫情的爆发不可避免地对经济造成了影响。金融机构面临着不良资产陡增和信贷风险集中暴露的风险。国际供应链体系受挫引发的产业结构调整也会影响银行体系未来的信贷业务结构，但影响总体可控。新时期，各种驱动因素的独特融合，必将在更广阔的社会和经济环境中释放出前所未有的变革力量，全球银行业的发展目标和发展模式也将随之改变。银行可能会更加注重整体利益，而银行管理层将根据目前的发展形势重新审视本行的长期发展目标，以从根本上增强银行的核心实力（Deloitte）。

金融业开放

尽管中美贸易战阻碍了两国之间的货物流动，但中国政府继续在金融领域的其他方面对外开放，吸引更多的外国银行、保险公司等金融服务公司来华投资。不少大

yield. The intensified deposit competition pressure will continuously impact the results of cost reduction. The domestic banking industry generally recognizes the necessity of digital transformation, taking digital transformation as the starting point for banks to serve customers, building comprehensive high-quality financial services by employing digital means, improving the capability of digital operation, and enhancing the ability to respond to emergencies and risks. Tightened regulation and advanced technology guide the future comprehensive risk management system. Banks should continually strengthen risk governance frameworks, optimize the overall portfolio analysis and asset allocation ability, deepen data management and application, expand and refine quantitative analysis tools, and reinforce the customer-centered risk management strategies as well as the compliance and security management. The agile transformation of retail banks poses a great challenge to the solidified organizational operation model. The key of agility lies in rapid iteration and constant trial and error. Deliberately applying the accumulated skills and strengths is essential to delivering the intended results. Finally, empowering the internal development of the banking businesses through intelligent operation is a natural choice to respond to the market competition under the rapid development of FinTech, reshaping the banks' overall value creation system and business model, which is a top-down complex project. Banks should promptly reach the reform consensus, thoroughly assess all difficulties in the course of transformation, and be prepared in advance. The COVID-19 outbreak has inevitably affected the economy. Financial institutions are faced with the hidden dangers of sudden increase of non-performing assets and concentrated outbreak of credit risks. The industrial restructuring triggered by the setback of the international supply chain system will also affect the future credit industrial structure of the banking system, but the impact will be generally controllable. In the new era, the unique integration of various driving factors is bound to unleash unprecedented forces for change in a broader social and economic environment, and the development goals and models of the global banking industry will change accordingly. The banks may focus more on the overall interests, and the management will re-examine the long-term development goals of their banks according to the current development situation, to fundamentally strengthen the core strength of the bank (Deloitte).

Opening of Financial Sector

Even as the trade war was crimping the flow of goods between the US and China, the Chinese government opened other doors in the financial sector, inviting in more foreign banks, insurance providers and other financial services companies. China has also been making it easier for foreigners to buy its stocks and bonds — something many fund managers are required to do now that major index compilers are including Chinese assets in their gauges. The take-up is gathering pace but the going has been tough. In 2020 China began allowing full foreign ownership of more financial services companies. Ownership caps for securities and mutual fund firms, life insurers and futures-trading houses came off in stages during the year. Regulators in 2019 cleared the way for full takeovers of local banks by foreigners, a year after easing caps in that category. Foreign companies now also can be lead underwriters for all types of bonds and control wealth-management firms. Not long-ago Bloomberg Intelligence estimated that foreign banks and securities firms could be raking in profits of more than US$9 billion a year in China by 2030. The pandemic and an increasingly fraught US-China relationship have clouded that forecast. In Washington there is strong bipartisan support for a tougher line on China on national security grounds. In November, President Donald Trump barred American investment in 31 companies identified by the US Defense Department as having links to China's military, and regulators were laying the groundwork for rules that could eventually force some Chinese companies to delist in the US. Attitudes could harden further as the global economy struggles to recover from the pandemic-induced slump, although China's President Xi Jinping said in November that opening up was a fundamental policy that won't change. There are also plenty of hidden barriers, including the challenge of cracking a market dominated by government-controlled rivals that have longstanding relationships with clients. The lengthy and often opaque application process also can be a deterrence (Liu et al.).

型指数编纂机构已将中国资产纳入其衡量指标，因此，中国不断出台措施以便利外国投资者购买国内股票和债券——要求基金管理公司执行相关要求。执行的步伐逐步加快，但进展却不太顺利。2020年，中国开始放宽外资企业持股国内金融服务公司数上限。证券机构、公募基金管理公司、寿险公司和期货交易公司的外资股比限制在今年分阶段取消。监管机构在放宽外资全面收购内地银行的限制一年后，于2019年进一步为其铺平了道路。如今，外资企业也可以申请成为所有类型债券的主承销商，并控股理财公司。不久前，彭博经济学估计，截至2030年，外资银行和证券公司在华实现的年利润或逾90亿美元。而疫情和不断紧张的中美关系，为这一估计蒙上了阴影。美国两党都强烈支持以国家安全为由对中国采取强硬立场。今年11月，美国总统唐纳德 · 特朗普下令禁止美国对31家被美国国防部认定与中国军方有关联的公司进行投资，其监管机构正着手制定迫使部分中国公司从美国退市的相关规定。尽管中国国家主席习近平去年11月表示，对外开放是一项永不改变的基本政策，但由于全球经济的复苏之旅举步维艰，美方可能会进一步采取强硬态度。除此以外，还存在许多潜在阻碍，如何攻克一个由政府控制、与客户保持长期关系的竞争对手主导的市场，就是其中之一。申请程序冗余繁杂、且往往不透明，也可能是另一大阻碍（Liu et al.）。

在全球金融业面临新冠疫情冲击的情况下，中国继续加快金融业对外开放的步伐。中国经济预计将保持较快增长势头，国内消费市场规模和发展潜力巨大。随着科技的不断升级，数字化进程的加快，改革开放的不断推进，中国经济的蓬勃发展将成为国际投资者瞩目的焦点。自2018年以来，中国有关部门已批准外资银行和保险公司来华设立近100家各类机构。中国恪守了开放金融业的承诺，同时还承诺为外资金融机构提供一贯、公开、透明的政策环境。中国银保监会还将帮助国内银行和保险公司开拓海外市场，参与全球金融治理，加强国际金融合作。中国的营商环境逐步优化，金融业开放措施为外国投资者进入中国市场带来了巨大机遇。疫情期间，中国金融业从未停止对外开放的脚步。例如，专注于替代性市场的全球资产管理公司美国橡树资本管理有限公司（Oaktree Capital Management）今年2月在北京成立了一家全资子公司。中国央行还批准了万事达中国合资企业在华开展银行卡清算业务的申请。今年下半年，更多的外资金融机构有望在中国成立，合作项目有望落地（Xinhua, China Focus）。

国际大型预测机构预计，2021年，在新冠疫情的后期影响下，中国经济将实现较为强劲的增长。国际货币基金组织（International Monetary Fund, IMF）称，2020年全球经济将萎缩4.4%，相比之下，中国经济增长1.9%，是今年唯一实现正增长的主要经济体。IMF预测，2021年中国GDP增速将反弹至8.2%。世界银行预测，2020年，中国GDP将增长1.6%，而全球将收缩5.2%。世界银行还称，2021年中国GDP增长率或达7.9%。毕马威第四季度《中国经济观察》报告预测，2021年中国GDP将增长7.8%（CBNEditor, International）。

中国经济已深度融入全球经贸体系。建立一个全新的、开放度更高的经济体系，是创造新的发展条件的根本。要创造新的发展条件，就必须更好地利用国际国内两大市场，不仅要使商品和生产要素流通更加便利，而且还要推动建立制度化体系。这不仅有利于中国经济发展，也能造福世界经济。在此背景下，进一步开放金融业是创造新的发展环境的必然条件。开放金融业，不仅能吸引各类机构、企业和产品的进入，增加金融生产要素供给，还加快了各项规章制度的完善以及金融体系内的供给。过去3年，中国政府出台了50多项金融开放措施，包括在银行业、证券、基金、期货和人寿保险领域全面取消外资持股限制。2018年以来，已有8家外资控股证券公司、2家外资控股基金管理公司和20家外资控股私募证券投资基金管理公司在华成立。未来拟实施的开放政策预计包括：全面实施市场准入前与中国企业一视同仁的负面清单监管制度，进一步开放金融服务业，改革人民币汇率形成机制，进一步推进人民币国际化，风险防范与加快开放两手抓，加强宏观审慎监管，以及建立各种防火墙，加强防范和化解重大风险的能力（CBNEditor, Further Opening）。

银行业

随着中国从疫情影响中逐步恢复常态，面对已经债台高筑的系统，中国央行更愿意增加贷款，而不是削减贷款。中国人民银行在2020年的前三个季度披露的数据表明贷款增势稳定。社会融资总量，作为衡量经济中信贷和流动性的一个广泛指标，在9月份达到280.07万亿元，增长近3.5万亿元（合5220亿美元），比去年增长了13.5%，快于第二季度末的12.8%，比去年同期增长2.8个百分点。今年年初，中国在遭遇新冠疫情的冲击之际，初步尝试减少经济增长对债务的依赖。今年第一季度，中国家庭、政府、金融企业和非金融企业的总债务占GDP的比重从300%以上升至近318%，在接下来的几个月里，这一比重继续缓慢升至335%。中国正处于“特殊情况”，应实施“分阶段增加”债务，以保障经济发展。总的来说，在中国目前的体系下，大型国有企业的更容易获得融资，相关部门一直在努力解决小型民营企业融资难的问题。虽然9月份广义货币供应量M2同比增速确实从6月份的11.1%放缓至10.9%，但仍远高于2019年8.4%的增速。M2泛指现金、储蓄、支票账户和公募基金等可随时获得的货币供应量。在经济活动复苏之际，在政府债券和富有弹性的贷款需求的支持下，短期内整体信贷增长可能会保持高位。然而，许多规模较小的公司在其产品和服务面临巨大需求时，并未借入足额资金。央行表示，截至9月底，服务业（不含房地产）中长期贷款比去年同期增长了17.3%，为2018年以来最高水平（Cheng）。

Though the global financial sector is facing challenges amid the COVID-19 pandemic, China has continued to accelerate the opening up of its financial sector. China's economy is expected to maintain relatively fast growth and the size and development potential of its domestic consumer market is huge. With the continuous upgrading of technology, accelerated digitalization and continued reform and opening up, China's booming economy will be noticeable to international investors. Since 2018, Chinese authorities have given approval to foreign banks and insurers to set up nearly 100 institutions in China. China has kept its promise to open up its financial sector, while pledging to provide a consistent, open and transparent policy environment for foreign financial institutions. The CBIRC will also help Chinese lenders and insurers explore overseas markets, participate in global financial governance and strengthen international financial cooperation. The business environment in China is getting better and better, and China's opening-up measures in the financial sector have provided us with great opportunities to enter the Chinese market. China's financial sector did not stop opening up amid the epidemic. For example, Oaktree Capital Management, a global asset management firm focused on alternative markets, established a wholly owned subsidiary in Beijing in February. China's central bank also approved an application from Mastercard's Chinese joint venture to conduct bank card clearing business in the country. More foreign financial institutions are expected to be established and cooperation projects landed in China in the second half of this year (Xinhua, China Focus).

Leading international forecasters anticipate comparatively robust growth for the Chinese economy in 2021 amidst the residual impacts of the COVID-19 pandemic. The International Monetary Fund's (IMF) said China's economy grew 1.9% in 2020, amidst a global contraction of 4.4%, making it the only major economy to achieve positive growth this year. The IMF forecasts that Chinese GDP growth will bounce back to 8.2% in 2021. The World Bank forecasts that Chinese GDP will grow 1.6% in 2020, amidst a global contraction of 5.2%. The World Bank also forecasts GDP growth of 7.9% in 2021 for China. KPMG's Q4 China Economic Outlook report forecasts that Chinese GDP will grow 7.8% in 2021 (CBNEditor, International).

The Chinese economy is now deeply integrated into the global economic and trade system. Establishing a new and even more open economic system is intrinsic to the establishment of new development conditions. The establishment of new development conditions requires even better use of both international and domestic markets, and not only entails more convenient circulation of goods and factors of production, it also requires pushing for the opening of a rules-based system. This is not just for the benefit of the Chinese economy, but also for the benefit of the global economy. Against this background, further opening up of the financial sector is an inevitable requirement for the creation of new development circumstances. The opening of the financial sector not only attracts institutions, businesses and products and increases the supply of financial factors of production, it also expedites the improvements of systems and regulations, and expedites supply within the financial system. Over the past three years Beijing has unveiled over 50 financial opening measures, including full cancellation of foreign ownership restrictions when it came to the banking, securities, funds, futures and life insurance sectors. Since 2018 China has seen the establishment of eight foreign-controlled securities companies, two foreign-controlled fund management companies, and 20 foreign-controlled privately offered securities investment fund managers. Future opening measures should include: comprehensive implementation of a negative list regulatory system that confers equal treatment with Chinese parties prior to market entry, further opening of the financial services sector, reform of renminbi exchange rate formation mechanisms, further internationalization of the RMB, and risk prevention in tandem with accelerated opening – stronger macro-prudential regulation, and the establishment of various firewalls to raise the ability to prevent and dissolve major forms of risk (CBNEditor, Further Opening).

Banking

As China recovered from the Covid Pandemic, the country's central bank was more open to increasing loans to an already debt-heavy system than it is to cutting back. The People's Bank of China disclosed data for the first three quarters of 2020 that showed steady loan growth. Total

话虽如此，中国各大银行因受疫情影响，不良贷款将进一步增加，因此在2020年下半年的利润下降幅度更大。据中国五大银行报告，利润同比下降了至少10%，是至少十年来最大降幅。中国政府在积极应对疫情对家庭和企业造成的经济冲击时，中国银行一直走在最前线。中国政府要求国内银行，包括许多国有银行，牺牲回报，通过降低贷款利率和延迟还贷期限来帮助企业纾困。即便如此，惠誉维持中国银行业营商环境的“稳定”评级展望。该机构表示，中国的银行体系可通过积极识别和化解不良贷款，防范信贷风险的大规模累积（Lee）。

2020年，为遏制经济在新冠疫情影响下的金融风险，中国银行业处置了3.4万亿元（约合4899.1亿美元）的不良贷款。2021年，一些问题会因延迟还贷政策而暴露出来，因此金融业会进一步加大对不良贷款的处置力度。2019年，中国借贷机构也处置了2.3万亿元的不良贷款。在当前形势下，容易滋生金融风险，不良贷款的上行压力“较大”（Cheng et al.）。

中国更多地依赖正规银行来重振受疫情打击的经济，防止影子银行风险像过去的复苏周期那样再次爆发，因此，中国信用较差、过去依赖非银行贷款的借款人在中期内仍将面临融资压力。截至2020年9月底，包括委托贷款余额、信托贷款余额和未贴现银行承兑汇票在内的影子银行核心资产为22.06万亿元，较2019年下降了2.8%。然而，9月份的萎缩率是2018年7月同比下降2.31%以来的最低水平。考虑到整体GDP增长目标的弱化，不太可能会让影子银行继续增长，随着银行继续为企业和投资提供资金支持，正规银行贷款将继续构成中国新增信贷的中坚力量。较影子银行的其他核心活动而言，信托贷款自2020年初以来下降得更快，而委托贷款的收缩率较低，未贴现银行承兑汇票较前几个月出现反弹。9月份，信托贷款同比下降8.5%，降至7万亿元，是自2019年3月同比下降8.6%以来的最大降幅，而委托贷款则较上年同期萎缩5.2%。近期多家信托公司违约、信托资产质量恶化以及在经济不确定性的情况下，对弱势企业的避险情绪上升等因素，仍将继续抑制贷款活动。各大银行更愿意以政策支持下收益率较低的供应链融资或抵押贷款形式为中小企业提供贷款，与此同时，较影子银行渠道而言，企业也更愿意从融资成本较低的银行机构贷款。鉴于银行体系的整体流动性充裕，这一趋势仍将贯穿2021年。相比之下，未贴现银行承兑汇票增长了18.8%，为2017年10月以来的最高水平。未贴现银行承兑汇票实现反弹，而银行资产负债表上贴现票据却有所减少，反映出企业在2020年第三季度有实质性的业务活动，有票据交易需求和支付目的。据分析人士预计，随着监管机构继续打击影子银行融资，未贴现银行承兑汇票在2021年不会继续强劲增长。随着中国监管机构继续加强对国内影子银行领域的限制，该领域在2021年可能会进一步缩减规模。2020年8月，中国最高人民法院大幅下调受法律保护的民间借贷利率上限，以促进民间借贷健康稳定发展。最高院下调小额信贷、典当行贷款和网上P2P借贷等民间借贷利率后，借贷机构为弱势企业提供融资将无法盈利，因此弱势企业的一大重要融资渠道也将随之关闭。政府在不断加大对房地产行业杠杆的控制力度，而抑制信托融资是实现这一目标的一大途径（Isjwara and Ahmad）。

保险业

2020年前7个月，中国保险公司的保费收入同比增长7%，增至3万亿元（约合4372.9亿美元）。据中国银行保险监督管理委员会发布的数据显示，今年第一季度，理赔支出总额为7479亿元，较去年同期增长达3.1%。截至2020年7月底，保险业总资产为22.06万亿元。今年以来，保险业经营情况总体平稳，对经济发展的支撑作用增强（Xinhua, China’s Insurance）。

2020年，中国保费收入仍保持正增长，并在中国新冠疫情导致的暴跌后强劲反弹。数字分销渠道的快速引入，寿险业务的进一步自由化，以及风险意识的不断增强，都将助力保险业务复苏。例如，此次疫情危机提高了全球范围内各个业务线和客户群体对保险价值的认识。重大疫情虽不是全部都能投保，但新冠疫情危机将提高人们对相关金融风险的认识，并激发保险业务创新。总体而言，未来两年，中国将为全球寿险保费增长贡献0.7个百分点，紧随其后的是亚洲其他新兴市场（0.2个百分点）。中国在全球保费中所占份额仍将保持快速增长，预计到2030年将达到18%，但仍仅为美国的一半。但除去医疗保险费，到本世纪30年代中期，中国仍有望成为全球最大的保险市场（Hu）。

与此同时，据惠誉评级数据显示,中国人寿保险股份有限公司的保险公司财务实力评级（IFS）为“A+”（强），长期发行人违约评级（IDR）为“A”。评级展望“稳定”。惠誉对中国人寿的个体信用资质（SACP）评级为“a+”，与中国主权长期IDR的“A+”/稳定的评级相同。惠誉评级还反映中国人寿拥有“最有利”的业务状况、“非常强劲”的财务表现和“强劲”的资本实力。惠誉认为，从中国人寿的税前收益（不含已实现和未实现的损益）可以看出，其财务表现“非常强劲”。这主要得益于中国A股市场复苏带来的投资收入增加，以及新规对承保和保单取得成本税前扣除的影响。惠誉对中国人寿的业务状况评级为与中国其他寿险公司相比“最有利”，依据是中国人寿的业务特许经营处于领先地位、业务重心稳定，业务和分销渠道多元化。惠誉将中国人寿的所有权评为其IFS评级的积极影响因素。该机构认为，考虑到中国人寿实际上由财政部所有、拥有庞大的保险客户基础，并在中国保险业占据着重要地位，在困难时期，中国政府很有可能会提供资金或业务支持。如果政府提供支持，将减轻中国人寿个体信用基本面所承受的压力（Fitch）。

social financing, a broad measure of credit and liquidity in the economy, rose by nearly 3.5 trillion RMB (US$522 billion) in September to a total of 280.07 trillion RMB. That was a 13.5% increase from a year ago — faster than the 12.8% pace recorded at the end of the second quarter, and 2.8 percentage points above the same period in 2019. Covid-19 hit China early in the year just as the country was in the early years of attempting to cut its reliance on debt for growth. Total Chinese debt across household, government, financial and non-financial corporate sectors rose from over 300% of GDP to nearly 318% in the first quarter. That ratio inched toward 335% of GDP in the following months. China is in a "special situation" and a "phased increase" in debt should be allowed to support the economy. Overall, Chinese authorities have been trying to make it easier for privately run, smaller businesses to get loans in a system that tends to favor larger, state-owned enterprises. Growth of M2 — broad measure of readily available money supply including cash, savings, checking accounts and mutual funds — did slow from the 11.1% year-on-year pace in June to 10.9% in September, but remained well above the 8.4% growth rate recorded a in 2019. Broad credit growth could remain elevated in the near term on the back of government bond and resilient loan demand amid activity recovery. Yet, many smaller companies were not borrowing as much as they should if they had significant demand for their products and services. The central bank said medium and long-term loans for services businesses excluding real estate as of the end of September grew 17.3% from a year ago, the highest since 2018 (Cheng).

That being said, banks in China recorded greater declines in profits in the second half of 2020 as bad loans were set to rise further as a result of the pandemic. The five largest Chinese banks reported at least 10% year-on-year fall in profit — their biggest earnings decline in at least a decade. Chinese banks have been at the front line of the government's effort in managing the pandemic's economic hit on households and businesses. Lenders in China — many of which are controlled by the government — were asked by Beijing to sacrifice returns to help companies by lowering lending rates and deferring repayments on loans.

But Fitch has maintained its "stable" outlook for the operating environment of Chinese banks. It explained that by actively recognizing and resolving bad loans, China's banking system can prevent a large build up in credit risks (Lee).

China's banking industry disposed of 3.4 trillion RMB (US$489.91 billion) of bad loans in 2020 to contain financial risks in an economy weakened by COVID-19. The sector will further step up bad loan disposals in 2021, as some of the problems will be exposed due to delayed loan payments. Chinese lenders disposed 2.3 trillion RMB of bad loans in 2019 as well. Financial risks are prone to occur under current circumstances, and that the upward pressure on bad loans is "relatively big" (Cheng et al.).

Less creditworthy borrowers in China who used to lean on nonbank lending are set to remain under funding pressure in the medium term, as the nation relies more on formal bank loans to reboot its pandemic-hit economy in order to prevent risk in the shadow banking system from flaring up again as in past recovery cycles. As of end-September 2020, core shadow banking assets, which include outstanding entrusted loans, trust loans and undiscounted bankers' acceptances, totaled 22.06 trillion RMB, down 2.8% from 2019. September's contraction rate, however, was the lowest since the year-over-year decline of 2.31% in July 2018. Given the de-emphasis of a headline GDP growth target, it is unlikely shadow banking will be allowed to grow again and formal bank lending will continue to form the bulk of new credit lending in China as banks continue to provide financial support to businesses and investments. Among the core shadow banking activities, trust loans have been declining more quickly since the beginning of 2020, while entrusted loans contracted at slower rates and undiscounted bankers' acceptances rebounded compared to previous months. In September, trust loans declined 8.5% to 7 trillion RMB from a year earlier, the biggest drop since the 8.6% year-over-year fall in March 2019, and entrusted loans shrank 5.2% in September from a year earlier. Lending activities will remain hampered by recent defaults of several trust companies, the deterioration in trust asset quality, and the increasing risk aversion to weaker corporations amid economic uncertainty.

金融证券业

美国并不希望在金融业方面与中国脱钩。特朗普政府对短视频分享应用TikTok采取行动，加大对在美上市中国公司的监管审查力度，以及个别公司从美国股市退市的消息，都推动了社会各界有关美国在金融服务领域与中国脱钩的讨论。采取脱钩等类似行动将损害双方利益，相反，合作才能实现双赢。以美元计价的全球资本流动相关业务，是维持国际货币体系的基础。一旦美元停止参与中国的经济和金融市场，则可能意味着，美国最终可能会削弱整个货币体系。中国是世界第二大经济体。其出口约占全球出口总额的12%。中国是全球第二大资本市场。然而，全球货币体系仍以美元为主导。美国经济、贸易和美元在国际货币体系中所占比例严重不对称。到目前为止，全球大约50%的贸易以美元结算。中国是全球贸易的重要参与者和推动者。然而，其贸易业务中仍有很大一部分以美元计算。美元约占全球官方储备的60%，占全球外汇交易近85%。中国庞大的外汇储备也以美元计价。如果中国不使用美元，而是选择欧元或其他货币来进行贸易结算，将对美元体系造成冲击。因此，一旦与中国脱钩，将削弱美元体系，美国不愿承担这样的风险。美国将中兴、华为等中国科技企业列入所谓实体清单，并对它们实施制裁。美国还对字节跳动等企业采取了多项不合理行动，加大对在美上市中国企业的监管审查力度。这些行动并不是为了与中国金融业脱钩，而是为了打压对美国企业构成威胁的中国企业。美国采取这些行动的目的是阻止中国企业参与所谓的国家安全业务，希望通过不正当手段维护美国企业的国际竞争力。金融资本全球化，国际金融资本流动边界模糊。我们可以看到，即使美国政府加强监管审查，中国企业仍可在美国上市。随着金融全球化的发展，国际资本力量主导着全球金融市场的发展。企业可以选择融资的方式，但金融资本套利的成本决定了，各种方式之间必然存在一定的差异。中美双边金融一体化已迈向新台阶，这主要是由中国资本市场的高质量开放及美国资本的逐利行为所决定的。美国投资者在中国资本市场持有大量证券，2018年约为2600亿美元，占其境外证券持有量的2.3%。而中国投资者同样持有大量美国证券，其中美国国债就超过1万亿美元。2020年6月，摩根大通获准开设了一家外商独资期货公司。同月，美国运通获准与连通（杭州）技术服务有限公司合作成立了一家合资公司。美国运通成为首家在中国内地开展清算业务的外国银行卡提供商。此外，今年流入中国证券市场的资金流创新高，而且其中一部分资金是来自美国投资者。

与此同时，大型国有银行交通银行（BOCOM）成为首家在海外发行永续债券的中国银行。交通银行于2020年11月根据相关监管批复，发行了28亿美元符合巴塞尔协议III的其他一级资本债，并在香港联合交易所上市。这些债券无固定期限，五年期满后可赎回。交通银行是首个海外发行其他一级资本债的中国发行人。在其他一级资本债结构下，一旦发生触发事件，永续债将在无需进行股权转换即可直接核销。2019年初，中国中央政府首次批准国内银行发行永续债，旨在为国内银行提供更多的资金补充渠道。截至2020年9月中旬，中国银行业已通过发行永续债补充资本近万亿元（CBNEditor, Bank of Communication）。

As banks are more willing to lend money to SMEs through supply chain financing or collateral loans with cheaper yield helped by policy supports, corporates prefer to borrow from banks instead of shadow banking channels due to cheaper funding costs. The trend would continue in 2021 given overall liquidity in the banking system is ample. In contrast, undiscounted bankers' acceptances rose by 18.8%, the highest since October 2017. The rebound of undiscounted bank acceptance bills, yet the decrease in the discount bills on banks' balance sheet, reflects that corporates have substantive business activities with bills demand for transactions and payment purpose in 3Q20. Analysts don't expect undiscounted bank acceptance bills would continue to grow strongly entering in 2021 as regulators remain to clap down shadow banking financing. China's shadow banking industry is likely to shrink further in 2021 as regulators continue to introduce restrictions for the sector. In August 2020, China's Supreme Court slashed the legally protected ceiling of informal lending rate to promote a healthy and stable development of the private lending sector. The Supreme Court's lowering of interest rates on informal lending, including for microcredit, pawnshop loans and online peer-to-peer lending will close off an important financing channel for weaker companies as it makes it unprofitable for lenders. The government is getting stricter in controlling leverage in the property sector and the curbing of trust financing is one of the ways to achieve this (Isjwara and Ahmad).

Insurance

Chinese insurers' premium income increased 7% year on year to 3 trillion RMB (437.29 billion US dollars) in the first seven months of 2020. Compensation expenses totaled 747.9 billion RMB in the period, up 3.1% from the same period last year, according to data released by the China Banking and Insurance Regulatory Commission. By the end of July 2020, total assets of the insurance industry stood at 22.06 trillion RMB. The insurance industry has maintained overall stable operation and offered better support for economic development since the beginning of the year (Xinhua, China’s Insurance).

Insurance premium growth remained positive in 2020, and bounced back strongly after a COVID-19 induced slump in China. The fast adoption of digital distribution channels, further liberalization of the life sector, and rising risk awareness will support the recovery. For instance, the crisis is raising awareness of the value of insurance across the lines of business and client groups globally. Pandemics will not be fully insurable, but the COVID-19 crisis will raise awareness of the associated financial risks and spark innovation for new covers. Overall, China will contribute 0.7 percentage points to global life premium growth over the next two years, followed by the rest of emerging Asia (0.2 percentage points). China's share of global premiums will continue to rise rapidly to an estimated 18 percent in 2030, still only half the share of the US. However, excluding medical insurance premiums, China remains on track to become the largest insurance market globally by the mid-2030s (Hu).

Meanwhile, Fitch Ratings has affirmed China Life Insurance Company Limited's Insurer Financial Strength (IFS) Rating at 'A+' (Strong) and its Long-Term Issuer Default Rating (IDR) at 'A'. The Outlook is Stable. Fitch assesses China Life's Standalone Credit Profile (SACP) at 'a+', the same as the Chinese sovereign's Long-Term IDR of 'A+'/Stable. The rating reflects China Life's 'Most Favorable' business profile, 'Very Strong' financial performance and 'Strong' capitalization. Fitch regards the insurer's financial performance as 'Very Strong', reflected by its pretax return, excluding realized and unrealized gains and losses. This was due mainly to an increase in investment income from the recovery of China's A-share market and the impact of a new rule on pretax deduction of underwriting and policy acquisition costs. Fitch ranks China Life's business profile as 'Most Favorable' compared with that of other life insurers in China in light of its leading business franchise, stable business focus and well-diversified business and distribution. Fitch regards the ownership of China Life as positive to its IFS Rating. The agency believes there is a high probability of the Chinese government providing financial or operational support in times of stress in consideration of China Life's effective ownership by the Ministry of Finance (MoF), its large policyholder base and its significant role

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in China's insurance sector. The perception of government support will ease the pressure on China Life's standalone credit fundamentals (Fitch).

Financial Securities

The US really does not want to decouple from China in the financial industry. The Trump administration's actions against short video-sharing app TikTok, the tightening regulatory scrutiny of Chinese companies listed in the US, and some news of individual companies delisting from the US stock market, have all boosted discussions on the reported US initiative to decouple from China in the financial services sector. Any action like decoupling will hurt the two sides; instead, cooperation will achieve a win-win situation. Operations relating to flows of global capital denominated in the US dollar are the foundation that sustains the international monetary system. If the US dollar does not participate in China's economy and financial market, it could mean the US will likely end up weakening the whole monetary system. China's economy is the second-largest in the world. Its exports account for about 12 percent of the global total. China's capital market is the world's second-largest. However, the global monetary system is still dominated by the US dollar. There is a significant asymmetry in the proportion of the US economy, trade and the dollar in the international monetary system. So far, about 50 percent of the global trade settlements are done in the US dollar. China is an important participant and promoter of global trade. However, a large part of the trade is still settled in US dollars. The greenback accounts for about 60% of global official reserves and nearly 85% of global foreign exchange transactions. China's huge foreign exchange reserves are also denominated in the US dollar. If China does not use the US dollar but chooses the euro or other currencies to settle its trade deals, it will shock the US dollar system. So, the US will not take the risk of decoupling from China, because that will weaken the US dollar system. The US has added some Chinese tech companies, including ZTE and Huawei, to its so-called Entity List and carried out sanction measures. It also took unreasonable actions against enterprises such as Byte-Dance, and tightened regulatory scrutiny of Chinese companies listed in the US. Such actions were not to decouple from China's financial sector but to suppress Chinese companies that pose a challenge to US competitors. Washington aims to prevent Chinese enterprises from participating in areas related to the so-called national security, hoping to maintain the US companies' international competitiveness through improper means. Financial capital is globalized, and the boundaries of international financial capital flows are blurred. As we can see, Chinese companies will list in the US even if the US government tightens regulatory scrutiny. With the development of financial globalization, the power of the international capital dominates the development of global financial markets. Enterprises can choose the ways of financing, but there are certain differences determined by the cost of financial capital arbitrage. The financial integration between China and the US has entered a new stage, which is mainly determined by the high-quality opening-up of China's capital market and the profit-seeking behavior of the US capital. US investors hold a large amount of securities in China's capital market, which was about US$260 billion in 2018, accounting for 2.3% of their holdings of foreign securities. Chinese investors also hold a large number of US securities, including more than US$1 trillion in treasury bonds. In June 2020, JPMorgan received the approval to open a wholly foreign-owned futures company. And in the same month, American Express received the approval to establish its joint venture with Lianlian DigiTech Co Ltd. AmEx became the first foreign bank card provider to do clearing business on the Chinese mainland. In addition, capital flows into China's securities market this year have reached a record high, and a part of the funds came from US investors.

Meanwhile, Big state-owned lender Bank of Communications (BOCOM) has become the first Chinese bank to issue perpetual bonds offshore. BOCOM issued US$2.8 billion in Basel III-compliant additional tier-1 capital bonds that were offered under Regulation S format and listed on the Hong Kong Stock Exchange in November 2020. The instruments have no maturity date, although they have a call date after a five-year period. The AT 1 structure for the BOCOM issue is the first adopted by a Chinese issuer offshore.

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Under the structure the perpetual bonds will be written off without equity conversion in the case of a non-viability trigger event. The Chinese central government first gave its approval to the issuance of perpetual bonds by Chinese banks at the start of 2019, in a bid to provide domestic lenders with more channels for capital replenishment. As of mid-September 2020, Chinese banks had used perpetual bonds to raise nearly a trillion RMB in funds (CBNEditor, Bank of Communication).

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2.17 Information and Communication Technology Industry

Key Take-Aways

- China's new 5G standards as something that can shape the playing field and landscape for the future of these technologies, but China will have challenges dislodging the dominance of Europe and the US.

- China's information and communication technology market remains among the most dynamic sectors in the economy. The market was projected to reach US$8.1 trillion by 2021, representing 55% of China's GDP.

- China is the world's second-largest cloud computing market. Alibaba and Tencent are among the best-positioned to capitalize.

Covid-19 Repercussions

The Covid pandemic has affected every industry economically and the global information and communication technology (ICT) sector is no exception. Majority of the local and multinational ICT corporations halted most of their manufacturing operations and canceled China's participation in important events and conferences in the first quarter of 2020. However, the industry was determined to make a solid comeback and the average industry growth was in the range of 7-8% by end of 2020. A majority of ICT projects are losing their momentum owing to the delays or even cancellations in some conditions. Major segment of the ICT sector, including hardware and IT services experienced a nearly 4% dip in revenues in the first quarter of 2020. Companies were forced to meet their existing deadlines with limited workforce, and hence are hardly concentrating on setting new targets and projects. This, in turn, has slowed down the growth of the sector and stunted the previously predicted optimistic industry growth. With the onset of Coronavirus crisis, the majority of international ICT events, gatherings, conferences were canceled. Tech leaders including Google, Microsoft, Adobe, Facebook, NVidia, Cisco, and Salesforce among others were also forced to call off their yearly events. Such events and gatherings offer vital business opportunities to ICT companies to showcase their products and solutions. Cancellation of such events has certainly affected the forthcoming opportunities for market players, making revival of the industry more difficult. With a jaw-dropping decline in China's manufacturing capacity, the global supply chain for ICT sector is disrupted to a much greater extent. Being a manufacturing hub, China was a key manufacturing location of some of the global ICT leaders including IBM, Intel, Apple, and Qualcomm among others. Although China is striving hard to regain its manufacturing capacity, it is difficult to predict the time it will take for complete revival of the operations. This has certainly obstructed the supply chains of the ICT industry, temporarily. Companies like Apple, who have China as the key manufacturing hubs and also one of the major markets for their products, were severely hit from both sides, and had severe revenue implications for the companies throughout 2020. The telecommunications industry witnessed a surge from past in the last few months of 2020. After the onset of COVID-19 crisis, social distancing limited consumers' mobility; hence, people were seeking new ways to keep themselves busy, entertained, and connected. Websites such as Facebook, Netflix, and YouTube witnessed a growth of 27.0%, 16.0%, and 15.3% viewership growth respectively in the US. Similar trends were also observed across the globe, including China where social networking, short videos, and mobile gaming has gained momentum. Consequently, social distancing and isolation have helped the telecommunication sector maintain its growth trajectory (MMR).

2.17 信息通讯技术业

关键要点

· 中国的新5G标准塑造了相关技术的未来竞争格局，但要动摇欧美国家在信息通讯技术领域的主导地位并不容易。

· 信息通讯市场仍是中国经济最为活跃的领域之一。这个市场预计到2021年可以达到8.1万亿美元的体量，占中国GDP的55%。

· 中国是全球第二大云计算市场。阿里巴巴和腾讯为这一领域最具发展优势的企业。

新冠疫情所带来的影响

新冠疫情使各行各业遭受了经济上的打击，全球信息通讯技术（ICT）行业也不例外。大多数本土和跨国ICT企业暂停了其大部分生产经营活动，并在2020年第一季度，取消了中国参加各种重要活动及会议的资格。不过，ICT行业决意要重振旗鼓，到2020年底，其平均增长速度保持在7%-8%之间。大部分ICT项目因延期甚至受某些条件影响而直接被取消，导致整体发展动力不足。2020年第一季度，ICT行业的主要环节，包括硬件和各类信息技术（IT）服务，其营收均下滑近4%。企业不得不在劳动力不足的情况下加紧在截止期限前完成现有项目，因此无暇制定新目标或开展新项目。这样反而拖慢整个行业的发展脚步，阻碍了原本预期乐观的增长。随着新冠肺炎疫情的爆发，大部分ICT行业的国际活动和会议均被迫取消。谷歌、微软、Adobe、Facebook、NVidia、思科和赛富时等技术领袖也被迫取消其年度活动。这些活动和会议原本是ICT企业展示自身产品和服务的绝佳机会。而活动和会议的取消必然会对市场参与者造成不利影响，导致行业复苏更加艰难。中国的产能呈断崖式下跌，全球ICT产业供应链也随之进一步断裂。中国作为制造中心，是IMB、英特尔、苹果和高通等全球ICT领军企业关键的产品产地。尽管中国正努力恢复产能，但究竟需要多久才能彻底复苏，还难下定论。这势必会导致ICT产业供应链暂时中断。对苹果等企业而言，中国不仅是其关键生产中心，还是其产品的主要市场之一。因此，在这场危机中，这些企业两头受创，使其2020年全年的营收数据非常难看。2020年最后几个月以来，电信行业复苏迅猛。新冠疫情危机爆发之后，保持社交距离的措施限制了消费者的出行；因此，人们只好寻找其它方法让自己忙碌起来，打发时间，或进行社交联结。Facebook、Netflix和YouTube等网站在美国的点击率分别迎来27.0%、16.0%和15.3%的增长。全球其它地区也出现了类似的趋势，包括社交网络、短视频和移动游戏发展势头正猛的中国。如此一来，保持社交距离和隔离等措施反而促进了电信行业的增长（MMR）。

在新冠疫情的影响下，中国加速了向"云"转变的步伐。后疫情时代，中国逐渐走向复苏。疫情期间供应链的断裂可能导致现金流出现问题，这促使一些传统企业重新制定未来发展战略，从而推动了云计算服务的需求增长。刚进入云市场或在疫情期间尝试云服务的企业可能最终也会成为付费客户。同时，企业可能加速实施"云"计划，以促进远程办公和远程交互。这类场景预计将在全球上演，国际数据公司（IDC）预测今年全球信息技术支出将减少5%，而在云服务支出的推动下，IT基础设施支出将增长3.8%，达到2370亿美元。企业预计将维持云服务支出，以此控制成本，同时推迟IT项目（例如，现有内部数据中心和应用）的支付。由于疫情爆发，尽管大型企业迁移脚步的放缓，但是在远程办公需求激增的推动下，仅在2020年第一季度，全球云服务基础设施支出就增长了34%，至310亿美元（LD Investments）。

背景

信息通讯技术（ICT）市场是中国经济最为活跃的领域之一。预计到2021年，这一市场规模将增长至8.1万亿美元，占中国GDP的55%。中国2017年的ICT进口总额达5280亿美元，出口额则为7810亿美元。随着中国ICT市场发展，某些推动增长的细分领域（例如（如挖掘机）的增长智能手机）预计将达到饱和；ICT技术与转型中的传统产业的融合则是未来的增长动力。对国际企业而言，中国ICT市场中既存在巨大的机遇，也充满严峻的挑战。由于国内竞争格局日渐成形，外国企业在中国众多ICT细分领域占据主导份额的光辉岁月已成为过眼云烟。中国企业一直在努力掌握技术，还经常以低廉的价格动摇市场。为在市场上站稳脚跟，美国企业的合作意识也在不断提升。随着市场逐渐成熟，ICT产品首次消费者也越来越少。由于企业不断向其他国家转移生产，中国的成本优势也不如往昔。中国的ICT政策环境带来了严峻挑战。中国从商业和国家安全的角度看待这个产业。各项旨在确保安全的政策通常看似是在牺牲外国企业的利益。2017年6月1

Covid may have the effect of accelerating China's shift to the cloud. The country's post-Covid recovery is expected to boost demand for cloud computing services, driven by traditional businesses rethinking their future strategies, as supply disruptions during the pandemic may have led to cash flow problems. Companies new to the cloud market or which had been lured into trying cloud services during the Covid outbreak could also end up becoming paying customers. Meanwhile, enterprises may accelerate cloud initiatives to facilitate remote working and remote interactions. This scenario is also expected to play out around the world, with the IDC forecasting global IT spending to decline 5% this year, while IT infrastructure spending is expected to grow 3.8% to US$ 237 billion driven by cloud spending. Companies are expected to maintain their cloud spending as a way of controlling costs, while deferring expenses on other IT spending such as existing on-premise data centers and applications. In the first quarter of 2020 alone, cloud infrastructure spending globally grew 34% to US$ 31 billion, driven by remote working demand due to the Covid outbreak, although this was offset by a slowdown in migrations from large enterprises (LD Investments).

Background

China's information and communication technology (ICT) market is among the most dynamic sectors in the economy. The market was projected to reach $8.1 trillion by 2021, representing 55% of China's GDP. China's ICT imports in 2017 totaled $528 billion, while its exports reached $781 billion. As China's ICT market develops, certain sub-sectors that have been driving growth (e.g., smart phones) are predicted to become saturated; future growth will be fueled by integrating ICT technologies into, and transforming, traditional industries. For international firms, big opportunities in China's ICT market are tempered by real challenges. Due to rapidly maturing domestic competition, foreign companies no longer have a dominant market share in many of China's ICT sub-sectors. Chinese firms have been adept at mastering technologies and shaking up markets, often by offering low prices. US firms are increasingly partnering to stay in the market. As the market matures, there are fewer first-time buyers of ICT. China's cost advantages have also declined as production is increasingly moved elsewhere. China's ICT policy environment presents a serious challenge. China views the sector through a commercial and national security lens. Policies intended to ensure security often appear to do so at the expense of foreign companies' interests. China's first Cybersecurity Law went into effect on June 1, 2017. The law establishes a framework for regulating China's networks on national security grounds, and for the supervision of the ICT sector more generally. The law details the security obligations of internet products and service providers, institutes rules for the transmission of data, and enhances the rules on personal data protection. China continues to roll out implementing measures for the law. Lack of clarity about how the law will be enforced remains a top concern for many ICT companies active in China's market. Data privacy is a critical component of the Cybersecurity Law and is an area where the Chinese government has been particularly active. China's new data measures trends attracted significant industry concern due to inconsistencies with international practices on data transfer and data localization, which could heavily impact international businesses' operations. Over the past decade, China has consistently ranked as one of the largest and fastest growing country markets for U.S. semiconductors and semiconductor manufacturing equipment and will continue to do so in the near term. China represents 50% (US$168 billion) of the US$336 billion global semiconductor market. Headwinds brought on by slowing global demand for ICT products, slowing transitions to smaller IC manufacturing nodes, and a strong dollar, however, will be exacerbated by China's opaque policies and unprecedented state-led investment to develop an indigenous semiconductor industry. China's policies, which are intended in part to reduce reliance on international semiconductor imports, create medium and long-term uncertainties for US industry prospects in the Chinese market. While a gap remains between China's demand and production of semiconductors, with the support of the Chinese government – including significant state funding directed

日，中国首部《网络安全法》正式生效。这部法律基于国家安全考虑，建立了一个针对网络治理的监管框架，从更宽泛的角度讲，这个框架目的是对ICT行业进行监督。《网络安全法》详细规定了互联网产品和服务提供者的安全义务，制定了数据传输规则，并强化了对个人数据的保护规则。中国还在持续出台这部法律的配套实施细则。而许多活跃在中国市场的ICT企业最担心的是，官方并未明确解释这部法律具体该如何执行。数据隐私是《网络安全法》的关键组成部分，也是中国政府尤其活跃的领域。中国有关数据保护方面的措施倾向引起了行业的重大担忧，因为它们不符合国际上有关数据传输和数据本地化的相关实践，因此可能严重影响国际企业在中国的运营。在过去十年中，中国始终是美国半导体及半导体制造设备最大且增长速度最快的市场之一，这在短期内不会有任何变化。全球半导体市场规模为3360亿美元，中国则占据了其中的一半（1680亿美元）。然而，全球对ICT产品的需求放缓、向小型集成电路制造节点的过渡变慢以及美元坚挺所导致的逆风局势，将因中国的不透明政策和在史无前例的国家主导下本土半导体产业投资而加剧。中国的这些政策本意是减少对国际半导体进口的依赖，却给美国产业在中国的中长期发展带来了诸多不确定因素。虽然中国半导体的供需差距仍然存在，在中国政府的支持下，包括国家引导的投资基金的大力支持，一些中国半导体企业有望发展出自身的核心技术，从而弥补这个差距。近年来，中国宣布在厦门、合肥、南京、武汉和成都等地开展了许多新型12英寸半导体制造厂项目。中国数字经济欣欣向荣，网络安全成为中国监管机构的重要关注点。2017年6月1日，中国出台的旨在维护国家安全的《网络安全法》正式生效。这部法律的实施细则，包括网络安全审查和跨境数据传输，将会对外国企业及ICT产业整体的发展造成重大影响，而这种影响究竟是积极还是消极，目前还不得而知。中国进一步制定并发布了《网络安全法》配套细则措施的公开征求意见稿。中国的网络安全等级保护制度旨在保护信息网络不受破坏或攻击，所有外国企业必须遵守这一制度。根据该制度，所有网络信息产品按其对中国国家安全、社会秩序和经济利益的重要程度从小到大分为五个等级。根据该制度，安全等级为第三级及以上的技术产品必须至少包括部分国内知识产权。该制度还要求对安全等级为第三级及以上的传统信息技术产品进行严格测试。几乎没有外国公司能获得销售安全等级为第三级的技术产品的许可（PSN）。

《中国标准2035》

全球各地的技术和产业都有相应的标准，用于界定其操作规则及在全球范围内的互操作性。互操作性指两个或以上系统共同协作的能力。电信行业就是个很好的例子。5G这种新网络技术并不是凭空出现。在面世之前，需要经过多年的规划和开发。相关的技术标准需要行业机构、专家和企业通过合作制定。技术规范采用后被纳入后来人们所指的标准中。这能确保标准尽可能统一，从而提高新网络技术推出的效率，且无论在世界上任何地方都能正常运作。人们日常使用的各种技术背后都有相应的标准，例如，智能手机。欧美国家的技术巨头，如高通和爱立信，都曾参与各类行业标准的制定。但是，近年来，中国越来越积极地参与标准制定。中国也许在这方面野心勃勃，但要动摇欧美国家的主导地位也绝非易事。虽然中国的参与度和政府干预的加强确实带来一些程序上的挑战，这并未造成任何不当影响，也未能让竞争局面转而对中国更加有利。基于技术领导地位和专业知识、对标准制定程序和规则的深刻理解、提案的质量以及长时间的参与度等因素，大部分ICT相关的标准制定机构仍将美国和跨国企业视为最具影响力的参与者。美国信息技术产业协会（ITI）代表着全球70多家信息通信技术企业。中国未来也需要提高参与全球标准制定的企业的质量，也需要在各个技术领域扶持像华为这样有实力做大事的企业。各个行业机构通过其成员企业制定相关技术标准。这些企业一般会要求最好、最高质量的标准，而通常只有最顶尖的技术才能胜出。这也是欧美国家能够占据如今的优势地位的原因。这些国家拥有高度先进的企业（Kharpal, Power）。

中国决心从世界工厂转型成为出口导向型技术提供方，而标准化作为实现这一转型的战略工具，在近十年间得到越来越广泛的应用。在此背景下，那些在历次五年计划中被认定为优先技术的领域是重点标准化领域。因此，在机械工程领域，根据2020年收官的《中国工程机械行业"十二五"发展规划》，中国对与智能制造流程相关的机床领域提出了具体的标准化要求。中国人许多年前就认识到，中国在国际标准组织ISO和IEC层面的参与度与其日益重要的经济地位并不匹配。因此，中国在过去十年中一直在努力提高其在国际标准化制定的参与度。在国家的大力资助下，中国方面的行动日益增加，尤其是在那些被国家定义为优先标准化领域（Donath）。

猜疑的阴云始终笼罩着中美关系，因此似乎所有中国方面（尤其是涉及先进技术）的行动都会遭到动机不纯的质疑。技术标准作为技术开发流程中的一个环节，原先并不为人所熟知。随着5G、AI和新兴技术成为流行热词，这个环节才开始得到政策制定者更多的关注。特别是，美国官员早已对中国在技术标准制定工作中更加活跃的表现以及中国政府即将出台的计划忧心忡忡。在这种恐惧和不确定性加剧的氛围中，不难看出威胁就潜伏在各个角落。当政策制定者试图将真正的威胁从巨大的阴影中分离出来时，在中国作出的姿态和各种声明中分辨出真正的风险，这一点非常重要。由于政策制定者们越发担心技术标准与中国的技术优势之间存在某些潜在的联系，《中国标准2035》受到了更加密集的关注。然而，要评估这些担忧是否只是杞人忧天，重点是要先了解国际标准体系。技术标准领域奉行产业领导力、开放、规则导向、共识决策和自愿采用国际标准等原则。任何相关利益方均

by state-guided investment funds – some Chinese semiconductor companies are looking to develop core technologies that allows China to bridge that gap. In recent years, many new 12-inch semiconductor fab projects have been announced in China, including projects in Xiamen, Hefei, Nanjing, Wuhan, and Chengdu. With the booming growth of China's digital economy, cybersecurity has become critically important to Chinese regulators. China's Cybersecurity Law took effect on June 1, 2017 and is designed to promote national security. Implementing measures for the law – including those on cybersecurity review and cross-border data flow – will have a large, but as of now unknown, effect on foreign firms and the development of the ICT industry as a whole. China continues to introduce new laws and measures related to the Cybersecurity Law for public comment in advance of future implementation. Foreign firms must comply with China's Multi-Level Protection Scheme, (MLPS), which seeks to protect information networks from being damaged or attacked. Products are classified from one to five, one being the lowest and five being the most critical to China's national security, social order, and economic interests. Technology products at MLPS levels three and above must include at least some domestic IP. MLPS also requires that traditional IT products at level three or above be subject to rigorous testing. Few foreign companies are licensed to sell products at level three (PSN).

China Standards 2035

Technologies and industries around the world have standards that define how they work and their interoperability around the world. Interoperability refers to the ability for two or more systems to work together. The telecommunications industry is a good example. New networks such as 5G aren't just turned on. They take years of planning and development. Technical standards are created through collaboration between industry bodies, experts and companies. Those technical specifications are adopted and integrated into what becomes known as standards. That ensures that standards are as uniform as possible, which can improve the efficiency of network rollouts and ensure they work no matter where you are in the world. Standards are behind many of the technologies we use every day, such as our smartphones. Major American and European technology companies, such as Qualcomm and Ericsson, have been part of standards setting across various industries. But China has played an increasingly active role in the past few years. China may have big ambitions, but dislodging the dominance of the U.S. and Europe won't be an easy task. While increased Chinese participation and government involvement has created some procedural challenges, it has not created undue influence or tipped the competitive scales in favor of the Chinese. The US and multinational companies are still largely regarded as the most influential participants in ICT-related standards bodies — based on their technical leadership and expertise, deep understanding of standards processes and rules, quality of contributions, and consistent participation over time. The ITI represents over 70 global information and communications technology companies. China will also need to boost the quality of the companies contributing to global standards. The country will need to develop companies that are able to do what Huawei is doing, but in a variety of different technology sectors. These standards are set by industry bodies through companies that participate in them. Usually the companies want the best, the highest standards, and the best tech usually wins out. That is why the U.S. and Europe have the incumbent advantage. They have highly advanced companies (Kharpal, Power).

With China's intended transformation from the world's extended workbench to an export-oriented technology provider, standardization has increasingly been used as a strategic instrument by the Chinese side for about 10 years. In this context, standardization particularly addresses those areas that are defined as priority technologies in the respective five-year plan. Accordingly, in the mechanical engineering sector, specific Chinese standardization activities in relation to intelligent manufacturing processes in the machine tool sector could be observed based on the 12th Five-Year Plan which expired in 2020. In China, it was recognized years ago that Chinese participation at the level of the international standards organizations ISO and IEC does not correspond to the country's

可坐到谈判桌边参与合作和竞争，提出既能够让全球消费者享受产品和服务又能防止某一方获取不当主导的提案。这是整个体系存在的前提。消费者每天都在从中获益，例如，在统一的国际标准下，用户的电脑能够连接到美国和日本的无线网络，或高清多媒体界面（HDMI）线缆能够接入任何品牌的电视。这就是制定这些标准的目标：确保整个市场的互操作性，让消费者和企业能够在具有竞争力的价格条件下充分利用最新技术的优势。在日益分化的全球大环境下，跨国公司长期以来一直鼓励包括中国公司在内的竞争对手在国际标准制定组织的谈判桌前提出自己的提案，这一点可能让人感到惊讶。这种对所有参与者一视同仁的做法背后的目的是，制定全球市场准入门槛，让消费者免受技术孤岛带来的伤害。然而，当政策制定者留意到中国企业越来越积极地参与新兴技术相关的标准制定工作，尤其是加入专门负责5G和电信的技术委员会时，他们开始担忧了。这也可以理解。来自一些大型中国企业的提案越来越多，似乎把工作小组的议程都淹没了。但是，决策制定者似乎错把数量当成了质量，单纯的数量多并不意味着就能主导市场。技术标准的制定工作是一个互相竞争的过程，在这个过程中，由主题专家一致同意通过的提案将得到采用，其余提案则被淘汰。有些中国企业在产品研发方面进行了投资，也了解标准体系的工作原理，因此，他们当然也能提出优质的技术提案。讽刺的是，中国政府的多项声明与美国政策制定者对其的解读掩盖了双方对标准的根本性误解。国际标准并非必须遵守的规则或法律，甚至称不上是规范。企业为其产品选择最适合的标准，而这种选择会随着技术的迅速发展而改变。有这样一种非常普遍的观点：中国政府会诱使世界上最好的工程师采用能够塑造有利于中国的技术格局的自愿性标准，并在每次技术变革中继续采取这种做法。在自身所在领域以及相关的技术标准制定过程中，美国和跨国企业仍是强力竞争者和领头羊。但是，中国的竞争实力也不容小觑，随着中国企业不断进步，这种实力会在他们参与国际标准机构并成功制定标准的过程中有所体现。成功的提案能为企业的产品吸引更多消费者，从而占据更大的市场份额，并在时刻变化的环境中保持自身的竞争力。不过，单纯地起草更多的标准，并不能塑造下一代技术。企业领导层需要确保对技术标准专家进行持续的投资。这些专家需要具备一套独特的技术专长技能，并且能够在庞大复杂的官僚机构中进行跨企业工作。这需要频繁出差，还要坚持长期参与，才能充分了解工作职责并产生影响力。对专家人才的投资效果不会立竿见影，但技术企业若想持续获得成功并维持领导力，这一点至关重要。

云计算

在全球云计算行业，中国是个快速发展且非常重要的市场，同时也给美国云服务提供商带来了各种严峻挑战。即便是经验丰富的美国大型服务提供商，也面对各种监管限制（包括与中国企业合作时要遵守的种种严格要求），某些方面的政府决策以及与当地竞争对手的较量时，它们也会头疼不已。因此，在中国经营业务需要掌握大量的资源，会灵活变通，还要能够高瞻远瞩（PSN）。

中国早已成为全球第二大云计算市场，但其体量仍只有全球最大市场美国的十分之一，且中国云计算支出在国家IT总支出中的占比极小。说明中国云计算发展空间巨大。中国云计算市场一直在快速增长。2019年全年，国家云基础设施支出增长了63.7%，达107亿美元，占据了10.8%的全球市场份额，成为全球第二大云市场。不过，美国作为全球最大的公共云市场，其2019年云支出就比预计的1240亿美元高出了不止10倍，相比之下，中国的支出简直微不足道。另外，据印度全国软件和服务公司协会（NASSCOM）2019年的报告显示，中国的IT支出仅占国家GDP的1.4%，而云服务支出占IT总支出的比例只有2.7%。再看美国，作为全球最大的云市场，其IT支出占GDP的4.7%，其中的11.4%是用于公共云服务。这一对比表明中国的云市场潜力巨大。当前，中国的云市场还处于落后状态，比美国落后了至少四年。但是，2023年以后，中国将快速追赶，有望将自身与美国的差距缩减至三年以下（LD Investments）。

后疫情时代，解封后的中国重新恢复经济增长势能，在政府的经济措施刺激下，出现更多的数字机遇，加速推动正在进行的"云"迁移。事实证明，在本季度，随着新冠疫情危机的升级，按需访问计算资源至关重要。许多企业采取远程办公模式，利用数据和各类应用，以维持运营，而学生则借助协作平台继续学习。这证明了云服务日益重要的地位，以及它在实现数字化转型中所发挥的核心作用。但是，由于工作场所关闭，一些复杂的大型咨询导向型项目被迫中断，谈判和招标程序也受到了影响。不过，随着企业评估自身对危机的响应、优化未来的应急连续性计划以及开发新的流程和服务，新的云迁移和云原生机会正在涌现。更多资金的经过政府主导的新基建经济刺激措施流向了互联互通、医疗保健、教育、交通和城市建设等领域，这也将推动云技术的应用顺利向2021年过渡。与其他国家不同的是，中国政府的刺激措施集中在5G、人工智能、云计算、电动汽车、物联网和机器人等领域的投资，目的是重整经济结构，以创新促发展。这些机会将进一步加剧顶级云服务提供商之间的竞争，这些提供商随后制定了大型投资计划和技术发展目标，以提升其在这些领域的能力（Williams）。

阿里巴巴在2020年9月季度的云业务增长速度已超过了亚马逊和微软，这家中国技术巨头也再次表明，到2021年三月，要让该项业务实现盈利。据阿里巴巴的报告，其9月季度的云计算业务创收达148.9亿人民币（约22.4亿美元）。这意味着同比增长60%，而且这是该公司自2019年12月季度以来最快的增长率。这一增长率超过了同期亚马逊Web服务29%的营收同比增长和微软Azure业

increasing economic importance. Therefore, considerable efforts have been made in the last decade to increase the presence in international standardization. Due to massive state funding, there is an increase in Chinese initiatives, particularly in those areas of standardization where the state has defined these as priority topics (Donath).

With mistrust pervading the US-China relationship, it seems that nearly any Chinese action stokes suspicions of malicious intent, especially anything involving advanced technology. As 5G, AI, and emerging technology have become buzzwords, policymakers have started to pay more attention to a previously obscure piece of the technology development process: technical standards. In particular, U.S. officials have been concerned about China's increased participation in technical standards development work and the government's forthcoming plan. In a climate of heightened fear and uncertainty, it is easy to see boogeymen lurking behind every corner. As policymakers seek to separate true threats from long shadows, it is important to distinguish Chinese posturing and proclamations from real risks. As policymakers have become increasingly concerned about the potential connection between technical standards and China's technological advantage, focus on China Standards 2035 has heightened. However, in order to assess these concerns, it is important to first understand the international standards system. The technical standards community lives by the tenets of industry leadership, openness, rules-based, consensus decision making, and voluntary adoption of international standards. The whole system rests on the premise that any interested stakeholder can come to the table to cooperate and compete, proposing contributions that enable products and services to work for consumers around the globe while safeguarding against undue dominance of any one player. Consumers reap the benefits of this everyday—for example, international standards ensure that your laptop can connect to Wi-Fi in the United States and Japan; or that an HDMI cable can plug into any TV, regardless of brand name. That's the goal of standards development—to enable interoperability across markets, so that consumers and companies can take full advantage of the latest technology at competitive prices. In an increasingly bifurcated world, it might be surprising to learn that global companies have long encouraged their competitors, including Chinese companies, to bring their contributions to the table at international standards development organizations. The idea behind including all players is to foster global market access and avoid islands of technology that hurt consumers. However, when policymakers noticed a significant uptick in Chinese company participation in emerging technology standards work, particularly in technical committees dealing with 5G and telecommunications, they understandably became concerned. As contributions from a few large Chinese companies increased, they sometimes seemed to overwhelm the agendas of working groups. Yet, in this instance, policymakers have mistaken quantity for quality, and numbers alone don't lead to market dominance. Technical standards work is a competitive process, in which contributions are accepted by consensus among subject matter experts, and others are weeded out. There are, of course, very good technical contributions from Chinese companies that have invested in their product development and learned how the standards system works. Ironically, the Chinese government's proclamations and U.S. policymakers' interpretation belie foundational misunderstandings of standards. International standards are not required rules, laws, or even norms. Companies choose the most appropriate standards for their products, which change with rapidly developing technology. The notion that the Chinese government is going to swindle the world's best engineers into adopting voluntary standards that will shape the technological landscape in China's favor, and continue to do so with every technological change, is a significant reach. US and multinational technology companies remain strong competitors and leaders in their fields and in the associated development of technical standards. However, China is a real competitor, and as Chinese companies advance we should expect to see that reflected in their participation (and success) in international standards bodies. Successful contributions can help companies' products reach more consumers and markets and enable them to stay competitive in an ever-changing

务48%的增长。值得一提的是，阿里巴巴的云计算业务规模远小于这两家市场领军企业。作为比较，2020年9月季度，亚马逊Web服务创收额为116亿美元，微软的智能云业务（包括Azure及其它产品）营收总额达130亿美元。阿里巴巴是全球第四大公共云计算提供商（Kharpal，阿里巴巴）。

5G和物联网

前面几代移动技术主要为用户介绍单个新功能：1G让用户可以边移动边讲电话，2G让用户可以发短信，3G让用户可以登入互联网，4G让用户进入流量时代。5G与这些的不同点在于，它有望实现一系列的重大进步。5G技术使用全新的无线基础架构，使其速度比4G快100倍，并有望消除几乎所有的处理延迟。5G技术还能以低成本和低能耗连接数十亿台机器、设备和传感器，非常适合用于启动物联网。中国非常了解这一切。中国政府在《"十三五"规划》中将5G描述为一个"战略性新兴产业"和"新的增长领域"，并在《中国制造2025》这项旨在将中国打造成为全球制造领袖的计划中，明确要"全面突破第五代移动通信(5G)技术。"显然，中国正在严肃认真地实施规模宏大的措施，推动实现这个目标。这句话的意思是，中国认为，5G是其引领全球无线技术发展的第一个机遇。1990年代，欧洲国家率先采用了2G技术；2000年代，日本成为3G技术的开拓者；2011年，美国主导推出4G技术。而这次，中国从通信技术的追赶者成长为引领者。在一次电视访谈中，中国最大的移动运营商中国移动前董事长王建宙将通信行业从1G到5G的发展描述为"一个从无到有、从小到大、从弱到强的过程。"中国政府认为5G对国家技术领域和经济发展至关重要。生产了多年的山寨产品之后，中国的科技公司希望成为下一个苹果或微软——价值近万亿美元的全球创新巨头。中国信息通信研究院是一家官办研究机构，该机构预计，到2030年5G将为中国创造超过800万个工作岗位。该机构认为，包括能源和医疗保健在内的主要行业同期将总共投入数十亿美元用于购买5G设备和无线服务。中国三大移动运营商（中国移动、中国电信和中国联通）均为国有企业，在政府的指引下，正在几十座城市大规模布局5G测试网络。中国移动表示，其正在进行测试全球最大的5G网络。在政府的指引下，中国企业在2013年开始开展5G相关的研究并在2016年进行相关技术测试。中国运营商只需要执行政府政策就可以了，而大部分国际电信企业由于要平衡各种竞争因素，所以它们的投资步伐缓慢。中国政府还承诺为中国运营商提供大量5G频谱。美国和其他国家的运营商则不仅享受不了这种优待，为了获得频谱使用授权牌照，它们还得向监管机构支付数十亿美元。这些射频携带无线信号，对于蜂窝网络服务（尤其是5G）至关重要，因为蜂窝网络服务需要有更高的带宽才能为用户提供超快的网速。中国希望先将5G网络应用于智慧城市和联网汽车。地方政府一直鼓励开发商创建各种与远程医疗和城市基础设施相关的基于5G网络的应用，而中国企业则希望利用5G网络实现工厂设备的连通和智能化。尽早使用5G网络，能让中国占据优势，开发基于5G的服务并从中实现盈利——正如当初4GLTE网络推出后，硅谷从Instagram、优步（Uber）和YouTube等应用中获利一样。正因为美国是率先大范围推广4G网络的国家，美国企业才能迅速抓住这一优势并在全球销售由4G产生的各种应用。中国的制造中心深圳可以利用5G将大量设备连接到云服务器，从而成为物联网（IoT）领军者（Woyke）。

在中国迈入激动人心的新技术时代之际，国家工业和信息化部已经提出了具体的行动方案。5G、物联网以及更先进的人工智能全部都在眼前。这些有关中国的工业和信息技术行业的关键词也让人们对2021年寄予了厚望。工业和信息化部部长苗圩表示，国家信息和通信产业保持着良好发展态势。根据当前发展状况，国内早已出现了较为优质的商业5G终端，尤其是在一些大城市。苗圩还表示，在国际5G合作中，应该为华为这样的中国企业提供公平公正的商业环境。并补充道，中国将始终保持开放态度，加强与其他国家的合作，加速5G发展步伐，从而尽早让更多人民从中受益（Zheng）。

网络安全

中国发布新规，要求购买网络产品和服务的企业开展网络安全评估，排查可能危害国家安全的漏洞。中国一直在实施越来越严格的措施，对支撑其互联网的核心科技以及网络活动进行监管。2017年，中国出台了一部具有标志性意义的法律《网络安全法》，为之后发布的所有配套法规制定了一套框架体系。这部法律规定了国家网络治理的相关标准，包括实名认证、内容审核和数据本地化等。这些新规明确了采购网络产品的审查要求和程序，以符合现行法律。要求关键信息基础设施运营者对其网络设备和服务进行审查，以确保国家安全。这些规定可能影响服务器设备、海量存储设备、云计算服务和大型数据库等采购项目。关键基础设施运营者大致涵盖了涉及金融、能源、交通和通信等行业以及处理大量个人数据的企业，但是官方并明确定义哪些企业属于这个范畴。运营者必须"预判"产品和服务投入使用后可能带来的国家安全风险。中国政府还设立了一个新部门，专门评估网络设备是否可能遭受干预或被非法控制，系统是否会危害数据安全或存在宕机风险。先前针对中国网络安全框架的几次更新对外国企业以及它们处理收集的中国公民数据的方式提出了更多的要求。2018年，苹果公司与一家位于中国西南部贵州省的数据中心运营商合作，将中国苹果手机用户数据放在中国。微软Azure和亚马逊Web服务等云运营商必须与中国企业合作才能在中国提供它们的产品（Udemans）。

environment. But drafting more standards alone does not shape the next generation of technology. Company leadership needs to ensure that they continue to invest in technical standards experts. These professionals require a unique skill set of technical expertise and the ability to work across companies in a large and complex bureaucracy. It requires significant travel and consistent, long-term participation in order to fully learn the ropes and gain influence. The results of these investments are not immediate, but they are essential to the continued success and leadership of technology companies.

Cloud Computing

Although China is a fast-growing, important market for global cloud computing, the country presents serious challenges for U.S. cloud providers. Regulatory restrictions, including strict requirements to operate with a local partner, some aspects of governmental decision-making, and local competition make China a problematic market for even large experienced U.S. providers. Operating in China therefore requires substantial resources, flexibility, and a long-term outlook (PSN).

China's cloud computing market is already the world's second largest but is still just about one-tenth the size of the United States (the world's largest), and China's cloud spending accounts for a tiny fraction of the country's total IT spend. This suggests tremendous room for growth. China's cloud computing market is growing at a rapid clip. During the year 2019, the country's cloud infrastructure spending increased 63.7% to US$ 10.7 billion, making it the second-biggest cloud market in the world with a 10.8% market share. Yet, China's public cloud market is minuscule compared to the US, the world's biggest public cloud market, where cloud spending was more than 10 times higher at a projected US$ 124 billion in 2019. Furthermore, according to a 2019 report by the National Association of Software and Service Companies (NASSCOM), China's IT spend accounts for just 1.4% of the country's GDP, and a tiny 2.7% of its total IT expenditure is spent on cloud services. This compares with the United States, the world's largest cloud market, where IT spend accounts for 4.7% of its GDP, and 11.4% of that is spent on public cloud services. This suggests ample potential for China's cloud market. China is currently a lagging country in the cloud market—lagging four or more years behind the United States). However, beyond 2023, China is expected to become a tracking country—lagging behind the U.S. by less than three years (LD Investments).

The ongoing shift to cloud in China will accelerate as the economy regains momentum post-Covid shutdown, with new digital transformation opportunities emerging, funded by Chinese government economic stimulus measures. Access to on-demand compute resources proved to be vital during the quarter as the coronavirus crisis escalated. Many businesses were able to maintain operations through remote working and access to data and applications, while students continued to learn via collaboration platforms. This demonstrated the growing importance of cloud services and the central role they have played in enabling digital transformation. But some large, complex and consulting-led projects were disrupted due to workplace shutdowns, which also affected negotiations and bidding processes. But new cloud migration and cloud-native opportunities are emerging as organizations assess their response to the crisis, optimize future emergency continuity plans and develop new processes and services. Additional funding through government-led "new-infrastructure" economic stimulus measures into areas such as connectivity, healthcare, education, transport and urban areas will also drive cloud use well into 2021. China's stimulus measures differ from those in the rest of the world by focusing investment on 5G, AI, cloud computing, electric vehicles, IoT and robotics to restructure the economy and drive growth through innovation. These opportunities will further intensify competition among the leading cloud service providers, which subsequently outlined large investment plans and technology advancements to increase their capabilities in these areas (Williams).

The growth of Alibaba's cloud business outpaced Amazon and Microsoft in the quarter ending in September 2020, and the Chinese tech giant reiterated its commitment to making the unit profitable by next March 2021. Alibaba reported cloud computing brought in revenue of

如果网络安全审查办公室认为需要开展网络安全审查，会向相关运营者发出书面通知，并在发出书面通知之日起30个工作日内完成初审。如果情况复杂，可延长15个工作日。特别审查程序一般应当在45个工作日内完成，如有复杂情况可适当延长。提交补充材料的时间不计入审查时间。根据该审查办法，参与网络安全审查的相关组织和人员应严格保护企业商业秘密和知识产权。审查机构和人员对运营者提交的未公开材料，以及审查工作中获悉的其他未公开信息承担保密义务，且不得向无关方披露此类信息或将此类信息用于审查以外的目的（Hunton）。

在中国境内运营的所有外国实体均受此网络安全体系监管。网络系统和通信是当代所有企业工作的核心，因此，了解中国这个网络监管体系的运作机制非常关键。这部法律的影响范围不仅限于在中国设立外资企业的外国企业，还适用于通过任何网络将个人或技术信息传输至中国、将信息传输至任何中国通过“数字丝绸之路”项目实施“数字权威主义”任何国家、以及将信息传输至任何已成为基于中文的数据搜集操作的目标国家或地区（香港/台湾）的任何人（Dickinson）。

14.89 billion RMB (US$2.24 billion) in the three months ending Sept. 30. That's a 60% year-on-year rise and its fastest rate of growth since the December quarter of 2019. That was faster than Amazon Web Service's 29% year-on-year revenue rise and Microsoft Azure's 48% growth in the September quarter. It's important to note that Alibaba's cloud computing business is significantly smaller than these two market leaders. For comparison,Amazon Web Services brought in revenue of US$11.6 billion while Microsoft's intelligent cloud revenue, which includes other products as well as Azure, totaled US13 billion in the September 2020 quarter. Alibaba is the fourth largest public cloud computing provider globally (Kharpal, Alibaba).

5G and the Internet of Things

Unlike previous generations of mobile technology, which tended to introduce a single novel feature for users (1G let you walk and talk, 2G let you send texts, 3G got you onto the internet, and 4G let you stream), 5G promises a whole suite of dramatic improvements. It uses entirely new wireless infrastructure to achieve speeds up to 100 times faster than 4G and promises to nearly eliminate any processing delays. It will also kick-start the internet of things, since it was designed to connect billions of machines, appliances, and sensors at low cost without draining their batteries. China knows this all too well. In its 13th Five-Year Plan the government describes 5G as a "strategic emerging industry" and "new area of growth," and in its Made in China 2025 plan, which outlines its goal of becoming a global manufacturing leader, it vows to "make breakthroughs in fifth-generation mobile communication." Clearly, China is serious about making this work—and on an epic scale. Here's what that means. China sees 5G as its first chance to lead wireless technology development on a global scale. European countries adopted 2G before other regions, in the 1990s; Japan pioneered 3G in the early 2000s; and the US dominated the launch of 4G, in 2011. But this time China is leading in telecommunications rather than playing catch-up. In a TV interview, Jianzhou Wang, the former chairman of China Mobile, China's largest mobile operator, described the development of China's mobile communication industry from 1G to 5G as "a process of from nothing to something, from small to big, and from weak to strong." The Chinese government views 5G as crucial to the country's tech sector and economy. After years of making copycat products, Chinese tech companies want to become the next Apple or Microsoft—innovative global giants worth nearly a trillion dollars. The China Academy of Information and Communications Technology (CAICT), a government-run research institute, estimates that 5G will create more than 8 million jobs domestically by 2030. The agency thinks major industries, including energy and health care, will spend billions of dollars collectively on 5G equipment and wireless service during that period. The government controls all three of the country's mobile operators (China Mobile, China Telecom, and China Unicom) and has been "guiding" them to deploy large-scale 5G test networks in dozens of cities. China Mobile claims that its tests alone represent the world's largest 5G trial network. Under government direction, Chinese companies began conducting research on 5G in 2013 and holding technical trials of related technologies in 2016. Chinese operators see their job as implementing government policy, whereas most global telecom companies try to balance competitive factors and will naturally invest at a slower pace. Beijing has also committed to giving Chinese operators large chunks of spectrum for 5G. That's a far cushier arrangement than operators enjoy in the US and many other countries, where they pay regulators billions of dollars for the right to use slivers of spectrum. These radio frequencies carry wireless signals and are critical to cellular service, especially 5G, which will need wide swaths of bandwidth to provide users with superfast speeds. China wants to use 5G in smart cities and connected cars—for starters. Local authorities have encouraged developers to create 5G-based applications related to telemedicine and urban infrastructure, while Chinese companies want to use 5G to add connectivity and intelligence to factory equipment. Early access to robust 5G networks could give China an edge in developing and monetizing services that use them—just as Silicon Valley profited from apps like Instagram, Uber, and YouTube after 4G LTE

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networks launched. Because the US was the first country to make 4G available on a wide scale, American firms were quick to take advantage of it and sell the resulting apps globally. China's manufacturing center, Shenzhen, could tap 5G to connect huge volumes of devices to the cloud and become a leader in the internet of things, often known simply as IoT (Woyke).

With China on the brink of an exciting new technological era, the nation's Ministry of Industry and Information Technology has laid out how China will get there. 5G, IoT, more advanced artificial intelligence, it's all right around the corner. The key words summing up China's industry and information technology sector have placed big expectations on 2021. Miao Wei, minister of China's Ministry of Industry and Information Technology, claims the Information and Communication Technology sector has kept good momentum. Based on the current development, relatively good commercial 5G terminals have already started appearing across the nation, especially in large urban areas. Wen also says that a fair and just business environment should be provided for Chinese companies, like Huawei, in international 5G cooperation. The ministry adds that China will always have an open heart for strengthening cooperation with other countries, quickening the advancement of 5G, and benefitting more people at an early date (Zheng).

Cybersecurity

China has released new rules requiring companies buying networking products and services to perform cybersecurity evaluations for vulnerabilities that could affect national security. China has been imposing stricter controls over the technology that makes up the backbone of its internet and how people interact in the cyber world. In 2017, China implemented its landmark Cybersecurity Law, which has served as a framework for regulations that have been rolled out since. The law set standards for the governance of the country's internet, including rules over real-name verification, content moderation, and data localization. The new rules clarify procurement review requirements and procedures to comply with existing laws. Operators of "critical information infrastructure" are required to conduct reviews of networking equipment and services to address any national security concerns. The rules could affect purchases of server equipment, mass storage devices, cloud computing services, and large-scale databases, among others. There is no clear definition of which companies could be classified as critical information infrastructure operators, though they broadly include firms involved in the finance, energy, transportation, and telecommunications industries, or those that handle large amounts of personal data. Operators are required to make "anticipatory judgments" over whether the use of the equipment could pose a threat to national security. A new government office was up to conduct evaluations to determine whether the equipment can be interfered with or illegally controlled, whether the systems could jeopardize data security, or if there are risks of service outages. Previous updates to China's cybersecurity frameworks placed additional burdens on foreign companies and how they handle data collected from Chinese citizens. In 2018, Apple moved all of its Chinese user data to China through a partnership with a data center operator in the country's southwestern Guizhou province. Cloud operators, including Microsoft Azure and Amazon Web Services, are required to offer their products through partnerships with Chinese companies (Udemans).

The Cybersecurity Review Office will provide written notification to the relevant Operator if it thinks a cybersecurity review is required and shall complete the preliminary review within 30 working days of such written notification. The time limit may be extended by 15 working days if the case is complicated. As for special review, it shall be completed within 45 working days normally, but the time limit may be extended if the case is complicated. The time for supplemental document submission is not included in these time limits. According to the Measures, the relevant organizations and personnel involved in the cybersecurity review shall maintain strict confidentiality with regard to the commercial secrets and intellectual property rights of the enterprises. They shall

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also bear responsibility for the confidentiality of nonpublic materials submitted by operators and other nonpublic information acknowledged during the review, and must not disclose to any irrelevant party, nor for purposes other than the review (Hunton).

All foreign entities operating within China are subject to this cyber-insecurity system. Since network systems and communication are central to the work of every modern company, understanding how the Chinese system operates is essential. The impact is not limited to foreign entities that establish foreign invested enterprises in China. It also applies to anyone who transmits information, personal or technical, into China via any network. It also applies to any person who transmits information into any country in which the Chinese digital authoritarianism system has been implemented through the Digital Silk Road project. It also applies to anyone who transmits information into any country or region (Hong Kong/Taiwan) that has become the target of Chinese based data gathering operations (Dickinson).

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List of Abbreviations and Acronyms in Part I and Part II

AI - artificial intelligence
BRI - Belt and Road Initiative
BNEF - Bloomberg New Energy Finance
CAA - Chinese Athletic Association
CAAC - Civil Aviation Administration of China
CAAM - China Association of Automobile Manufacturers
CADA - China Automobile Dealers Association
CASS - Chinese Academy of Social Sciences
CDC- Centers for Disease Control and Prevention
China GBC - China Green Building Council
CIRC - China Insurance Regulatory Commission
CMEC - China Machinery Engineering Corporation
CMIF - China Machinery Industry Federation
CNNC - China National Nuclear Corporation
CNPC - China National Petroleum Corporation
CPC - Communist Party of China
FAO - UN's Food and Agriculture Organization
FDI - Foreign direct investment
FMCG - fast-moving consumer goods
FTZ - China's Free Trade Zones
GM - General Motor
GMO - Genetically Modified Organism
HEI - higher education institution
ICOM - The International Council of Museums
ICPS - International Chinese-owned Private Schools
IEP - Institute for Economic Peace
IMF - International Monetary Fund
IIOT - Industrial Internet of Things
IRM - Industrial Raw Material
MSCI - Morgan Stanley Capital International
MLM - multi-level marketing
MOC - Ministry of Commerce
MOE - China's Ministry of Education
NBS - China's National Bureau of Statistics
NDRC - China's National Development and Reform Commission
NFGA - China's National Forestry and Grassland Administration
NFSRA - China's National Food and Strategic Reserves Administration
NHC - China's National Health Commission
NAFTA - North American Free Trade Agreement
OECD - Organization for Economic Co-operation and Development
PBOC - The People's Bank of China
PSA - Port of Singapore Authority
PMIs - Purchasing Manager Survey
RCEP - Regional Comprehensive Economic Partnership
SCFW - School for Children of Foreign Workers
Sinograin - China Grain Reserves Cooperative
TLAC - total loss-absorbing capacity
TPP - Trans-Pacific Partnership Agreement
UN - United Nations
UNEP - United Nations Environment Program
USDA - US Department of Agriculture
USTR - United States Trade Representative
WHO - World Health Organization

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Part III

Regional Overview

**Courtesy of EY*

Note

Unless otherwise mentioned, the data are provided by Wind. Wind's database is sourced from China's statistical offices or state agencies, such as the National Bureau of Statistics. Additional information was pulled from other credible sources, which are appropriately cited and described at the "notes" space at the bottom of each page.

This publication contains information in summary form and is therefore intended for general guidance only. It is not intended to be a substitute for detailed research or the exercise of professional judgment. Member firms of the global EY organization cannot accept responsibility for loss to any person relying on this article.

第三部分

区域概况

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3.1 Economic Overview in South China

Overview

South China is a leading engine in China's economic growth that includes not only the province of Guangdong, Fujian, Guangxi, and Hainan, but also the Special Administrative Regions of Hong Kong and Macau. Together, the economy of these regions measured RMB20.56t in 2019, or around 20.8% of the national GDP, much of which is concentrated in coastal regions such as the Pearl River Delta.

Forerunners in China's Economic Reform

The coastal region of South China is now home to China's technology and financial centers, as it benefits from being at the forefront of China's economic reforms. Shenzhen, Shantou and Zhuhai in Guangdong and Xiamen in Fujian were designated as the first four special economic zones when the opening-up policy began in 1978. With the support of significant capital investments from the Chinese diaspora originating in areas such as Taishan, Macau, Hong Kong, Chaozhou, Xiamen and Fuzhou, the region has quickly developed into an external facing manufacturing hub since the 1980s. In the decades that followed, the provinces have also successfully moved up from production of labor-intensive light-industry products and processing trade to higher value-added products such as mobile phones and the service industries.

The transition opened up opportunities for inland provinces in the region which remain hubs for national resources and agriculture. Inland provincial governments have been proactive in attracting new inbound investments. Specifically, the Guangxi government has aligned its comparative advantages in heavy industry and its proximity to ASEAN to welcome new industrial investments in the automobile, petrochemical and machinery manufacturing sectors in recent years. Hainan has also invested extensively in infrastructure to bring in modern service sectors such as exhibitions and logistics, and high value-added industries such as pharmaceuticals. With its stated target to become an international tourism destination in the 13th Five Year plan, Hainan has also launched an offshore duty-free policy and travel visa waiver to welcome tourists.

Meanwhile, the economic prospects for the Hong Kong and Macau SARs are set to improve due to increasing integration with Mainland China, particularly since the announcement of the Greater Bay Area in July 2017, when President Xi Jinping witnessed the signing of the "Development of the Guangdong-Hong Kong-Macau Greater Bay Area". Being a long-standing portal between Mainland China and the rest of the world, the SARs, especially Hong Kong, may tap into: 1) the rising connectivity of Mainland China's financial markets with the rest of the world; 2) their unique positioning as a gateway for the Belt and Road Initiative through overseas connections, particularly as a financing and litigation center; and 3) synergy with Shenzhen in terms of technology research and development, according to President Xi's pledge in May 2018, possibly through comparative advantages in academic research.

Outlook

The Greater Bay Area is envisioned by the government to become a leading metropolis. Its development is also expected in the 13th Five Year Plan to radiate into adjacent regions. As the GBA develops by leveraging the diverse strengths of its constituent cities, e.g., in technology and innovation, finance, shipping and trade, advanced manufacturing and hospitality, it will also create a supply chain of ideas, resources and talent within the region. Meanwhile, regional connectivity and

3.1 华南地区经济概况

概述

华南地区是中国经济增长的主要引擎之一，不仅包括广东省、福建省、广西壮族自治区和海南省，还包括香港和澳门两个特别行政区。2019年，这些地区的经济体量共达20.56万亿元人民币，约占中国GDP的20.8%。该地区经济发展多集中于沿海区域，尤其是珠江三角洲。

中国经济改革的先驱

获益于地处中国经济改革前沿地带，华南沿海区域一直是中国的科技和金融中心。自1978年中国开始实施改革开放政策，广东省的深圳、汕头和珠海，以及福建省的厦门成为国家首批设置的四个经济特区。在台山、澳门、香港、潮州、厦门和福州等地华人华侨大量资本投资的支持下，这些地区自20世纪80年代迅速崛起，发展成为外向型的制造业中心。在随后的几十年间，这些省份还成功地实现了从生产劳动密集型的轻工业产品和加工贸易，向生产手机等高附加值产品和服务业的转型。

上述转型为该区域内的内陆省份——中国的资源和农业中心，提供了机遇。内陆各省份政府积极吸引新的对内投资。具体而言，近年来广西政府将其在重工业方面的比较优势及其毗邻东盟的优越地理位势结合起来，欢迎在汽车、石油化工和机械制造领域进行新的投资。海南也大力投资基础设施领域，引进会展、物流等现代服务业以及医药等高附加值产业。为实现"十三五"规划中明确提出的建设国际旅游目的地的目标，海南还推出了离岸免税政策和旅游签证免签政策，欢迎游客。

同时，随着与内地整合程度不断提高，香港和澳门特别行政区的经济发展必将从中获益，尤其是在2017年7月粤港澳大湾区发展规划公布，国家主席习近平见证《深化粤港澳合作 推进大湾区建设框架协议》的签署之后。作为长期以来连接内地与世界其他地区的门户，香港和澳门特别行政区，尤其是香港，可利用下述有利条件：第一，内地金融市场与世界其他金融市场不断增强的互联互通；第二，通过其与海外的联系，特别是作为融资和诉讼中心，充分发挥其作为"一带一路"门户独特定位的作用；第三，根据习近平主席在2018年5月的讲话，或可通过其在学术研究上的比较优势，与深圳在升级技术研发方面形成协同效应。

前景

中国政府不仅希望大湾区将自身发展成为领先的国际大都市，还在"十三五"规划中提出希望其发展能够辐射周边区域。随着大湾区凭借区内各城市在科技和创新、金融、航运和贸易、先进制造业以及酒店服务业等方面的多元化优势推进发展，其也在周边地区形成了一条理念、资源和人才的供应链。同时，区域互联互通，以及对于改善生活水平不断提高的需求，也将推动着区内现代服务业的发展。由此，大湾区的建立，或能打造出一个以珠江三角洲为中心、发展程度更高、相互联系更为紧密的华南地区。

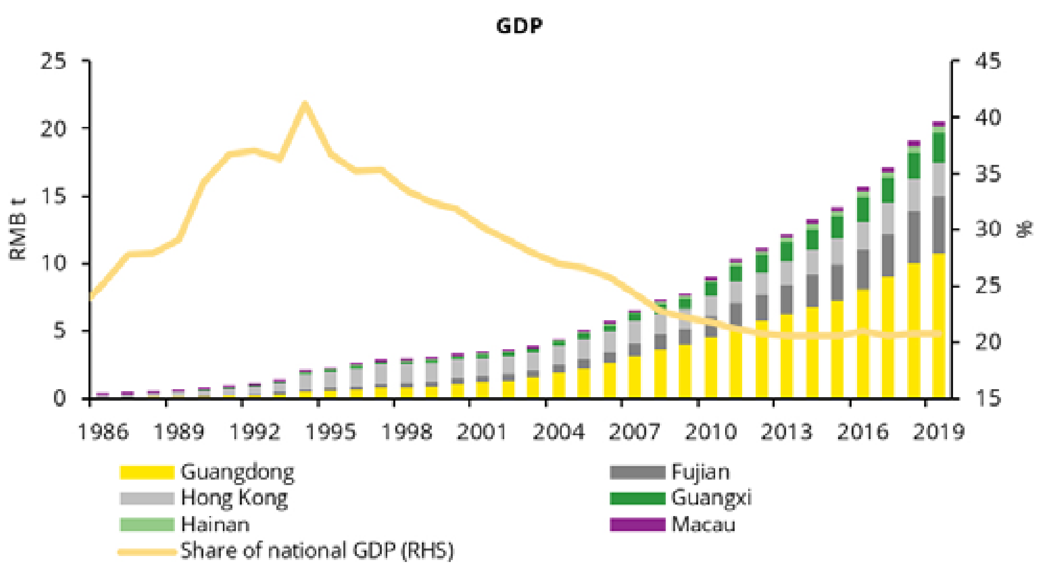
rising demand for an improved quality of life will also support development of modern services across the region. This could thereby create a more developed and interconnected South China with the Pearl River Delta at its center.

Fig 1 Snapshot of key economic indicators by province and region

	Guangdong	Fujian	Guangxi	Hainan	Hong Kong	Macao	National
GDP (RMB b)	10,767.1	4,239.5	2,123.7	530.9	2,527.4	371.9	99,086.5
Land area ('000 km2)	177.9	121.4	236.7	33.9	1.1	0.031	9,600.0
Population (m)	115.2	39.7	49.6	9.5	7.5	0.68	1,400.1
GDP per capita (RMB)	94,172	107,139	42,964	56,507	336,655	552,285	70,892
Share of export to GDP (%)	40.3	19.5	12.2	6.5	157.8	24.2	17.4
Share of household spending to disposable income (%)	74.3	71.1	70.4	73.3	74.3	73.7	70.1

Note: As of 2019 except for household spending to disposable income in Hong Kong (2016) and Macau (2012/2013)
Source: Wind, EY estimates

Fig 2 GDP of South China



Source: Wind

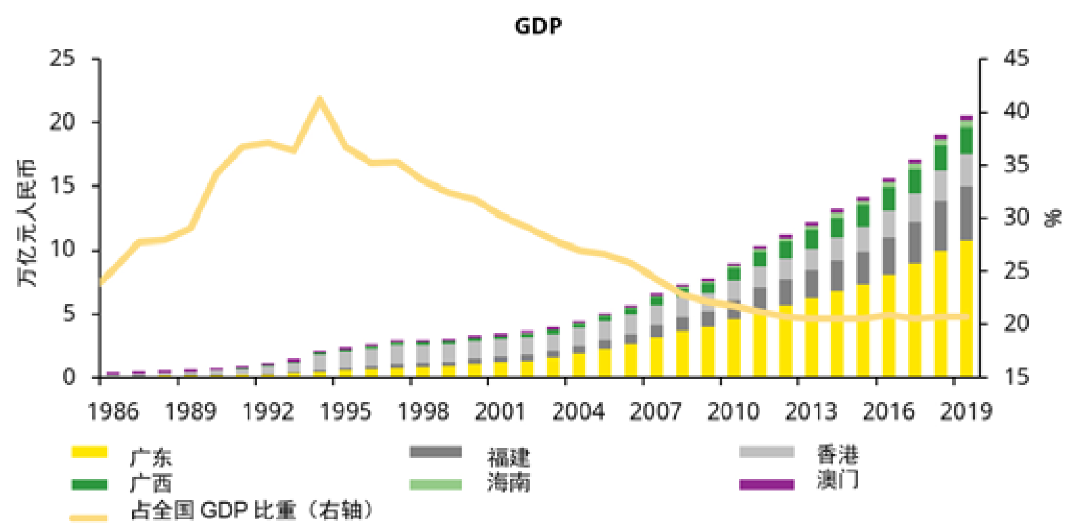
图表一 华南各省份及地区主要经济指标速览

	广东	福建	广西	海南	香港	澳门	全国
GDP (10亿元人民币)	10,767.1	4,239.5	2,123.7	530.9	2,527.4	371.9	99,086.5
土地面积(千平方公里)	177.9	121.4	236.7	33.9	1.1	0.031	9,600.0
人口(百万)	115.2	39.7	49.6	9.5	7.5	0.68	1,400.1
人均GDP (元人民币)	94,172	107,139	42,964	56,507	336,655	552,285	70,892
出口占GDP比重(%)	40.3	19.5	12.2	6.5	157.8	24.2	17.4
家庭支出占可支配收入比重(%)	74.3	71.1	70.4	73.3	74.3	73.7	70.1

注:截止2019年,不包括香港(2016)和澳门(2012/2013)的家庭支出占可支配收入比重

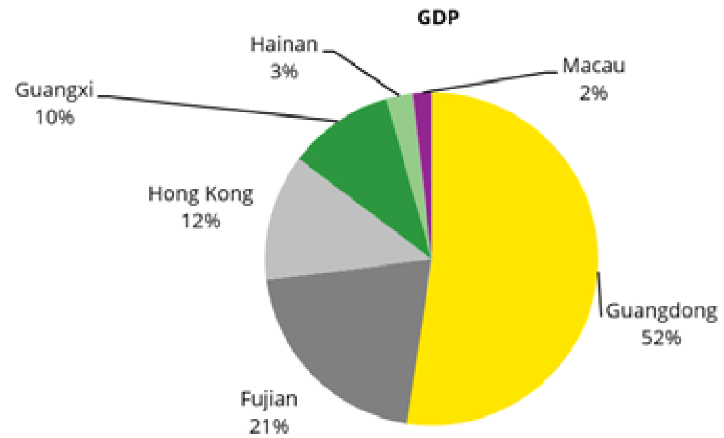
资料来源:Wind, EY estimates

图表二 华南地区GDP逐年攀升



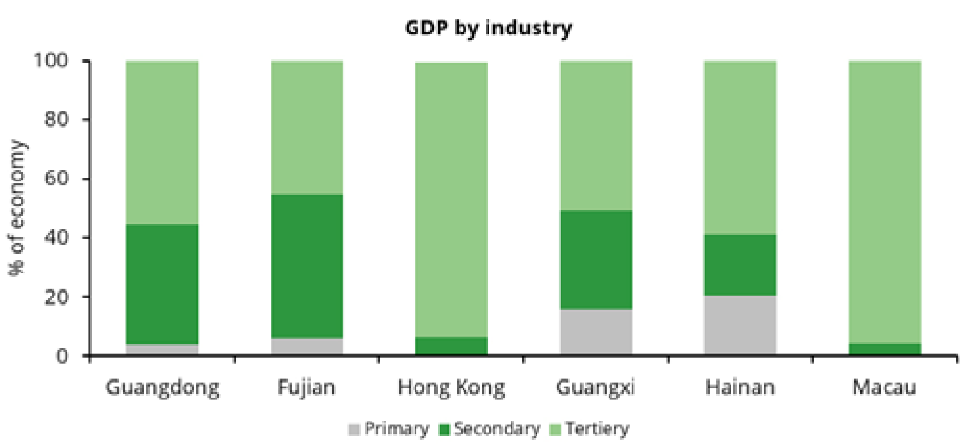
资料来源:Wind

Fig 3 GDP by province and region in South China



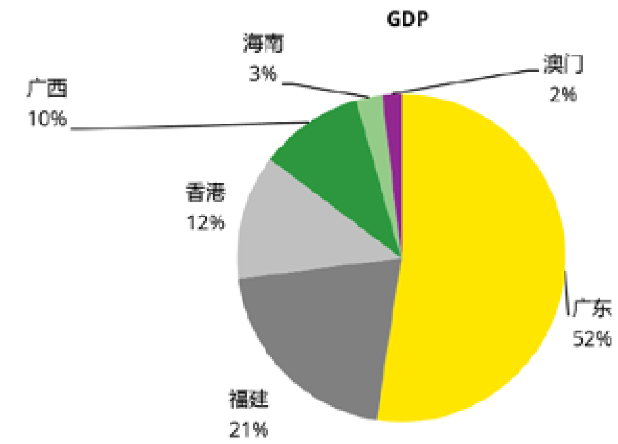
Source: Wind

Fig 4 Diverse structure among the economies in the region



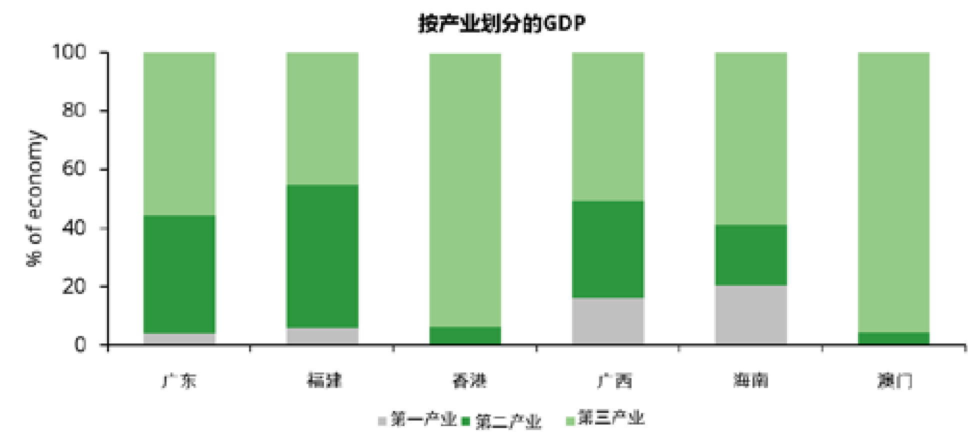
Note: As of 2019 except for 2018 for Macau
Source: Wind

图表三 华南地区各省份和地区GDP



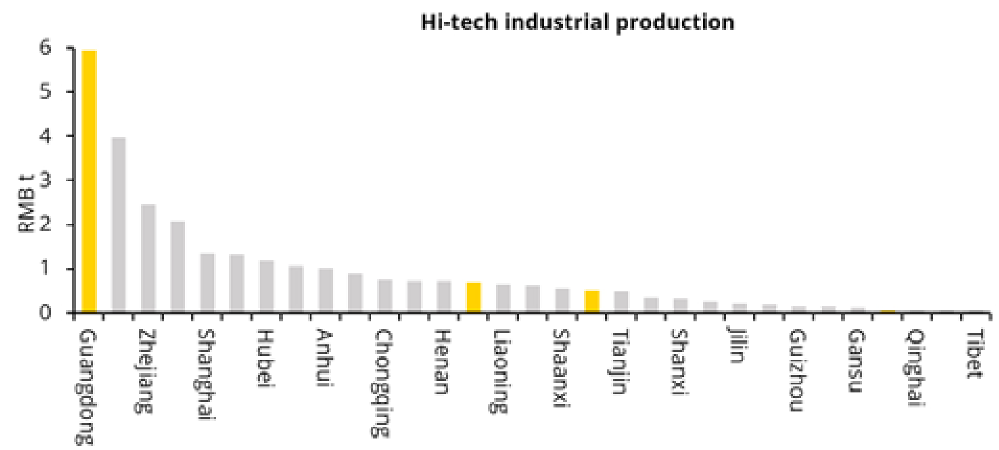
资料来源:Wind

图表四 该区域各地区具多元经济结构



注:除澳门数据为2018,其余数据截止2019年
资料来源:Wind

Fig 5 High tech industry share in Guangdong

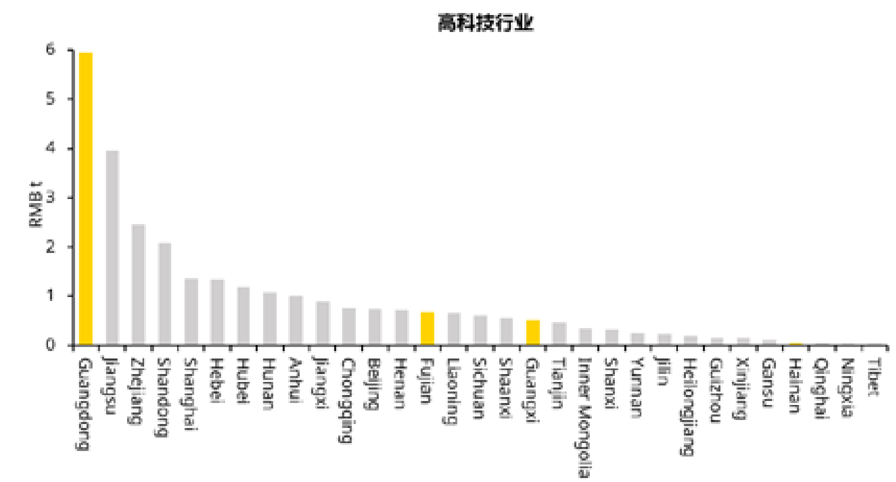


Note: As of 2018
Source: Wind

Fig 6 The Greater Bay Area in Guangdong

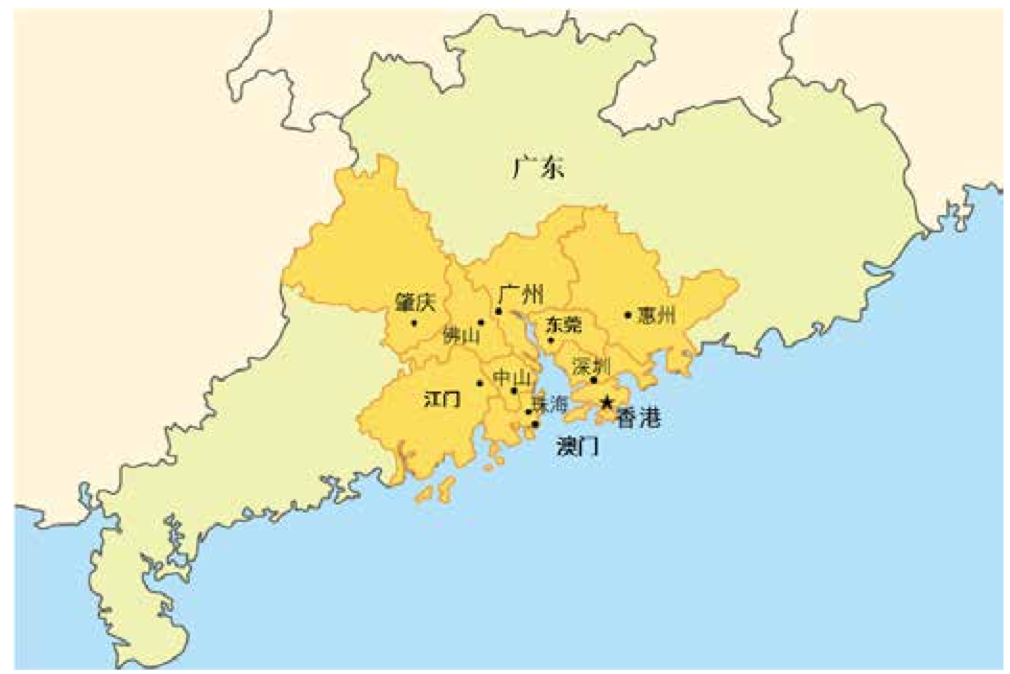
Source: Hong Kong Trade Development Council

图表五 广东省科技行业比重极高



注：截至2018年
资料来源：Wind

图表六 广东省纳入粤港澳大湾区的区域



资料来源：香港贸易发展局

3.2 Guangdong

The Economy

Guangdong has a total area of 177,900 sq km. The total population stood at 115.2m at the end of 2019, out of which around 84% have registered residency. The Pearl River Delta (PRD) is the province's economic hub, its GDP accounting for 80.7% of Guangdong's GDP in 2019. The PRD Economic Zone covers nine cities – Guangzhou, Shenzhen, Zhuhai, Foshan, Jiangmen, Dongguan, Zhongshan, Huizhou and Zhaoqing.

Guangdong remains the largest province by economic size, at RMB10.77t or 10.9% of the national total in 2019. Compared to other economic hubs in China such as the Yangtze River Delta, Guangdong stands out for having:

1) The largest external facing economy with exports accounting for 25.2% of the national total in 2019. Guangdong is also a major export-processing base for foreign investors and the home of the Canton Fair, China's largest export trade fair. Cities with the largest industrial production include Guangzhou, Shenzhen, Dongguan, Foshan, Huizhou, Jiangmen and Shantou; and

2) The largest retail market of consumer goods at around 10.4% of the national total in 2019. With rising income levels and economic structural adjustments, the consumer expenditure pattern is also undergoing structural changes in favor of services such as transportation and communications.

Traditionally, light industry output accounted for over half of the province's total industrial output. Major products include electrical appliances such as television sets, electrical fans and refrigerators, and labor intensive products like garments, toys, shoes and electronics. In recent years amid rising labor costs, Guangdong is moving up the production chain to higher technology industries. Among them, many indigenous enterprises have also developed a strong brand name, such as Huawei, Tencent, BYD, Midea and Gree. In 2019, the top five industries in Guangdong by value-added were computers, communications and electronic equipment, electrical machinery and equipment, automobile manufacturing, petrochemical processing and metal products.

As for the service sectors which accounted for 55.5% of GDP in 2019, Guangdong aims to further increase their overall relative GDP share. While service sector development will be expedited across the board, the structure will be optimized to develop Guangdong into a regional financial center, a modern logistics hub in southern China and an international business travel and shopping center.

Guangdong accounted for about 16.2% of China's total utilized FDI. Foreign investments in Guangdong are mainly engaged in tertiary sectors, including leasing and business services (27.6% of utilized FDI) and real estate (17.4%), followed by wholesale and retail trade (8.5%) and research and technical services (5.6%). The share for manufacturing, meanwhile, declined to 25.2% in 2019.

Recent Policies and Reforms

Opinions on Strengthening Financial Services for Small and Medium-sized Enterprises, Supporting Epidemic Prevention and Control and Promoting Stable Economic Development

On 13 February 2020, the Financial Supervision and Administration Bureau of Guangdong Province, Department of Industry and Information

3.2 广东

经济

广东总面积177,900平方公里，2019年底总人口1.152亿，其中户籍人口占84%。珠江三角洲经济区是该省的经济中心，2019年其GDP占广东省GDP的80.7%。珠江三角洲经济区包括九个城市，即广州、深圳、珠海、佛山、江门、东莞、中山、惠州和肇庆。

广东省是中国经济规模最大的省份，2019年达到10.77万亿元人民币，占全国经济总量的10.9%。与长江三角洲等中国其他经济中心相比，广东省的突出之处在于：

第一，最大的外向型经济体，2019年出口占全国总量的25.2%。这是因为广东是外资的主要出口加工基地。此外，中国最大的出口商品交易会——广交会，也在这里举办。工业产值较高的城市包括广州、深圳、东莞、佛山、惠州、江门和汕头；

第二，最大的消费品零售市场，2019年占全国消费品零售总额的约10.4%。随着收入水平不断提高和经济结构调整，消费支出模式也发生着有利于交通运输和通信等服务业的结构性变化。

传统上，轻工业产值占该省工业总产值的一半以上。主要产品包括电视机、电风扇和冰箱等电器产品，以及服装、玩具、鞋和电子等劳动密集型产品。近年来，劳动力成本快速上涨，广东省逐步向产业链上游拓展，发展高技术行业。许多本土企业也培育出了自己的知名品牌，如华为、腾讯、比亚迪、美的、格力等。2019年，广东省工业产值排名前五的行业包括：计算机通讯和电子设备、电力机械及设备制造、汽车制造、石油化工加工及金属制品。

对于2019年占GDP 55.5%的服务业，广东省计划进一步提高其在GDP中的比重；在全面加速服务业发展的同时，优化其结构，将广东建设成为华南地区的金融中心、现代物流中心以及国际商旅和购物中心。

广东省约占中国实际利用FDI总额的16.2%。广东利用外资主要集中在第三产业，包括租赁和经营服务业（占实际利用FDI的27.6%）和房地产（17.4%），其次是批发和零售贸易（8.5%）和研究和技术服务（5.6%）。与此同时，制造业的份额在2019年已经下降到25.2%。

近期政策与改革

《关于加强中小企业金融服务支持疫情防控促进经济平稳发展的意见》

2020年2月13日，广东省地方金融监督管理局、省工业和信息化厅、人民银行广州分行、广东银保监局、广东证监局经省人民政府同意联合印发《关于加强中小企业金融服务支持疫情防控促进经济平稳发展的意见》，进一步强化金融支持和服务保障，全力配合做好新冠肺炎疫情防控工作，促进广东经济平稳发展，就加强中小企业金融服务有关工作提出如下意见：

一、精准把握疫情防控金融服务的重点对象

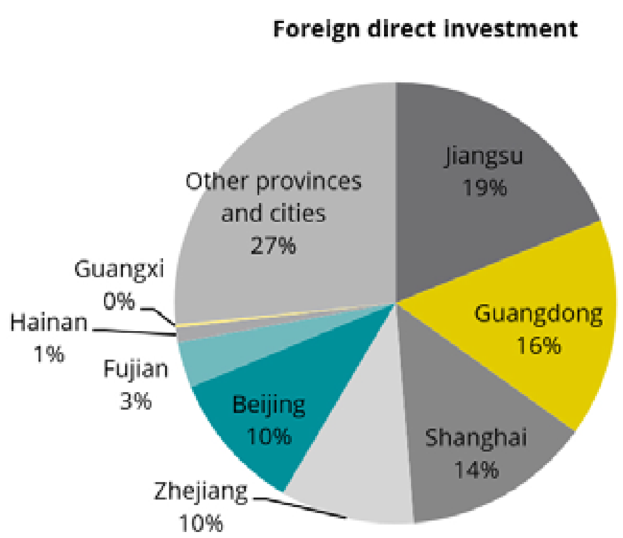
（一）加快扶持疫情防控相关企业。为疫情防控必需（医疗器械、药品、防护用品生产运输和销售等行业）、保障城乡运行必需（供水、供电、油气、通讯、公共交通、环保、市政环卫等行业）、群众生活必需（超市卖场、食品生产、物流配送等行业）相关企业特别是中小企业强化金融支持和服务保障。

（二）持续帮助受疫情影响的中小企业等群体。为受疫情影响较大（批发零售、住宿餐饮、物流运输、文化旅游等行业）的中小企业，受延迟复工影响大的中小企业，以及受疫情影响的个体工商户着力解决资金困难。

二、积极履行地方金融企业服务功能和社会责任

（一）降低小额贷款和小额再贷款利率。支持省粤科科技小额贷款公司、广州立根小额再贷款公司等加大小额贷款和小额再贷款投放力度，对疫情防控相关企业和受疫情影响较大企业发放的贷款，以及对参与疫情防控的小额贷款公司发放的再贷款，年化综合实际利率下调5%-10%。对医疗器械、药品、医护用品制造等防疫必需行业的企业，安排专门团队对接，符合条件的贷款申请在5个工作日内放款。鼓励小额贷款公司对疫情防控相关企业、受疫情影响较大企业和个人下调贷款利率、减免手续费用、延期或展期1-3个月、免除1-3个月罚息、完善续贷安排、增加信用贷款和中长期贷款。

Fig 7 Guangdong is one of the top destinations for FDI



Note: As of 2019
Source: Wind

Technology of Guangdong Province, People's Bank of China Guangzhou Branch, Banking and Insurance Regulatory Bureau of Guangdong Province and Securities Regulatory Bureau of Guangdong Province jointly issued the "Opinions on Strengthening Financial Services for Small and Medium-sized Enterprises, Supporting Epidemic Prevention and Control and Promoting Stable Economic Development" with the approval of the Provincial People's Government. The Opinions will further strengthen financial support and guarantee service quality, integrate with COVID-19 prevention and control, and promote steady economic growth in Guangdong. The Opinions propose the following suggestions on strengthening financial services for small and medium-sized enterprises:

I. Accurately grasp the key targets of financial services for epidemic prevention and control

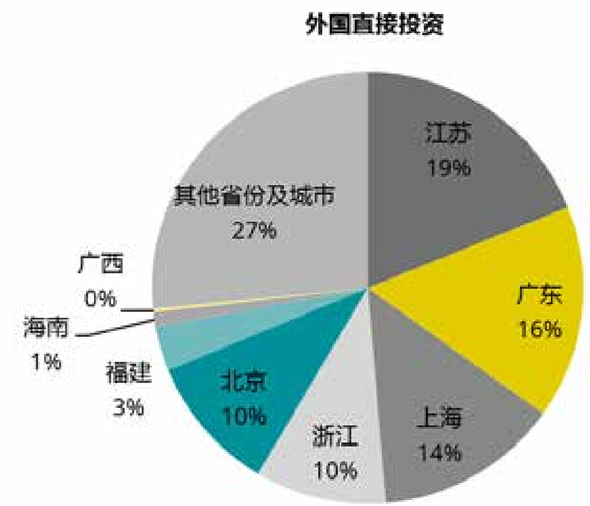
(i) Accelerate support for enterprises involved in epidemic prevention and control. Strengthen financial support and service quality guarantees for epidemic prevention and control (medical equipment, medicine, necessary protective equipment production transportation and sales, etc.), secure necessary operation (water, electricity, oil and gas, communication, public transportation, environmental protection, municipal sanitation, etc.), life necessities (supermarket stores, food production, logistics and other industries) and related enterprises, especially small and medium-sized enterprises.

(ii) Continue to help small and medium-sized enterprises and other groups affected by the epidemic. Solve financial difficulties for small and medium-sized enterprises that are heavily affected by the epidemic (wholesale and retail, accommodation and catering, logistics and transportation, cultural tourism and other industries), small and medium-sized enterprises where resumption of work is heavily affected, and individual businesses affected by the epidemic.

II. Actively perform the service functions and social responsibilities of local financial enterprises

(i) Reduce the interest rates of small loans and small re-loans. Support companies like Yueke

图表七 广东是FDI流入的首要目的地之一



注：截止2019年
资料来源：Wind

（二）适度放宽优秀小额贷款公司融资杠杆。各项监管指标优良、积极参与疫情防控的小额贷款公司，经省地方金融监管局批准，其融资余额可放宽至不超过净资产的5倍，单户贷款余额上限上调为不超过注册资本的5%且不超过1000万元人民币。其中，通过银行、小额再贷款公司及法人股东借款等非标准化融资方式融入资金的余额，放宽至不超过净资产2倍；通过在沪深交易场所发行债券、资产证券化产品等标准化融资工具融入资金的余额，放宽至不超过净资产3倍。

《进一步做好稳外资工作若干措施的通知》

2020年7月21日，广东省人民政府办公厅印发《进一步做好稳外资工作若干措施的通知》。为进一步做好利用外资工作，促进外资稳存量、促增量，全力稳住外资基本盘，增强外资对经济发展的促进作用，加快实现以高水平开放推动经济高质量发展，制定以下措施。

一、进一步扩大开放

（一）全面实施外商投资准入前国民待遇加负面清单管理制度，落实《外商投资准入特别管理措施（负面清单）（2020年版）》。鼓励外商投资新能源汽车领域，放宽商用车制造外资股比限制。支持中外合资乘用车企业的外方按规定转让平均燃料消耗量与新能源汽车积分。取消设立外资人才中介机构、职业介绍机构对外方投资者出资比例和从业年限的限制。

（二）加快金融服务业开放进程。支持外资企业开展资本项目收入支付便利化业务。支持境外机构投资者通过合格境外有限合伙人（QFLP）参与投资粤港澳大湾区内地私募股权投资基金和创业投资企业（基金）。允许外资企业在所属外管机构辖内银行办理境内直接投资基本信息登记、变更与注销手续。开展外债登记管理改革试点，允许外资企业按净资产2倍办理一次性外债登记，并在登记金额内自行开展跨境融资。允许外资企业从"投注差"外债管理模式调整为跨境融资宏观审慎管理模式举借外债。探索在粤港澳大湾区内地城市开展本外币合一的跨境资金池业务试点。

二、加大投资力度

（一）强化重大外资项目支持保障。落实好省财政对重大外资项目的资金支持，对符合条件的年实际外资金额（不含外方股东贷款）超过5000万美元的新项目、超过3000万美元的增资项目等按不低于2%的比例予以奖励，最高奖励1亿元人民币。建立完善省、市两级重大外资项目工作专班，将符合条件的投资总额1亿美元以上在谈、签约、在建外资项目按程序纳入省重大外资项目专班协调，由省政府协调统筹用地、能耗、污染物排放等事项，涉及国家部委协调事项的，及时报请国家部委支持解决。加强重大外资项目跟踪储备，实施"一企业一专员""一项目一方案"精细化管理。落实好土地"带设计方案出让"改革措施，实现符合条件的外资制造业大项目交地即可开工。

Science and Technology Micro-credit Company of Guangdong Province and Guangzhou Ligen to increase the supply of small loans and small re-loans. Reduce annual comprehensive real interest rates by 5% to 10% for loans to COVID-19 prevention and control related enterprises and enterprises that have been heavily affected by the epidemic, and re-loans to micro-credit companies involved in epidemic prevention and control. Special teams shall be arranged for enterprises in industries necessary for epidemic prevention, such as manufacturing of medical devices, drugs and medical supplies. Eligible loan applications will be released within 5 working days. Encourage micro-credit to lower loan interest rates, reduce formality fees, extend or postpone loans for 1-3 months, waive penalty interest for 1-3 months, improve loan renewal arrangements, and increase credit loans and medium- and long-term loans for COVID-19 prevention and control enterprises, and enterprises and individuals affected by the epidemic.

(ii) Appropriately relax the financing leverage of outstanding micro-credit companies. With the approval of the Provincial Local Financial Supervision and Regulation Bureau, the financing balance of micro-credit companies with good regulatory indicators and active participation in epidemic prevention and control can be relaxed to no more than 5 times of net assets, the maximum balance of single-family loans will be raised to no more than 5% of the registered capital and no more than 10 million RMB. Among them, the balance of funds absorbed through non-standard financing methods such as loans from banks, small re-loan companies and corporate shareholders shall be relaxed to no more than 2 times of net assets; the balance of funds issued by bonds, securitized assets and other standardized financing instruments on the Exchanges of Shanghai and Shenzhen, will be relaxed to no more than 3 times of net assets.

Notice on Measures to Further Stabilize Foreign Investment

On 21 July 2020, the General Office of the Guangdong Provincial People's Government issued the “Notice on Measures to Further Stabilize Foreign Investment”. The following measures have been formulated to properly use foreign capital, promote its steady stock and increase, make every effort to stabilize the basic stock of foreign capital, enhance its role in promoting economic development, and accelerate the realization of high-quality economic development through high-level opening up.Outline of the Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area

I. Further open up

(i) Fully implement the pre-establishment national treatment management system and negative lists for foreign investment and implement the “Special Management Measures for Foreign Investment Access (Negative List) (2020 Edition)”. Encourage foreign investment in new energy vehicles and relax restrictions on the proportion of foreign shares in commercial vehicle manufacturing. Support those foreign parties supporting Sino-foreign passenger vehicle joint ventures to transfer average fuel consumption and new energy vehicle points according to regulations. Cancel restrictions on the proportion of investment and length of employment of foreign investors in the establishment of foreign talent agencies and job agencies.

(ii) Accelerate the opening up of the financial services sector. Support foreign-invested enterprises in facilitating payment of income from capital accounts. Support overseas institutional investors to invest in mainland private equity funds and venture capital enterprises (funds) in the Greater Bay Area of Guangdong, Hong Kong and Macau through Qualified Foreign Limited Partners (QFLP). Allow foreign-capital enterprises to go through the procedures of registration, alteration and cancellation of the basic information of domestic direct investment in banks under their jurisdiction. Carry out trials to reform the registration and management of foreign debts, allowing foreign-capital enterprises to register foreign debts in a lump sum twice their net assets, and to raise cross-border financing within the registered amount. Foreign capital enterprises are allowed to borrow foreign debt from the management mode of "bet difference" to the macro-prudential management mode of cross-border financing. Explore pilot projects to

（二）支持外资总部型企业发展。加快出台鼓励跨国公司在广东设立总部型企业办法，完善在广东设立跨国公司地区总部和具有总部功能的机构的认定标准，经认定的外资总部型企业在跨境资金使用、高新技术企业认定、人员出入境和停居留、员工子女入学等方面享受一揽子便利化措施。对省级财政年度贡献首次超过1亿元人民币的外资总部型企业，省财政按其当年对省级财政贡献量的30%给予一次性奖励，最高奖励1亿元人民币。鼓励各地出台支持外资总部经济发展的配套政策。

三、营造支持外资企业稳定发展的良好环境

用好省加工贸易企业融资风险补偿资金池政策，支持符合条件的外资企业申请无抵押、优惠利率贷款。通过设备奖励等方式支持外资制造业企业开展技术改造，对符合条件的加工贸易制造业企业，按规定进一步加大奖励力度。支持外资企业适销对路的出口产品转内销，加强内销渠道建设、精准对接消费需求，强化内销融资信贷扶持。保障内外资企业同等享受国家和省助企纾困相关政策。在严防境外疫情输入前提下，指导协助重点外资企业（项目）办理外籍员工来粤邀请及“快捷通道”手续。

《关于贯彻落实金融支持粤港澳大湾区建设意见的实施方案》

2020年7月31日，广东省地方金融监管局联合人民银行广州分行、广东银保监局、广东证监局、人民银行深圳市中心支行、深圳银保监局、深圳证监局按照坚持服务实体经济、合作互利共赢、市场化导向、防范系统性金融风险的总体原则，进一步推进金融开放创新，深化内地与港澳金融合作，加大金融支持粤港澳大湾区建设力度，提升粤港澳大湾区在国家经济发展和对外开放中的支持引领作用，制定以下方案。

一、促进粤港澳大湾区跨境贸易和投融资便利化，提升本外币兑换和跨境流通使用便利度

将广东自贸试验区更高水平贸易投资便利化试点范围扩大至粤港澳大湾区内地（指珠三角九市）支持粤港澳大湾区内地银行在落实“展业三原则”的基础上，凭企业提交的支付指令，直接为其办理跨境货物贸易、服务贸易人民币结算业务，以及外商直接投资资本金、跨境融资及境外上市募集资金调回等资本项目收入资金境内支付使用。

推动开展本外币合一的跨境资金池业务试点。支持粤港澳大湾区内地符合条件的跨国企业集团开展本外币合一的跨境资金池业务试点，便利跨国企业集团在境内外成员之间进行本外币资金余缺调剂和归集，并对跨境资金池业务实行宏观审慎管理。

二、推进粤港澳资金融通渠道多元化，促进金融市场和金融基础设施互联互通

在依法合规前提下，支持粤港澳三地机构共同设立粤港澳大湾区相关基金。鼓励保险资金、银行理财资金按规定参与相关基金。引导港澳地区及海外各类社会资金，积极参与基础设施REITs试点，稳妥有序参与粤港澳大湾区建设，为基础设施建设、现代产业发展和重大项目建设提供长期稳定的资金支持。

经济特区

中国（广东）自由贸易试验区

2014年12月31日，中国（广东）自由贸易试验区（“广东自贸区”）经国务院正式批准设立。2015年4月，广东自贸区三个片区正式挂牌。广东自贸区实施范围116.2平方公里，涵盖三个片区：广州南沙新区片区60平方公里（含广州南沙保税港区7.06平方公里），深圳前海蛇口片区28.2平方公里（含深圳前海湾保税港区3.71平方公里），珠海横琴新区片区28平方公里。

广东自贸区实行六个方面的创新政策，推进投资、贸易便利化：

- 投资便利化：对外商投资实行准入前国民待遇加负面清单管理模式；对负面清单之外的领域，外商投资项目实行备案制；

- 贸易便利化：自贸试验区内的广州南沙保税港区、深圳前海湾保税港区等海关特殊监管区域，实行“一线放开、二线安全高效管住”的进出境监管服务模式。珠海横琴新区片区按照国务院确定的“一线放宽、二线管住、人货分离、分类管理”的原则实施分线管理；

- 扩大开放措施：进一步取消或放宽对境外投资者的资质要求、股比限制、经营范围等准入限制，其中在制造业、金融服务、交通航运服务、商贸服务、专业服务和科技文化服务等6个领域对全球扩大开放措施有34条；在金融服务、交通航运服务、商贸服务、专业服务、科技文化服务和社会公共服务等6个领域对港澳进一步扩大开放措施有28条；

- 金融创新：建立与粤港澳商贸、旅游、物流、信息等服务贸易自由化相适应的金融服务体系；

- 人才管理创新：对港澳及外籍高层次人才在出入境、在华停居留、项目申报、创新创业、评价激励、服务保障等方面给予特殊政策。通过特殊机制安排，推进粤港澳服务业人员职业资格互认；

integrate local and foreign currencies into cross-border capital pools in mainland cities in the Guangdong-Hong Kong-Macau Greater Bay Area.

II. Increase investment

(i) Strengthen support for major foreign-funded projects. Ensure financial support from the provincial governments for major foreign-funded projects, and reward not less than 2% of eligible new projects with annual actual foreign capital (excluding loans from foreign shareholders) of more than 50 million US dollars and projects with capital increase of more than 30 million US dollars, with a maximum reward of 100 million RMB. Establish and improve two levels of province and city special major foreign investment project work teams. Eligible projects with a total investment of more than US$100 million that are under negotiation, contract signing or construction will be included in the provincial special work team for major foreign investment projects in accordance with the relevant procedures. Matters such as land use, energy consumption and pollutant discharge shall be coordinated by the provincial government, and if the matter involves coordination by national ministries and commissions, it shall be reported to them for support and settlement in a timely manner. Strengthen tracking reserves for major foreign-funded projects, and implement refined management of "one enterprise, one specialist," and "one project, one plan." Implement reform measures to “transfer land using design schemes” and ensure that large foreign-funded manufacturing projects that meet requirements can begin construction when they are handed over.

(ii) Support the development of foreign funded headquarter enterprises. Speed up the introduction of measures to encourage multinational companies to set up headquarters in Guangdong and improve the standards for establishing regional headquarters and institutions with headquarters functions in Guangdong. Approve foreign headquartered enterprises to enjoy facilitation measures in terms of cross-border capital use, identification of high-tech enterprises, entry and exit of personnel and residence suspension, and enrollment of employees' children. For foreign-funded headquartered enterprises whose contribution to the provincial financial year exceeds 100 million RMB for the first time, the provincial financial department will give a one-time bonus of 30% of their contribution to the provincial financial year, with a maximum reward of 100 million RMB. Encourage local governments to introduce policies to support the economic development of foreign-funded headquarters.

III. Create a favorable environment to support the steady development of foreign-capital enterprises

Make good use of the provincial financing risk compensation capital pool policy for processing trade enterprises and supporting eligible foreign-funded enterprises in applying for unsecured and preferential interest rate loans. Support foreign-funded manufacturing enterprises in carrying out technological transformation through equipment awards and other means and further increase incentives for qualified manufacturing enterprises engaged in processing trade in accordance with regulations. Support foreign-funded enterprises in transferring marketable export products to domestic markets, strengthen channels for domestic sales, accurately match consumer demand, and strengthen financing and credit support for domestic sales. Ensure that domestic and foreign-funded enterprises enjoy equal access to state and provincial assistance policies. Guide and assist key foreign-funded enterprises (projects) in going through the procedures of inviting foreign employees to Guangdong and "fast tracking" on the premise of strictly preventing the importation of COVID-19 into Guangdong.

Implementation Plan on Financial Support for The Construction of The Guangdong-Hong Kong-Macau Greater Bay Area

On 31 July 2020, the Financial Supervision and Administration Bureau of Guangdong Province in combination with the People's Bank of China Guangzhou Branch, Banking and Insurance Regulatory Bureau of Guangdong Province, Securities Regulatory Bureau of Guangdong Province, People's Bank of Shenzhen Central Sub-branch, Banking and Insurance Regulatory Bureau of Shenzhen and Securities Regulatory Bureau of Shenzhen adhered to the principles of continuing

- 税收管理：中国（上海）自由贸易试验区已经试点的税收政策原则上可在中国（广东）自由贸易试验区进行试点。深圳前海深港现代服务业合作区、珠海横琴新区对符合规定的企业减按15%的税率征收企业所得税。

今年虽受疫情冲击，但广东自贸试验区仍取得了亮眼成绩，1-9月新设企业2.2万家，其中外资企业2320家；实际利用外资53.4亿美元；税收810.7亿元人民币，增长27.3%，自成立以来累计引进世界500强投资项目404个。三个片区发挥自贸试验区先行先试的优势，努力改革探索，形成了特色鲜明、竞争力强的现代产业体系，取得了丰硕的制度创新成果和经济发展成果。

未来，广东自贸试验区将继续以《优化营商环境条例》为总框架，积极打造形成市场化法治化国际化营商环境，力争构建起与国际规则相衔接的制度体系，跻身国际一流营商环境行列。

广州南沙新区片区

2015年4月21日，广州南沙新区片区正式挂牌。片区的基本定位是：充分发挥地处珠江三角洲地理几何中心和港口资源丰富的优势，连通港澳，服务内地，重点发展航运物流、国际金融、国际商贸、科技创新、海洋经济和高端制造等产业，建设以生产性服务业为主导的现代产业新高地和具有世界先进水平的综合服务枢纽，打造粤港澳全面合作示范区。

本年度投资亮点政策包括：2020年4月16日，《广州南沙开发区（自贸区南沙片区）广州市南沙区深化营商环境改革三年行动计划（2020-2022）》发布，出台南沙未来三年深化营商环境改革“施工图”和“任务书”，提出132条举措改革创新举措，全力打造国际一流、重点领域示范引领的营商环境，确保三年内营商环境模拟世行排名进入全球前20位。2020年4月16日，《广州南沙坚决打赢新冠肺炎疫情防控阻击战努力实现全年经济社会发展目标任务的若干措施》发布，从做好疫情防控工作、加大项目建设、促进消费提质扩容、狠抓重点产业发展、打造一流营商环境等方面提出37条措施，大力鼓励促进消费，提振市场信心，升级人才补贴，狠抓重大项目和产业发展，从全产业链的角度为南沙发展注入“强心剂”。

2014至2019年，南沙地区生产总值由1026亿元人民币提高至1683亿元人民币，年均增长10.4%;固定资产投资年均增长13.3%;税收总额由337亿元人民币提高至625.4亿元人民币，年均增长13.2%;南沙港区集装箱吞吐量年均增长8.4%。

下一步，南沙新区将着力营造国际一流营商环境，建设粤港澳全面合作示范区，提升高水平对外开放门户枢纽功能，打造现代化产业体系。

深圳前海蛇口自贸片区

2015年4月27日，深圳前海蛇口自贸片区挂牌成立。片区总面积28.2平方公里，分为前海区块（15平方公里，含前海湾保税港区3.71平方公里）和蛇口区块（13.2平方公里）。

深圳前海蛇口自贸片区的功能定位是：借助深圳市场化、法治化和国际化的优势与经验，发挥21世纪海上丝绸之路战略支点作用，整合深港两地资源，集聚全球高端要素，重点发展金融、现代物流、信息服务、科技服务及专业服务、港口服务、航运服务和其他战略性新兴服务业，推进深港经济融合发展，打造亚太地区重要生产性服务业中心、世界服务贸易重要基地和国际性枢纽港。

三个功能区产业形态各有侧重：

- 前海金融商务区：主要承接服务贸易功能，重点发展金融、信息服务、科技服务和专业服务，建设中国金融业对外开放试验示范窗口、亚太地区重要的生产性服务业中心；

- 深圳西部港区：重点发展港口物流、国际贸易、供应链管理与高端航运服务，承接货物贸易功能，打造国际性枢纽港；

- 蛇口商务区：重点发展网络信息、科技服务、文化创意等新兴服务业，与前海区块形成产业联动、优势互补。

前海深港合作区叠加了自贸试验区的功能和政策，开启“合作区+自贸试验区+保税港区”的“三区”叠加模式，因此既有全国自贸试验区共享的政策，也有前海合作区自身特有的政策，如15%的企业所得税与个人税等特殊优惠政策，比较优势更加突出。

2020年8月31日深圳市人民代表大会常务委员会公布施行《深圳经济特区前海蛇口自由贸易试验片区条例》以推进中国（广东）自由贸易试验区深圳前海蛇口片区建设和发展，不断提高贸易投资自由化便利化水平，构建与开放型经济发展相适应的制度体系。2020年8月28日深圳市前海管理局印发《深圳前海深港现代服务业合作区招商引资奖励暂行办法》，加快引进与培育优质企业，做大做强前海深港现代服务业合作区在地经济规模，进一步补链、稳链、强链，促进产业高质量发展。

截至2020年上半年，自贸片区注册企业增加值增长13.3%；在地“四上”企业增加值（不含金融业）增长21.4%；税收贡献增长1.8%；固定资产投资增长6.3%；实际使用外资28.89亿美元，增长15.1%；进出口按关区口径4640.76亿元人民币，增长21.4%，其中前海湾保税港区868.15亿元人民币，增长61.5%。

to serve the real economy, win-win cooperation, market-orientation and preventing systemic financial risks. In order to further promote financial openness and innovation, deepen financial cooperation between the mainland and Hong Kong and Macau, increase financial support for development of the Guangdong-Hong Kong-Macau Greater Bay Area and enhance the supporting and leading role of the Guangdong-Hong Kong-Macau Greater Bay Area in China's economic development and opening-up, the following plans have been formulated.

I. Promote the facilitation of cross-border trade, investment and financing in the Guangdong-Hong Kong-Macau Greater Bay Area, and make it easier to exchange local and foreign currencies and use cross-border flows

Expand the pilot project for higher-level trade and investment facilitation in the Guangdong Pilot Free Trade Zone to Mainland China of the Guangdong-Hong Kong-Macau Greater Bay Area (referring to nine cities in the Pearl River Delta area). Support mainland banks in Guangdong, Hong Kong, Macau and the Greater Bay Area to directly handle RMB settlement business for cross-border trade in goods and services, foreign direct investment, cross-border capital financing and return of funds raised from overseas listing and other capital account income funds for domestic payment and used on the basis of implementation of the “Three Principles of Industry Expansion” and payment instructions submitted by enterprises.

Carry out trials to integrate domestic and foreign currencies into cross-border capital pools. Support eligible multinational enterprise groups in Mainland China of the Guangdong, Hong Kong and Macau Greater Bay Area in carrying out a pilot project to integrate domestic and foreign currencies into a cross-border capital pool business, facilitate the transfer and pooling of surplus domestic and foreign currencies among domestic and foreign members, and exercise macro-prudential management over cross-border capital pool business.

II. Promote the diversification of financing channels between Guangdong, Hong Kong and Macau, and promote the connectivity of financial markets and financial infrastructure.

Support institutions in Guangdong, Hong Kong, Macau and Macau in jointly establishing funds related to the Greater Bay Area under the premise of complying with laws and regulations. Insurance funds and bank financial management funds are encouraged to participate in relevant funds in accordance with regulations. Guide all kinds of non-governmental funds from Hong Kong, Macau and overseas, actively participate in the pilot REITs of infrastructure, steadily and orderly participate in the construction of the Guangdong-Hong Kong-Macau Greater Bay Area, and provide long-term and stable financial support for infrastructure construction, development of modern industries and construction of major projects.

Special economic zones

China (Guangdong) Pilot Free Trade Zone

The GDFTZ was formally approved by the State Council and established on 31 December 2014. The implementation scope for the GDFTZ is set at 116.2 square kilometers and covers three areas: (i) Nansha area of Guangzhou, a 60 square kilometer district (including 7.06 square kilometers of Guangzhou’s Nansha Bonded Port Area); (ii) Qianhai & Shekou areas of Shenzhen, a 28.2 square kilometer district (including 3.71 square kilometers of Shenzhen’s Qianhai Bay Bonded Port Area); and (iii) Hengqin area of Zhuhai, a 28 square kilometer district, which was officially launched in April 2015.

To advance the facilitation of investment and trade, the GDFTZ has implemented a series of innovative policies from the following six aspects:

- Investment facilitation: Pre-establishment of a national treatment and negative list management mode will be implemented for overseas investment. For fields that fall outside the negative lists, foreign investment projects will be filed.

珠海横琴新区片区

2015年4月23日，横琴自贸试验片区正式挂牌成立。珠海横琴新区片区战略定位是：重点发展旅游休闲健康、商务金融服务、文化科教和高新技术等产业，建设文化教育开放先导区和国际商务服务休闲旅游基地，打造促进澳门经济适度多元发展新载体。

横琴自贸片区地区生产总值从126.8亿元人民币(2015年)增长到401.24亿元人民币(2019年)，年均增长26.40 %；固定资产投资从289.83亿元人民币增长到471.99亿元人民币，年均增长15.48%；一般公共预算收入从37.80 亿元人民币增长到63.95亿元人民币，年均增长20.97%；实际吸收外资从4.26 亿美元增长到15.71亿美元，年均增长64.59 %；外贸进出口从10.58亿美元增长到34.76亿美元，年均增长66.33%。

下一步，横琴将更加积极主动与澳门各界沟通协商，进一步发挥澳门自由贸易港的优势，争取制度更加开放、和澳门对接更加顺畅，推动琴澳深度合作取得实质性突破。

深圳社会主义先行示范区

深圳经济特区位于广东省东南部沿海，于1980年8月正式成立，是中国最早实行对外开放的四个经济特区之一。特区东起大鹏湾边的梅沙，西至深圳湾畔的蛇口工业区，总面积327.5平方公里，特区范围2011年延伸至深汕特别合作区，2018开始全面代管深汕区。

深圳经济发展迅速，经济运行总体稳健。截止2019年底，全市本地生产总值26,927.09亿元人民币，比上年增长6.7%。分产业看，第一产业增加值25.20亿元人民币，增长5.2%；第二产业增加值10,495.84亿元人民币，增长4.9%；第三产业增加值16,406.06亿元人民币，增长8.1%。全市固定资产投资为6,191.01亿元人民币，增长20.3%，其中第二产业投资增长4.0%，其中第三产业投资增长23.8%。

2020年下半年中共中央办公厅、国务院办公厅印发了《深圳建设中国特色社会主义先行示范区综合改革试点实施方案（2020—2025年）》，主要目标为：2020年，在要素市场化配置、营商环境优化、城市空间统筹利用等重要领域推出一批重大改革措施，制定实施首批综合授权事项清单，推动试点开好局、起好步。2022年，各方面制度建设取得重要进展，形成一批可复制可推广的重大制度成果，试点取得阶段性成效。2025年，重要领域和关键环节改革取得标志性成果，基本完成试点改革任务，为全国制度建设作出重要示范。

- 完善要素市场化配置体制机制：要求支持土地管理制度深化探索，完善超大城市特点的劳动力流动制度，推进创业板改革并试点注册制，率先完善数据产权制度；

- 打造市场化法治化国际化营商环境：进一步完善公平开放的市场环境，打造保护知识产权标杆城市，完善行政管理体制和经济特区立法；

- 完善科技创新环境制度：优化创新资源配置方式和管理机制，建立具有国际竞争力的引才用才制度；

- 完善高水平开放型经济体制：加大制度型开放力度，支持以规则衔接深化粤港澳大湾区合作发展。扩大金融业、航运业等对外开放；

深圳经济发展迅速，经济运行总体稳健。截止2019年底，全市本地生产总值26,927.09亿元人民币，比上年增长6.7%。分产业看，第一产业增加值25.20亿元人民币，增长5.2%；第二产业增加值10,495.84亿元人民币，增长4.9%；第三产业增加值16,406.06亿元人民币，增长8.1%。全市固定资产投资为6,191.01亿元人民币，增长20.3%，其中第二产业投资增长4.0%，其中第三产业投资增长23.8%。

广州开发区

广州开发区成立于1984年，是全国首批国家级开发区之一，总规划面积484平方公里，位于粤港澳大湾区的湾顶、珠江东西两翼交汇处，是广州市营商环境改革先行区、对外开放窗口区、国际科技创新枢纽核心区、经济发展重要动力区。截至目前全区实现了全广州市43%的工业总产值、高新技术企业产值占广州市的78%，实际利用外资和上市企业数量均占全市的1/3。在219个国家级经开区中财税总收入、科技创新、营商环境排名第一，是全国最具实力、最具活力、最具效益的开发区之一。

2020年10月27日，《广州市黄埔区、广州开发区促进高新技术产业发展办法实施细则》出台，推出基金扶持、资金配套、研发资助、科技金融补贴等方面的落地举措，以进一步促进高新技术产业发展，提高产业创新发展能力。2020年6月30日广州开发区金融工作局印发《广州市黄埔区 广州开发区促进金融业发展政策措施实施细则》，以把握粤港澳大湾区建设的战略发展机遇，加大对金融业发展的支持力度，集聚金融要素资源，增强对金融机构和人才的吸引力。

目前区内汇聚各类企业5万多家，上市企业60多家，世界500强企业项目190多个，累计吸引100多个国家和地区3600家跨国公司投资创业。2020年，开发区实际利用外资保持大幅增长，1-9月的实际利用外资达22.4亿美

- Trade facilitation: At Guangzhou's Nansha Bonded Port area, Shenzhen's Qianhai Bay Bonded Port area and other areas with special customs supervision inside the Pilot Free Trade Zone, entry and supervisory services will be carried out in line with the "first line opening" and "highly efficient controls in the second line". In Zhuhai's Hengqin area, hierarchical management operates according to the principles of "relaxed restriction in the first line, effective control in the second line, people and goods separated, and systematic management" stipulated by the State Council.

- Measures for furthering opening-up: The Pilot Free Trade Zone further loosens and eliminates access restrictions for overseas investors, such as qualification requirements, equity ratio limits and business scope. There are 34 global opening-up measures in 6 fields, namely manufacturing, financial services, maritime transport services, commercial trade services, professional services and technology, and cultural services. There are 28 measures for further opening up to Hong Kong and Macau in 6 fields, namely financial services, maritime transport services, commerce and trade services, professional services, technology and cultural services, and social public services.

- Financial Innovation: Establishing financial services systems catering to service trade liberalization of commercial trade, tourism, logistics and information between Guangdong, Hong Kong and Macau.

- Personnel Management Innovation: The GDFTZ provides special policies for elites from Hong Kong, Macau and foreign countries, in departure and entry, stay and residence in Mainland China, project application, innovation and entrepreneurship, evaluation and incentivization, service protection, etc. Mutual recognition of personnel qualifications in the service industry between Guangdong, Hong Kong and Macau will be promoted by special institutional arrangements.

- Tax Administration: Tax policies, which have been piloted in Mainland China's (Shanghai) Pilot Free Trade Zone, are applied in principle to the GDFTZ. The Qianhai Shenzhen-Hong Kong Modern Service Industry Cooperation Zone of Shenzhen and the Hengqin New Area of Zhuhai levy 15% corporate income tax for eligible enterprises.

Despite the impact of COVID-19 this year, the Guangdong Pilot Free Trade Zone has made remarkable achievements. From January to September, 22,000 new enterprises were set up, including 2,320 foreign-funded enterprises. Actual utilization of foreign investments amounted to US$5.34 billion; tax revenue reached 81.07 billion RMB, increased by 27.3%, and 404 investment projects from the Global Top 500 companies have been introduced since its establishment. The three pilot free trade zones, taking advantage of their pioneering efforts in reform and exploration, have formed a modern industrial system with distinctive features and strong competitiveness, and achieved fruitful results in institutional innovation and economic development.

In the future, the Guangdong Pilot Free Trade Zone will continue to implement the "Regulations on Improving the Business Environment" as the general framework, actively foster a market-oriented and law-based international business environment and strive to build an institutional system that is in line with international rules and ranks among the top in the world in terms of business environment.

Nansha Area of Guangzhou

On 21 April 2015, the Nansha Area of Guangzhou was officially established. The area focuses on: (i) taking advantage of its location in the geographic and geometric center of the Pearl River Delta and the rich local port resources; (ii) connecting Hong Kong, Macau and Mainland China, and focusing on the development of shipping logistics, international finance, international commerce, technological innovation, marine economy and high-end manufacturing; (iii) constructing new industrial hubs led by productive services and a globally advanced comprehensive service hub; and (iv) building a Guangdong-Hong Kong-Macau comprehensive cooperation demonstration zone.

元，已与去年全年持平，同比增长65%，占全国2%、广东12%、广州43%，充分显示了本地区经济发展的强大韧劲和良好的投资势头。

小结

广东省在国家建设粤港澳大湾区的带动下,打造投资贸易自由、创新要素聚集、辐射功能突出的自由贸易区。广东省鼓励外商投资,加大对企业的有条件奖励和补贴,与港澳展开科研、人才、贸易方面的合作,重点支持科技、金融、休闲旅游行业的发展。广东省致力于打造具有全球竞争力的营商环境,发挥市场在资源配置中的决定性作用,减少行政干预,加强市场综合监管,形成稳定、公平、透明、可预期的一流营商环境。

Investment highlight policies include "Guangzhou Nansha Development Zone (Nansha Area of Free Trade Zone), Three-year Action Plan for Deepening The Reform of Business Environment (2020-2022)" issued on 16 April 2020. The "Construction Drawing" and "Task Book" of Nansha to deepen the business environment reform in the next three years were also issued, and 132 reform and innovation measures were put forward, so as to build a world-class business environment led by demonstration in key areas and ensure that the World Bank ranks the zone as in the top 20 in terms of business environment simulation within three years. On 16 April 2020, "Measures for Guangzhou Nansha to resolutely win the COVID-19 Epidemic Prevention and Control Battle and Achieve Annual Economic and Social Development Goals and Tasks" were released. 37 measures were proposed to prevent and control the epidemic, increase project construction, promote the quality and expansion of consumption, pay close attention to the development of key industries, and create a first-class business environment. The measures aim to vigorously encourage consumption, boost market confidence, upgrade subsidies for talents, pay close attention to major projects and industrial development, and inject "strong impetus" into the development of Nansha from the perspective of the whole industrial chain.

From 2014 to 2019, Nansha's GDP increased from 102.6 billion RMB to 168.3 billion RMB, with an average annual growth rate of 10.4%. Fixed asset investments have grown at an average annual rate of 13.3%; Total tax revenue rose from 33.7 billion RMB to 62.54 billion RMB, an average annual growth rate of 13.2%. The container throughput of Nansha Port increased by 8.4% annually.

In the next step, the Nansha Area will focus on: (i) creating a world-class business environment; (ii) building a Guangdong-Hong Kong-Macau comprehensive cooperation demonstration zone; (iii) developing as a high-level gateway to the world; and (iv) building a modern industrial system.

Qianhai and Shekou Areas of Shenzhen

On 27 April 2015 the Qianhai and Shekou Areas of Shenzhen were officially established. Qianhai and Shekou's total area is 28.2 square kilometers, of which 15 square kilometers (including 3.71 square kilometers of the Qianhai Bay Bonded Port Area) are occupied by Qianhai District and 13.2 square kilometers are occupied by Shekou District.

The Qianhai and Shekou Areas focus on the following: (i) capitalizing on the advantages and extensive experience in marketization, legalization and internationalization in Shenzhen; (ii) utilizing Shenzhen and Hong Kong's prime location in carrying out the 21st Century Maritime Silk Road strategy to further integrate their resources and gather global high-end resources; (iii) prioritizing finance, modern logistics, information services, science and technology services, professional services, port services, shipping services and other strategic emerging service industries in order to facilitate the economic integration and development of Shenzhen and Hong Kong; and (iv) developing the Qianhai and Shekou Areas into important producer service centers of the Asia-Pacific region as well as a significant base for global services trade and an international hub port.

The industrial forms of the three functional zones emphasize different aspects.

- The Qianhai Financial Business Zone: Mainly undertakes the function of trade in services by: (i) prioritizing finance, information services, scientific and technological services and professional services; and (ii) building a pilot and demonstration window for China's financial industry to open up to the outside world and as an important producer service center in the Asia-Pacific region.

- The Western Shenzhen Port Zone: Prioritizes port logistics, international trade, supply chain management and high-end shipping services while undertaking the function of trading goods and building an international hub port.

- The Shekou Business Zone: Prioritizes new services such as network information,

此页留白

scientific and technological services and cultural creativity, and forms an industrial linkage and complementary advantages with the Qianhai Area.

The Qianhai Shenzhen-Hong Kong Cooperation Zone overlaps with the functions and policies of pilot free trade zones and follows the "three zones" model of "Cooperation Zone + Pilot Free Trade Zone + Bonded Port Area". These policies include those shared by pilot free trade zones in Mainland China and also policies unique to the Qianhai Cooperation Zone, such as a reduced corporate income tax of 15%, preferential individual income tax and other tax policies. The comparative advantages are more prominent.

On 31 August 2020, in order to (i) promote the construction and development of the China (Guangdong) Pilot Free Trade Zone in Shenzhen, the Qianhai Shekou Area, (ii) consistently raise the level of trade and investment liberalization and facilitation, and (iii) build an institutional system commensurate with the development of an open economy, the National People's Congress (NPC) Standing Committee of Shenzhen issued "Regulations of Shenzhen Special Economic Zone Qianhai Shekou Free Trade Pilot Area". On 28 August 2020, Qianhai Administration of Shenzhen Municipality issued the "Interim Measures of Shenzhen Qianhai Shenzhen-Hong Kong Modern Service Industry Cooperation Zone for Investment Attraction Rewards" to accelerate the introduction and cultivation of high-quality enterprises, enlarge and strengthen the local economic scale of the Qianhai Shenzhen-Hong Kong Modern Service Industry Cooperation Zone, further compensate, stabilize and strengthen the chain, and promote the high-quality development of the industry.

By the first half of 2020, the added value of registered enterprises in the Free Trade Zone had increased by 13.3%. The added value of local enterprises (excluding the financial sector) increased by 21.4%. Tax contributions rose 1.8%. Fixed asset investments increased by 6.3%. Actual utilized foreign capital was US$2.889 billion, up 15.1%. Imports and exports were 464.076 billion RMB in customs caliber, up 21.4%, including 86.815 billion RMB in the Qianhai Bay Bonded Port Area, up 61.5%.

Hengqin New Area of Zhuhai

On 23 April 2015, the Hengqin Pilot Free Trade Zone was officially established. The strategic positioning of the Hengqin New Area of Zhuhai is to: (i) prioritize tourism, leisure and health, business financial services, culture, science, education, high-tech and other industries; (ii) establish an open area leading cultural and education services, and a leisure and recreation base for international commercial services; and (iii) create a new carrier that promotes appropriate and diversified economic development in Macau.

The gross regional product of Hengqin Free Trade Zone increased from 12.68 billion RMB (2015) to 40.124 billion RMB (2019), with an average annual growth rate of 26.40%. Fixed asset investments increased from 28.983 billion RMB to 47.199 billion RMB, with an average annual growth rate of 15.48%. Revenue in general public budgets rose from 3.78 billion RMB to 6.395 billion RMB, an average annual increase of 20.97%. Actual FDI rose from US$426 million to US$1.571 billion, an average annual growth rate of 64.59%. Imports and exports increased from US$1.058 billion to US$3.476 billion, representing an average annual growth rate of 66.33%.

In the next step, Hengqin will take the initiative to communicate and negotiate with all sectors of Macau, further leverage the advantages of the Macau Free Trade Port, strive for a more open system and smoother docking with Macau, and promote a substantial breakthrough in Qin-Macau cooperation.

Shenzhen Socialist Pioneering Demonstration Zone

The Shenzhen Special Economic Zone (the "Zone") is located on the southeast coast of Guangdong Province. It was officially established in August 1980 and is one of the first four special economic zones in China to be opened to the world. The Zone starts from Meisha in Dapeng Bay in the east and the Shekou Industrial Zone in Shenzhen Bay to the west, with a total area of 327.5 square kilometers. The scope of the Zone extends to the Shenzhen-Shanshan Special Cooperation Zone in 2011, and it took full charge of Shenzhen-Shanshan District in 2018.

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Shenzhen's economy has developed rapidly, and its overall economic operation is stable. By the end of 2019, the city's gross domestic product (GDP) was 26,92.709 billion RMB, an increase of 6.7% over the previous year. By industry, the added value of primary industries was 2.52 billion RMB, up by 5.2%. Secondary industries' added value was 1,049.584 billion RMB, up 4.9%; Tertiary industries' added value was 1.64606 trillion RMB, up 8.1%. Fixed asset investments were 619.101 billion RMB, up 20.3%, among which investment in the secondary industries increased by 4.0% and that in tertiary industries by 23.8%.

In the second half of 2020, the General Office of the CPC Central Committee and General Office of the State Council issued the "Implementing Plan for the Comprehensive Pilot Reform of Building Shenzhen into a Pilot Demonstration Area of Socialism with Chinese Characteristics (2020-2025)". Main goals of the plan include: By 2020, the government will roll out a number of major reform measures in such important fields as market-oriented allocation of factors, optimization of business environment, and overall planning and utilization of urban space, formulate and implement the first batch of lists of matters under comprehensive authorization, and promote a good start to the pilot reform. By 2022, the government will make important progress in the building of systems in all aspects, form a number of major institutional achievements that can be replicated and popularized, and achieve phased results in the pilot reform. By 2025, the government will accomplish landmark achievements in the reform of important fields and critical links, complete the tasks of the pilot reform, and provide an important demonstration for institutional building for the whole country.

- Perfect systems and mechanisms for market-oriented allocation of factors: Support in-depth exploration of the land management system, perfect a labor mobility system that can adapt to the characteristics of a megacity, promote the reform of the growth enterprise market and pilot the registration system, and explore new mechanisms for data property protection and utilization.

- Create a market-oriented and law-based internationalized business environment: Further perfect a fair and open market environment, build a benchmark city for intellectual property protection, perfect the administrative management system and the legislation of special economic zones.

- Perfect the environmental system for scientific and technological innovation: optimize and innovate in the allocation mode and management mechanism of resources, and establish an internationally competitive system of talent introduction and use.

- Perfect the high-level open economic system: Intensify institutional opening and support rule-based connectivity and deepening of cooperation and development in the Guangdong-Hong Kong-Macau Greater Bay Area. Expand the opening up of financial, shipping and other industries to the outside world.

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Guangzhou Development Zone

The Guangzhou Development Zone was established in 1984 and is one of the first state-level development zones with a total planning area of 484 square kilometers. It is located at the intersection of a large bay on top of the Guangdong-Hong Kong-Macau Greater Bay Area and the east and west wings of the Pearl River. It is a Guangzhou business environment reform pilot area, and an international science and technology innovation and economic development hub area. The region currently provides 43% of the total industrial output value of Guangzhou, and the

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output value of high-tech enterprises accounts for 78% of that of Guangzhou. The actual utilization of foreign capital and the number of listed enterprises account for 1/3 of the city. It ranks first among 219 state-level economic development zones in terms of fiscal and tax revenue, scientific and technological innovation, and business environment. It is one of the most powerful, dynamic and profitable development zones in China.

On 27 October 2020, the "Detailed Rules for the Implementation of Measures for Promoting the Development of High and new Technology Industries in Huangpu District of Guangzhou and Guangzhou Development Zone" were issued, and measures were introduced in terms of fund support, capital matching, research and development subsidies, science and technology financial subsidies, etc., in order to further promote the development of high and new technology industries and improve the capability for industrial innovation and development. On 30 June 2020, the Financial Affair Bureau of Guangzhou Development Zone issued the "Detailed Rules for the Implementation of Measures for Promoting the Development of Financial Industries in Huangpu District of Guangzhou and Guangzhou Development Zone" to grasp the strategic development opportunity in developing Guangdong-Hong Kong-Macau Greater Bay Area, improve the support for the development of financial industry, concentrate essential financial resources, and enhance the ability of attracting financial institutes and talents.

At present, the region has attracted more than 50,000 enterprises of various types, more than 60 listed enterprises, and more than 190 projects from Global Top 500 enterprises, attracting 3,600 multinational companies from more than 100 countries and regions to invest and start businesses. In 2020, the actual utilized foreign capital in this development zone will maintain substantial growth, reaching US$2.24 billion from January to September, the same as last year, with a year-on-year growth of 65%, accounting for 2% in China, 12% in Guangdong and 43% in Guangzhou. This fully demonstrates the strong resilience of economic development and good investment momentum of this region.

Summary

Guangdong Province, driven by construction of the Guangdong-Hong Kong-Macau Greater Bay Area, has created a free trade zone with free investment and trade, an innovative resource cluster and prominent radiation functions that encourage foreign investment, strengthen conditional rewards and subsidies for enterprises, and promote scientific research, talent and trade cooperation with Hong Kong and Macau that focuses on supporting the development of science and technology, finance, and leisure tourism. Guangdong Province is creating a globally competitive business environment by giving play to the decisive role of the market in resource allocation, reducing administrative intervention and strengthening comprehensive market supervision to form a stable, fair, transparent and predictable first-class business environment.

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3.3 Fujian

The Economy

Fujian is located in the south-eastern coast of the mainland, opposite to Taiwan. It has a total area of 121,400 sq km. Its total population was 39.7m in 2019. Southeast Fujian comprises five cities and counties – Fuzhou, Xiamen, Putian, Quanzhou and Zhangzhou, and is the economic hub of Fujian, accounting for 77.1% of the province's GDP in 2019.

In 2019, Fujian ranked 8th out of China's 31 provinces by economic size. Up from 22nd in 1978, Fujian has been one of the fastest growing provinces since China's economic reform. In particular, Fujian's economy maintained steady growth relative to the other provinces since the 18th National Party Congress in 2012, indicating the significant contributions from infrastructure upgrade, service sector and technology advancement to the provincial economy.

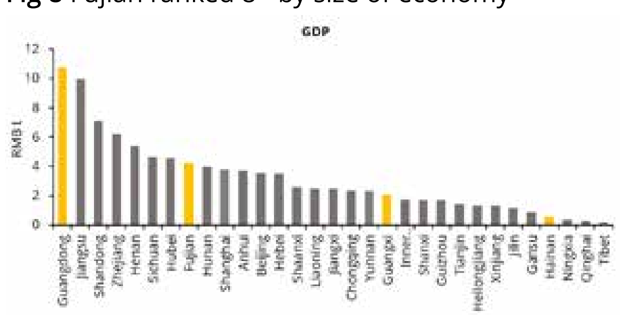
Fujian's economy maintains a strong manufacturing sector that includes not only more traditional industries such as chemical processing and textile, but also computers, communications and other electronic equipment manufacturing and pharmaceuticals as well. Meanwhile, tertiary industries have been driving Fujian's economic expansion with notable growth in leasing and business services, real estate, and rapidly emerging information technology and technical services.

In 2018, the latest year available, Fujian's value-added of hi-tech industries increased by 16.9%YoY. The electronics industry is particularly concentrated in Fuzhou, which as one of the world's largest production bases for LCD display screens, and is also home to world famous tech enterprises including TPV Technology, Castech and Rockchip Semiconductors.

The Fujian government focuses its efforts on attracting foreign investments in 13 industries, namely electronics and information technology, machinery equipment, petrochemicals, metal processing, shipbuilding, new energy, pharmaceuticals (traditional Chinese medicine), logistics, new materials, construction materials and textiles. Tourism development is also a focus in the government's work report, with an emphasis on its natural and relatively unpolluted environment such as Wuyi Mountain, Gulangyu Isle and Taining Golden Lake. In 2019, Fujian received 526.97 million (+16.7%YoY) domestic tourists with tourism receipts of RMB739.34 billion (+22.6%YoY), and 9.58 million (+6.3%YoY) non-mainland tourists with foreign exchange income of US$10.24 billion (+12.7%YoY).

Like Guangdong, its coastal position and strong connections to Taiwan make Fujian an export-facing province. In 2019, merchandized exports amounted to 19.5% of Fujian's GDP, below only Guangdong and Yangtze delta provinces. Fujian's major export items included machinery and transport equipment, clothing and accessories and footwear. Thanks in part to its proximity and historical connections with Taiwan, Fujian is also one of the leading recipients in terms of foreign direct investments.

Fig 8 Fujian ranked 8th by size of economy



Note: As of 2019
Source: Wind

3.3 福建

经济

福建省位于中国大陆东南沿海，与台湾隔海相望。总面积121,400平方公里，2019年总人口3,970万。福建东南地区包括福州、厦门、莆田、泉州和漳州五市，是福建省的经济中心，占该省2019年GDP的77.1%。

2019年，福建省经济规模在中国31个省份中排在第8位。与1978年排名第22位相比，福建已成为中国经济改革以来发展速度最快的省份之一。特别值得注意的是，自2012年中国共产党第十八次全国代表大会召开以来，福建经济相较其他省份保持稳定增长，对此基础设施升级、服务业和技术进步对该省经济的巨大贡献功不可没。

从工业方面来看，福建的制造业保持强劲发展势头，其中不仅包括化工和纺织等传统行业，还包括计算机、通信和其他电子设备制造以及制药。与此同时，第三产业带动了福建经济的发展，租赁和商业服务、房地产、信息技术和技术服务等行业增长显著。

2018年，福建省高科技行业的附加值同比增长16.9%，较上年提高0.8个百分点。电子行业尤为集中在福州，这里是世界最大的LCD显示屏生产基地之一，也是冠捷科技、福晶科技和瑞芯半导体等世界著名科技企业的所在地。

福建省政府主要在13个行业集中精力吸引外资投资，包括电子和信息技术、机械设备、石油化工、金属加工、造船、新能源、生物医药（中医药）、物流、新材料、建筑材料以及纺织品。同时旅游业发展也是该省政府的着重点之一，重点是武夷山、鼓浪屿和泰宁金湖等天然的、相对未受污染的环境。2019年，福建省接待国内游客5.2697亿人次（增16.7%），旅游业收入7,393.4亿元人民币（增22.6%），接待境外游客958万人次（增6.3%），外汇收入102.4亿美元（增12.7%）。

与广东相似，福建的沿海地理位置以及其与台湾的密切联系，使该省发展成为出口型经济。2019年，商品出口占福建省GDP的19.5%，仅次于广东省和长江三角洲各省份。主要出口市场包括美国、香港、日本、菲律宾、台湾和德国。主要出口商品包括机械和运输设备、服装配饰及鞋履。与台湾毗邻及其与台湾的历史渊源，也在一定程度上使得福建成为外国直接投资的主要目的地之一。

近期政策与改革

《福建省实施工业（产业）园区标准化建设推动制造业高质量发展三年行动计划（2020—2022年）》

2020年9月20日，福建省人民政府办公厅印发《福建省实施工业（产业）园区标准化建设推动制造业高质量发展三年行动计划（2020—2022年）》。大力实施工业（产业）园区标准化建设，全面提升我省工业（产业）园区发展水平，做强做优做大产业，加快产业结构优化升级，为全方位推动高质量发展超越提供有力支撑。

一、总体要求

发展思路强调以习近平新时代中国特色社会主义思想为指导，坚持新发展理念，主动融入以国内大循环为主体、国内国际双循环相互促进的新发展格局，打好产业基础高级化、产业链现代化的攻坚战，提升产业链供应链现代化水平，加快建设先进制造业强省，打造未来发展新优势。主要目标提出了2022年园区标准化建设和产业发展目标，分别明确了2022年纺织鞋服产业、机械装备产业、电子信息制造业、石油化工产业、食品产业、冶金产业、建材产业、战略性新兴产业、数字经济的发展目标，力争到2025年，培育形成4个超万亿产业

二、专项行动

重点推进十个专项行动，并明确责任单位和重点任务。十个专项行动包含：龙头品牌专项行动；规划提升专项行动；集约发展专项行动；产教融合专项行动；科技创新专项行动；融资支持专项行动；配套设施专项行动；新型基建专项行动；机制创新专项行动；标准研制专项行动。

《2020年福建省深化"放管服"改革优化营商环境工作要点》

2020年下半年，福建省人民政府办公厅印发《2020年福建省深化"放管服"改革优化营商环境工作要点》《要点》把优化营商环境作为推进治理体系和治理能力现代化的重要举措，作为扎实做好"六稳"工作、落实"六保"任

Recent Policies and Reforms

The Three-year Action Plan of Fujian Province (2020-2022) on implementing the Standardized Construction of Industrial Parks and Promoting the High-quality Development of Manufacturing Industry

On 20 September 2020, the General Office of the Fujian Provincial People's Government issued the “Three-year Action Plan of Fujian Province (2020-2022) on implementing the Standardized Construction of Industrial Parks and Promoting the High-quality Development of the Manufacturing Industry.” The government will vigorously implement the standardized construction of industrial parks, comprehensively improve the development level of industrial parks in the province, strengthen, optimize and expand industries, accelerate the optimization and upgrading of industrial structures, and provide strong support for all-round promotion of high-quality development.

I. General Requirements

Development emphasizes the thought of socialism with Chinese characteristics in Xi Jinping’s new era as a guide, adheres to the concept of new development, actively integrates with domestic large cycles as the main body and bi-circulating mutual promotion of domestic and international new development patterns. Ensuring the industrial foundation is advanced and the industrial chain is modernized. It will modernize the industrial and supply chains, accelerate the development of a strong province with advanced manufacturing, and create new advantages for future development. The main development goal for standardization construction and industrial development is set in 2022. Clarifying that the developmental goal for the textile shoes clothing industry, machinery and equipment industry, electronic information manufacturing industry, petrochemical industry, food industry, metallurgical industry, building materials industry and strategic emerging industries and the digital economy in 2022. Strive to cultivate four industries with scale of over 1 trillion RMB in 2025.

II. Specific Actions

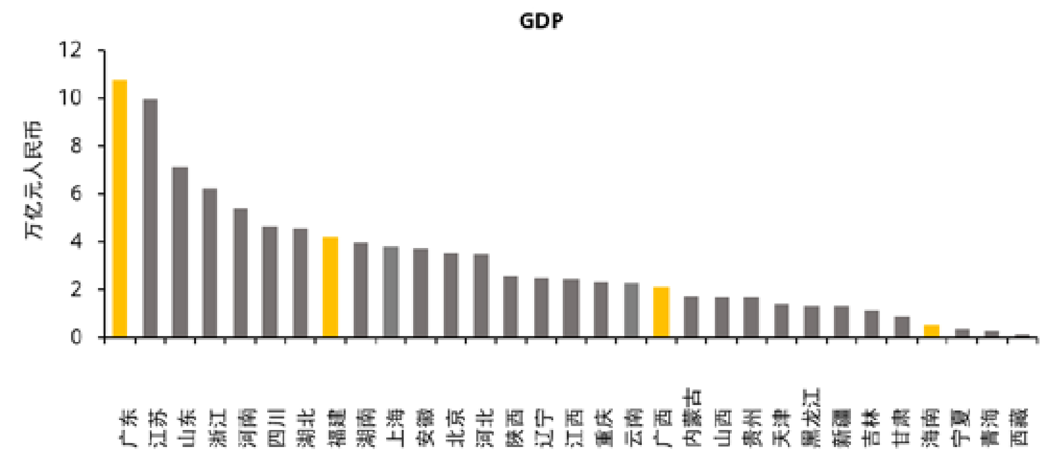
The government will focus on promoting 10 special actions, identifying responsible units and key tasks. The 10 special actions include: leading brand special actions; planning and promoting special actions; intensive development initiatives; special action for the integration of industry and education; special action on scientific and technological innovation; special actions to support financing; special operations for supporting facilities; special actions on new infrastructure projects; special action on mechanism innovation; and special action to develop standards.

Key points of deepening the reform of "streamline the government, delegate power, and improve government services" and optimizing business environment in Fujian Province in 2020

In the second half of 2020, the General Office of the Fujian Provincial People's Government issued the “Key Points of Deepening the Reform of "Streamline the Government, Delegate Power, and Improve Government Services" and Optimizing the Business Environment in Fujian Province in 2020.” The government will optimize the business environment as important measures to promote modernization of management systems and capabilities, and as a solid foundation for the "six stabilities" and "six protects". It will focus on enterprise concerns, match advanced standards, promote epidemic prevention and economic society development in a coordinated way, explore and implement a number of groundbreaking and leading reform measures in key areas and links, and strive to create a sound development environment conducive to innovation and entrepreneurship. In addition, they will explore and implement several groundbreaking and leading reform measures in key areas and links. This year, they will set eight major targets and three key tasks for the reform of the business environment.

The eight main objectives are to set up businesses, access to electricity, access to water and gas, register property, pay taxes, cross-border trade, government services and data aggregation. The “key points” put forward a goal that before

图表八 福建省经济规模位列全国第八



注：截至2019年
资料来源：Wind

务的重要抓手，聚焦企业关切，对标先进水平，统筹推进疫情防控和经济社会发展工作，在重点领域和关键环节探索实施一批突破性引领性改革举措，努力营造有利于创新创业创造的良好发展环境。在重点领域和关键环节探索实施一批突破性引领性改革举措，今年营商环境改革提出八项主要目标、三大重点任务。

八项主要目标涉及开办企业、获得电力、获得用水用气、登记财产、纳税、跨境贸易、政务服务、数据汇聚等方面。《要点》提出，年底前实现省网上办事大厅网上可办率96%以上，“一趟不用跑”比例65%以上。年底前福建省政务数据汇聚平台汇聚数据超100亿条，年底前实现已归集电子证照普遍应用，电子证照类目100%关联办事材料清单，各级政府办事窗口100%接入电子证照库。年底前不动产一般登记时限压缩至5个工作日，抵押登记办理时限压缩至3个工作日。年纳税时间130小时，年纳税次数不超过6次，年底前90%以上主要办税事项实现网上办理；跨境贸易上，口岸进、出口货物整体通关时间分别压缩至40小时、5小时以内，年底前全省进出口单个集装箱常规收费压减至350美元等。

经济特区

中国（福建）自由贸易试验区

2014年12月31日，中国（福建）自由贸易试验区正式设立。2015年4月21日，中国（福建）自由贸易试验区挂牌仪式在福州举行。中国（福建）自由贸易试验区范围总面积118.04平方公里，包括平潭、厦门、福州3个片区，功能定位分别是：平潭片区重点建设两岸共同家园和国际旅游岛，在投资贸易和资金人员往来方面实施更加自由便利的措施。厦门片区重点发展两岸新兴产业和现代服务业合作示范区、东南国际航运中心、两岸区域性金融服务中心和两岸贸易中心。福州片区重点建设先进制造业基地、21世纪海上丝绸之路沿线国家和地区交流合作的重要平台、两岸服务贸易与金融创新合作示范区。

2020年，受新冠肺炎疫情影响，全球经济受到严重冲击，面对国内外的严峻形势，福建自贸试验区充分发挥改革开放试验田的作用，全力促进利用外资稳中提质提效，为全方位推动高质量发展超越提供强大动力，在做好“六稳”工作、落实“六保”任务中发挥了示范引领作用。今年1—5月，福建自贸试验区新增外资企业123家，实际利用外资3.33亿美元，同比增长87.1%，三个片区累计签约项目达112个，投资总额951亿元人民币。

中国（福建）自由贸易试验区 · 福州片区

中国（福建）自由贸易试验区福州片区总面积31.26平方公里。包括两个区块：福州经济技术开发区22平方公里；福州保税港区9.26平方公里。

福州片区“两区七片”规划布局：

- 福州经济技术开发区规划面积22平方公里，分为5个区块。马江区块（含福州保税区0.6平方公里）：重点发展21世纪海上丝绸之路重要经贸平台、文化创意、商品展示交易。快安区块：重点发展高新技术产业、产业金融、服务贸易（跨境电商）。长安区块，含福州出口加工区（1.14平方公里）：重点发展加工贸易、保税仓储、冷链物流。琅岐区块：重点发展旅游、教育培训、医疗养生。南台

the end of the year the province's online service hall will handle more than 96% on enquiries, such that 65% would be fully resolved online. By the end of the year: (i) more than 10 billion pieces of data should be collected on the Fujian Provincial Government data gathering platform; (ii) collected electronic certificates and licenses should be widely used. The list of materials for handling affairs related to the categories of electronic certificates and licenses should achieve 100%, and the service windows of governments at all levels should be 100% connected to the electronic certificate and license database; (iii) the time limit for real estate general registration should be compressed to 5 working days, with 3 working days for mortgage registration. Annual tax payment time should be 130 hours and no more than 6 times; (iv) more than 90% of major tax matters should be handled online. For cross-border trade, overall customs clearance time of import and export goods at ports should be reduced to 40 hours and 5 hours respectively; and (v) regular charges for import and export containers should be reduced to US$350.

Special economic zones

China (Fujian) Pilot Free Trade Zone

The China (Fujian) Pilot Free Trade Zone was officially established on 31 December 2014, and the opening ceremony was held in Fuzhou on 21 April 2015. The China (Fujian) Pilot Free Trade Zone covers 118.04 square kilometers, including the Pingtan Area, Xiamen Area and Fuzhou Area. The Pingtan Area is designed to: (i) be developed into a cross-strait common home and international tourist island; and (ii) to provide more facilities for the free and convenient exchange of investment, trade, capital and personnel. The Xiamen Area will be developed into a demonstration area for cross-strait emerging and modern service industry cooperation, a southeast international shipping center, and a cross-strait regional financial service and trade center. The Fuzhou Area will be developed into an advanced manufacturing base, an important platform for exchange and cooperation among countries and regions along the 21st Century Maritime Silk Road, and a demonstration area for cross-strait service trade and financial innovation cooperation.

In 2020, the global economy has been severely impacted by the COVID-19 epidemic. In the face of the grim domestic and foreign situation, the Pilot Free Trade Zone in Fujian Province gives full play to its role as a pilot field for reform and opening up, making full use of foreign investments to improve quality and efficiency in a stable manner, and providing a strong driving force for all-round efforts to promote high-quality development. It has played an exemplary and leading role in ensuring the "six stabilities" and "six protects". In the first five months of this year, 123 new foreign-funded enterprises in the Pilot free Trade Zone of Fujian Province took advantage of US$333 million of foreign capital, up 87.1% year on year. 112 projects were signed in the three zones, with a total investment of RMB95.1 billion.

Fuzhou Area of the China (Fujian) Pilot Free Trade Zone

The Fuzhou area of China (Fujian) Pilot Free Trade Zone covers 31.26 square kilometers and is divided into the Fuzhou Economic and Technological Development Zone (22 square kilometers) and the Fuzhou Bonded Port Area (9.26 square kilometers).

The layout of the Fuzhou Area's "two sections and seven blocks" consists of:

- The Fuzhou Economic and Technological Development Zone has a planned area of 22 square kilometers divided into five blocks. Majiang Block (covering an area of 0.6 square kilometers within the Fuzhou Bonded Port Area) focuses on the development of trade platforms for the 21st Century Maritime Silk Road, cultural creativity, commodity exhibitions and transactions. Kuai'an Block focuses on the development of high-tech industries, industrial finance and service trade (cross-border e-commerce). Chang'an Block (covering an area of 1.14 square kilometers within the Fuzhou Export Processing Zone) focuses on the development of processing trade, bonded warehousing and cold chain logistics. Langqi Block focuses on the development of tourism, education and training, health and medical treatment. Nantai Island Block focuses on the development of cross-strait financial services innovation, professional exhibition services, commodity exhibitions and transactions.

岛区块：重点发展两岸金融服务创新、会展专业化服务、商品展示交易。

- 福州保税港区规划面积9.26平方公里，一分为二：新厝区块：重点发展先进制造业（侧重发展汽车保税改装及维修，飞机研发、制造、运营及维修等）、融资租赁。江阴区块：重点发展国际航运物流、整车及零配件进出口贸易、保税仓储及保税展示交易。

2020年5月7日，福州市人民政府印发了《自贸区福州片区开展"证照分离"改革全覆盖试点工作实施方案》，要求全面清理涉企经营许可事项，分类推进审批制度改革，创新和加强事中事后监管，营造市场化、法治化、国际化的营商环境，进一步激发微观主体活力，推动经济高质量发展。

挂牌以来至2019年12月底，福州自贸片区共新增企业3.5万家，注册资本7194亿元人民币；新增外资企业1051家，占全市新增外资企业数的43%，注册资本717亿元人民币；以不到全市千分之三的面积，吸引了全市新增外资、台资企业数的近一半。

中国（福建）自由贸易试验区 · 厦门片区

厦门片区总面积43.78平方公里，重点是建设两岸新兴产业和现代服务业合作示范区、东南国际航运中心、两岸区域性金融服务中心和两岸贸易中心。片区包括两个区块：

- 两岸贸易中心核心区：19.37平方公里，功能定位：发展航运物流、口岸进出口、保税物流、加工增值、服务外包、大宗商品交易等现代临港产业，构建高效便捷、绿色低炭 的物流网络和服务优质、功能完备的现代航运服务体系，成为立足 海西、服务两岸、面向国际，具有全球航运资源配置能力的亚太地区重要的集装箱枢纽港。

- 东南国际航运中心海沧港区：24.41平方公里，功能定位：发展高新技术研发、信息消费、临空产业、国际贸易服务、金融服务、专业服务、邮轮经济等新兴产业和高端服务业，构建两岸经贸合作最紧密区域，成为立足大陆，面向亚太地区的区域性国际贸易中心。

2020年以来，厦门自贸片区全年试验任务落实推进率达到85%以上。在招商引资方面，今年1-8月，厦门自贸片区新增企业5629家，注册资本416.91亿元人民币；其中外资企业146家，注册资本58.91亿元人民币，合同利用外资33.44亿元人民币。

2020年3月31日，厦门市人民市政府办公厅印发《厦门市促进融资租赁业发展的若干措施》，以加快厦门市融资租赁业发展，鼓励融资租赁公司支持实体经济发展，拓宽中小微企业融资渠道，服务产业转型升级。2020年4月13日，中国（福建）自由贸易试验区厦门片区管理委员会印发《中国（福建）自由贸易试验区厦门片区激励人才创新创业的若干措施》，建立更加开放、灵活、高效的人才引进使用机制，加大人才创新创业激励扶持力度，为推动中国（福建）自由贸易试验区厦门片区产业经济高质量发展、打造一流国际化营商环境提供充分的人才和智力支撑。

中国（福建）自由贸易试验区 · 平潭片区

中国（福建）自由贸易试验区平潭片区总面积43平方公里。包括三个区块：港口经贸区16平方公里；高新技术产业区15平方公里；旅游休闲区12平方公里。

平潭片区重点：建设两岸共同家园和国际旅游岛，在投资贸易和资金人员往来方面实施更加自由便利的措施。

功能定位：

- 港口经贸区：加快建设港口物流聚集区、商贸服务聚集区、电子产业聚集区等产业功能性平台，重点发展国际贸易、现代物流、商务服务和电子信息设备制造等；

- 高新技术产业区：探索两岸合作建设高新技术产业基地，加快建设研发总部聚集区、海洋产业聚集区、高端轻型制造聚集区等产业功能性平台，发挥原产地政策优势，重点发展海洋生物、医疗器械、包装材料和轻型设备制造等高新产业；

- 旅游商贸区：着力对接台湾旅游和旅游服务，加快建设滨海旅游聚集区、两岸旅游商贸聚集区、农渔产品加工聚集区等产业功能性平台。

2020年2月18日，平潭综合实验区管委会办公室印发了《平潭综合实验区"大招商"行动方案》，目标任务为：围绕旅游文化康体、物流贸易、总部经济、新兴产业、传统产业转型升级等实验区主导产业方向，力争到2020年底，策划生成100个产业项目，签约80个项目，新引进投资额3000万元人民币以上项目300个，其中包含30个以上用地项目，外资（含港、澳、台资）企业180个（其中台资企业150个），新引进项目投资额200亿元人民币以上，其中外商投资项目20亿元人民币以上。2020年4月30日，平潭综合实验区管委会办公室印发了《平潭综合实验区支持新兴产业园示范区运营发展的政策措施》，加快示范区产业集聚，鼓励企业入驻，提供金融服务支持及各项政策补贴。

2020年1月-10月，福建自贸试验区平潭片区全区新增企业1563家，注册资本339.9亿元人民币。

- The Fuzhou Bonded Port area has a planned area of 9.26 square kilometers and is divided into two blocks. Xincuo Block focuses on the development of advanced manufacturing industries (highlighting bonded automobile maintenance and refit, aircraft research and development, manufacturing, operation and maintenance), and finance leases. Jiangyin Block focuses on the development of international shipping and logistics, vehicle and spare parts import and export, bonded warehousing, and bonded exhibitions and transactions.

On 7 May 2020, the Fuzhou People's Government issued the Implementation Plan for the Pilot Reform of "Separation of Certificates and Licenses" in Fuzhou Free Trade Zone to cover the whole area. It is required to comprehensively review the business licensing matters of enterprises, advance reform of the examination and approval system on a case-by-case basis, innovate and strengthen ongoing and ex-post supervision, create a market-oriented, law-based and internationalized business environment, further stimulate the vitality of micro-entities, and promote high-quality economic development.

Up to the end of December 2019, the Fuzhou Free Trade Zone has added 35,000 new enterprises with registered capital of 719.4 billion RMB. 1,051 new foreign-funded enterprises, accounting for 43% of the new foreign-funded enterprises in the city, with registered capital of 71.7 billion RMB. With an area of less than 3/1000 of the city, it has attracted nearly half of new foreign-funded and Taiwan-funded enterprises in the city.

Xiamen Area of the China (Fujian) Pilot Free Trade Zone

The Xiamen Area covers a total area of 43.78 square kilometers, with a focus on building a demonstration area for cross-strait emerging and modern service industry cooperation, a southeast international shipping center, a cross-strait regional financial service center and a cross-strait trade center. The area includes two blocks that consist of:

- The core area of the cross-strait trade center covers an area of 19.37 square kilometers, designed to: (i) develop modern port-vicinity industries such as shipping logistics, import and export, bonded logistics, valued-added processing, service outsourcing and bulk commodities trade; (ii) build a highly efficient, convenient, green and low-carbon logistics network and a modern shipping service system with high-quality services and complete functions; and (iii) build itself into an important international container hub port in the Asia-Pacific region focusing on the west coast of the Taiwan Strait, which serves Taiwan, Mainland China and the rest of the world, and having the ability to allocate global shipping resources.

- The Haicang Port Area of the Southeast International Shipping Center covers 24.41 square kilometers. It is designed to develop emerging industries and high-end service industries, such as high-tech scientific research and development, information consumption, airport-vicinity industries, international trade services, financial services, professional services and cruise economy industries. It aims to build a regional international trade center that focuses on mainland China and is open to the Asia-Pacific region.

Since 2020, more than 85% of the trials in the Xiamen Free Trade Zone have been carried out. In terms of investment attraction, from January to August this year, the Xiamen Free Trade Zone added 5,629 new enterprises with registered capital of 41.691 billion RMB. Among them, 146 were foreign-funded enterprises, with registered capital of 5.891 billion RMB, and 3.344 billion RMB of contractual foreign capital.

On 31 March 2020, the General Office of Xiamen People's Government issued a number of “Measures to Promote the Development of Xiamen's Financing Lease Industry” to accelerate the development of Xiamen's financing lease industry, encourage financial leasing companies to support the development of the real economy, expand financing channels for small, medium-sized and micro businesses, transform and upgrade service industries. On 13 April, the Management Committee of Xiamen Area of China (Fujian) Pilot Free Trade Zone published the “Measures to Encourage Talents to Innovate and Start Businesses in Xiamen Area of China (Fujian) Pilot Free Trade Zone” to: (i) establish a more open, flexible and efficient mechanism for

小结

福建省通过需求与供给侧改革带动经济增长,提升了经济发展的质量,进一步减轻企业税费负担,降低企业生产经营成本,营造更加便利和公平的营商环境。福建省重点支持金融业的发展,放款外汇登记管理,引入台商、外商投资,大力推动外商投资和贸易便利化,提高对外开放水平。福建省将打造两岸融合示范区,加强与台湾省的经济、技术、人才合作,为两岸融合创造机会。

the introduction and use of talent; (ii) increase incentives and support for talent innovation and entrepreneurship; (iii) provide sufficient talent and intellectual support for high-quality industrial and economic development in Xiamen, a Pilot Free Trade Zone of China (Fujian); and (iv) create a first-class international business environment.

Pingtan Area of the China (Fujian) Pilot Free Trade Zone

The Pingtan Area of the China (Fujian) Pilot Free Trade Zone covers 43 square kilometers and is divided into three blocks: (i) the Port Economic and Trade Zone (16 square kilometers); (ii) the High-tech Industrial Zone (15 square kilometers); and (iii) the Tourism and Business Zone (12 square kilometers).

The Pingtan Area focuses on constructing a cross-strait common home and international tourist island and providing facilities for the free and convenient exchange of investment, trade, capital and personnel.

Functional positioning:

- The Port Economic and Trade Zone was set up to: (i) accelerate the construction of industrial functional platforms such as port logistics, business service and electronic industry clusters; and (ii) focus on the development of international trade, modern logistics, business services, electronic information equipment manufacturing, etc.

- The High-tech Industrial Zone was set up to: (i) explore cross-strait cooperation in building high-tech industrial bases by accelerating the construction of industrial functional platforms such as R&D headquarters, marine industry and high-end light manufacturing clusters; (ii) give full play to policy advantages regarding place of origin; and (iii) focus on the development of marine life, medical devices, packaging materials and light equipment manufacturing and other high-tech industries.

- The Tourism and Business Zone was set up to: (i) focus on connecting Taiwan tourism and tourist services; and (ii) accelerate the construction of industrial functional platforms such as coastal tourist, cross-strait tourism, and agricultural and fishing product processing clusters.

On 18 February 2020, the Administrative Committee office of Pingtan Comprehensive Experimental Area published the "'Great Investment Attraction' Action Plan of Pingtan Comprehensive Experimental Area", with the following objectives and tasks centering on: tourism, culture, recreation and sports, logistics and trade, headquarters economy, emerging industries, transformation and upgrading of traditional industries and other leading industries of the experimental area. By the end of 2020, they strive to generate 100 industry planning projects, sign 80 projects, introduce 300 new projects with investments of 30 million RMB or above (including land for more than 30 projects), 180 foreign investment enterprises, including from Hong Kong, Macau and Taiwan (150 of these enterprises will be Taiwan-funded enterprises), introduce new project investments of 20 billion RMB or more , and foreign investment projects 2 billion RMB or more.

On 30 April 2020, the Management Committee Office of Pingtan Comprehensive Experimental Area published the "Policies and Measures of Pingtan Comprehensive Experimental Area to Support the Operation and Development of the Demonstration Area of Emerging Industrial Park", which accelerates industrial agglomeration of the demonstration zones, encourages enterprises to settle in, and provides financial service support and various policy subsidies.

From January to October 2020, there were 1,563 new enterprises in Pingtan Area of the Fujian Pilot Free Trade Zone, with registered capital of 33.99 billion RMB.

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Summary

Fujian Province promotes economic growth through demand and supply-side reforms, improving the quality of economic development, reducing corporate taxes, fees, production and operating costs, and creating a more convenient and fair business environment. Fujian Province focuses on supporting the development of the financial industry, lending foreign exchange registration management, introducing Taiwanese and foreign investment, promoting foreign investment and trade facilitation, and improving the level of opening up. Fujian Province will build a cross-strait integration demonstration zone, strengthen Taiwanese economic, technological and talent cooperation, and create opportunities for cross-strait integration.

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3.4 Guangxi

The Economy

Guangxi Zhuang Autonomous Region – abbreviated as Gui – is situated to the southwest of China, facing Vietnam across the Beibu Gulf. The province is not only involved in economic development opportunities in Southern China, but is also connected to ASEAN countries as well as being part of the Western Region Development Program. The province has a total area of 237,000 sq km, and population of 49.6m in 2019. The Zhuang people, the largest minority group in China, account for around 40% of the total population in the autonomous region. There are also 11 other major ethnic groups in the region.

In 2019, Guangxi ranked 19th out of China's 31 provinces by economic size, as accounts for 2.1% of the national GDP. Its main cities in terms of economic activities include Nanning, Liuzhou, Guilin, Yulin, and Wuzhou. The primary industry remains a critical part of the economy while the share of tertiary sectors such as services is relatively low when compared to other provinces. Automobile manufacturing, sugar manufacturing and non-ferrous metal smelting and pressing are the three top industries in terms of industrial output.

In particular, the automobile industry in Guangxi, based in Liuzhou, is one of the top production centers in China, with hubs for SAIC, FAW, Dongfeng and Sinotruk as well as local corporations such as Wuling. Among new, higher value-added industries, pharmaceuticals have become a special focus in Guangxi with its history as a major production base for Traditional Chinese Medicine.

Compared to more developed provinces in eastern China, Guangxi continues to benefit significantly from investments in government infrastructure, rural area development and poverty relief. According to government work reports, there were ongoing major construction projects for highways, railways, seaports and airports in 2018, in addition to intracity railways in both Nanning and Liuzhou. There were also water dams, wind turbines, nuclear plants and irrigation construction projects in order to fully capture the natural resources that Guangxi has to offer.

Externally, Guangxi is determined to capitalize on its geographic advantage to develop into a trade and logistics center, especially serving the China-ASEAN Free Trade Area (CAFTA). Nanning is the host of the annual China-ASEAN Expo, which highlights China's market opening for ASEAN products, and China's outbound investment into ASEAN. Subsequently, ASEAN members have been Guangxi's largest trading partners for the past 19 years, as they contributed 49.7% of its foreign trade in 2019.

Recent Policies and Reforms

Regulations of Guangxi Zhuang Autonomous Region on Optimizing the Business Environment

On 19 May 2020, the Standing Committee of the People's Congress of Guangxi Zhuang Autonomous Region issued the "Regulations of Guangxi Zhuang Autonomous Region on Optimizing the Business Environment". The regulations stipulate in the general provisions that (i) all types of market entities should have equal rights, equal opportunities and equal rules, guided by the needs of market entities and centered on the transformation of government functions, (ii) comprehensively deepen the reform of delegating power, regulation and services, and follow the service philosophy of "Answer every business and bother no one", (iii) continue to match international and domestic advanced standards

3.4 广西

经济

广西壮族自治区（简称桂）位于中国西南部，隔北部湾与越南相望。其地理位置决定了，广西面临华南经济发展、西部大开发以及与东盟国家互联互通带来的多重发展机遇。广西总面积237,000平方公里，2019年人口4,960万。壮族，即广西壮族自治区名称的来源，是中国人口最多的少数民族，约占自治区总人口的40%。区内还有其他11个主要民族。

2019年，广西的经济规模在中国31个省份中排名第19，占全国GDP的2.1%。主要经济城市计有南宁、柳州、桂林、玉林、梧州等。第一产业仍然是广西经济的重要组成部分，服务业等第三产业比重与其他省份相比较低。汽车制造、制糖以及有色金属冶炼和冲压是工业产值最高的三大行业。

特别是广西柳州的汽车工业，这里是中国最大的汽车生产中心之一。上汽集团、中国一汽、东风和中国重汽，以及五菱等当地汽车企业均在此设立了生产中心。在新兴的高附加值产业中，历史上就是中药主要生产基地的广西，已将制药业作为一项重点发展的产业。

与东部发达省份相比，广西继续从政府基础设施、农村地区发展和扶贫投资中获益良多。根据政府工作报告，2018年，除南宁和柳州的城际铁路之外，还有公路、铁路、海港及机场建设等大型项目在建。此外，水坝、风力发电机、核电站以及灌溉项目也在建设中，以充分利用广西的自然资源。

对外发展方面，广西决心发挥其区位优势，发展成为贸易和物流中心，尤其是服务于中国—东盟自由贸易区。南宁是一年一度的中国—东盟博览会的主办城市，这一盛会突出显示了中国向东盟产品开放市场，以及中国向东盟的对外投资。正因于此，东盟成员国在过去19年一直是广西最大的贸易伙伴，2019年，东盟国家贡献了广西49.7%的对外贸易额。

近期政策与改革

《广西壮族自治区优化营商环境条例》

2020年5月19日，广西壮族自治区人民代表大会常务委员会发布《《广西壮族自治区优化营商环境条例》。《条例》在总则中提出，坚持各类市场主体权利平等、机会平等、规则平等，以市场主体需求为导向，以政府职能转变为核心，全面深化"放管服"改革，践行"有事必应、无事不扰"的服务理念，持续对标国际国内先进水平，打造贸易投资便利、行政效率高效、政务服务规范、法治体系完善的国内一流营商环境，为各类市场主体投资兴业营造稳定、公平、透明、可预期的发展环境。

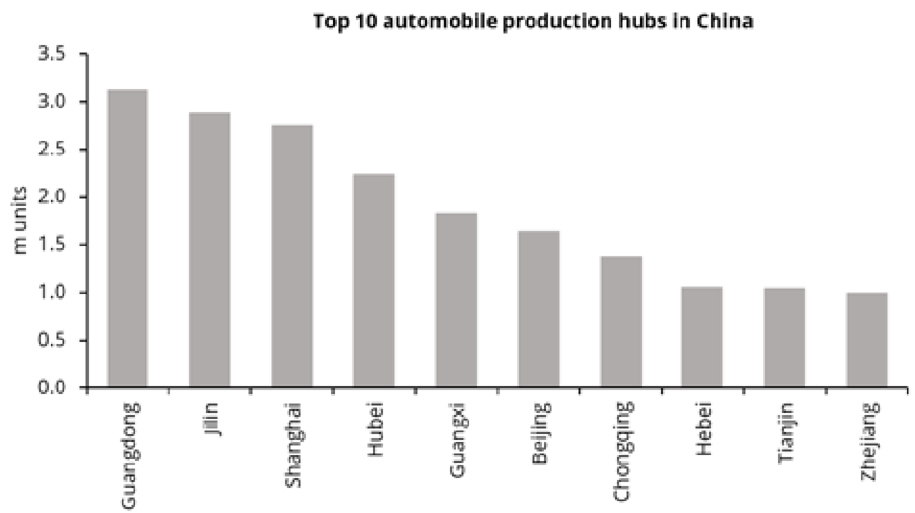
- 《条例》突出体现"公平"的目标追求，明确了除负面清单以外的领域，市场主体可依法平等进入。保障各类市场主体依法平等获取资金、技术、人力资源等各类生产要素和公共服务资源。清理与企业性质挂钩的行业准入、资质标准等规定和做法，保障依法平等适用国家和自治区各类支持发展政策；招标投标和政府采购对各类所有制和不同地区市场主体平等对待，将财产权、知识产权等纳入了平等保护的范畴；

- 为提升市场主体获得感，聚焦破除市场准入和市场退出障碍，《条例》在评价、考评、激励问责、容错、投诉举报等方面完善制度，对标国际国内先进水平，从市场环境、政务服务、监管执法、法制保障五个方面作出规定，在减税降费、治理拖欠账款、保护知识产权、融资服务、创新创业、项目审批、保护合法权益等企业关心的问题提出要求。

《加快建设面向东盟的金融开放门户若干措施》

2020年6月9日，广西壮族自治区人民政府印发《加快建设面向东盟的金融开放门户若干措施》，在更深层次、更宽领域，以更大力度推进广西金融供给侧结构性改革和对外开放合作，加快建设面向东盟的金融开放门户。

Fig 9 Guangxi is one of the top 5 automobile production hubs in China



Note: As of 2019
Source: Wind

to foster a first-class business environment in China featuring convenient trade and investment, efficient administration, standardized government services, and a sound legal system, and (iv) create a stable, fair, transparent, and predictable development environment for all types of market entities to invest and do business.

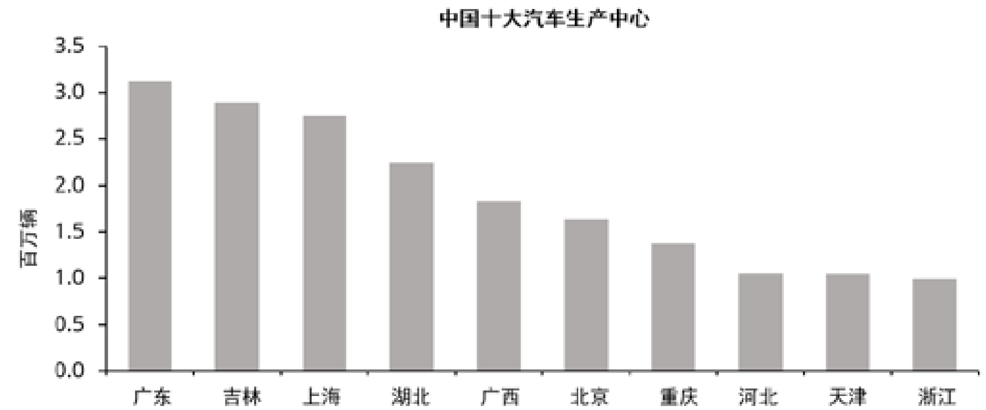
- The regulations highlight the goal of "fairness" and specify areas other than the negative list where market players can enter on an equal basis in accordance with the law. The Regulations will ensure that market entities of all types have equal access to capital, technology, human resources and other factors of production and public service resources in accordance with the law. The government will review industry access, qualification standards and other regulations and practices related to the nature of enterprises should be reviewed, ensuring all kinds of policies of the state and autonomous regions supporting development are applied equally in accordance with the law. All forms of ownership and market entities in different regions should be treated equally in tendering, bidding and government procurement, including property rights and intellectual property rights in the category of equal protection.

- In order to enhance the sense of gain of market players and focus on removing barriers to market access and exit, the Regulations have improved systems in such aspects as evaluation, incentive accountability, fault tolerance, complaints and reporting, benchmarking international and domestic advanced level provisions are made in five aspects, namely, market environment, government services, supervision and law enforcement, and legal protection. Requirements are also made for tax and fee reduction, payment in arrears, protection of intellectual property rights, financing services, innovation and entrepreneurship, project approval, and protection of legitimate rights and interests of enterprises.

Several Measures to Accelerate the Construction of a Financial Open Door for ASEAN

On 9 June 2020, the People's Government of Guangxi Zhuang Autonomous Region issued “Several Measures to Accelerate the Construction of a Financial Open Door for ASEAN”, to make greater efforts to promote the supply-side structural reform and opening-up cooperation in the financial sector in Guangxi at a deeper and broader level, and to speed up the construction of a financial open door for ASEAN by:

图表九 广西是中国主要的汽车生产中心之一



注：截至2019年
资料来源：Wind

- 鼓励优质金融要素集聚：主要包括吸引各类机构入驻，根据机构类别、级别、实缴注册资本等方面情况给予相应的落户奖励。其中，对持牌类金融机构落户奖励最高达6000万元人民币，对金融中后台服务机构落户奖励最高达2000万元人民币并给予电价优惠支持政策，对新型金融机构落户奖励最高达1000万元人民币，对股权投资机构、金融科技机构落户奖励最高达500万元人民币。同时，对持牌类金融机构和面向东盟证券期货服务基地给予办公用房费用补贴政策，着力发挥这些机构的辐射带动作用，推动优质资源集聚和现代金融产业发展，加快广西构建区域特色金融体系，为金融服务创新奠定基础；

- 支持跨境金融服务创新：立足于面向东盟的金融开放门户的属性和特点，对离岸金融、跨境人民币结算、银行间市场区域交易、跨境信贷融资、跨境保险服务、国际航运保险、跨境股权债权融资等跨境金融业务给予一定比例的奖励和补贴，突出对业务增量的奖励，单个项目的奖励最高达200万元人民币。开展金融创新评选，每年对自治区内金融机构、金融监管部门以及相关企业在人民币面向东盟跨区域使用、金融产品和服务创新、金融监管创新和金融科技应用等方面的活动成果进行等级评定，并给予奖励支持。

- 推动区域重大金融改革：深入挖掘建设面向东盟金融开放门户总体方案赋予广西先行先试的领域和项目，大力推行“创建制”，鼓励和支持有条件的设区市自下而上开展金融改革创新，争创绿色金融改革创新示范区、创建保险创新综合示范区、争创金融服务乡村振兴试验区、直接融资改革创新试点等，自治区给予资金奖补和政策倾斜，着力调动各地的主观能动性和积极性，营造全区性的金融改革创新氛围。自治区层面进一步完善金融改革评价机制，建设评价信息系统，打造特色金融城市和金融改革示范县；

- 鼓励金融支持实体经济发展：牢牢把握金融服务实体经济的本质要求，通过促进信贷增量扩大、支持企业在资本市场上市挂牌、支持企业发行资本市场融资工具、鼓励企业引进保险资金、鼓励实施并购重组等一系列激励措施，推动金融供给侧结构性改革，优化金融资源配置，提升金融服务的质量和效能，引导信贷资金、股权资金、债券资金、保险资金、并购重组资金等各类资金落到实体经济上，满足企业多元化的融资需求；

- 吸引优秀金融人才集聚：着力健全引才育才机制，积极争取从中央金融监管部门、金融机构总部、东部地区选派高端金融人才来桂挂职或任职，在住房、交通、相关待遇等方面加强保障。落实薪酬补贴、跟踪服务等优惠政策，支持高级管理人才、高级专业技术人才等高层次金融人才发展。按照分类分层、梯队培养的思路，实施“领航”“英才”“远航”三大金融人才培养工程，创新培养支持激励机制，培养与金融开放门户发展方向相适应，以高层次人才为引领，专业人才为主体，结构优化、梯次衔接、素质优良的金融人才队伍。

- Encouraging high-quality financial factors to gather, mainly including attracting various institutions to settle in, and giving corresponding incentives to settle in according to the categories, levels, paid-in registered capital and other aspects. Among them, the reward for settling down is up to 60 million RMB for licensed financial institutions, 20 million RMB for middle- and back-office financial service institutions, 10 million RMB for new financial institutions, and 5 million RMB for equity investment institutions and FinTech institutions. At the same time, the government will subsidize office space costs for licensed financial institutions and the ASEAN Securities and Futures Service base, giving full play to the leading role of these institutions, promote the accumulation of high-quality resources and the development of a modern financial industry, accelerate the construction of a regional characteristic financial system in Guangxi, and lay a foundation for innovation in financial services.

- Supporting cross-border financial service innovation based on the ASEAN oriented financial attributes and characteristics of open portal, provide a percentage of awards and subsidies to offshore finance, cross-border RMB settlement, the interbank market area, cross-border trade, cross-border credit financing insurance service, international shipping insurance, cross-border equity and debt financing and other cross-border financial businesses, highlighting incremental business rewards, up to 2 million RMB for individual projects. Conducting financial innovation evaluation. Every year, the financial institutions, financial regulatory authorities and related enterprises in the Autonomous Region shall be rated on the achievements of their activities in the transregional use of RMB in ASEAN, innovation in financial products and services, innovation in financial regulation and application ofFinTech. Rewards and support will be provided.

- Promoting major financial reform in the region including exploring and constructing the areas and projects that the overall plan of building an open financial door for ASEAN first endowed to Guangxi, vigorously promoting the "creation system". Encouraging and supporting cities divided into districts where conditions permit financial reform and innovation from the bottom up, and strive to create demonstration zones for green financial reform and innovation, comprehensive demonstration zones for insurance innovation, pilot zones for the revitalization of rural financial services, and pilot zones for reform and innovation in direct financing. The Autonomous Region will give capital awards and subsidies and preferential policies to mobilize the subjective initiative and enthusiasm of all regions and create a district-wise atmosphere for financial reform and innovation. At the level of the Autonomous Region, the evaluation mechanism of financial reform should be further improved, the evaluation information system should be built, and characteristic financial cities and demonstration counties should be built.

- Encouraging financial support for the development of the real economy by firmly grasping the essential requirements of financial services for the real economy. Promoting financial supply-side structural reform, optimizing the allocation of financial resources, improving the quality and efficiency of financial services, and guiding credit funds, equity funds, bond funds, insurance funds, merger and reorganization funds and other funds to the real economy, so as to meet the diversified financing needs of enterprises through a series of incentive measures, including promoting the increase of credit, supporting enterprises to go public in the capital market, supporting enterprises to issue capital market financing instruments, encouraging enterprises to introduce insurance funds, and encouraging the implementation of mergers and acquisitions.

- Attracting outstanding financial talent to gather through efforts that will be made to improve the mechanism for attracting and cultivating talent, and efforts will be made to send high-end financial talent from the central financial regulatory authorities, the headquarters of financial institutions and eastern regions to Guangxi for temporary posts or permanent posts. They will strengthen support for housing, transportation and other related benefits. Preferential policies such as salary subsidies and tracking services will be implemented to support the development of high-level financial talent such as senior management personnel and senior professional and technical personnel. According to hierarchical classification and echelon training,

《促进中国（广西）自由贸易试验区跨境贸易便利化若干政策措施》

2020年7月4日，广西壮族自治区人民政府办公厅发布《促进中国（广西）自由贸易试验区跨境贸易便利化若干政策措施》，要求优化通关流程、完善口岸服务、提高通关效率、降低通关成本，打造更有活力、更富效率、更加开放、更为便利的跨境贸易营商环境，全面提升中国（广西）自由贸易试验区跨境贸易便利化水平。《政策措施》包含5个方面29条，对标国内国际先进的通关监管体系，着力提高跨境贸易便利化水平，推动国际贸易、边境贸易等贸易模式蓬勃发展，促进外向型经济集聚，推动广西自贸试验区高水平发展和高质量建设。

- 优化口岸通关流程：包括13项措施。推广“预约通关”“两步申报”等通关模式，优化进口汽车零部件、大宗资源性商品、进口矿产品等物品的检验检疫流程。建立便捷高效的海事服务体系，创新保税油、保税研发等监管模式，提升南宁航空口岸通关效能；

- 优化税收金融服务：包括4项措施。落实跨境电商出口税收政策，推进退税全程无纸化办理，压缩出口退税时间。推广关税保证保险等税收担保方式改革。支持银行机构加大对跨境贸易企业以其纳税等信用为依据的授信额度，扩大信用贷款、流动资金贷款等产品覆盖面，打造降本利企的税收金融环境；

- 创新边境贸易监管服务：包括3项措施。充分利用凭祥这个西部陆海新通道陆路门户，创新发展边境贸易通关监管新模式，围绕推行“边民合作社+边境落地加工”模式、全面落实边民互市贸易负面清单、创新鲜活农产品监管流程等，不断提升边境贸易监管服务水平。

- 推进口岸提效降费：包括4项措施。提高钦州港集装箱进出口环节的作业效率，推动降低中介费用；提升凭祥铁路口岸服务水平；加强国际通关合作，扩大与东盟国家的AEO互认合作；

- 提升口岸信息化智能化水平：包括5项措施。通过升级国际贸易“单一窗口”、提升“智慧监管”水平、打造钦州港通行“一码通”平台、实施出入境车辆自助通关模式等方式，实现广西自贸试验区智能通关“加速度”。

《广西壮族自治区人民政府关于促进边境经济合作区高质量发展的若干意见》

2020年10月8日，广西壮族自治区人民政府发布《广西壮族自治区人民政府关于促进边境经济合作区高质量发展的若干意见》。《意见》目标为：贯彻落实中央、自治区关于扩大沿边开发开放、提升发展边合区的新部署、新要求，着力解决当前边合区面临的困难和问题，促进边合区高质量发展，进一步发挥边合区在沿边经济社会发展中的示范引领和辐射带动作用。

- 发展目标：根据边合区发展实际并采取适度超前原则，从边合区综合经济实力、开放水平、产业发展质量等三个方面，设置了到2025年，边合区地区生产总值（GDP）增速及占所在县（市、区）比重、进出口贸易总额增速以及占所在县（市、区）比重、边合区工业总产值增速、劳动生产率增速、从业人员增速等边合区高质量发展指标；

- 推动产业园区升级发展：从大力推进“小组团”滚动开发、设立一批自治区级边合区、聚焦发展沿边特色优势产业等3个方面，提出了下一步推动边合区升级发展的重点方向和具体措施；

- 强化政策支撑：针对边合区建设资金不足、边合区产业基础薄弱、竞争优势不明显等问题，提出加大自治区资金支持力度、加大税收优惠力度、加大金融支持力度、实行差别化产业政策、优先保障边合区重点项目建设用地、支持开展跨境劳务合作、加大产业链龙头企业的引资奖励等7条政策措施。

经济特区

中国-马来西亚钦州产业园区

中国—马来西亚钦州产业园区是中国政府与外国政府合作共建的第三个国际园区。中马钦州产业园区以打造中国—东盟合作的示范区为目标，定位为“先进制造基地、信息智慧走廊、文化生态新城、合作交流窗口”，同时也将成为与钦州市主城区、滨海新城齐头并进的“产城一体化”的新城区。中马钦州产业园区远期规划面积55平方公里，规划人口50万人。园区划分为工业区、科技研发区、配套服务区、生活居住区四大功能片区。

重点发展六大产业：装备制造、电子信息、食品加工、材料及新材料、生物技术和现代服务业。

- 装备制造：工程机械，汽车及零配件，电力、农业等专用和通用设备，医疗设备等；

- 电子信息：智能电子仪器，智能家电，自动化数据处理设备，新一代移动通信设备，集成电路，新型显示器，多媒体设备及关键器件等

- 食品加工：燕窝加工，保健及清真食品，特色农产品及海产品深加工等；

implement three big financial talent training projects of "talent" "sail" and "pilot", innovate in training support incentive mechanisms, cultivate financial talent teams with optimized structures, hierarchical connections, and excellent quality in line with the development direction of financial open doors, with high-level talents as the guide, and professional talent as the main body.

Several Policies and Measures for Promoting Cross-border Trade Facilitation in The China (Guangxi) Pilot Free Trade Zone

On 4 July 2020, the General Office of the Guangxi Zhuang Autonomous Region People's Government promulgated the "Several Policies and Measures for Promoting Cross-border Trade Facilitation in the China (Guangxi) Pilot Free Trade Zone". It is required to optimize customs clearance procedures, improve port services, raise customs clearance efficiency and reduce customs clearance costs, create a more dynamic, efficient, open and convenient cross-border trade and business environment, and comprehensively enhance cross-border trade facilitation in the China (Guangxi) Pilot Free Trade Zone. The policy measures include 29 articles in 5 aspects. It aims to improve cross-border trade facilitation, promote the vigorous development of international trade, border trade and other trade modes, promote the agglomeration of an export-oriented economy, and promote the high-level development and high-quality construction of the Guangxi Pilot Free Trade Zone.

- Optimizing the port clearance process: 13 measures are included. Promoting customs clearance models such as "pre-clearance" and "two-step declaration" and optimizing the inspection and quarantine procedures for imported auto parts, bulk resource commodities, mineral products and other goods. Establishing a convenient and efficient maritime service system, innovate in bonded oil, bonded R&D and other regulatory modes, and improve the customs clearance efficiency of Nanning airport.

- Optimizing tax financial services: 4 measures are included. Implementing export tax policies for cross-border e-commerce businesses, promoting paperless tax rebates throughout the process, and reducing the time required for export tax rebates. Promoting the reform of tax guarantees such as customs guarantee insurance. Supporting banking institutions to increase the credit lines for cross-border trade enterprises based on their tax and other credits, expanding the coverage of credit loans and working capital loans, and creating a tax and financial environment for enterprises that reduce costs and profits.

- Innovating border trade regulatory services: 3 measures are included. Make full use of Pingxiang, the land gateway of the new land and sea corridor in western China, innovate and develop the new mode of border trade customs clearance supervision, focus on implementation of the "border people's cooperative + border landing processing" mode, fully implement the negative list of border trade among border people, and innovate the supervision process of fresh agricultural products, so as to continuously improve the supervision service level of border trade.

- Promoting efficiency and fee reduction at ports: 4 measures are included. Improving the efficiency of container import and export in Qinzhou Port, and promoting the reduction of intermediary fees; improving the service level of Pingxiang Railway Port; strengthening international customs clearance cooperation and expanding AEO mutual recognition cooperation with ASEAN countries.

- Improving the level of port information and intelligence: 5 measures are included. By upgrading the "single window" of international trade, improving the level of "smart supervision", building the "one-code Pass" platform for Qinzhou Port, and implementing the automatic clearance mode for entry-exit vehicles, etc., the "acceleration" of intelligent clearance in the Guangxi Pilot Free Trade Zone will be realized.

Opinions of the People's Government of Guangxi Zhuang Autonomous Region on Promoting the High-quality Development of Border Economic Cooperation Zones

On 8 October 2020, the People's Government of The Guangxi Zhuang Autonomous Region

- 材料及新材料：棕榈产品提取新材料，新型合金材料，化工新材料，海洋新材料等；

- 生物技术：大南药及现代中药，海洋生物制药，农业生物技术，生物医药保健，生物环保技术等；

- 现代服务业：现代物流，金融保险，商贸会展，文化康乐，技术咨询，服务外包，教育培训，区域总部经济等。

2019年全年，园区进出口总额达24.62亿元人民币，同比增长2.59%。规模以上工业总产值同比增长9.7%，规模以上工业增加值同比增长6.18%。固定资产投资同比增长6.96%。注册企业超过380家。

广西-东盟经济技术开发区

2004年3月，广西-东盟经济技术开发区（以下简称“东盟经开区”）于广西南宁市成立。2013年3月2日，经国务院批准，开发区升级为国家级经济技术开发区。开发区规划有综合产业园区、南宁教育园区、文化旅游休闲区、现代农业示范区等四个功能区。开发区是中国-东盟博览会的重要载体，是广西北部湾经济区14个重点产业园区之一。

2020年2月3日，广西—东盟经济技术开发区管理委员会发布《广西-东盟经济技术开发区管理委员会关于在招商引资工作中推行“招商大使”的若干规定》，进一步拓宽招商引资渠道，加快推进广西-东盟经济技术开发区产业优化升级、人才集聚和产城融合，充分调动社会各界人士参与招商引资的积极性。

2019年广西-东盟经济技术开发区实现新开工工业项目62个、竣工投产工业项目50个，共引进李宁体育（香港）有限公司高端运动装备制造项目等项目122个。

广西东兴国家重点开发开放试验区

广西东兴国家重点开发开放试验区（简称“东兴试验区”）是全国首批三个沿边开发开放试验区之一，地处广西北部湾经济区核心区域和西南、泛珠三角与东盟三大经济圈结合部，是国家推进“一带一路”建设的重要门户，也是带动西南、中南地区开放发展的重要支点。

2012年7月，国务院批准《东兴试验区建设实施方案》，要求“努力把东兴试验区建设成为深化我国与东盟战略合作的重要平台、沿边地区重要的经济增长极、通往东南亚国际通道重要枢纽和睦邻安邻富邻示范区”。2012年8月，东兴试验区建设正式启动。2012年12月，自治区政府印发《加快推进东兴重点开发开放试验区建设的若干政策》，给予东兴试验区34条政策支持。2015年12月，国务院出台《国务院关于支持沿边重点地区开发开放若干政策措施的意见》，明确在兴边富民、体制机制、贸易结构、差异化扶持、基础设施建设、财税、金融创新、旅游开放等31个方面给予东兴试验区一系列政策支持。

东兴试验区范围涵盖防城港市所辖的东兴市、港口区全境，以及防城区的防城镇、江山乡、茅岭乡，总面积1226平方公里，人口48.3万人，与东盟海陆相连，陆地边境线100.9公里，大陆海岸线537.8公里，拥有我国西部第一大港防城港等5个国家级口岸和5个边贸互市区（点）。

东兴试验区重点布局五大功能区：

- 国际经贸区。以东兴市和防城区沿边沿海一带为主体，重点发展国际商贸和会展、物流业、进出口加工业、文化旅游业等，建设高度开放的国际经贸合作基地和国际旅游基地；

- 港口物流区。以防城港渔万港区为主体，重点发展港口运输、国际物流和中转业务，拓展保税业务，建设现代化物流基地；

- 国际商务区。以市行政中心和防城区的主城区为核心，是全市的文化中心、商业中心、行政中心，努力打造生态海湾新城，国际商务服务基地，重点发展商贸、金融、信息等现代服务业；

- 临港工业区。以企沙工业区为主体，重点发展临港特色工业，承接国内外产业转移，形成产业集群，建设先进装备制造基地和能源化工基地；

- 生态农业区。位于十万大山南麓，以东兴市北部山区和防城区江山乡北部为主体。重点发展亚热带特色农业、生态旅游、休闲农业等产业，建成边海生态屏障，同时为试验区发展预留建设用地。

2019年，东兴试验区实现地区生产总值555.63亿元人民币，同比增长6.0%；规模以上工业企业101家，工业总产值同比增长0.2%；新签项目84个。

中国东兴—越南芒街跨境经济合作区

中国东兴—越南芒街跨境经济合作区位于广西北部湾经济区核心区域和中国西南、泛珠三角、东盟三大经济圈的结合部，是国家实施“一带一路”倡议的重要节点、中国面向东盟开放合作的重要平台和中国—越南经贸投资合作的示范区。2015年11月，中国广西和越南广宁两省区签署《中国共产党广西壮族自治区委员会与越南共产党广宁省委员会关于建立友好地方组织的交流协议》，提出要加快推进中越跨境经济合作区建设。2013年10月，李克强总理访越期间，中越两国达成共识，决定建设中国

issued the “Opinions of the People's Government of the Guangxi Zhuang Autonomous Region on Promoting the High-quality Development of Border Economic Cooperation Zones”. The goal of the Opinion is to implement the central government and autonomous region’s new arrangements and requirements on expanding the development and opening up of border areas and enhancing the development of border cooperation zones. Efforts will be made to solve the current difficulties and problems of border areas, promote their high-quality development, and give greater play to their exemplary role in guiding and driving economic and social development.

- Development objective according to the actual development of border-joint zone and adopting the principle of appropriate advance, high-quality development indicators such as the growth rate of gross domestic product (GDP) and its share in the local county (city or district), the growth rate of total import and export trade and its share in the local county (city or district), the growth rate of total industrial output, the growth rate of labor productivity and the growth rate of employees in the border region have been set from the comprehensive economic strength of border-joint zone, the level of openness, industrial development quality and three other aspects by 2025.

- Promote the upgrade and development of industrial parks from the following three aspects, (i) vigorously promote the rolling development of "groups and groups", (ii) set up a number of border-joint areas at the autonomous region level, and (iii) focus on the development of industries with characteristics and advantages along the border.

- Strengthening policy support is aimed at problems such as insufficient funds for the construction of the border-joint zone, weak industrial foundation and insignificant competitive advantages. Seven policies and measures were proposed, including increasing financial support, increasing tax incentives, increasing financial support, implementing differentiated industrial policies, giving priority to land for construction of key projects in border cooperation areas, supporting cross-border labor cooperation, and increasing investment incentives for leading enterprises in the industrial chain.

Special economic zones

China-Malaysia Qinzhou Industrial Park

The China-Malaysia Qinzhou Industrial Park (the “Park”) is the third international park jointly built by the Chinese government and a foreign government. With the objective of building a demonstration area for China-ASEAN cooperation, the China-Malaysia Qinzhou Industrial Park positions itself as “an advanced manufacturing base, an information wisdom corridor, a cultural and ecological new park, and a cooperation and exchange window”, and will also become a new urban area for the “integration of industrial functions and urban residences” which keeps pace with the main urban area and Binhai New Area of Qinzhou. The long-term expected area of the China-Malaysia Qinzhou Industrial Park is 55 square kilometers, with a planned population of 500,000. The Park is divided into four areas: the Industrial Park, R&D Area, Supporting Service Area and Residential Area.

The China-Malaysia Qinzhou Industrial Park focuses on six major industries: equipment manufacturing, electronic information, food processing, materials and new materials, biotech and modern services. The details are as follows:

- Equipment manufacturing: Construction machinery, automobile and parts, power, agriculture and other special and general equipment, medical equipment, etc.

- Electronic information: Intelligent electronic instruments, intelligent household appliances, automatic data processing equipment, next generation mobile communication equipment, integrated circuits, new displays, multimedia equipment, key devices, etc.

- Food processing: Bird nest processing, healthcare and halal food, special agricultural products, seafood deep processing, etc.

东兴—越南芒街跨境经济合作区。2017年5月11日中越联合公报中明确指出，双方要加快商签《中越跨境经济合作区建设共同总体方案》。

中国东兴—越南芒街跨境经济合作区规划总面积共23.44平方公里，其中：中方园区规划面积9.94平方公里，越方园区规划面积13.5平方公里。中方园区核心区围绕金融商贸、电子机械、纺织服装、新能源、现代物流、农副产品加工等产业，重点建设“一区三园”（金融商贸区、深圳电子科技产业园、香港纺织服装产业园、台湾加工贸易与物流综合产业园）。东兴跨境经济合作区现正加快开发建设，将打造成为全国沿边经济发展新增长极。

2020年广西东兴国家重点开发开放试验区管委会发布《关于建立推进中国东兴—越南芒街跨境经济合作区东兴园区与东兴市政区协同发展联动工作机制的实施意见》，推动中国东兴—越南芒街跨境经济合作区东兴园区高质量发展，提高工作效率，凝聚工作合力，全面提升区域与东兴市发展联动制度化、规范化、科学化水平。

截至2019年9月，中国东兴-越南芒街跨境经济合作区（中方园区）建设完成国门楼、验货场、标准厂房及友好大道、楠木山大道、罗浮西路几大项目，累计投资额为84354万元人民币。截至2019年8月，东兴市外贸进出口总值39.7亿元人民币，同比增长87.3%。

根据国家总书记指示，下一步，试验区按“两城、多园”进行布局。其中，国际医药制造城核心区由防城港高新技术产业开发区、东兴跨境经济合作区、企沙山新半岛片区、上思江南综合加工区四个片区组成，给跨境经济合作区带来新的国际合作机遇，增加新的国际贸易功能。

珠江—西江经济带（广西）

珠江-西江经济带横贯广东、广西，上联云南、贵州，下通香港、澳门，规划范围包括广东省的广州、佛山、肇庆、云浮4市和广西壮族自治区的南宁、柳州、梧州、贵港、来宾、崇左7市，在全国区域协调发展和面向东盟开放合作中具有重要的战略地位。2014年7月，《珠江—西江经济带发展规划》获得国务院批复，以珠江一西江流域为依托的区域发展正式上升为国家战略。国务院在该批复中指出，要坚持优化升级，着力构建现代产业体系；坚持统筹协调，着力推进新型城镇化发展；坚持开放引领，着力构筑开放合作新高地，努力把珠江—西江经济带打造成为我国西南、中南地区开放发展新的增长极，为区域协调发展和流域生态文明建设提供示范。

2020年9月17日，广东、广西推进珠江-西江经济带发展规划实施联席会议第七次会议在三亚召开，推动落实《全面对接粤港澳大湾区 粤桂联动加快珠江-西江经济带建设三年行动计划（2019-2021年）》，进一步强化粤桂合作，推进新时代珠江-西江经济带高质量发展。

粤桂合作特别试验区

2011年12月11日，广东与广西两省区政府在北京签署了《“十二五”粤桂战略合作框架协议》，一致同意在广东肇庆市和广西梧州市交界区域共同设立“粤桂合作特别试验区”。2014年4月17日，粤桂两省（区）政府印发《关于同意粤桂合作特别试验区总体发展规划的批复》，标志着两省（区）正式批准建设粤桂试验区，规划建设进入了全面实施阶段。

粤桂合作特别试验区是国家区域发展战略珠江-西江经济带的重要组成部分，位于广东省肇庆市和广西壮族自治区梧州市交界处，面积140平方公里，广东广西各70平方公里，是中国唯一的横跨东西部省际流域合作试验区。

2020年1月18日，粤桂合作特别试验区（梧州）管理委员会印发《粤桂合作特别试验区（梧州）促进产业发展十条政策（试行）》，进一步优化粤桂合作特别试验区（梧州）营商环境，推动经济高质量发展。2020年5月21日梧州市人民政府印发《梧州市招商引资激励办法》，完善招商引资激励机制，充分调动一切积极因素，不断扩大对外开放，提高招商引资质量，培育发展新动能。

截至2019年11月，目前，粤桂合作特别试验区注册企业累计337家，已投产企业65家，其中规上工业企业38家，招商引资到位资金累计369亿元人民币，合同总额约470亿元人民币。2019年1—10月，广西片区签约项目19个，协议投资总额69.3亿元人民币，在建项目44个，完成投资79亿元人民币。

广西战略性新兴产业城（贵港）

贵港位于广西壮族自治区东南部、珠江流域干线西江中游，拥有西江“黄金水道”287公里，是大西南与华南地区的水路交通交汇点，为沿江开放奠定了极佳基础。2015年起，贵港确立“工业兴市、工业强市”的发展理念，初步构建了广西第二汽车生产基地、中国-东盟新能源电动车生产基地、电子信息制造基地的框架。被国务院评为促进工业稳增长和转型升级、技术改造成效明显市，并被自治区定位为广西战略性新兴产业城。

2020年6月20日贵港市委、市政府举行贵港市2020年推进广西战略性新兴产业城建设暨第二季度重大项目建设集中开竣工活动。本次集中开竣工活动共116个项目，总投资268.85亿元人民币，年度计划投资83.47亿元人民币。参与集中开竣工仪式的项目涵盖了战略性新兴

- Materials and new materials: Palm product extraction new materials, new alloy materials, new chemical materials, new marine materials, etc.

- Biotech: General southern medicine and modern Chinese medicine, marine biopharmaceuticals, agricultural biotech, biomedical healthcare, bioenvironmental protection technology, etc.

- Modern services: Modern logistics, financial insurance, commercial exhibition, cultural leisure, technical consultation, service outsourcing, education and training, regional headquarters economy, etc.

In 2019, the total import and export volume of the park reached 2.462 billion RMB, with a year-on-year growth of 2.59%. The total output value of industries above designated a size increased by 9.7% year-on-year, and the added value of industries above designated size increased by 6.18% year-on-year. Fixed asset investments increased by 6.96% year on year. There are more than 380 registered enterprises.

Guangxi-ASEAN Economic and Technological Development Zone

In March 2004, the Guangxi-ASEAN Economic and Technological Development Zone (the "ASEAN Economic Development Zone") was established in Nanning, Guangxi. On 2 March 2013, with the approval of the State Council, the ASEAN Economic Development Zone was upgraded to a state-level economic and technological development zone. The planning of the ASEAN Economic Development Zone includes four functional zones: the Comprehensive Industrial Park, Nanning Education Park, Cultural Tourism Leisure Zone and Modern Agricultural Demonstration Area. The ASEAN Economic Development Zone is an important organizer of the China-ASEAN Expo and one of the 14 key industrial parks in the Guangxi Beibu Gulf Economic Zone.

On 3 February 2020, the Management Committee of Guangxi-ASEAN Economic and Technological Development Zone promulgated the “Provisions of The Management Committee of Guangxi-ASEAN Economic and Technological Development Zone on The Implementation of ‘Ambassadors for Investment Promotion’ in the Work of Investment Promotion”.

In 2019, 62 industrial projects were newly started and 50 were completed and put into operation in The Guangxi-ASEAN Economic and Technological Development Zone, and 122 high-end sports equipment manufacturing projects like Li Ning Sports (Hong Kong) Co., Ltd. were introduced.

Guangxi Dongxing National Key Experimental Zone for Development and Opening-up

The Guangxi Dongxing National Key Experimental Zone for Development and Opening-up (the “Dongxing Experimental Zone”) is one of the first three frontier developments and opening-up experimental zones in China, and is located in the core region of the Guangxi Beibu Gulf Economic Zone and is part of the southwest China, Pan-Pearl River Delta and ASEAN economic circles. It is a national important gateway for promoting implementation of the Belt and Road Initiative and is pivotal for southwest and central south China’s development and opening-up.

In July 2012, the State Council approved the “Implementation Plan for the Construction of the Dongxing Experimental Zone”, which “strives to build the Dongxing Experimental Zone into an important platform for deepening strategic cooperation between China and ASEAN, representing an important border area economic growth point, a key hub for international channels to connect to China and southeast Asia, and a demonstration area for diplomatic policies to create an amicable, secure and prosperous neighborhood”. In August 2012, construction of the Dongxing Experimental Zone was officially launched. In December 2012, the People’s Government of Guangxi Zhuang Autonomous Region issued “Several Policy Measures on Accelerating the Construction of the Dongxing Key Experimental Zone for Development and Opening-up” and introduced 34 supporting policies. In December 2015, the State Council released the “Opinions on Several Policy Measures in Support of Development and Opening-Up of Key Border

产业、工业、基础设施、社会民生等多个领域，集中展示了贵港市招商引资和重大项目建设丰硕成果，为贵港市加快建成西江流域核心港口城市和战略性新兴产业城按下加速键。

广西东融先行示范区（贺州）

贺州毗邻粤港澳，是桂粤湘三省通衢之地，位于广州和桂林的中点，是广西与粤港澳地区经济融合、产业对接、文化交流的重要支点。

2020年3月28日，广西壮族自治区发展和改革委员会印发《关于支持广西东融先行示范 区(贺州)建设发展的若干政策》，加快推动广西东融先行示范区（贺州）建设，努力构建“南向、北联、东融、西合”全方位开放发展新格局，促进经济实现高质量发展。《若干政策》主要包括支持产业加快发展、支持产业平台和互联互通基础设施建设、加大财税金融支持、强化人才科技支撑、支持先行先试等五方面共17条具体政策措施。

目前广西东融先行示范区（贺州）建设已取得部分成效，编制了《广西东融先行示范区（贺州）发展规划》和三年行动计划；引进了70多个新经济新业态项目；吸引了10家世界和中国500强企业，以及中资控股、天沐温泉等行业龙头企业入驻；实现了从“地无寸铁”到高铁动车公交化开行重大转变；全市地区生产总值、财政收入等主要经济指标增速连续3年位居全区第一方阵。

小结

广西省通过东兴试验区、珠江—西江经济带、粤桂合作特别试验区、东融先行示范区等特区,全面对接粤港澳大湾区,构建战略性新兴产业,包括新能源汽车、生物医药、智能装备等先进制造业。广西省大力推动贸易转型升级,提升贸易便利化水平,深化金融领域开放创新,打造面向东盟的金融开放门户、促进跨境投融资便利化。广西省深化投资和外贸领域改革,与东盟及成员国建立合作,建立数据中心,推动信息科技的发展。

Regions", which specify a series of support policies for the Dongxing Experimental Zone from 31 aspects, including programs to develop border areas and improve the lives of the border residents, system and institutional reform, trade structure adjustment, differentiated support policies, infrastructure construction, financial and tax support, financial innovation, and expanding tourism.

Dongxing Experimental Zone covers Dongxing City and Gangkou District under the administration of Fangchenggang Municipality, as well as the towns of Fangcheng, Jiangshan and Maoling of Fangcheng District, with a total area of 1,226 square kilometers and population of 483,000. Dongxing Experimental Zone connects ASEAN countries through sea and land transportation. With a land border of 100.9 kilometers and a sea border of 537.8 kilometers, it has five national ports including the largest port in western China, Fangcheng Port, and five barter trade zones for border residents.

Details of the 5 functional zones of the Dongxing Experimental Zone are:

- The International Economic and Trade Zone: Located in the border and coastal areas of Dongxing City and Fangcheng District, this zone prioritizes the development of international trade and exhibitions, logistics, import and export processing, cultural tourism and other industries, and has a highly open international economic and trade cooperation base and an international tourism base.

- The Port Logistics Zone: Located in Yuwangang District in Fangchenggang Municipality, this zone prioritizes the development of port transportation, international logistics and transshipment business, has expanded bonded business, and has a modern logistics base.

- The International Business Zone: Located in the central downtown area of Fangcheng District, this zone has developed into the cultural, commercial and administrative center of the city. The goals for this zone are to build a new ecological bay city and an international business service base, and prioritize the development of modern service industries such as trade, finance and information.

- The Lingang Industrial Zone: Located in Qisha Industrial Zone, this zone prioritizes the development of industries with port characteristics, industrial transfers at home and abroad, forming industrial clusters, and building an advanced equipment manufacturing, energy and chemical base.

- The Ecological Agricultural Zone: Located at the foot of Shiwandashan Mountain, this zone prioritizes the development of industries with sub-tropical characteristics, such as agriculture, ecological tourism and leisure agriculture, ecological protection of coastal waters and land reservation for development of the Dongxing Experimental Zone.

In 2019, the Dongxing Pilot zone achieved a GDP of 55.563 billion RMB, up by 6.0% year-on-year. There were 101 industrial enterprises above designated scale, and the total industrial output value increased by 0.2% year-on-year. There were 84 newly signed projects.

China (Dongxing) - Vietnam (Mong Cai) Cross-border Economic Cooperation Zone

The China (Dongxing) - Vietnam (Mong Cai) Cross-border Economic Cooperation Zone is located in the core region of the Guangxi Beibu Gulf Economic Zone and overlaps with southwest China, Pan-Pearl River Delta and ASEAN economic circles. It is an important node for China to implement the Belt and Road Initiative, which is an important platform for China to open up and cooperate with ASEAN countries, and is a demonstration area for China-Vietnam economic, trade and investment cooperation. In November 2015, Guangxi, China and Quang Ninh, Vietnam jointly signed the "Cooperation Agreement on Building Friendly Local Organizations Between the Guangxi Zhung Autonomous Region Committee of the CCP and the Quang Ninh Province Committee of the VCP", proposing to accelerate the construction of the China-Vietnam Cross-border Economic Cooperation Zone. In October 2013, during Premier Li Keqiang's visit to Vietnam, China and Vietnam agreed to construct the

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China (Dongxing) - Vietnam (Mong Cai) Cross-border Economic Cooperation Zone. The joint communique issued by China and Vietnam on 11 May 2017 specified that both countries should speed up negotiation and signing of the “Overall Plan for Construction of the China-Vietnam Cross-border Economic Cooperation Zone”.

The China (Dongxing) - Vietnam (Mong Cai) Cross-border Economic Cooperation Zone covers a total planned area of 23.44 square kilometers, including 9.94 square kilometers of Chinese territory and 13.5 square kilometers in Vietnam. The core area of the Chinese side focuses on finance and trade, electronics and machinery, textile and garments, new energy, modern logistics, agricultural product processing, etc., to build a "One Zone and Three Parks" (Financial and Trade Zone, Shenzhen Electronic Technology Industrial Park, Hong Kong Textile and Garment Industrial Park, and Taiwan Processing Trade and Logistics Comprehensive Industrial Park) model. The Dongxing Cross-border Economic Cooperation Zone is speeding up its development and construction and will become a new growth point for China's economic border development.

In 2020, the Administrative Committee of Guangxi Dongxing National Key Development and Opening-up Pilot Zone issued the “Implementation Opinions on The Establishment and Promotion of the Joint Working Mechanism of Coordinated Development between Dongxing Park District and Dongxing Municipal Government District of China's Dongxing - Vietnam's Mong Cai Cross-border Economic Cooperation Zone.” Promoting the high-quality development of Dongxing Park, a cross-border economic cooperation zone between Dongxing and Mong Cai in Vietnam, improving work efficiency, consolidating work forces, and comprehensively improving the institutionalization, standardization and scientific level of the linkage of development between the region and Dongxing city.

By the end of September 2019, the Cross-border Economic Cooperation Zone (Chinese Park) between Dongxing and Vietnam Mong Cai Street completed construction of Guomenlou, an inspection yard, standard workshop and several major road projects including Youhao Avenue, Nanmushan Avenue and Luofu West Road, with a total investment of 843.54 million RMB. By August 2019, the total value of Dongxing's foreign trade was 3.97 billion RMB, up 87.3% year-on-year.

Pearl River-Xijiang River Economic Belt

The Pearl River-Xijiang River Economic Belt runs through Guangdong and Guangxi, with Yunnan and Guizhou Provinces upstream, and Hong Kong and Macau downstream. The scope includes Guangzhou, Foshan, Zhaoqing and Yunfu in Guangdong Province and 7 cities in Guangxi Province, including Liuzhou, Wuzhou, Guigang, Laibin and Chongzuo. The economic belt occupies an important strategic position in China’s development and the opening up to and cooperation with ASEAN. In July 2014, the “Pearl River-Xijiang Economic Belt Development Plan” was approved by the State Council, and regional development based on the Pearl River-Xijiang River Basin was officially promoted as a national strategy. The State Council proposed to (i) support optimization, (ii) establish and update modernized industrial systems, (iii) adhere to planning and coordination, (iv) promote the development of new-type urbanization, (v) put the improvement of people's lives first, and (vi) strive for improved public services. The plan also proposes to (i) uphold the principle of opening up, (ii) improve the process of opening up and cooperation, (iii) shape the Pearl River-Xijiang River Economic Belt into a new growth base for the opening up and development of southwest and central south China, and (iv) a create model for regionally harmonious development and watershed ecological construction.

On 17 September 2020, the seventh Joint Conference of Guangdong and Guangxi Provinces on Promoting the Development Planning and Implementation of the Zhujiang-Xijiang Economic Belt was held in Sanya. The conference promoted (i) implementation of the “Three-year Action Plan on Comprehensively Connecting Guangdong, Hong Kong and Macau in the Greater Bay Area with Guangdong and Guangxi to Accelerate the Construction of the Pearl River and Xijiang Economic Belt (2019-2021)”, (ii) further strengthening cooperation between Guangdong and Guangxi, and (iii) high-quality development

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of the Pearl River and Xijiang Economic Belt in the new era.

Guangdong-Guangxi Cooperation Special Experimental Zone

On 11 December 2011, the Guangdong and Guangxi Provincial Governments signed the "Twelfth Five-Year Plan Strategic Agreement on Guangdong-Guangxi Strategic Cooperation" in Beijing and agreed to jointly establish a "Guangdong-Guangxi Cooperation Special Experimental Zone" in the border area of Zhaoqing, Guangdong and Wuzhou, Guangxi. On 17 April 2014, the governments of Guangdong and Guangxi jointly issued the "Approval of the Overall Development Plan of the Guangdong-Guizhou Cooperation Special Experimental Zone", which marked formal approval for construction of the Guangdong-Guizhou Experimental Zone, and the beginning of comprehensive implementation of the construction plan.

The Guangdong-Guizhou Cooperation Special Experimental Zone is an important part of the Pearl River-Xijiang Economic Belt in the national regional development strategy. It is located at the junction of Zhaoqing City, Guangdong Province and Wuzhou City, Guangxi Zhuang Autonomous Region, covering an area of 140 square kilometers, with 70 square kilometers each in Guangxi and Guangdong. It is the sole experimental cooperation zone covering both eastern and western provinces.

On 18 January 2020, the Management Committee of the Guangdong-Guangxi Cooperation Special Pilot Zone (Wuzhou) published the "Ten Policies for Promoting Industrial Development in The Special Pilot Zone (Wuzhou)", which further optimize the business environment of the Special Pilot Zone for Guangdong-Guangxi Cooperation (Wuzhou) to promote high-quality economic development. On 21 May 2020, the People's Government of Wuzhou issued the "Incentive Measures for Investment Attraction of Wuzhou City" to improve the incentive mechanism for investment attraction, fully mobilize all positive factors, constantly expand opening up, improve the quality of investment attraction, and cultivate new driving forces for development.

Up to November 2019, there were 337 registered enterprises in the Special Pilot Zone for Guangdong and Guangxi Cooperation, and 65 enterprises had started production, among which 38 were industrial enterprises above the designated level. The total amount of investment in the zone reached 36.9 billion RMB, and the total contract amount was about 47 billion RMB. From January to October 2019, 19 projects were signed in Guangxi, with a total investment of 6.93 billion RMB, and 44 projects were under construction, with completed investment of 7.9 billion RMB.

Guangxi Strategic Emerging Industry City (Guigang)

Guigang is located in southeast Guangxi Zhuang Autonomous Region and the middle reach of Xijiang River in the Pearl River Basin. It spans 287 kilometers in the "golden waterway" of the Xijiang River. Since 2015, Guigang has developed the concept of "Industry to Promote and Strengthen City Development" and has established a framework for the Second Automobile Production Base of Guangxi, China-ASEAN New Energy Electric Vehicle Production Base and Electronic Information Manufacturing Base. Guigang was rated by the State Council as a city promoting stable industrial growth with significant technological transformation and has been positioned as a strategic emerging industrial city by Guangxi Autonomous Region.

On 20 June 2020, the Municipal Party Committee and Municipal Government of Guigang held activities in Guigang to promote the construction of Guangxi Strategic Emerging Industrial City in 2020 and the centralized opening and completion of major project construction in the second quarter. A total of 116 projects were opened and completed, with a total investment of 26.885 billion RMB and an annual planned investment of 8.347 billion RMB. The projects that participated in the centralized opening and completion ceremony covered strategic emerging industries, industries, infrastructure, social and people's livelihood and other fields. The activities concentrated on demonstrating the results of investment attraction and Guigang's major construction projects to speed up development as a core port and a strategic emerging industrial city in the Xijiang River Basin.

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Guangxi Dongrong Pioneering Demonstration Zone (Hezhou)

Hezhou is adjacent to Guangdong, Hong Kong and Macau, and is a thoroughfare between the three provinces of Guangxi, Guangdong and Hunan. It is located at the midpoint between Guangzhou and Guilin, and is also an important fulcrum for economic integration, industrial docking and cultural exchange between Guangxi, Guangdong, Hong Kong and Macau.

On 28 March 2020, the Development and Reform Commission of Guangxi Zhuang Autonomous Region issued “Several Policies on Supporting the Construction and Development of Guangxi Dongrong Pilot Demonstration Zone (Hezhou)”. The policies will accelerate the construction of the Guangxi Dongrong Pilot Demonstration Zone (Hezhou), strive to build a new pattern of all-round opening and development featuring "Southward orientation, Northern Alliance, East Fusion and Western cooperation", and promote high-quality economic development. The “Several Policies” mainly include 17 specific policies and measures in five aspects, namely, supporting the accelerated development of industries, supporting the construction of industrial platforms and connectivity infrastructure, increasing fiscal, taxation and financial support, strengthening scientific and technological support for talent, and supporting the development of pilot projects.

At present, some achievements have been made in the construction of Guangxi Dongrong Pilot Demonstration Zone (Hezhou), and the "Development Plan of Guangxi Dongrong Pilot Demonstration Zone (Hezhou)" and a three-year action plan have been formulated. More than 70 projects regarding new economy and new forms of business have been introduced. 10 global and Chinese top 500 enterprises have been attracted, as well as Chinese-funded holdings, Tianmu Hot Springs and other industry leaders. "From the ground up” transformation and development of high-speed railways has driven major change. The city's GDP, fiscal revenue and other major economic indicators have grown faster than first tier cities in the region for three consecutive years.

Summary

Guangxi Province has fully integrated with the Guangdong-Hong Kong-Macau Greater Bay Area, through the Dongxing Experimental Zone, Pearl River-Xijiang Economic Belt, Guangdong-Guizhou Cooperation Special Experimental Zone and Dongrong Pilot Demonstration Zone, by building strategic emerging industries, including new energy vehicles, biomedicine, Intelligent equipment and other advanced manufacturing industries. Guangxi Province seeks to promote the transformation and upgrade of trade, enhance trade facilitation, promote the facilitation of cross-border investments and financing, deepen opening-up and innovation in the financial sector, and build a financial gateway to ASEAN. Guangxi has deepened reforms in the fields of investment and foreign trade, established cooperation with ASEAN and member states, established data centers, and promoted the development of information technology.

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3.5 Hainan

The Economy

Hainan abbreviated as Qiong, used to be a special administrative region of Guangdong province, but became its own province and special economic zone (SEZ) in 1988. The province has a total area around 33,900 sq km, and population of 9.5m in 2019. In addition to the island of Hainan, it also includes Xisha (Paracel) Islands, Nansha (Spratly) Islands and Zhongsha Islands in the South China Sea. Sanya, Haikou and Danzhou are its major cities.

In 2019, Hainan ranked 28th out of China's 31 provinces by economic size, and accounts for just 0.54% of national GDP. Due to its subtropical climate, high precipitation and mild temperature differences throughout the year, the province has well-developed primary industries (contributing to 20.3% of GDP in 2019) such as agriculture. While Hainan is China's smallest province, it is also its largest special economic zone, which supports tertiary industries that are rapidly growing (58.9% of GDP) such as tourism, while its secondary industries, at just 20.7% of GDP, are among the lowest in China. Among them, petrochemicals, pharmaceuticals, agricultural non-staple food processing and papermaking are the main industries.

The unique economic structure in Hainan has one of the best-preserved natural environments in China. The province is keen on utilizing its tourism resources such as mangrove forests, coral reefs, beaches, tropical cash crop plantations and rainforests. Sanya, a tropical beach resort located in the south of the island, is one of China's major tourist and holiday resorts. Hainan also offers numerous tourist festivals and celebrations. "Hainan Coconut International Festival" is held annually and attracts thousands of overseas and domestic visitors. The Boao Forum for Asia is held every year in Boao with participation of top world leaders.

The emphasis in economic policy also relies heavily on the tourism sector. Building on the tourism visa waiver for foreign visitors that is already in place, Hainan seeks to add value to the tourism industry through the conventions and exhibitions industry, expansion of cruise ship traffic, construction of international theme parks, and development of medical and sports tourism.

Recent Policies and Reforms

Master Plan for the Construction of the Hainan Free Trade Port

On 1 June 2020 the State Council issued the "Master Plan for the Construction of the Hainan Free Trade Port in order to benchmark against high-level international economic and trade rules, liberate thoughts, make bold innovations, focus on the liberalization and facilitation of trade and investment, establish a policy and institutional system suitable for a high-level free trade port, create a special area of customs supervision with international competitiveness and influence, and build the Hainan Free Trade Port into a "shining flag" and an important open portal leading to China opening up to the outside world. This plan includes:

I. Development goals

By 2025, a free trade port policy and institutional system will have been established, focusing on the liberalization and facilitation of trade and investment. The overall business environment will be brought to the first-class level in China, the number of market entities will be substantially increased, industrial competitiveness will be significantly improved, powerful and effective risk prevention and control mechanisms will be in place, laws and regulations will be gradually perfected to adapt to the construction

3.5 海南省

经济

海南（简称琼）原是广东省海南行政区，1988年设立海南省，建立经济特区。海南省总面积约33,900平方公里，2019年人口950万。除海南岛之外，海南省还包括中国南海的西沙群岛、南沙群岛、中沙群岛，主要城市有三亚、海口和儋州。

2019年，海南省经济规模位列中国31个省份的第28位，仅占全国GDP的0.54%。亚热带气候，全年降水量丰沛，温差较小，这些因素造成了海南的农业等第一产业（贡献了2019年GDP的20.3%）和旅游业等第三产业（占GDP的58.9%）发达，而第二产业仅占GDP的20.7%，为全国最低水平之一。其中，石油化工、制药、农副食品及造纸为海南省的主要产业。

海南独特的经济结构使其拥有中国保存最完好的一些自然环境。该省积极利用这些旅游业资源，如红树林、珊瑚礁、海滩、热带经济作物种植以及热带雨林。三亚是位于海南岛南部的热带滨海旅游城市，是中国主要的旅游和度假胜地之一。海南还举办众多旅游节和庆祝活动，每年的"海南国际椰子节"吸引了众多海内外游客。博鳌亚洲论坛每年在海南的博鳌举行，亚洲各国领导人均前往出席。

该省经济政策的重心也以旅游业为主。在外国游客旅游签证免签政策的基础上，海南希望通过促进会展行业发展、扩大游轮交通服务、建设国际主题公园以及发展医疗旅游和体育旅游，来提高旅游业附加值。

近期政策与改革

《海南自由贸易港建设总体方案》

2020年6月1日，为对标国际高水平经贸规则，解放思想、大胆创新，聚焦贸易投资自由化便利化，建立与高水平自由贸易港相适应的政策制度体系，建设具有国际竞争力和影响力的海关监管特殊区域，将海南自由贸易港打造成为引领我国新时代对外开放的鲜明旗帜和重要开放门户，中共中央、国务院印发了《海南自由贸易港建设总体方案》。

一、发展目标

到2025年，初步建立以贸易自由便利和投资自由便利为重点的自由贸易港政策制度体系。营商环境总体达到国内一流水平，市场主体大幅增长，产业竞争力显著提升，风险防控有力有效，适应自由贸易港建设的法律法规逐步完善，经济发展质量和效益明显改善。

到2035年，自由贸易港制度体系和运作模式更加成熟，以自由、公平、法治、高水平过程监管为特征的贸易投资规则基本构建，实现贸易自由便利、投资自由便利、跨境资金流动自由便利、人员进出自由便利、运输来往自由便利和数据安全有序流动。营商环境更加优化，法律法规体系更加健全，风险防控体系更加严密，现代社会治理格局基本形成，成为我国开放型经济新高地。

到本世纪中叶，全面建成具有较强国际影响力的高水平自由贸易港。

二、制度设计

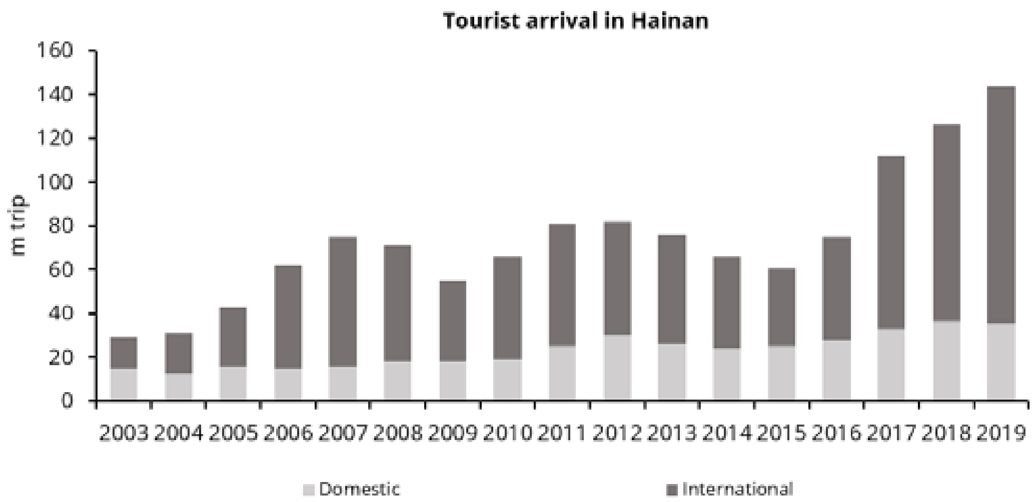
总体方案的主要内容可以概括为"6+1+4"。"6"就是贸易自由便利、投资自由便利、跨境资金流动自由便利、人员进出自由便利、运输来往自由便利、数据安全有序流动；"1"是构建现代产业体系，特别强调要突出海南的优势和特色，大力发展旅游业、现代服务业和高新技术产业；"4"是要加强税收、社会治理、法治、风险防控等四方面制度建设。

《海南省创一流营商环境行动计划(2020—2021年)》

为加快形成法治化、国际化、便利化营商环境，进一步激发各类市场主体活力和创造力，加快推进海南自由贸易港建设，结合海南实际，2020年10月10日，中共海南省委办公厅及海南省人民政府办公厅印发《海南省创一流营商环境行动计划(2020—2021年)》

- 在开办企业方面，海南省将进一步深化"证照分离"改革全覆盖试点；

Fig 10 Rapidly developing tourist industry in Hainan



Source: Wind

of a free trade port, and the quality and efficiency of economic development will be markedly enhanced.

By 2035, the free trade port system and operation mode will be more mature. Trade and investment rules characterized by freedom, fairness, rule of law and high-level process supervision will be basically established to realize free and convenient trade, free and convenient investment, free and convenient cross-border flow of capital, free and convenient access for people and free and convenient transportation, as well as secure and orderly flow of data. The business environment will be more optimized, the system of laws and regulations will be sounder, the risk prevention and control system will be more rigorous, and a pattern of modern social governance will be basically formed, with Hainan becoming a new highland of China's open economy.

By the middle of the century, a high-level free trade port with strong international influence will have been fully built.

II. Institutional Design

The main content of the overall plan can be summarized as "6+1+4". The "6" represents free and convenient trade, free and convenient investment, free and convenient cross-border flow of capital, free and convenient access for people, free and convenient transportation, and secure and orderly flow of data. The "1" represents constructing a modern industrial system. Special emphasis should be placed on the strengths and characteristics of Hainan when vigorously developing the tourism, modern service and high-tech industries. The "4" represents strengthening institutional building in terms of tax systems, social governance, rule of law, and risk prevention and control systems.

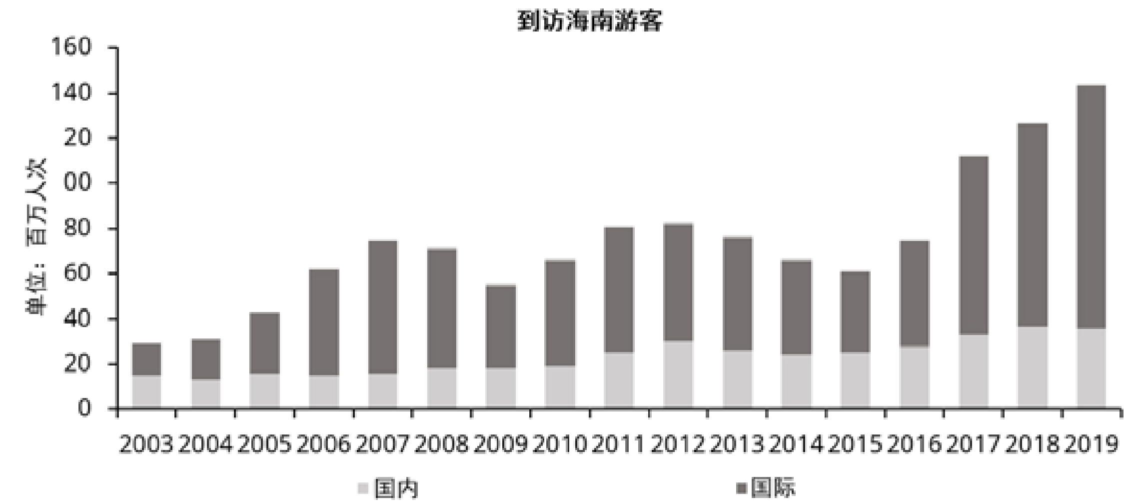
Hainan Action Plan for Creating a First-class Business Environment (2020-2021)

In order to accelerate the formation of the rule of law, internationalization, facilitation of the business environment, and further stimulate market vitality and creativity, the establishment of the Free Trade Port in Hainan Province will be accelerated. On 10 October 2020, the Communist Party of China Hainan Provincial Party Committee General Office and the General Office of the People's Government of Hainan Province issued the "Hainan Action Plan for Creating a First-class Business Environment (2020-2021)". This action plan includes:

- In terms of setting up enterprises, Hainan will further deepen the pilot reform of "separation of licenses" to cover the whole province.

- In terms of access to credit and

图表10 海南旅游业快速发展



资料来源：Wind

- 获得信贷和改善融资环境方面，在旅游业、现代服务业、高新技术产业等重点产业领域，探索以大保小、以强保弱的产业链担保贷款模式，提升金融服务水平，缓解企业资金困难；

- 跨境贸易方面，完善海南国际贸易“单一窗口”建设，加强口岸物流协同系统建设和应用，提升跨境贸易便利化水平。

《海南省支持高新技术企业发展若干政策(试行)》

为加快落实《海南自由贸易港建设总体方案》，做好高新技术企业引进和培育工作，推动海南省高新技术产业高质量发展，2020年10月24日，海南省人民政府印发了《海南省支持高新技术企业发展若干政策(试行)》。

- 支持高新技术企业享受海南自由贸易港政策，高新技术企业科研和生产所需进口的原辅料、设备等按规定进入自贸港相关政策的“正面清单”或者不列入“负面清单”，享受“零关税”政策；

- 实行各类奖励，奖励高新技术企业加大研发投入，奖励新增高新技术企业，奖励引进高新技术企业，鼓励高新技术企业积极申报海南省重点产业扶持奖励；

- 加大高新技术企业金融支持力度，用好、用足现有的金融扶持政策，依托银行业金融机构和政府性融资担保机构，创新开发科技贷款保险资金池、融资担保、科技保险、贷款贴息等符合我省高新技术企业需求的科技金融产品，为高新技术企业提供信贷和融资担保等金融服务。

经济特区

中国(海南)自由贸易试验区

2018年4月13日，习近平总书记在庆祝海南建省办经济特区30周年大会上郑重宣布，党中央决定支持海南全岛建设自由贸易试验区。

2018年6月3日，中国(海南)自贸区海口江东新区新闻发布会在海口召开，宣布设立海口江东新区，将其作为建设中国(海南)自由贸易试验区的重点先行区域，努力建设成为中国(海南)自由贸易试验区的集中展示区。海口江东新区位于海口市东海岸区域，总面积约298平方公里，分为东部生态功能区和西部产城融合区。

2020年6月1日，中共中央、国务院印发《海南自由贸易港建设总体方案》，提出：到2025年，初步建立以贸易自由便利和投资自由便利为重点的自由贸易港政策制度体系。营商环境总体达到国内一流水平，市场主体大幅增长，产业竞争力显著提升，风险防控有力有效，适应自由贸易港建设的法律法规逐步完善，经济发展质量和效益明显改善。到2035年，自由贸易港制度体系和运作模式更加成熟，以自由、公平、法治、高水平过程监管为特征的贸易投资规则基本构建，实现贸易自由便利、投资自由便利、跨境资金流动自由便利、人员进出自由便利、运输来往自由便利和数据安全有序流动。营商环境更加优化，法律法规体系更加健全，风险防控体系更加严密，现代社会治理格局基本形成，成为我国开放型经济新高地。

2020年10月9日，中共海南省委办公厅、海南省人民政府办公厅印发《海南自由贸易港制度集成创新行动方

improvement of financing environment, in key industries such as tourism, modern service and high and new technology, explore the model of industrial chain guarantee loans that protect the small and weak, so as to improve the level of financial services and alleviate the financial difficulties of enterprises.

- In terms of cross-border trade, improve the construction of a "single window" for international trade in Hainan, strengthen the construction and application of port logistics coordination systems, and enhance the facilitation level of cross-border trade.

Hainan Policies for Supporting the Development of High-tech Enterprises (Trial)

In order to accelerate the implementation of the "Master Plan for the construction of Hainan Free Trade Port", expedite introduction and cultivation of high-tech enterprises, and promote the high-quality development of high-tech industries in Hainan Province, the People's Government of Hainan Province issued the "Hainan Policies for Supporting the Development of High-tech Enterprises (Trial)" on October 24, 2020. The Hainan policies include:

- Supporting high-tech enterprises to enjoy the Hainan Free Trade port policy. Raw materials, auxiliary materials and equipment needed by high-tech enterprises for scientific research and production shall be included in the "positive list" or not included in the "negative list" and enjoy the "zero tariff" policy.

- Implementing various kinds of rewards. Rewarding new and high technology enterprises for increasing R&D investments, new and high technology enterprises for introducing new and high technology enterprises, and encouraging new and high technology enterprises to actively apply for Hainan key industry support and rewards.

- Increase financial support for high-tech enterprises, make full use of existing financial support policies, rely on banking financial institutions and government financing guarantee institutions to innovate and develop science and technology loan insurance capital pool, financing guarantee, science and technology insurance, loan discount interest and other science and technology financial products that meet the needs of high-tech enterprises in the province, to provide credit and financing guarantee and other financial services for high-tech enterprises.

Special economic zones

China (Hainan) Pilot Free Trade Zone

On 13 April 2018, General Secretary Xi Jinping announced at a gathering celebrating the 30th anniversary of the founding of Hainan Province and the Hainan Special Economic Zone that the CPC Central Committee had decided to support Hainan in developing the island into a pilot free trade zone.

On 3 June 2018, a press conference for the Haikou Jiangdong New District of China (Hainan) Pilot Free Trade Zone was held in Haikou, announcing the selection of Haikou Jiangdong New District as a key pioneer area for the construction of the China (Hainan) Pilot Free Trade Zone and a centralized exhibition area for the China (Hainan) Pilot Free Trade Zone. Haikou Jiangdong New District is located to the east of Haikou, with a total area of 298 square kilometers. It is divided into an eastern ecological function area and a western area integrating industry and urban facilities.

On 1 June 2020 the Central Committee of the CPC and the State Council issued the “Master Plan for the Construction of the Hainan Free Trade Port”. It indicated that by 2025, a free trade port policy and institutional system will be established and will focus on the liberalization and facilitation of trade and investments. The overall business environment will be brought to the first-class level in China, the number of market entities will be substantially increased, industrial competitiveness will be significantly improved, powerful and effective risk prevention and control mechanisms will be in place, laws and regulations will be gradually perfected to adapt to the construction of a free trade port, and the quality and efficiency of economic development will be markedly enhanced. By 2035, the free trade port system and operation mode will be more mature. Trade and investment rules characterized by freedom, fairness, rule of law and high-level process supervision will be established to realize free and convenient trade, free and convenient

案(2020—2022年)》，目标为：围绕贸易自由便利、投资自由便利、跨境资金流动自由便利、人员进出自由便利、运输来往自由便利和数据安全有序流动，推动全方位、大力度、高层次的制度集成创新，初步建立高效完备的法律法规体系、有国际竞争力的财政税收体系、高效运转的人流物流资金流信息流体系、安全严密的风险防控体系，营商环境和社会治理水平接近国内一流水平，市场主体大幅增长，产业竞争力显著提升，经济发展质量和效益显著改善，更好吸引全世界投资者和优秀人才来海南投资兴业。

2020年前三季度，海南省生产总值3841.31亿元人民币，按可比价计算，同比增长1.1%。分产业看，第一产业增加值806.11亿元人民币，增长1.9%;第二产业增加值734.48亿元人民币，下降1.5%;第三产业增加值2300.72亿元人民币，增长1.7%。

海南洋浦经济开发区

洋浦经济开发区是国务院1992年批准设立的享受保税区政策的国家级开发区。位于海南西北部的洋浦半岛，现有面积31平方公里。2007年，国务院批准设立洋浦保税港区，面积9.2063平方公里。2012年7月，经国务院批准，调整了开发区四至。2013年10月，经省委省政府批准，儋州市三都镇整建制划入洋浦管辖，洋浦开发区规划面积达到120平方公里，人口10万。洋浦开发区战略定位是：“面向东南亚的航运枢纽港、石油化工、浆纸一体化和油气储备基地”的 “一港三基地”。洋浦产业发展战略是：抓住“海上丝绸之路”和“自由贸易园区”的战略机遇，着力打造面向东南亚的石化产品出口加工基地和国际能源交易中心两个平台。

2020年1月8日，中共洋浦工委、洋浦经济开发区管委会办公室发布《洋浦经济开发区提高通关效率十条措施》。为加快形成市场化、法治化、国际化的口岸营商环境，洋浦经济开发区推出货物通关全流程无纸化，口岸“7×24小时”预约通关，出入境船舶卫生检疫诚信申报、快捷通行，船舶引航零等待等十条措施，提高口岸通关效率。

同日，洋浦工委、洋浦管委会还印发《洋浦经济开发区优化营商环境十条措施》。《措施》的落地，有助于提高洋浦区投资吸引力、区内企业获得感和满意度，进一步激发市场主体活力和社会创造潜力，推动营商环境向市场化、法制化、国际化高标准迈进，确保经济可持续发展，为洋浦实现高质量发展打下坚实基础。

洋浦经济开发区开发建设27年来，建成了一批技术先进、附加值高、高环保水平的重点项目，成为海南工业发展和外贸增长的龙头，已开通20条内外贸航线，初步形成了以洋浦港口为国际中转港的航线框架，内贸航线连通北部湾、长三角、珠三角华北、东北等国内沿海港口，外贸航线连通相关、越南、新加坡、马来西亚、缅甸等东南亚国家和地区。

海南省农业高新技术产业示范区

海南省高新技术产业示范区位于老城经济开发区内，占地面积12,570余亩，示范区内分为生物制药、海洋资源研发、信息产业、纺织科技、热作转基因工程、高效农业及绿色产品开发、产业化开发、环保产品研发、机械动力研发等基地。

目前产业园内的欣龙控股（集团）股份有限公司已投资4.6亿元人民币，是海南省的上市龙头企业；总投资1.9亿元人民币的海南睿丰光纤光缆有限公司已投产；海南欣安生物工程制药有限公司投资2.5亿元人民币的二期工程已动工建设；瓜尔豆胶深加工、豆粕加工等多个高科技项目即将落户园区。

博鳌乐城国际医疗旅游先行区

海南博鳌乐城国际医疗旅游先行区于2013年2月28日经国务院批准设立，园区试点发展特许医疗、健康管理、照护康复、医美抗衰等国际医疗旅游相关产业，旨在聚集国际国内高端医疗旅游服务和国际前沿医药科技成果，创建国际化医疗技术服务产业聚集区。

2020年6月16日，海南省六届人大常委会通过《海南自由贸易港博鳌乐城国际医疗旅游先行区条例》，将先行区管理体制、开发建设、产业发展、服务管理等内容制度化、法定化，进一步释放自由贸易港政策红利，以立法促进先行区高水平改革开放，推动先行区建成国际一流水平的国际医疗旅游目的地和医疗科技创新平台。

2020年9月1日，海南省卫生健康委员会印发《海南自由贸易港博鳌乐城国际医疗旅游先行区内医疗机构对外合作备案管理办法》，规范和加强海南自由贸易港博鳌乐城国际医疗旅游先行区内医疗机构医疗合作项目管理，强化风险控制，保障医疗机构合法权益，促进医疗机构健康发展。

截至2019年9月，先行区目前已有16个项目开工建设，其中9家医疗机构已开业运营，医疗体系逐步完善，已在肿瘤防治、辅助生殖、医美抗衰、干细胞研究等领域初步形成产业集聚，已引进院士专家团队51个，在应用国际医疗新药品、新设备、新技术方面创造了十余例国内首例，初步实现医疗技术、设备、药品与国际先进水平“三同步”，开创了国际健康旅游和高端医疗服务产业高质量发展的良好局面。

investments, free and convenient cross-border flow of capital, free and convenient access for people and free and convenient transportation, as well as secure and orderly flow of data. The business environment will be optimized, laws and regulations will be improved, risk prevention and control systems will be more rigorous, and modern social governance will be enhanced, with Hainan becoming a new highlight of China's open economy.

On 9 October 2020, the General Office of Hainan Provincial Party Committee and the General Office of Hainan Provincial People's Government issued the "Hainan Free Trade Port System Integration Innovation Action Plan (2020-2022)". The goal of the plan is to (i) promote all-round, large-scale and high-level institutional integration and innovation, and (ii) initially establish an efficient and complete system of laws and regulations, an internationally competitive fiscal and tax system, an efficient flow of people, logistics, capital and information, and a secure risk prevention and control system in accordance with free and convenient trade, free and convenient investment, free and convenient cross-border flow of capital, free and convenient access for people, free and convenient transportation, and secure and orderly flow of data. The business environment and social governance level should be close to the first-class level in China. Market players should grow substantially, industrial competitiveness should be significantly enhanced, and the quality and efficiency of economic development should be significantly improved, so as to better attract investors and outstanding talent from all over the world to invest and do business in Hainan.

In the first three quarters of 2020, Hainan's GDP totaled 384.131 billion RMB, representing an increase of 1.1% compared with last year, calculated at comparable prices. By industry, the added value of primary industries was 80.611 billion RMB, up 1.9%; The added value of secondary industries was 73.448 billion RMB, down 1.5%. The added value of tertiary industries was 230.072 billion RMB, up 1.7%.

Hainan Province has one state-level economic development zone: Hainan Yangpu Economic Development Zone.

Hainan Yangpu Economic Development Zone

The Yangpu Economic Development Zone is a state-level development zone established under a bonded area policy approved by the State Council in 1992. The zone is located on the Yangpu Peninsula in northwestern Hainan, with an area of 31 square kilometers. In 2007, the State Council approved the establishment of the Yangpu Bonded Port with an area of 9.2063 square kilometers. In July 2012, upon the approval of the State Council, the location of adjoining development zone parcels was adjusted. In October 2013, upon the approval of the Hainan Provincial Party Committee and the Hainan Provincial People's Government, the organizational system of Sandu Town in Danzhou was put under the jurisdiction of Yangpu. The planned area for the Yangpu Economic Development Zone is 120 square kilometers with a population of 100,000. The Yangpu Economic Development Zone is to develop into a "one port and three bases", i.e., "a shipping hub port, a petrochemical base, an integrated pulp-paper production base and an oil and gas reserve base oriented to southeast Asia". Yangpu's industrial development strategy is to seize the strategic opportunities of the "Maritime Silk Road" and "Free Trade Zone" and focus on building two platforms, i.e., an export processing base for petrochemical products and an international energy trading center oriented to southeast Asia.

On 8 January 2020, the Yangpu Committee of Industry of the Communist Party of China and the Office of Yangpu Economic Development Zone Management Committee issued the "Ten Measures for Improving Customs Clearance Efficiency of Yangpu Economic Development Zone". In order to speed up the formation of a market-oriented, law-based and internationalized port business environment, the Yangpu Economic Development Zone introduced 10 measures to improve the efficiency of port customs clearance, such as paperless customs clearance within process of goods clearance, "7×24 hours" pre-clearance at the port, upright declaration of health quarantine for entry and exit ships, fast passage and zero waiting for vessel piloting.

海口跨境电子商务综合试验区

2018年8月，国务院发布《关于同意在北京等22个城市设立跨境电子商务综合试验区的批复》，同意在海口市设立跨境电子商务综合试验区，名为"中国（海口）跨境电子商务综合试验区"。

2018年12月30日，海南省人民政府印发《中国(海口)跨境电子商务综合试验区实施方案》(《方案》)。《方案》要求，经过3至5年实践探索，力争把中国(海口)跨境电子商务综合试验区建设成为以"线上集成+跨境贸易+综合服务"为主要特点，以"物流通关渠道+跨境电商综合服务监管信息系统+金融增值服务"为核心竞争力，"关""税""汇""商""物""融"一体化，线上"跨境电商综合服务监管"平台和线下"综合园区"平台相结合，具有海南特色的跨境电子商务新业态新模式。

小结

海南自贸区致力于提升投资贸易便利化水平,扩大金融领域开放,通过"证照分离"改革、放松信贷、贸易方面的限制,加快打造便利的营商环境。大力发展高新科技及配套产业基金,引导企业数字化转型,形成网络化、智能化的数字产业。海南省重点支持农业、医疗、旅游休闲产业发展,鼓励外商投资,建立电子口岸,支持民营企业发展金融业务,并打造农业高新技术产业示范区和博鳌国际医疗旅游先行区。

On the same day, the Yangpu Committee of Industry and the Yangpu Committee of Management also printed and distributed the "Ten Measures to optimize the Business environment of Yangpu Economic Development Zone". Implementation is conducive to improving the attraction of investment, the sense of achievement and satisfaction of enterprises in the region, further stimulating the vitality of market players and social creativity potential, promoting the business environment to market-oriented, legalized and internationalized high standards, ensuring sustainable economic development, and laying a solid foundation for Yangpu to achieve high-quality development.

In the 27 years of development and construction for the Yangpu Economic Development Zone, a number of key projects with advanced technology, high-added value, and high environmental protection levels have been completed. It has become a leader in Hainan's industrial development and the growth of foreign trade. 20 domestic and foreign trade routes have been opened. The zone has preliminarily established a route framework with Yangpu Port serving as the international transit port. Domestic trade routes connect domestic coastal ports in regions such as the Beibu Gulf, Yangtze River Delta, North China, and Northeast Pearl River Delta. Foreign trade routes connect to southeast Asian countries and regions such as Vietnam, Singapore, Malaysia and Myanmar.

Agricultural High-tech Industry Demonstration Zone of Hainan Province

The High-tech Industrial Demonstration Zone of Hainan Province is located in the Old City Economic Development Zone, covering an area of more than 12,570 acres. The demonstration zone is divided into biopharmaceuticals, marine resource research and development, information, textile technology, hot genetic engineering, efficient agriculture and development, green product development, environmental protection, machinery power and other industrial bases.

At present, Xinlong Holding (Group) Co., Ltd. in the industrial park has invested 460 million RMB and is a leading listed enterprise in Hainan Province. Hainan Ruifeng Optical Fiber and Cable Co., Ltd., with a total investment of 190 million RMB, has been put into production. Hainan Xin'an Bioengineering Pharmaceutical Co., Ltd., with an investment of 250 million RMB, has begun construction of the phase II project. A number of high-tech projects, such as deep processing of Guar soybean gum and soybean meal processing, will be settled in the park.

Boao Lecheng International Medical Tourism Pilot Zone

Boao Lecheng International Medical Tourism Pilot Zone was established under the approval of the State Council on 28 February 2013. The zone pilots the development of international medical tourism related industries such as chartered medical treatment, health management, care and rehabilitation, and medical anti-aging. It aims to combine international and domestic high-end medical tourism services and international cutting-edge medical science and technology to create an international medical service cluster.

On 16 June 2020, the sixth Standing Committee of the People's Congress of Hainan Province adopted the “Regulations on Hainan Free Trade Port Boao Le Cheng International Medical Tourism Pilot Zone”. The regulations institutionalize and legalize the management system, development and construction, industrial development and service management of the pilot zone, further release free trade port policy benefits, promote high-level reform and opening up of the pilot zone through legislation, and promote the pilot zone to become an international first-class medical tourism destination and medical science and technology innovation platform.

On 1 September 2020, Hainan Provincial Health Commission issued the “Measures for the Record Management of External Cooperation among Medical Institutions in the Hainan Free Trade Port Boao Le Cheng International Medical Tourism Pilot Zone”. The measures require the standardization and strengthening of management of medical cooperation projects among medical institutions in the Hainan Free Trade Port Boao Lecheng International Medical Tourism Pilot Zone, strengthen risk control, protect the legitimate rights and interests of medical institutions, and

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promote the healthy development of medical institutions.

As of September 2019, there were 16 projects under construction, including 9 medical institutions, to develop a more comprehensive medical system with an initial focus on practice operations, cancer prevention and control, assisted reproduction, medical beauty and stem cell research. Industrial concentration has been preliminarily achieved through these projects. Moreover, 51 academics and experts were introduced with work focusing on new drugs, equipment and technology (with more than 10 first applications in the domestic market). These projects led to preliminary realization of medical technology, equipment and drugs at an internationally advanced level, known as the "three simultaneous advances", and promoted development of the international health tourism and high-end medical service industry.

China (Haikou) Cross-border E-commerce Comprehensive Pilot Zone

In August 2018, the State Council issued the “Official Reply of the State Council on Approving Proposed Cross-border E-commerce Comprehensive Pilot Zones in 22 Cities Including Beijing”, approving the establishment of the China (Haikou) Cross-border E-commerce Comprehensive Pilot Zone.

On 30 December 2018, the People’s Government of Hainan Province released the “Implementation Plan of the China (Haikou) Cross-Border E-Commerce Comprehensive Pilot Zone” (the “Plan”). According to the Plan, through three to five years of practical exploration, Hainan will strive to generate from the China (Haikou) Cross-Border E-Commerce Comprehensive Pilot Zone a new format and model for cross-border e-commerce with "online integration + cross-border trade + integrated services" as the main characteristics and "logistics clearance channels + cross-border e-commerce + integrated service supervision information system + financial value-added services" as the core competitiveness, with integration of “board", "tax", "foreign exchange", "business", "goods", "connection” and online "cross-border e-commerce integrated service supervision" platforms into the "Integrated Park" platform.

Summary

The Hainan Free Trade Zone is committed to (i) improving the level of investment and trade facilitation, (ii) expanding the opening up of the financial sector, and (iii) accelerating the creation of a convenient business environment through the "separation of licenses and licenses" reform, relaxing credit and trade restrictions, developing high-tech technology and supporting industry funds, guiding the digital transformation of enterprises, and creating a networked and intelligent digital industry. Hainan Province focuses on supporting the development of the agriculture, medical care, tourism and leisure industries, encouraging foreign investment, establishing electronic ports, supporting private enterprises to develop financial services, and building a high-tech agricultural demonstration zone and a leading international medical tourism zone in Boao.

此页留白

3.6 Hong Kong

The Economy

Situated at the southeastern tip of China, Hong Kong is at the center of East Asia. Since its return to China in 1997, the special administrative region has followed the “One Country, Two Systems” policy under the Basic Law, its mini-constitution. Hong Kong is considered one of the world’s freest economies, and under its laissez-faire system its financial sector has developed into a regional center. In addition, Hong Kong continues to play a significant role as a portal for Mainland China’s merchandise and capital flows.

According to the UNCTAD World Investment Report 2020, global FDI inflows to Hong Kong amounted to US$68b in 2019, ranking 7th globally and behind only Mainland China (US$141b) and Singapore (US$92b) in Asia. In terms of outflows, Hong Kong ranked 7th with US$59b, after Japan (US$227b) and Mainland China (US$117b) in Asia. Most of these investment flows, remarkably, are due to its position as a portal to investment flows into and out of Mainland China. Thanks partly to this proxy position, Hong Kong also had one of the world’s largest inward FDI stocks in 2019.

According to the Bank for International Settlements, Hong Kong was the largest foreign exchange market in Asia and the 3rd largest in the world in April 2019, with the net daily average turnover of forex transactions reaching US$691b [1]. This is in part due to Hong Kong’s position as a hub for offshore RMB. According to SWIFT, Hong Kong is the largest RMB clearing center in September 2020, sharing about 75% of the world’s RMB clearing activities[2].

Meanwhile, Hong Kong's stock market was ranked the 3rd largest in Asia and the 5th largest in the world in terms of market capitalization as of September 2020[3]. There were 2,560 companies listed on HKEX[4] and the total market capitalization of Hong Kong's stock market reached US$5.37 trillion. In more recent years, the size of Hong Kong’s asset management market has been rising, particularly with the help of a growing number of high-net worth individuals settling in Hong Kong. In 2019, the total asset under management (AUM) of funds registered for sales in Hong Kong expanded by 20.0%YoY to USD3.7t[5], with comparable growth among key categories such as equity, bond, and mixed-asset funds.

Hong Kong follows a free trade policy and hence maintains basically no barriers to trade: there are no customs tariffs on goods imported into or exported from Hong Kong. Import and export licensing is kept to a minimum. Most products do not need licenses to enter or leave Hong Kong and where licenses or notifications are required, they are only intended to fulfill obligations under various international agreements, or to maintain public health, safety or security. Therefore, while much of Hong Kong’s indigenous manufacturing capacity has moved to the mainland since the 1980s, it remains a trade hub with a significant share of merchandizing, transshipment, and trade facilitation in the region.

1 *https://www.bis.org/statistics/rpfx19_fx_annex.pdf*

2 *https://www.swift.com/swift-resource/249626/download*

3 *https://focus.world-exchanges.org/issue/october-2020/market-statistics*

4 *https://www.hkex.com.hk/eng/services/trading/securities/securitieslists/ListOfSecurities.xlsx*

5 *https://www.sfc.hk/edistributionWeb/gateway/EN/news-and-announcements/news/doc?refNo=19PR73*

3.6 香港

经济

香港位于中国东南端，是东亚的中心。自1997年回归祖国以来，香港特别行政区实行《基本法》下的“一国两制”政策。香港被视为世界上自由度最高的经济体之一，在自由市场经济体制下，香港的金融业已发展成该地区的中心之一。此外，香港继续发挥作为中国内地商品和资金流动门户的重要作用。

根据联合国贸发会议《2020年世界投资报告》，2019年香港的全球FDI流入达680亿美元，排名全球第七，在亚洲仅次于中国内地（1,410亿美元）和新加坡（920亿美元）。对外投资方面，香港以590亿美元排名亚洲第七，位居日本（2,270亿美元）和中国内地（1,170亿美元）之后。这些投资流很大程度上应归功于其作为投资进出中国内地门户的独特地位。得益于此，以直投总量而言香港在2019年是全球最大的FDI存量持有地之一。

香港同样获益于其金融中心地位。根据国际清算银行数据，截止2019年4月，香港是亚洲最大、全球第三大外汇市场，外汇交易日均净成交额达到6,910亿美元[1]。这部分可归因于香港作为离岸人民币中心的地位。SWIFT数据显示，香港是2020年9月最大的人民币清算中心，占全球人民币清算活动的75%左右[2]。

同时，截止2020年9月，香港股市市值位居亚洲第三，全球第五[3]。2,560家公司在港交所上市[4]，香港股市总市值达5.37万亿美元。近年来，香港资产管理市场规模不断扩大，尤其是越来越多的高净值人士定居香港令香港从中受益。2019年，在香港注册销售的基金管理资产规模同比增长20.0%，达到3.7万亿美元[5]，其中股票、债券和混合资产基金等主要类别均实现增长。

香港遵循自由贸易政策，基本上没有贸易壁垒：即对进出口香港的货物不征关税。进出口许可证保持在最低限度。大多数产品进出香港不需要许可证，如果需要许可证或通知，也仅仅是为了履行各项国际协议下的义务，或为维护公共健康、安全或保障。因此，虽然自20世纪80年代香港的本地生产能力很多已迁往内地，香港仍是重要的贸易中心，在推动区域商品销售、转运和贸易便利化中占有重要地位。

1 *https://www.bis.org/statistics/rpfx19_fx_annex.pdf*

2 *https://www.swift.com/swift-resource/249626/download*

3 *https://focus.world-exchanges.org/issue/october-2020/market-statistics*

4 *https://www.hkex.com.hk/eng/services/trading/securities/securitieslists/ListOfSecurities.xlsx*

5 *https://www.sfc.hk/edistributionWeb/gateway/EN/news-and-announcements/news/doc?refNo=19PR73*

近期政策与改革

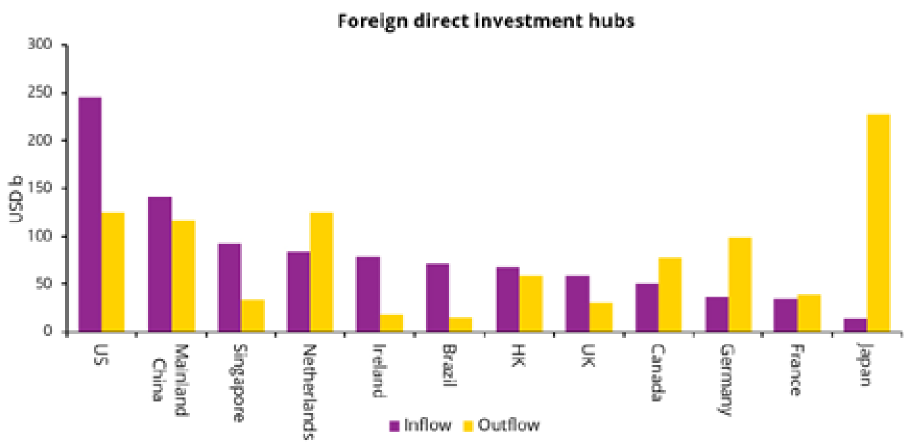
《中华人民共和国香港特别行政区维护国家安全法》

2020年6月30日，第十三届全国人民代表大会常务委员会第二十次会议通过《中华人民共和国香港特别行政区维护国家安全法》，法律内容有以下方面：第一，明确规定了中央人民政府对有关国家安全事务的根本责任和香港特别行政区维护国家安全的宪制责任；第二，明确规定了香港特别行政区维护国家安全应当遵循的重要法治原则；第三，明确规定了香港特别行政区维护国家安全相关机构的职责与活动的准则；第四，明确规定了防范、制止和惩治四类危害国家安全的罪行，包括分裂国家罪、颠覆国家政权罪、恐怖活动罪和勾结外国或境外势力危害国家安全这四类犯罪行为的构成及其应当承担的法律责任。第五，明确规定了案件管辖、法律适用、程序等内容。第六，明确规定了中央人民政府驻香港特别行政区维护国家安全的机构，机构的名称在法律中明确规定为驻香港特别行政区维护国家安全公署，还包括驻港国家安全公署和国家有关机关在特定情况下管辖危害国家安全犯罪案件的情形和程序。

《中共中央关于制定国民经济和社会发展第十四个五年规划和二〇三五年远景目标的建议》

2020年10月29日，中国共产党第十九届中央委员会第五次全体会议提出《中共中央关于制定国民经济和社会发展第十四个五年规划和二〇三五年远景目标的建议》，提出要保持香港、澳门长期繁荣稳定。重要内容包括，全面准确贯彻“一国两制”、“港人治港”、“澳人治澳”、高度自治的方针，坚持依法治港治澳，维护宪法和基本法

Fig 11 Hong Kong is a hub for both inbound and outbound direct investments



Note: As of 2019
Source: UNCTAD

Recent Policies and Reforms

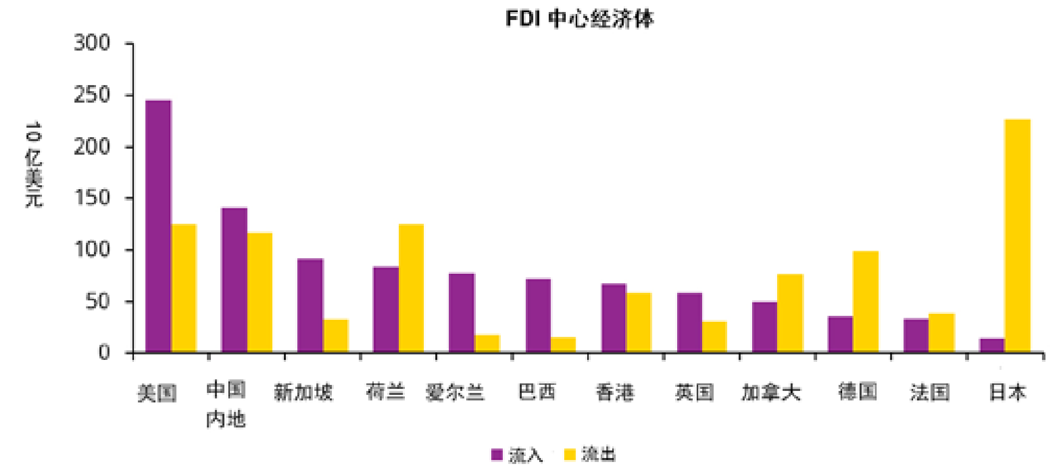
Law of the People's Republic of China on Safeguarding National Security in the Hong Kong Special Administrative Region

On 30 June 2020 the twentieth Session of the Standing Committee of the Thirteenth National People's Congress adopted the "Law of the People's Republic of China on Safeguarding National Security in the Hong Kong Special Administrative Region". The law content stipulates the following aspects: First, that the Central People's Government has an overarching responsibility for national security affairs relating to the Hong Kong Special Administrative Region and the duty of the Hong Kong Special Administrative Region under the Constitution to safeguard national security. Second, the important principles of the rule of law that the Hong Kong Special Administrative Region should follow in safeguarding national security. Third, the guidelines for the duties and activities of the Hong Kong Special Administrative Region's organizations concerned with safeguarding national security. Fourth, the prevention, suppression and punishment of four types of offenses endangering national security, including the constituent element and legal responsibility of four offenses, namely secession, subversion, terrorist activities and collusion with foreign countries or external elements to endanger national security. Fifth, jurisdiction, applicable law, procedure and other relevant contents. Sixth, the office for safeguarding national security of the Central People's Government in the Hong Kong Special Administrative Region. The name of the office is clearly defined in the law as The Office for Safeguarding National Security of the Central People's Government in the Hong Kong Special Administrative Region. The circumstances and procedures of exercising jurisdiction over specific cases concerning offenses endangering national security by the Office for Safeguarding National Security of the Central People's Government in the Hong Kong Special Administrative Region and relevant national agencies are also defined.

CPCCC's proposals for the formulation of the 14th Five-Year Plan (2021-2025) for National Economic and Social Development and the Long-Range Objectives Through the Year 2035

On 29 October 2020 the Fifth Plenary Session of the 19th Central Committee of the Communist Party of China proposed the "CPCCC's Proposals for the Formulation of the 14th Five-Year Plan (2021-2025) for National Economic and Social Development and the Long-Range Objectives Through the Year 2035". Long-term prosperity and stability in Hong Kong and Macau shall be maintained. Important contents include the full

图表11 香港是引进外资和对外直接投资的重要中心



注：截至2019年
资料来源：联合国贸发会议

确定的特别行政区宪制秩序，落实中央对特别行政区全面管治权，落实特别行政区维护国家安全的法律制度和执行机制，维护国家主权、安全、发展利益和特别行政区社会大局稳定。支持特别行政区巩固提升竞争优势，建设国际创新科技中心，打造"一带一路"功能平台，实现经济多元可持续发展。支持香港、澳门更好融入国家发展大局，高质量建设粤港澳大湾区，完善便利港澳居民在内地发展政策措施。增强港澳同胞国家意识和爱国精神。支持香港、澳门同各国各地区开展交流合作。坚决防范和遏制外部势力干预港澳事务。

香港成立粤港澳大湾区发展办公室

2020年11月23日，香港特区政府政制及内地事务局宣布正式成立粤港澳大湾区发展办公室，以加强推动和协调特区政府有关大湾区建设的工作。政制及内地事务局发言人表示，粤港澳大湾区建设是国家进一步改革开放的重大发展战略，也是香港在疫情后恢复经济动力的重点方向。通过进一步深化粤港澳合作，大湾区建设的目标是推动大湾区经济协同发展，发挥互补优势，建设宜居、宜业、宜游的国际一流湾区。

中国人民银行与香港金融管理局续签货币互换协议并扩大规模

2020年11月中国人民银行与香港金融管理局续签了货币互换协议，互换规模由原来的4000亿元人民币/4700亿港元扩大至5000亿元人民币/5900亿港元，有效期五年，经双方同意可以展期。双方认为，货币互换协议的续签有利于维护两地和区域金融稳定，便利两地贸易和投资，推动香港离岸人民币市场发展。

经济特区

落马洲河套地区"港深创新及科技园"

落马洲河套地区（位于深圳河以南，临近香港落马洲管制站）已于2017年3月确定开发建设港深创新及科技园。此前，香港和深圳市政府于2017年1月签署了一项合作备忘录，进行跨境合作。

占地87公顷，港深创新及科技园预计将成为香港历史上最大的创新和科技平台，成为创新和科研合作的重要基地，吸引来自香港、内地城市以及全球其他地区的顶尖企业、研究机构和高等教育机构。

更重要的是，港深创新及科技园有两个主要的连接区域：一个是河套地区在香港一侧的周边区域，占地182公顷，在开发规划中划定为B区。该区域比河套（A区）大两倍，预留待进一步开发。另一个是坐落在河套深圳一侧周边区域（C区）的深圳创新及科技园，总面积167公顷。香港和深圳市均同意，就构建具有集聚力和协同效应的"港深科技创新特别合作区"寻求中央政府加强政策支持。三个区域总面积426公顷，与台湾新竹科技园区相当，为发展成为全球创新及科技中心提供了足够的空间。

and accurate implementation of the principles of "One Country, Two Systems", "Hong Kong people governing Hong Kong", "Macau people governing Macau" and a high degree of autonomy, adherence to the principle of governing Hong Kong and Macau in accordance with the law, safeguarding the constitutional order of the Special Administrative Region as defined in the Constitution and the Basic Law, ensuring the Central Government's exercises of overall governance over the Special Administrative Region, implementing the legal system and enforcement mechanism for safeguarding state security in the Special Administrative Region, and safeguarding China's sovereignty, security and development interests as well as the overall social stability of the Special Administrative Region. Support the Special Administrative Region in consolidating and enhancing its competitive advantages, building an international center for innovation and technology, and building a "Belt and Road" functional platform to achieve diversified and sustainable economic development. Supporting Hong Kong and Macau in better integrating into the overall development of the country, developing the Guangdong-Hong Kong-Macau Greater Bay Area with high quality, and perfecting policies and measures to make it easier for Hong Kong and Macau residents to develop on the mainland. Enhancing the national awareness and patriotism of our compatriots in Hong Kong and Macau. Supporting Hong Kong and Macau in conducting exchanges and cooperation with other countries and regions. Resolutely guarding against and containing outside interference in Hong Kong and Macau affairs.

Hong Kong establishes the Guangdong-Hong Kong-Macau Greater Bay Area Development Office

On 23 November 2020, the Constitutional and Mainland Affairs Bureau of the HKSAR Government announced the formal establishment of the Guangdong-Hong Kong-Macau Greater Bay Area Development Office to enhance the promotion and coordination of the HKSAR government's work on the Greater Bay Area. A spokesman for the Constitutional and Mainland Affairs Bureau said that development of the Guangdong-Hong Kong-Macau Greater Bay Area is a major development strategy for China's further reform and opening-up, and a key direction for Hong Kong to restore economic momentum after the outbreak of COVID-19. By further deepening cooperation between Guangdong, Hong Kong and Macau, the goal of the Greater Bay Area is to promote the coordinated economic development of the Greater Bay Area, leverage its complementary advantages, and build a world-class bay area suitable for living, working and traveling.

The People's Bank of China and the Hong Kong Monetary Authority renewed and expanded their currency swap agreements

In November 2020, the People's Bank of China and the Hong Kong Monetary Authority renewed the currency swap agreement, expanding the scale of the swap from 400 billion RMB / 470 billion Hong Kong dollars to 500 billion RMB / 550 billion Hong Kong dollars. The swap agreement is valid for five years and can be extended with the consent of both parties. The two sides agreed that the renewal of the swap agreement is conducive to maintaining financial stability in Hong Kong and the region, facilitating trade and investment between the two places, and promoting the development of the offshore RMB market in Hong Kong.

Special Economic Zones

The Lok Ma Chau Loop "Hong Kong/Shenzhen Innovation and Technology Park"

The Lok Ma Chau Loop (an area south of Shenzhen River and near the Lok Ma Chau control point in Hong Kong) was earmarked in March 2017 to be developed into the Hong Kong/Shenzhen Innovation and Technology Park following a Memorandum of Understanding signed by the Hong Kong and Shenzhen governments in January 2017 for cross-border collaboration.

At 87 hectares, it is anticipated to be the largest innovation and technology platform ever established in the history of Hong Kong and will act as a key base for cooperation in innovation and technology research to attract top-tier

2020年8月，深圳市人民政府发布《深圳市人民政府关于支持深港科技创新合作区深圳园区建设国际开放创新中心的若干意见》，明确合作区深圳园区要坚持制度创新和科技创新双轮驱动发展，对标香港及国际上最有利于科技创新的体制机制，全方位探索构建有利于科技创新的政策环境，包括探索促进人员、物资等创新要素高效便捷流动，打造国际化营商环境，对接国际科研规则，建设5G通信、生物医药等新兴产业标准规则示范区。

近年来，在多项举措的推动下，合作区深圳园区在空间整备、科创资源、园区环境等方面发生重大变化。目前已筹集37万平方米科研空间，已落地和正对接项目126个。

港澳共建深圳前海深港现代服务业合作区

2010年8月26日，国务院批复同意《前海深港现代服务业合作区总体发展规划》，合作区战略定位为：现代服务业体制机制创新区，现代服务业发展集聚区，香港与内地紧密合作的先导区以及珠三角地区产业升级的引领区。

2020年8月28日，为应对当前经济形势变化，进一步推动外部优质增量注入、内部存量优化升级，做大做强前海在地经济规模，强化招商、亲商、育商，深圳市前海管理局印发《深圳前海深港现代服务业合作区招商引资奖励暂行办法》。《办法》分为总则、产业培育支持、产业引进奖励、申请与审核、监督管理、附则等六章，明确了奖励范围、标准、申报流程、审核方式、监督管理等内容。

2020年一季度，前海新增港资企业130家、新增注册资本88.11亿元人民币，注册港资企业数量从2015年的2172家增至12232家，注册资本达1.3万亿元人民币。

小结

香港作为自由度最高的经济体之一,将巩固与提升在国际金融、航运、贸易中心等业务枢纽地位,坚持贸易和投资的自由化,为外贸和外商投资创造了良好的环境。重点推进金融、商贸、物流、专业服务向高端高增值方向发展。此外,香港将联合深圳、东莞等地发展先进制造业,探索“再工业化”,培育信心产业。香港也将在亚投行、“一带一路”建设中扮演重要角色。

enterprises, research institutions and higher education institutes from Hong Kong, Mainland China and the rest of the world.

More importantly, the Park has two major connecting areas: One is the adjoining area of the Loop on the Hong Kong side with 182 hectares of land, designated as Area B in the development plan. This area is two times larger than the Loop (Area A) and is reserved for further development. The other is the Shenzhen Innovation and Technology Park located adjacent to the Loop on the Shenzhen side (Area C) with a total area of 167 hectares. Both cities agreed to seek stronger policy support from the Central Government for the Shenzhen/Hong Kong Technology and Innovation Cooperation Zone, which will create cluster and synergy effects. The three areas encompass a total area of 426 hectares, of similar size to the Hsinchu Science Park in Taiwan. It will occupy sufficient space to be developed into a global IT hub.

In August 2020, the Shenzhen Municipal People's Government issued the “Opinions of the Shenzhen Municipal People's Government on Supporting the Construction of an International Open Innovation Center in The Shenzhen-Hong Kong Science and Technology Innovation Cooperation Zone Shenzhen Park”. It stipulates that the Shenzhen Park of the cooperation zone must adhere to the two-wheel drive development of institutional innovation and technological innovation and benchmark the institutional mechanisms that are most conducive to technological innovation in Hong Kong and the world. Comprehensively explore the establishment of a policy environment conducive to scientific and technological innovation, including exploring and promoting the efficient and convenient flow of innovative elements such as personnel and materials, creating an international business environment, docking international scientific research rules, and building 5G communications, biomedicine and other emerging industry standard rules demonstration areas.

In recent years, driven by a number of measures, the Shenzhen Park of the Cooperation Zone has undergone major changes in terms of space preparation, scientific and technological innovation resources, and the park environment. At present, 370,000 square meters of scientific research space has been raised, and 126 projects have been launched and are being connected.

Qianhai Shenzhen-Hong Kong Modern Service Industry Cooperation Area

On 26 August 2010, the State Council approved the "Overall Development Plan for Qianhai Shenzhen-Hong Kong Modern Service Industry Cooperation Zone". The strategic positioning of the cooperation zone is a modern service industry system and mechanism innovation zone, a modern service industry development cluster area, a pilot zone for cooperation where Hong Kong is closely connected with the mainland and a leading zone for industrial upgrading in the Pearl River Delta.

On 28 August 2020, in order to cope with the changes in the current economic situation, further promote the injection of high-quality external increments, the optimization and upgrading of internal stocks, enlarge and strengthen the scale of Qianhai’s local economy, strengthen investment, pro-business, and business education, The Shenzhen Qianhai Maritime Administration issued the "Interim Measures for Investment Promotion and Reward of Shenzhen Qianhai Shenzhen-Hong Kong Modern Service Industry Cooperation Zone." The "Measures" are divided into six chapters: general provisions, industry cultivation support, industry introduction rewards, application and review, supervision and management, and supplementary provisions, which clarify the scope of rewards, standards, application procedures, review methods, and supervision and management.

In the first quarter of 2020, Qianhai added 130 Hong Kong-funded enterprises with registered capital of 8.811 billion RMB. The number of registered Hong Kong-funded enterprises increased from 2,172 in 2015 to 12,232, with registered capital of 1.3 trillion RMB.

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Summary

As an economy with the highest degree of freedom, Hong Kong will consolidate and enhance its position as a business hub in international finance, shipping and trade, and adhere to the liberalization of trade and investment. Hong Kong will focus on advancing the development of finance, commerce, trade, logistics and professional services toward high-end and high value-added. In addition, Hong Kong will cooperate with Shenzhen, Dongguan and other places to develop advanced manufacturing, explore "re-industrialization" and cultivate pillar industries. Hong Kong will also play an important role in the AIIB and the “Belt and Road Initiative”.

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3.7 Macao

The Economy

Macau is located on the south-eastern coast of China, along the west bank of the Pearl River estuary. It is 60km and 145km away from Hong Kong and Guangzhou respectively, and shares a border with Zhuhai to the north. With a population of 653,100 in an area of 30.8 sq km, it is the most densely populated region in the world. Macau has had the status of Special Administrative Region (SAR) in China since it was returned from being a Portuguese colony in 1999.

Macau's economy is dependent on tourism and gaming. By share of GDP, gaming alone accounted for 50.4% of Macau's GDP in 2018 while tertiary industries, which included peripheral sectors such as retail, accommodations and transportation, amounted to 95.7% of GDP. In 2019, gross revenue of the gaming industry (GGR) brought USD36.5b to Macau, more than three times that of Las Vegas.

In 2002, the Macau government ended its monopoly system that has been in place since 1962. Six casino operating concessions and subconcessions were granted to Sociedade de Turismo e Diversões de Macau, Wynn Resorts, Las Vegas Sands, Galaxy Entertainment Group, the partnership of MGM Mirage and Pansy Ho (daughter of Stanley Ho), and the partnership of Melco and Publishing and Broadcasting Limited (PBL). This set off a rapid phase of growth in the gaming and tourism industry. In 2019, Macau was visited by 39.4m tourists, up from 11.5m in 2002.

While its GGR has far exceeded Las Vegas, Macau is in the process of diversifying itself as a tourism destination. The government seeks to rebrand Macau as a regional hub in tourism, exhibitions, and small- and medium-sized enterprise business services within the region.

In terms of economic structure, Macau has been rated by the World Trade Organization (WTO) as one of the most open trade and investment regimes in the world. It is a free port and an independent tariff zone, with a corporate profit tax rate of no more than 12%, and a far-reaching international marketing network with close ties to Portuguese-speaking countries. Macau's role as a trade and economic co-operation service platform between China and Portuguese-speaking countries has received increasing recognition over the years.

Implementation of the Mainland and Macau Closer Economic Partnership Arrangement (CEPA) and the Pan-Pearl River Delta Regional Co-operation Framework Agreement, the Framework for Development and Reform Planning for Pearl River Delta Region, the Framework Agreement on Co-operation between Guangdong and Macau, and the Framework Agreement on Deepening Guangdong-Hong Kong-Macau Cooperation in the Development of the Bay Area will further enhance the economic integration of the Pan PRD region.

Recent Policies and Reforms

Opinions on Several Policies and Measures to Support the Construction of the Guangdong-Hong Kong-Macau Greater Bay Area in the Business Field"

In December 2019, the Ministry of Commerce issued the "Opinions on Several Policies and Measures to Support the Construction of the Guangdong-Hong Kong-Macau Greater Bay Area in the Business Sector", which will pilot the preferential measures of CEPA expansion in the Guangdong-Hong Kong-Macau Greater Bay Area and promote the full realization of services in the Greater Bay Area free trade. The "Opinions" support the Guangdong Pilot Free Trade Zone to take the lead in exploring the integration

3.7 澳门

经济

澳门位于中国东南沿海，沿珠江口西岸，距香港60公里，距广州145公里，北与珠海接壤。澳门人口680,000，面积30.1平方公里，是世界上人口最密集的地区。澳门自1999年结束葡萄牙殖民统治，回归祖国，成为中国的一个特别行政区。

澳门经济依赖旅游和博彩业。2019年，仅博彩业就占澳门GDP的50.4%，而包括零售、住宿和交通等周边行业在内的第三产业则占到GDP的95.7%。2019年，澳门博彩业毛收入365亿美元，比拉斯维加斯多三倍多。

2002年，澳门特别行政区政府终结了自1962年以来的垄断经营机制，向六家公司授予博彩经营权牌照和次级牌照，分别是：澳门旅游娱乐股份有限公司、永利度假村、拉斯维加斯金沙集团、银河娱乐集团、美高梅和何超琼（何鸿燊女儿）的合伙企业，以及香港新濠国际和澳洲出版广播公司的合伙企业。这开启了博彩和旅游业快速发展的新阶段。2019年，澳门接待游客3,940万人次，高于2002年的1,150万人次。

在博彩业收入超越拉斯维加斯之后，澳门正在寻找方法打造多样化旅游城市。澳门政府冀望能重新将澳门定位，变成区域性的旅游、会议展览心及泛珠三角发展框架范围内中小企业的服务平台。

经济结构方面，澳门获世界贸易组织（WTO）评为世界上最开放的贸易和投资体制之一。澳门是一个自由港，属独立关税区，企业利润税率不超过12%，拥有广泛的国际营销网络，与葡语国家关系密切。多年来，澳门作为中国与葡语国家之间经贸合作服务平台的作用日益得到认可。

《内地与澳门关于建立更紧密经贸关系的安排》、《泛珠三角区域合作框架协议》、《珠江三角洲地区改革发展规划纲要》、《粤澳合作框架协议》以及《深化粤港澳合作推进大湾区建设框架协议》等一系列协议的实施，将进一步促进泛珠三角区域的经济一体化。

近期政策与改革

《关于商务领域支持粤港澳大湾区建设若干政策措施的意见》

2019年12月，商务部发布《关于商务领域支持粤港澳大湾区建设若干政策措施的意见》，将CEPA扩大开放的优惠措施在粤港澳大湾区先行先试，推动大湾区全面实现服务贸易自由化。《意见》支持广东自贸试验区率先探索与港澳经贸规则对接，带动提升粤港澳大湾区制度型开放，支持香港、澳门参与大湾区珠三角九个城市市场体系建设和消费升级。《意见》包含六大方面27项具体举措，涵盖了消费、流通、贸易、投资、经济合作等重点领域，将成为今后一段时间商务领域支持粤港澳大湾区建设的政策指引。

《关于金融支持粤港澳大湾区建设的意见》

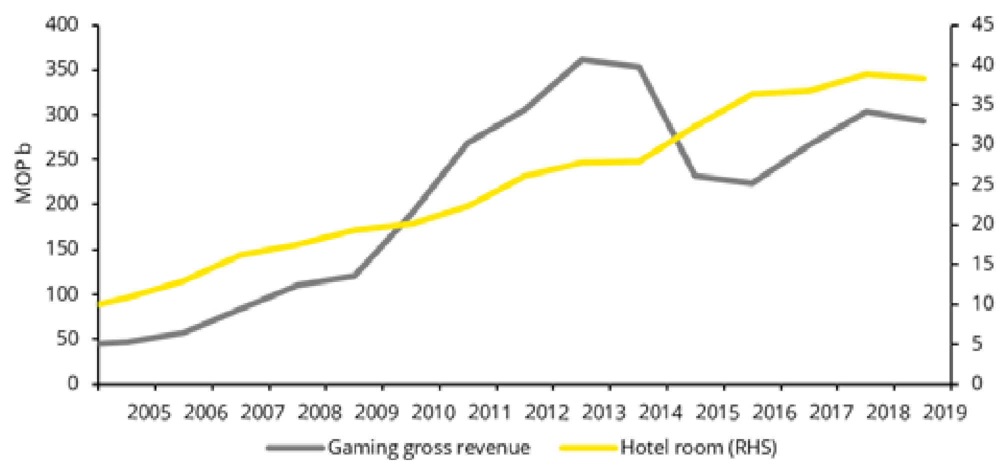
2020年4月，中国人民银行、中国银行保险监督管理委员会、中国证券监督管理委员会、国家外汇管理局印发《关于金融支持粤港澳大湾区建设的意见》，要求进一步推进金融开放创新，深化内地与港澳金融合作，加大金融支持粤港澳大湾区建设力度，提升粤港澳大湾区在国家经济发展和对外开放中的支持引领作用。《意见》支持澳门打造中国-葡语国家金融服务平台，建设出口信用保险制度，建设成为葡语国家人民币清算中心，承接中国与葡语国家金融合作服务，支持澳门发展租赁等特色金融业务，推动建设澳门-珠海跨境金融合作示范区；支持澳门在符合条件的情况下加入亚洲基础设施投资银行，支持丝路基金及相关金融机构在香港、澳门设立分支机构。

经济特区

珠海横琴与澳门的产业共融合作

横琴新区位于珠海经济特区，是广东自由贸易试验区的组成部分，与澳门仅有一箭之地。作为“一国两制”政策的组成部分，中央政府正努力推进澳门与中国内地的经济一体化工作，而横琴与澳门隔水相望，成为经济一体化的试点区，为投资者创造具有吸引力的激励措施。

Fig 12 The gaming and tourism industry grew sharply since the end of the monopoly in 2002



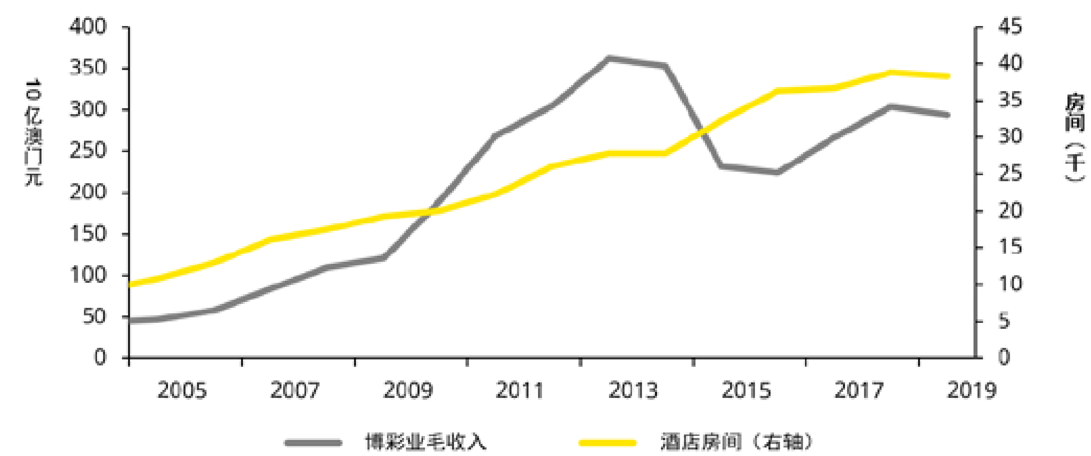
Source: Wind

of economic and trade rules with Hong Kong and Macau, promote the improvement of the institutional opening of the Guangdong-Hong Kong-Macau Greater Bay Area, and support Hong Kong and Macau to participate in the construction and consumption upgrade of the nine cities in the Pearl River Delta of the Greater Bay Area. The "Opinions" contain 27 specific measures in six areas, covering key areas such as consumption, circulation, trade, investment and economic cooperation. They will become a policy guide for the business sector to support the construction of the Guangdong-Hong Kong-Macau Greater Bay Area in the future.

Opinions of the People's Bank of China, the China Banking and Insurance Regulatory Commission, the China Securities Regulatory Commission and the State Administration of Foreign Exchange on Financial Support for the Development of the Guangdong-Hong Kong-Macau Greater Bay Area

In April 2020, the People’s Bank of China, the China Banking and Insurance Regulatory Commission, the China Securities Regulatory Commission, and the State Administration of Foreign Exchange issued the "Opinions on Financial Support for the Development of the Guangdong-Hong Kong-Macau Greater Bay Area", requesting further promotion of financial opening and innovation and deepening Mainland China’s financial cooperation with Hong Kong and Macau, increasing financial support for development of the Guangdong-Hong Kong-Macau Greater Bay Area, and enhancing the supporting and leading role of the Guangdong-Hong Kong-Macau Greater Bay Area in national economic development and opening up. The "Opinions" support Macau in building a China-Portuguese-speaking country financial service platform, establishing an export credit insurance system, building a Renminbi clearing center for Portuguese-speaking countries, undertaking financial cooperation services between China and Portuguese-speaking countries, and supporting Macau in developing special financial services such as leasing, and promoting to build a Macau-Zhuhai cross-border financial cooperation demonstration zone; supporting Macau to join the Asian Infrastructure Investment Bank if conditions are met, and support the Silk Road Fund and related financial institutions to set up branches in Hong Kong and Macau.

图表12 自2002年垄断结束以来，博彩和旅游业快速发展



资料来源：Wind

2020年7月，广东省人民政府港澳事务办公室网站公布实施《粤澳合作框架协议》2020年重点工作，加快推动在横琴设立粤澳深度合作区，构建粤澳共商共建共管的体制机制，探索更加灵活、开放的合作方式，促进粤澳两地人员和经济便利往来。

同月，横琴新区与澳门特区签订《关于共同推进横琴、澳门青年创业孵化的合作协议》，建立信息互通资源共享机制；与澳门青年创业孵化中心签署了“跨境联合孵化”框架协议。这一切，有助粤澳深度合作实现与市场无缝衔接、与国际高度接轨。

截至2020年4月底，珠海市横琴新区已有澳门投资企业2522家，注册资本（金）达139.44亿美元。

下一步，澳门政府将发展多元化经济，致力于将澳门发展成集旅游、博彩、会展、文创、购物、美食于一身的综合旅游城市。力求通过进一步深化区域合作，为澳门中小企业的发展提供支持，从而为经济多元化增添动力。

小结

澳门将与内地紧密合作，修订CEPA协议，逐步放开部分限制性措施，促进投资便利化，增强两地交流，推进粤港澳大湾区协同发展。澳门与横琴展开深度合作，借助横琴为澳门产业发展提供的空间、资源等，大力发展新兴产业，为外商投资创造机遇，打造产业共荣，逐步建成集旅游、博彩、会展为一体的休闲城市。

Special Economic Zones

Industrial integration of Zhuhai Hengqin and Macau

The Hengqin New Area, located in the Zhuhai Special Economic Zone and part of the Guangdong Free Trade Zone, is only a stone's throw away from Macau. As part of the "One Country, Two Systems" policy, the Central Government is trying to integrate the economies of Hong Kong, Macau and Mainland China. Hengqin is directly across the water from Macau, and as such is a pilot zone for integration. With professional zone management, as well as the most preferential investment policies in South China, the Hengqin New Area offers appealing incentives to investors.

In July 2020, the website of the Hong Kong and Macau Affairs Office of the People's Government of Guangdong Province announced the implementation of key tasks in 2020 under the "Guangdong-Macau Cooperation Framework Agreement", accelerating the establishment of a Guangdong-Macau in-depth cooperation zone in Hengqin, establishing a system and mechanism for Guangdong-Macau co-construction, and exploring more flexible and open ways of cooperation to facilitate the exchange of personnel and economy between Guangdong and Macau.

In the same month, Hengqin New District and Macau Special Administrative Region signed the "Cooperation Agreement on Jointly Promoting Hengqin and Macau Youth Entrepreneurship Incubation" to establish an information exchange and resource sharing mechanism; and the Macau Youth Entrepreneurship Incubation Center signed a "cross-border joint incubation" framework agreement. All of this will help Guangdong and Macau to achieve in-depth cooperation with the market seamlessly and highly in line with international standards.

On 10 May 2019, Zhuhai and Macau officially signed a co-construction agreement for the "Macau Industrial Diversity Cross Gate Central Business District Service Base". According to the agreement, the service base is a key demonstration project for Zhuhai to promote the diversification of Macau's industry and assist in Zhuhai-Macau cooperation, and is an important measure in this regard. Zhuhai will provide more than 50,000 square meters of international office space and public service platform. As an entity platform for the diversified development of Macau's industry, it will provide a full range of services to 300-500 emerging industries with diverse industries in Macau. The agreement marks a new stage of comprehensive advancement of Zhuhai-Macau cooperation.

As of the end of April 2020, there were 2,522 Macau-invested enterprises in Hengqin New District of Zhuhai City, with registered capital of US$13.944 billion.

In the next step, the Macau government will develop a diversified economy and is committed to developing Macau into a comprehensive tourism city that integrates tourism, gaming, conventions and exhibitions, cultural and creative spaces, shopping and food, and will strive to further deepen regional cooperation to support the development of Macau's SMEs, thereby adding momentum to economic diversification.

Summary

Macau will work closely with Mainland China, revise the CEPA agreement, gradually liberalize some restrictive measures, promote investment facilitation, strengthen exchanges and promote coordinated development of the Guangdong-Hong Kong-Macau Greater Bay Area. Macau and Hengqin have launched in-depth cooperation arrangements. The space and resources provided by Hengqin for the development of Macau's industries will help to develop emerging industries, create opportunities for foreign investment, generate industrial prosperity and gradually build leisure areas that integrate tourism, gaming and exhibitions.

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Part IV

Results of 2021 State of Business Study

4.1 Demographics

4.2 Revenue and Profitability

4.3 Reinvestment Trends

4.4 Business and Operational Environment

4.5 US-China Bilateral Relations

第四部分

2021年经济情况问卷调查结果

4.1 受访企业组成

4.2 收入与利润

4.3 再投资趋势

4.4 营商及运营环境

4.5 美中双边关系

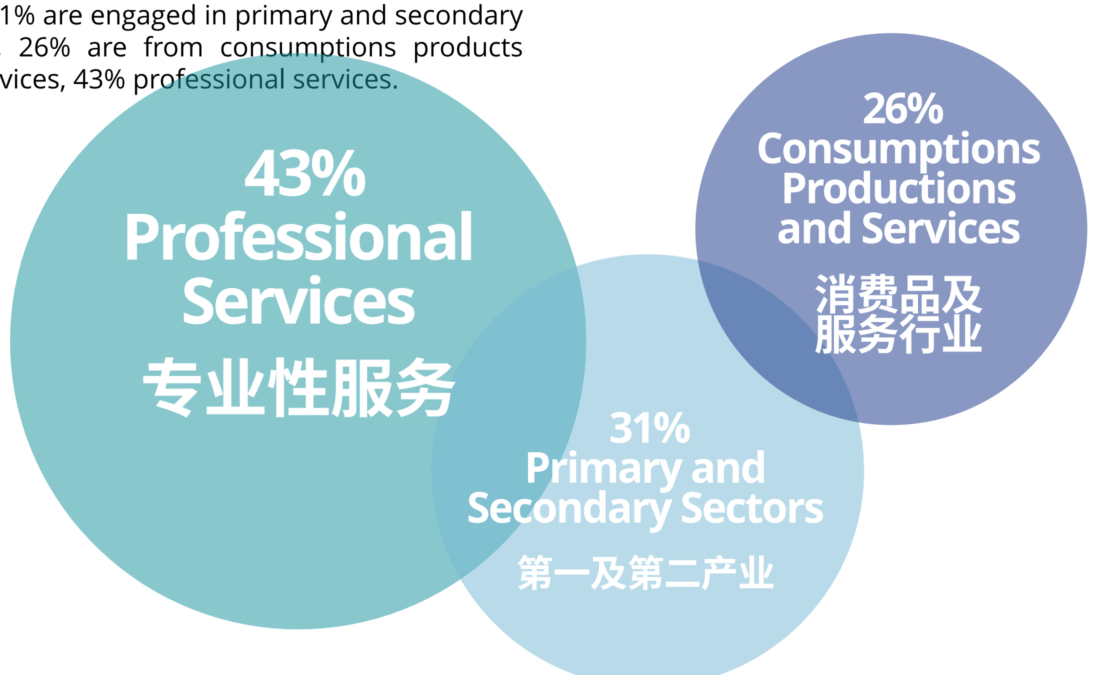
4.1 Demographics 受访企业组成

From September 23 to December 22, 2020, AmCham South China conducted its 17th annual study of companies with established operations in China through random sampling. While 208 companies participated in the study in total, questionnaires of 191 companies were finally adopted.

Generally speaking, the demographics of participating companies is similar as last year. To better reflect the present general economic situation, we classify the industry of participating companies into primary and secondary sectors, consumption products and services, professional services, as well as other services and organizations. While 31% are engaged in primary and secondary sectors, 26% are from consumptions products and services, 43% professional services.

自2020年9月23日至2020年12月22日，华南美国商会通过随机抽样邀请相关会员企业参加第十七次年度华南地区经济情况问卷调查，并最终回收了208份问卷。为确保数据的高效完整性，我们最终采用了191家企业提供的有效问卷。

总体而言，参与该年度调查的企业与往年的受访企业组成大体一致。为了更好的体现中国经济环境及受访企业在华的发展趋势，我们将受访企业所属行业大致分为：第一及第二产业、消费产品及服务、专业服务及其他服务及机构等。参与该年度调查的受访企业来自各行各业，约31%从事第一及第二产业，26%来自消费品及服务行业，43%为专业性服务。



Some figures in this report may show deviations from 100% due to rounding up.
本报告中某些数据合计因四舍五入可能偏离 100%。

Figure 1 | Distribution of Industry
图表1 | 行业分布

	Distribution of Industry 行业分布	Percentage 百分比
Primary and Secondary Sector 第一及第二产业	Agriculture, forestry, animal husbandry, fisheries and related businesses 农业、林业、畜牧业、渔业及其相关产业	2%
	Mining (production and services) 采矿业（产品及服务）	0%
	Manufacturing 制造业	25%
	Manufacture and supply of electricity, heat and water 电力、热力、燃气及水生产和供应业	1%
	Construction 建筑业	1%
	Repair of metal, machinery, and equipment 金属制品、机械及设备维修业	2%
Consumption Products and Services 消费产品及服务	Wholesale and retail 批发及零售业	13%
	Accommodation and catering 住宿及餐饮	4%
	Culture, sports, and entertainment 文化、体育及娱乐业	5%
	Resident services, repair, and other services 居民服务、修理和其他服务业	3%
	Water, environment, and public equipment management 水利、环境及公共设施管理业	1%
Professional Services 专业服务	Transportation, warehousing, postal services 交通运输、仓储和邮政业	5%
	Information 信息传输	2%
	Financial services 金融业	8%
	Real estate and development 房地产业	3%
	Leasing and commercial services 租赁及商业服务	8%
	Scientific research and technological services 科技研究及技术服务业	5%
	Education 教育	7%
	Healthcare 医疗卫生	4%
	Social work 社会工作	1%
Other Services and Organizations 其他服务及机构	Public management, social security, social organizations or international organizations 公共管理、社会安全、社会组织或国际组织	2%

While most of the participating companies are from the United States and Mainland China, 12% are from Europe and the remaining 18% originate from Japan, Korea, and other South East Asia, and Oceania countries/regions. Regarding the forms of legal entity, 42% are foreign-invested companies and 36% are local Chinese companies in this year's research. 14% of the participants are foreign joint ventures or representative offices of foreign companies. Although our studied participants come from all walks of life, most of them are medium and small size companies.

大部分受访企业的企业背景为美国或中国大陆，12%的受访企业来自欧洲，剩余18%则来自日本、韩国、其他东南亚及大洋洲的国家及地区。从企业类型来看，42%受访企业为外商独资企业，36%为中资企业，另外中外合资及外资企业办公室仅占14%。受访企业主要为中小规模企业。

Figure2 | Origin of Company
图表2 | 企业背景

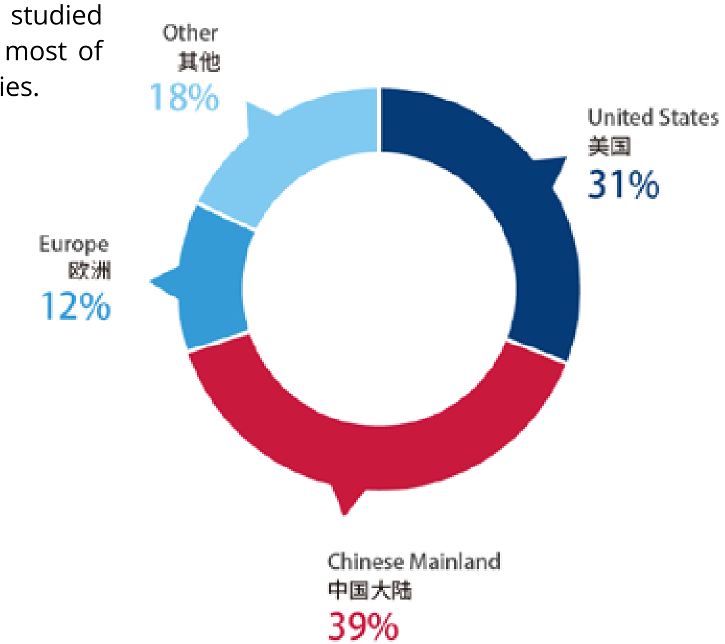


Figure3 | Forms of Legal Entity
图表3 | 企业类型

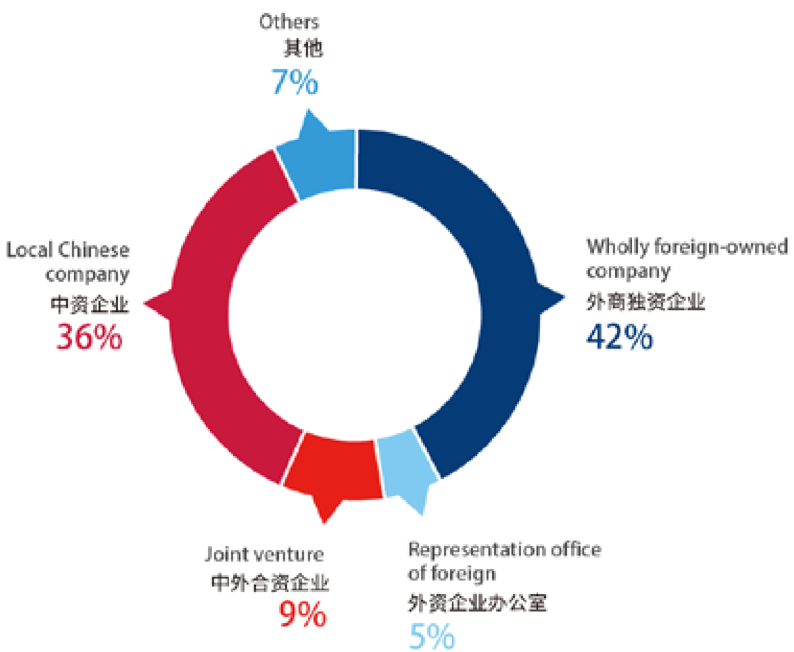
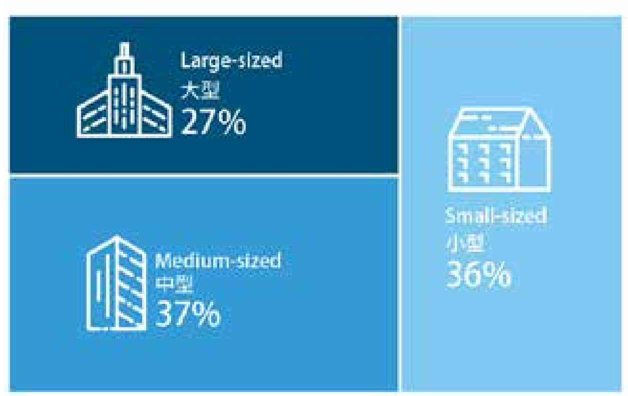


Figure4 | Size of Company
图表4 | 企业规模



More than 40% of participating companies have operated in China for more than twenty years, representing a large group of mature businesses. The primary business objective of 81% of participating companies is to provide goods or services to the Chinese market, rather than manufacturing to export, which is consistent with the results in previous years. This "in China, for China" strategy was first noted by our Chamber more than 10 years ago.

超过40%的受访企业在华运营时间超过二十年，代表着一批在华运营成熟的企业。绝大部分企业在华的主要业务为向中国市场提供产品或服务，而非以出口为主的制造业。该结果与往年大体一致。"立足中国，服务中国"的策略早在10多年前已被我们商会的报告所反映出来。

Figure5 | Operation Time in China
图表5 | 在华运营时间

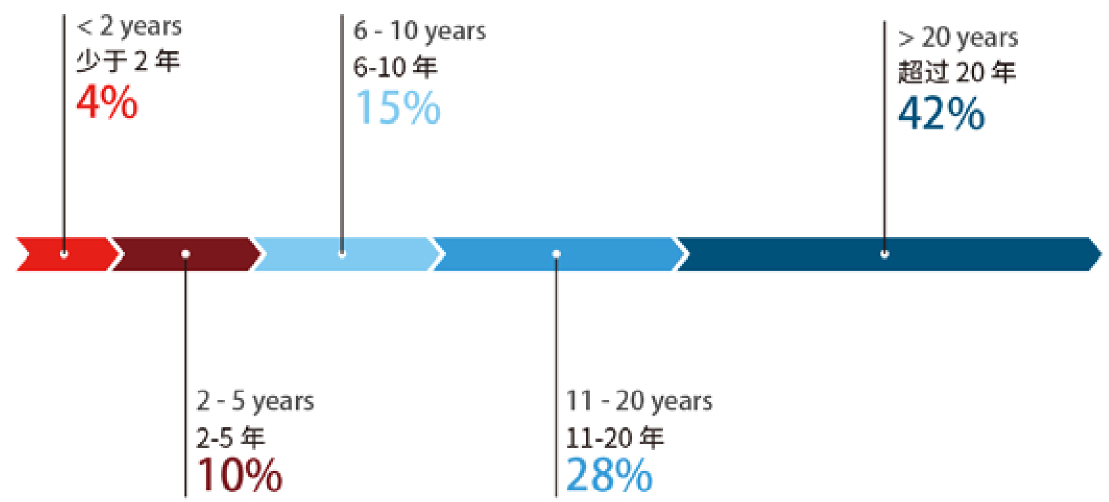
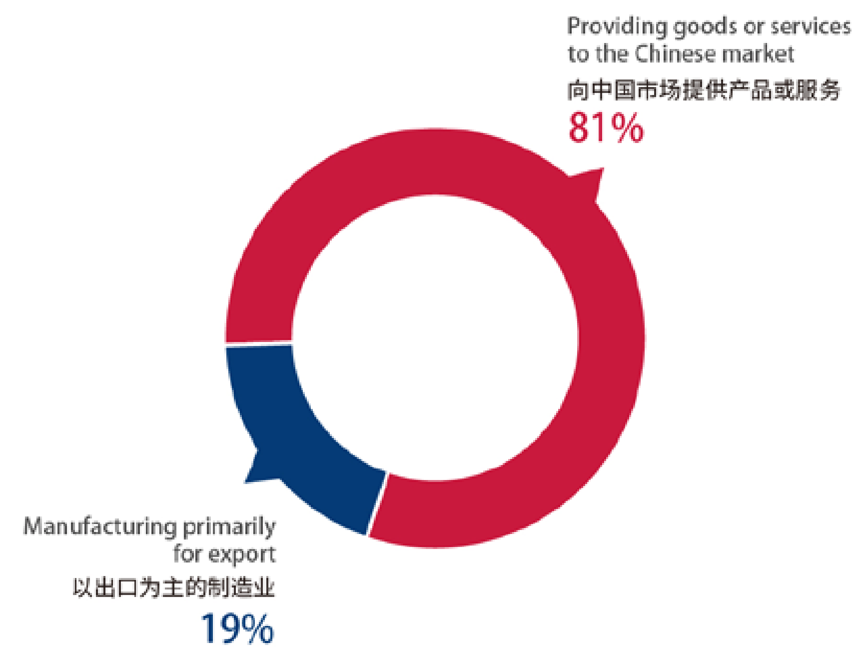


Figure6 | Focus of Business Activities in China
图表6 | 在华主要业务



Compared with 2019 data, there was a significant decrease in foreign employees in China in 2020. 70% of the participating companies have fewer than five foreign staff.

与2019年数据相比，2020年在华外籍雇员显著减少，70%的受访企业外籍雇员人数不足五名。

Figure7 | Number of Employees with Foreign Passport in China in 2019 and 2020
图表7 | 2019及2020年在华外籍雇员数量

	2019 Percentage 百分比	2020 Percentage 百分比
No expatriates 无	9%	28%
≤ 5 employees 少于或等于5人	24%	42%
6 - 10 employees 6 - 10 人	16%	11%
11 - 20 employees 11-20 人	12%	6%
21 - 50 employees 21 - 50 人	4%	4%
＞50 employees 超过 50 人	34%	9%

COVID-19 outbreak and various factors took a toll on employment levels of our participating companies in 2020. 30% of them have reduced headcount. Although the Chinese economy grew at its slowest pace in nearly three decades in 2020, most of the participating companies seem to be confident in employment expansion, with 44% reporting plans to significantly or slightly increase their headcounts in 2021.

2020年在新冠疫情爆发及各方因素的影响下，受访企业在扩员方面放缓了步伐，三成的受访企业表示已减少雇佣职位数量。虽然2020年中国经济增长放缓至近三十年新低，但大部分受访企业对2021年扩员的计划似乎颇有信心，44%的受访企业表示会在未来一年显著增加或少量增加雇员。

Figure8 | Change in Employee Headcount in China in 2020
图表8 | 2020年在华雇佣数量变化

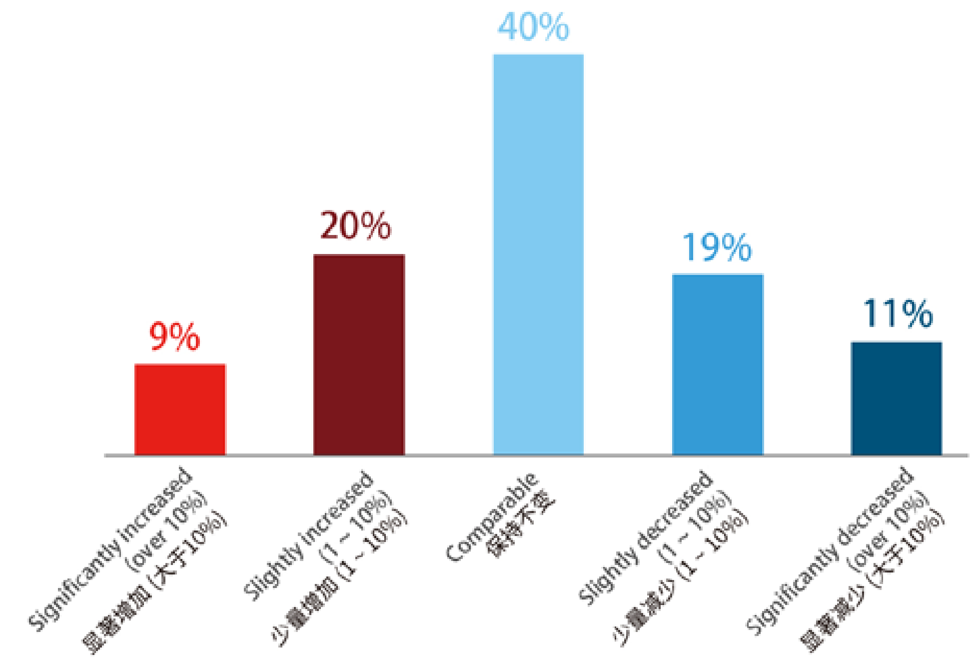
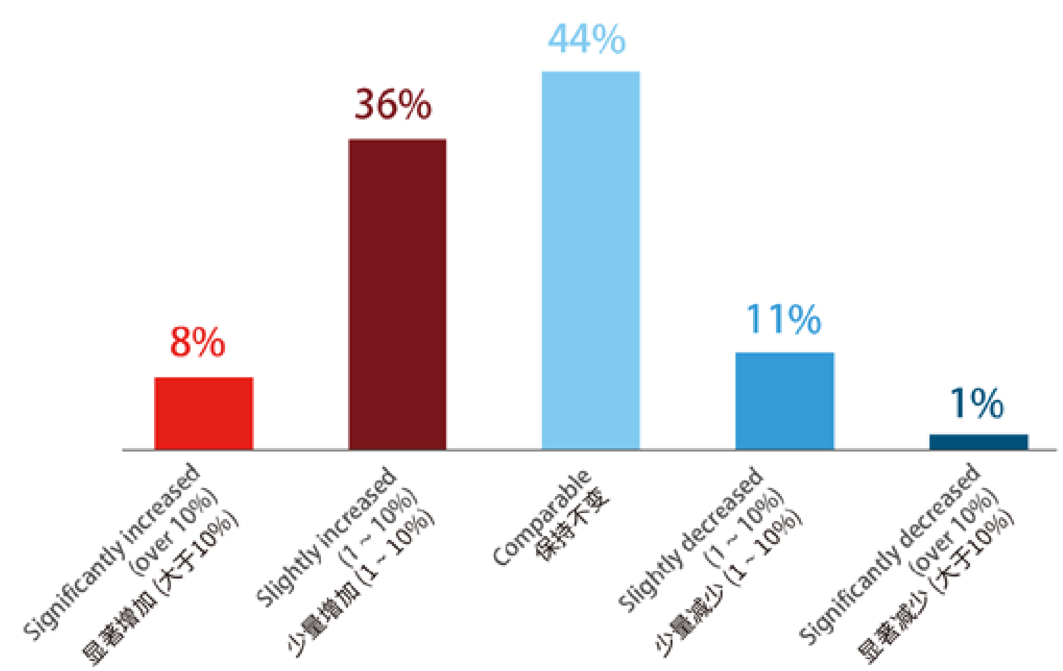


Figure9 | Employment Plan in China in 2021
图表9 | 2021年在华雇员计划



4.2 *Revenue and Profitability* 收入与利润

Compared with the past three years, companies saw slight fluctuations in the percentage of their global annual revenues from China in 2020. More than half of the companies gained more than 30% of revenue from China. As COVID-19 has taken a hold of the global economy, nearly 50% of the companies' 2020 revenue in China compared with 2019 reported slightly/ significantly decreased. This is the most significant reduction in the past few years.

与过去三年相比，受访企业2020年在华收入占全球营收呈现轻微波动的状态。超五成企业超过30%的全球收入来自中国。由于新冠疫情对全球经济的影响，约五成受访企业表示相比2019年，2020年在华营收出现了少量或显著减少。这是过去几年里出现的最显著的减少。

Figure 10 图表10 | Comparison of Percentage of Companies' Global Annual Revenue from China (2017-2020) 在华收入占全球营收比例对比(2017-2020)

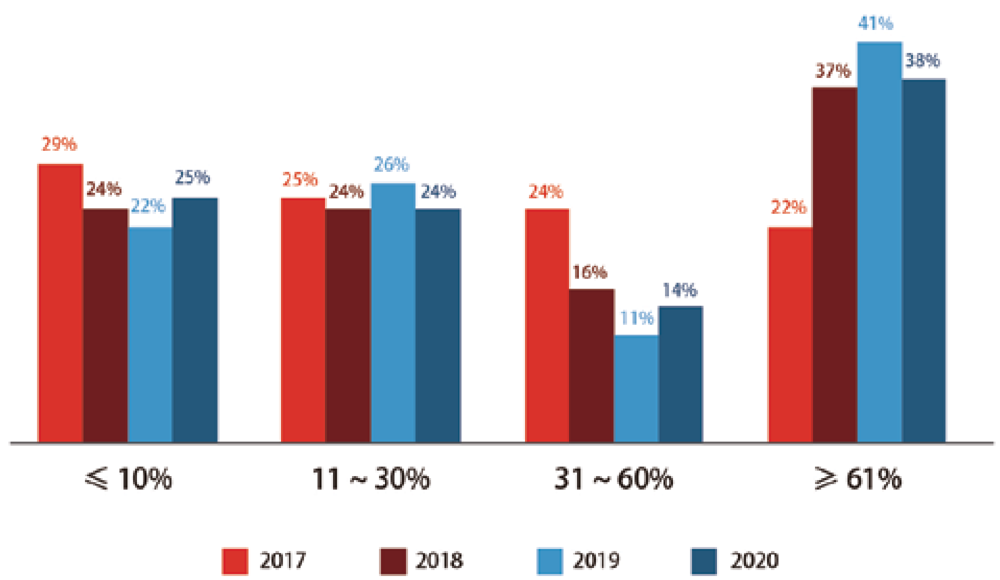


Figure 11 图表11 | Comparison of Percentage of Companies' Global Annual Revenue from China in 2020 (by Origins of Companies) 2020年在华收入占全球营收比例对比(按国家来源划分)

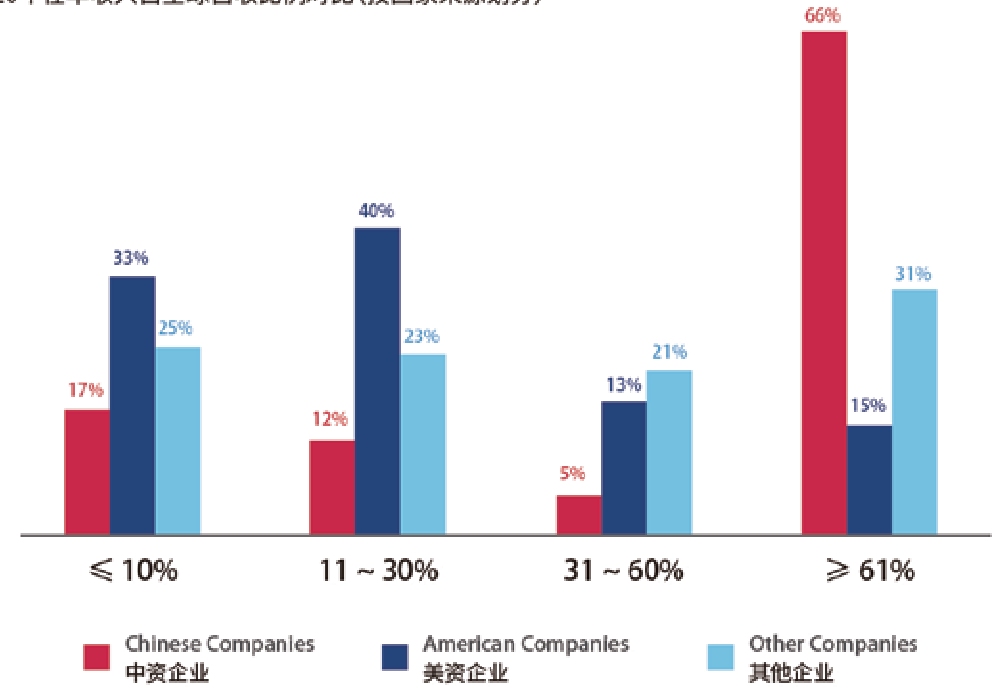
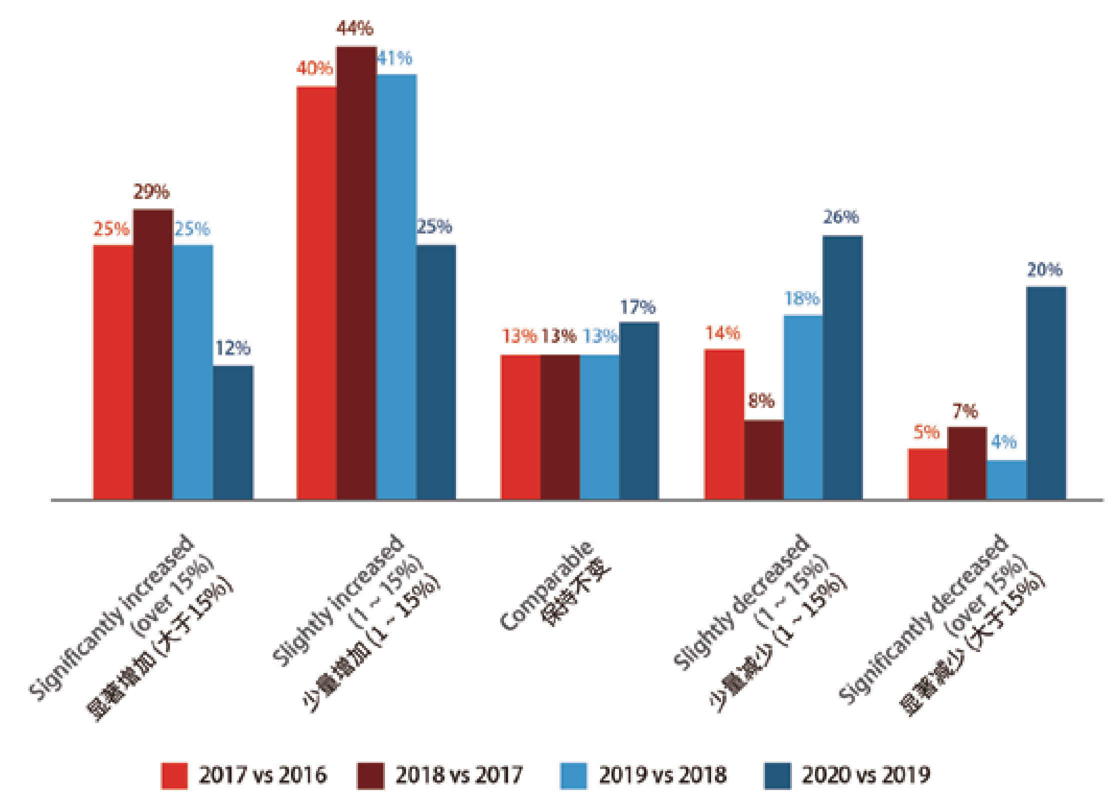


Figure 12 图表12 | Comparison of Change of Revenue in China (2017-2020) 在华营收变化对比(2017-2020)



Similar to our research last year, although the companies' profitability in China has declined slightly compared to the past two years, the overall situation is still relatively optimistic. About 90% of the companies report they have already made profits in China. Meanwhile, only 10% of the companies claim that they haven't reached profitability in China. From the perspective of origins of companies, more than 90% of American companies and other companies have achieved profitability, while only 83% of Chinese companies have made it. However, roughly half of those companies that have been profitable report their profitability not meeting their budget expectations, an increase of 12% year on year. Compared with previous years, fewer companies expect to reach profitability in a short period of time. While an overwhelming majority of the respondents expect their companies to be profitable within two years, more than 30% assume that it would take more than three years to become profitable.

与往年调查结果相似，虽然企业在华盈利情况相比过去两年稍有下降，但整体还是比较乐观。约九成受访企业表示已在中国实现盈利，只有约一成受访企业表示他们尚未在华实现盈利。从企业背景来看，超过90%的美资及其他外资企业均已实现盈利，而中资企业仅有83%。过半已实现盈利的受访企业表示其盈利水平未达预期，同比上升12%。与往年相比，预计能在短时间内实现盈利的企业大幅减少；绝大多数企业表示预计实现盈利的时间为两年，超过三成受访企业表示预计实现盈利时间将超过三年。

Figure 13 | Profitability in China in 2020 (by Origins of Companies)
图表13 | 2020年在华盈利情况（按国家来源划分）

	2018	2019	2020
Yes 是	91%	95%	89%
No 否	9%	5%	11%

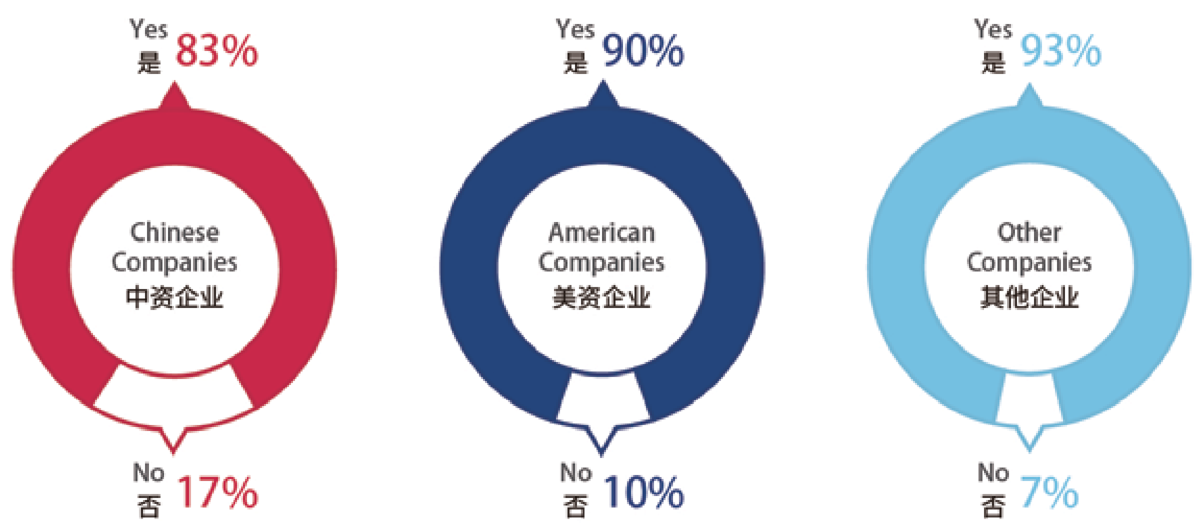


Figure 14 | Comparison of Change of Revenue in China (by Origins of Companies)
图表14 | 在华营收变化对比（按国家来源划分）

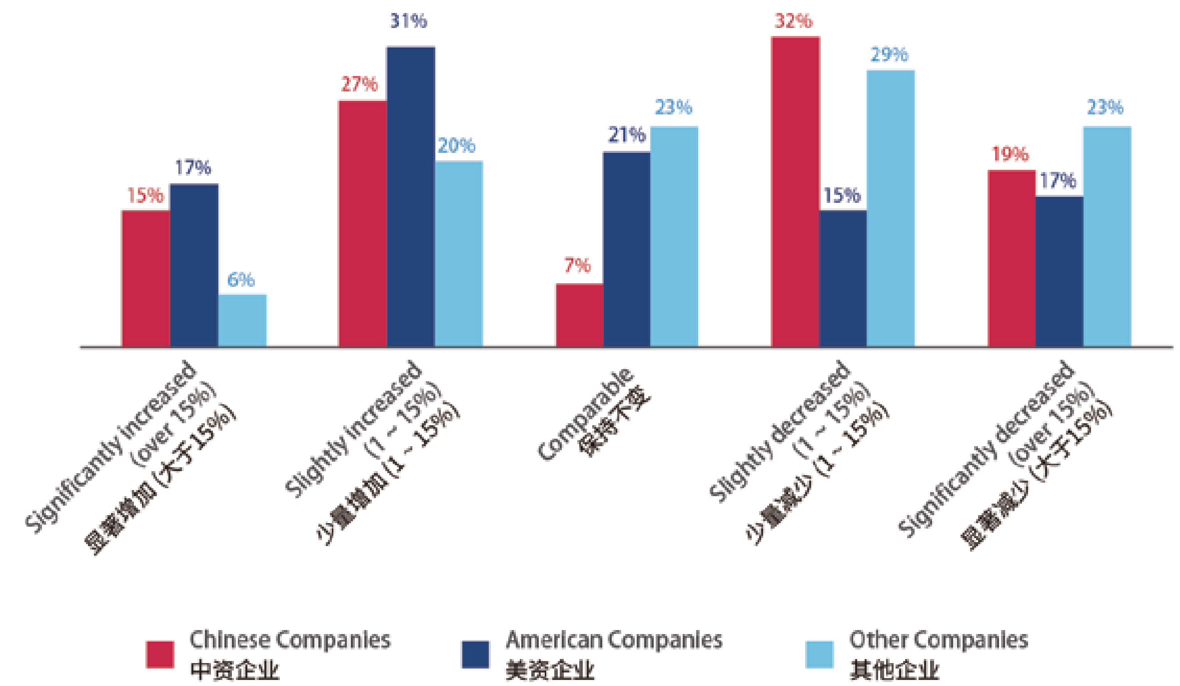


Figure 15 | Comparison of the State of Being Profitable (2016-2020)
图表15 | 在华盈利水平对比（2016-2020）

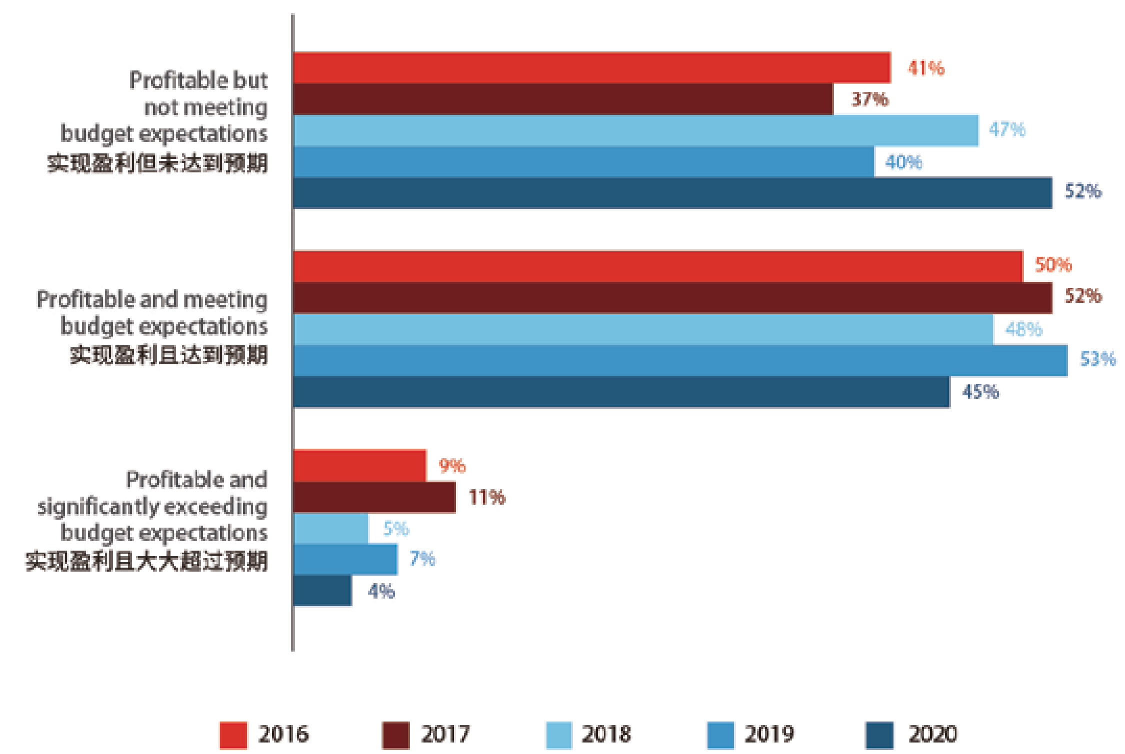


Figure 16 Comparison of the State of Being Profitable (by Different Industries)
图表16 在华盈利水平对比(按照行业划分)

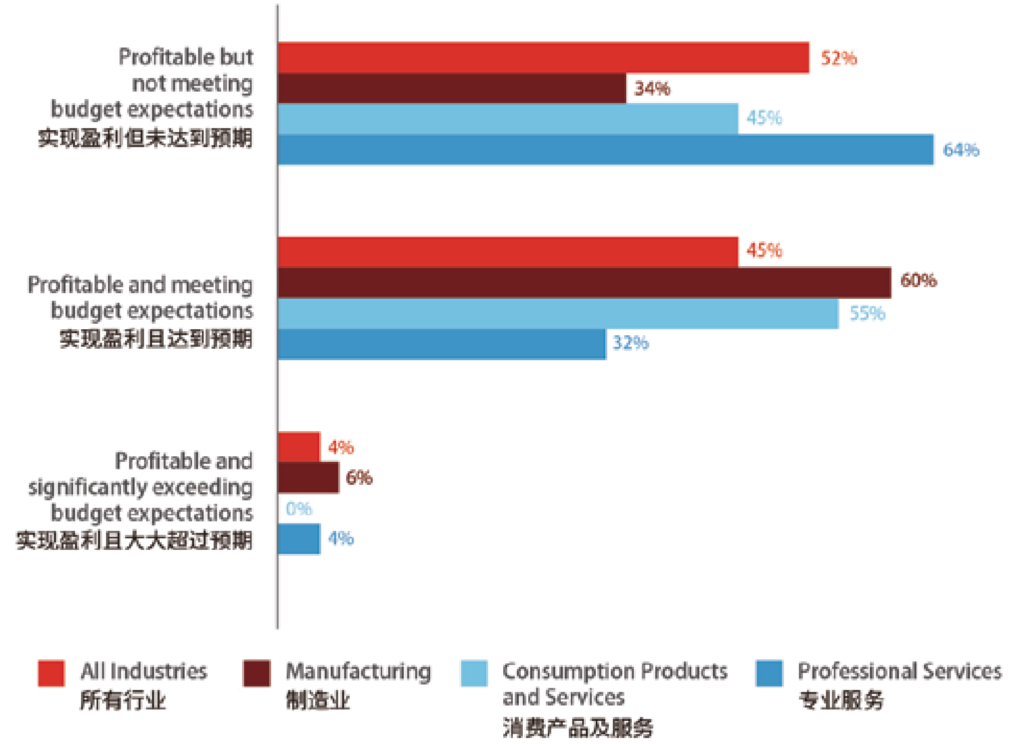
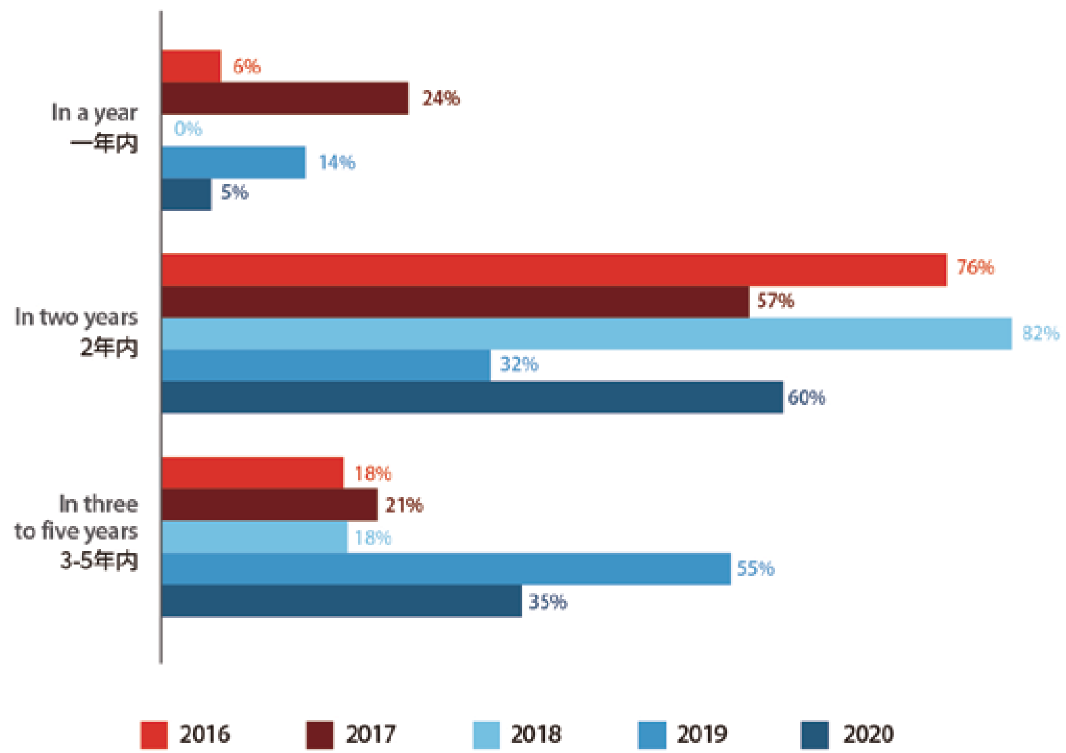


Figure 17 Comparison of Expected Time to Reach Profitability (2016-2020)
图表17 预计盈利所需时间对比(2016-2020)



Most of the companies reported that their overall return on investment in China were positive. Compared with their global overall return on investment, a majority of the respondents considered their overall return on investment in China to be higher than other places. Most of the companies remain optimistic towards the business outlook in China. Compared to data from 2016 to 2019, we have witnessed a significant increase of those who are optimistic about China's business, while American companies show more confidence in business outlook in China.

绝大部分受访企业认为在华投资总体回报率仍为正值;同时,大部分企业认为相比全球投资总体回报率,其在华投资总体回报率更高。大部分企业对中国市场的增长仍保持乐观的态度。跟早期2016年到19年的数据相比,我们看到了企业对中国市场信心的显著上涨。而美资企业对中国市场增长是最为乐观的。

Figure 18 Comparison of Overall Return on Investment in China (2016-2020)
图表18 在华投资总体回报率对比(2016-2020)

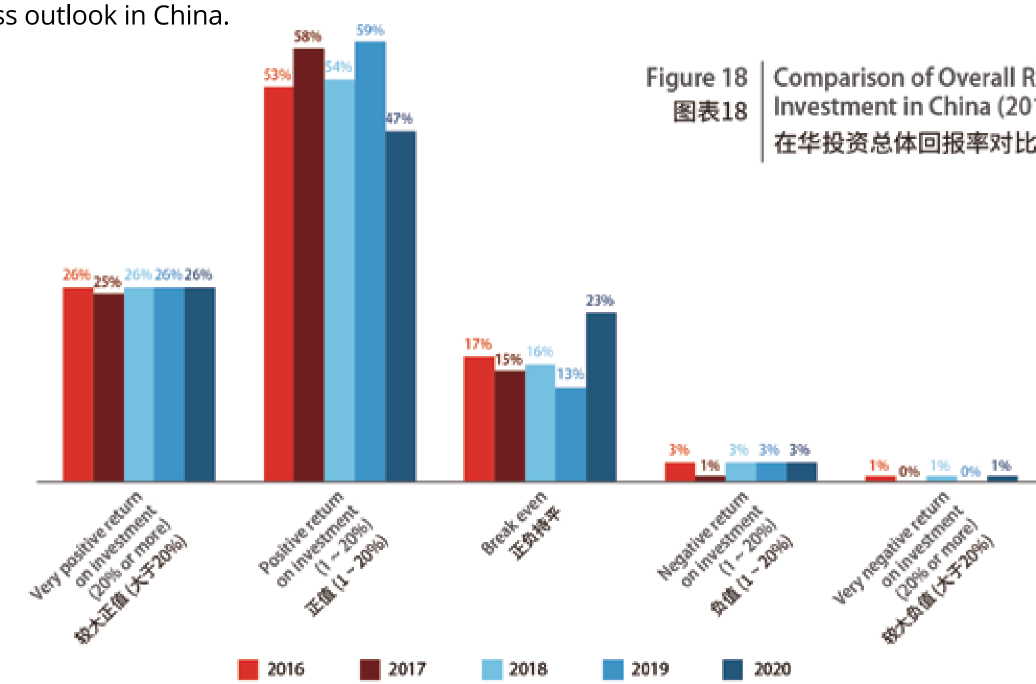


Figure 19 Overall Return on Investment in China vs Overall Return on Global Investment in 2020 (by Origins of Companies)
图表19 2020年在华总体投资回报率vs全球总体投资回报率对比(按国家来源划分)

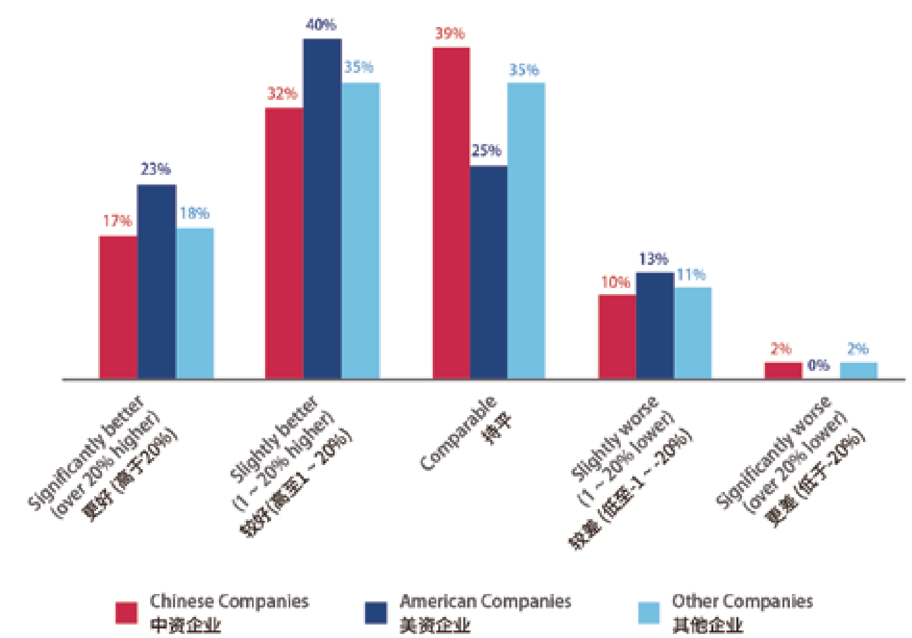


Figure 20 | Overall Return on Investment in China vs Overall Return on Global Investment in 2020 (by Different Industries)
图表 20 | 2020年在华总体投资回报率vs全球总体投资回报率对比（按照行业划分）

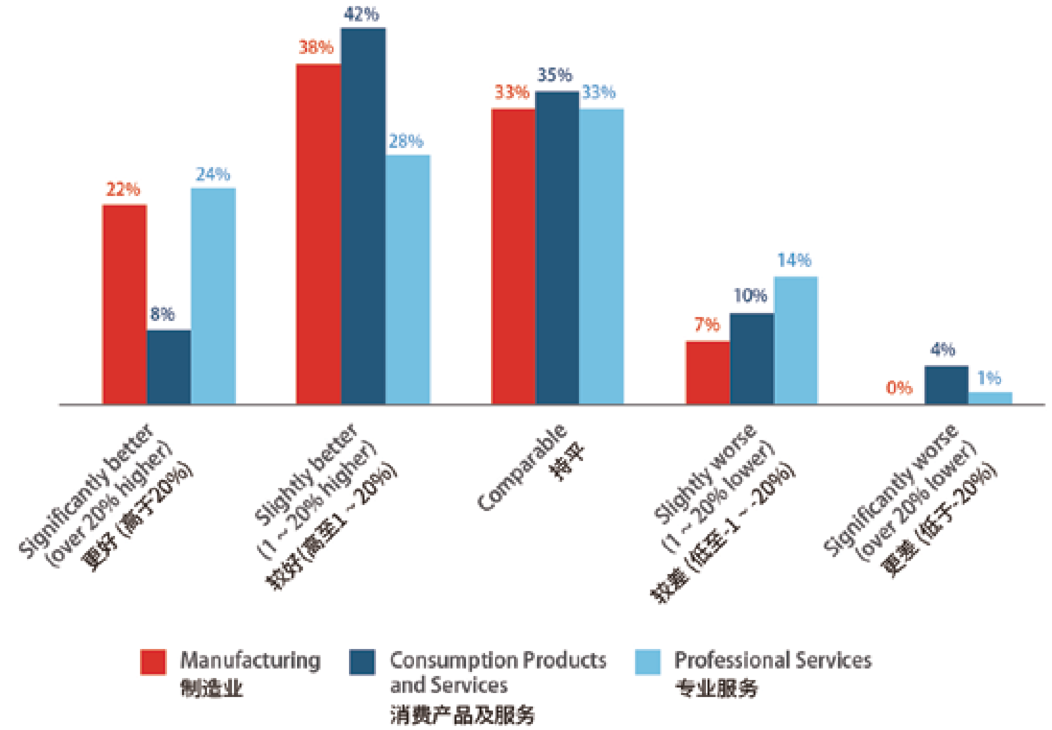


Figure 21 | Comparison of Business Outlook in China (2016-2020)
图表 21 | 对中国市场增长的期望对比（2016-2020）

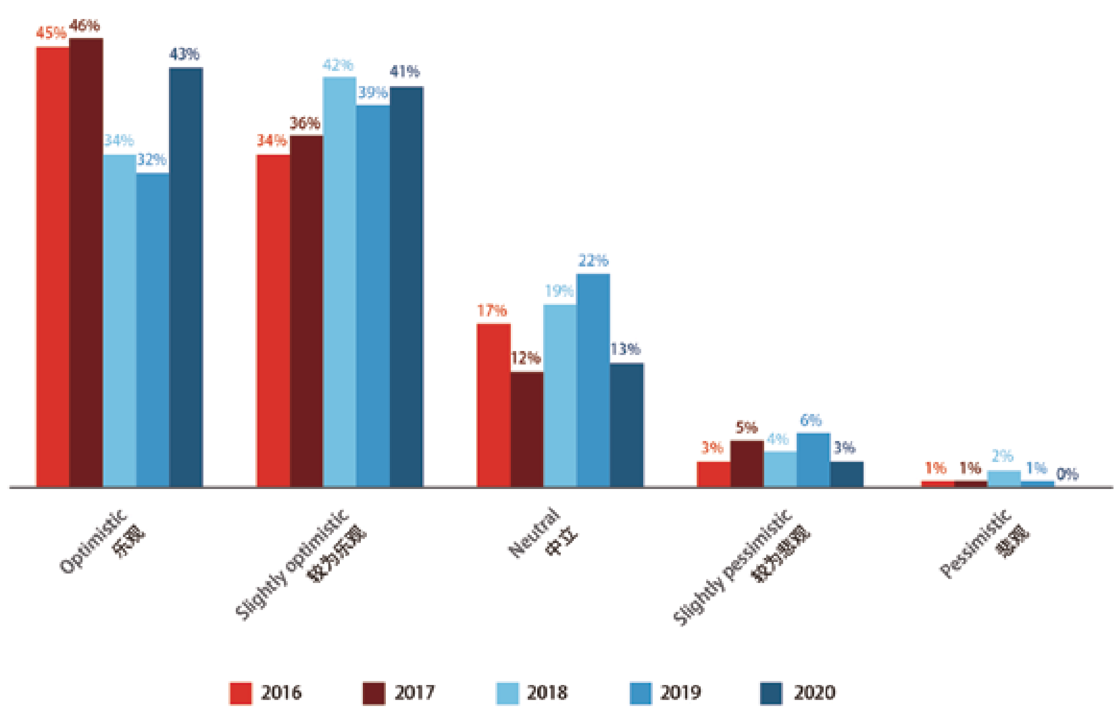


Figure 22 | Business Outlook in China (by Origins of Companies)
图表 22 | 对中国市场增长的期望（按国家来源划分）

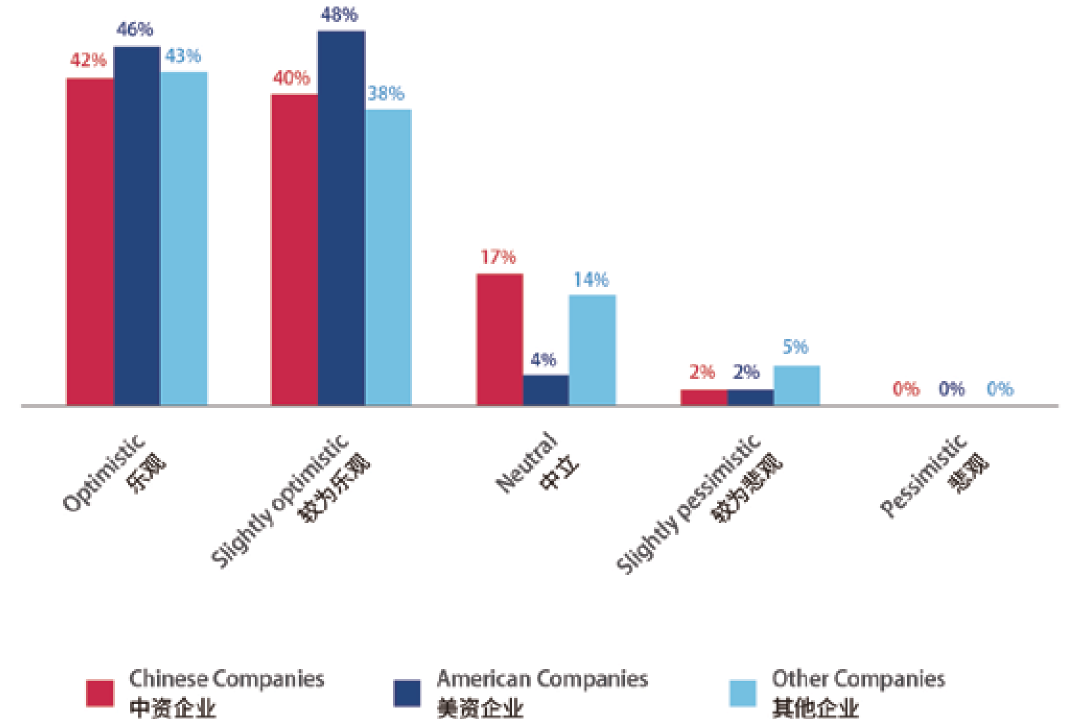
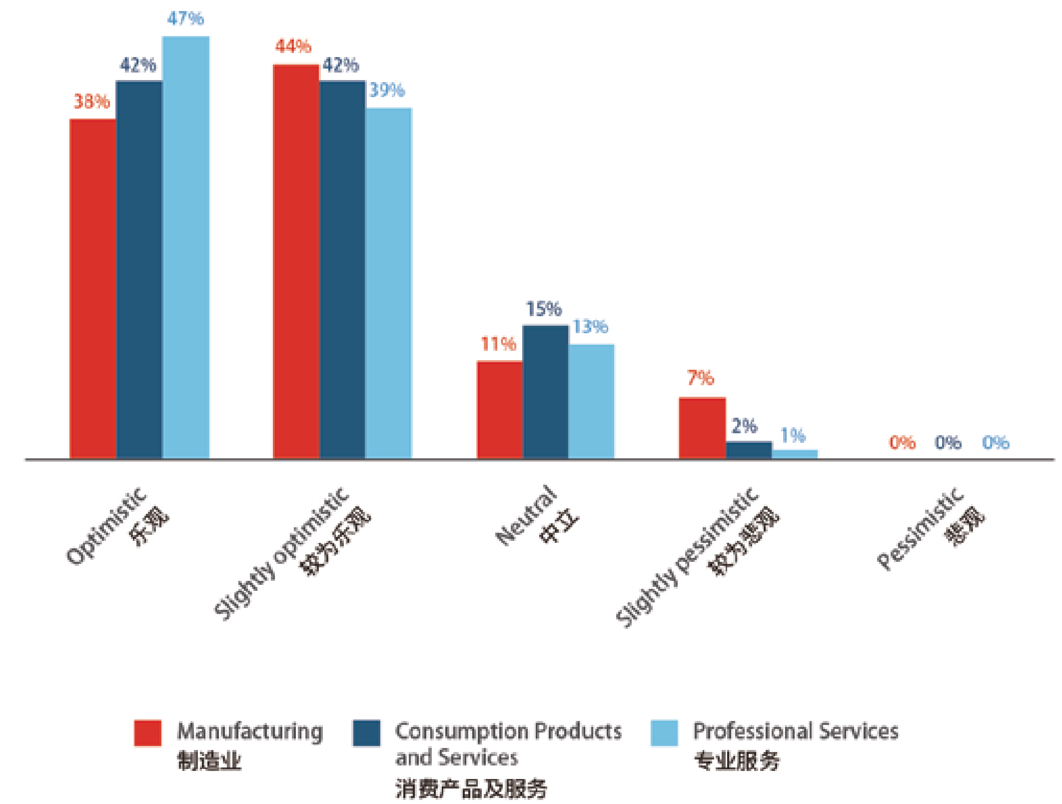


Figure 23 | Business Outlook in China (by Different Industries)
图表 23 | 对中国市场增长的期望（按照行业划分）



4.3

Reinvestment Trends

再投资趋势

More than half of the respondents consider China as the top spot in their global investment plans, a 10% increase compared with 2019. China is the most popular investment destinations among almost all the respondents, with more than 90% of the studied companies selecting China as one of the investment destinations and 44% of foreign companies choosing China as top one investment destination. More than 60% of the consumption products and services companies would choose China as their number one priority. China would be the priority for 59% professional services companies. Meanwhile, only 40% of manufacturing companies chose China as the top one destination. Similar to last year's result, China has been losing its attraction as a manufacturing base.

在本次调查中，约一半受访企业依然认为中国是其全球投资计划中的首位，同比增长10%。中国无疑是最热门的投资目的地之一，超过九成的企业会选择中国作为投资目的地，中国也是44%的外资企业的投资首选。有超过六成的消费产品及服务行业受访企业将中国作为投资首选。59%的专业服务企业将中国列为投资首选地，仅此于消费产品及服务企业。与此同时，仅四成制造业企业首选中国，这再次证实了中国作为生产制造基地的吸引力正逐渐下降。

Figure 24 图表 24 China's Ranking in Companies' Global Investment Plans (2017-2020)
中国在企业全球投资计划的地位(2017-2020)

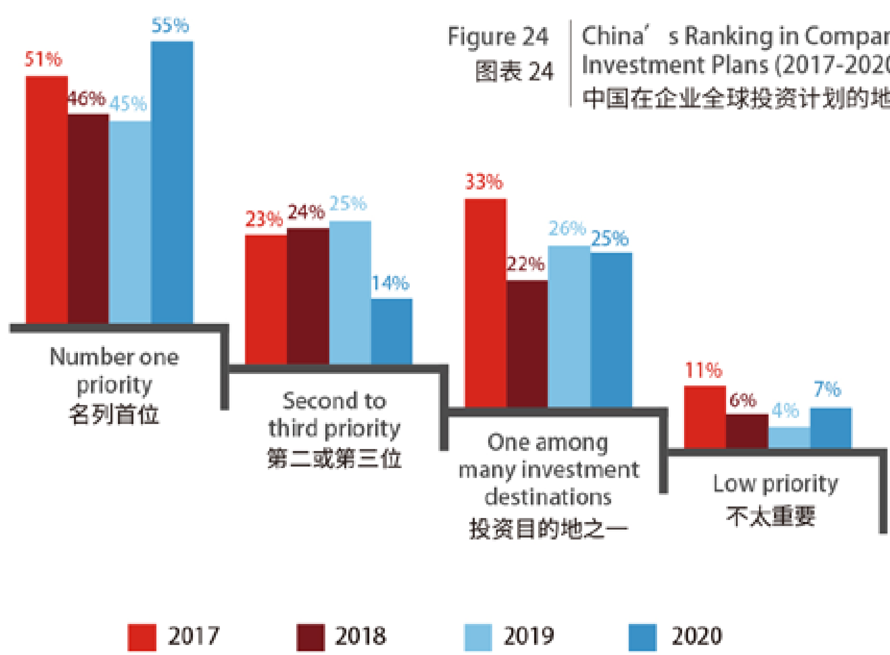


Figure 25 图表 25 China's Ranking in Companies' Global Investment Plans (by Origins of Companies)
中国在企业全球投资计划的地位(按照来源国家划分)

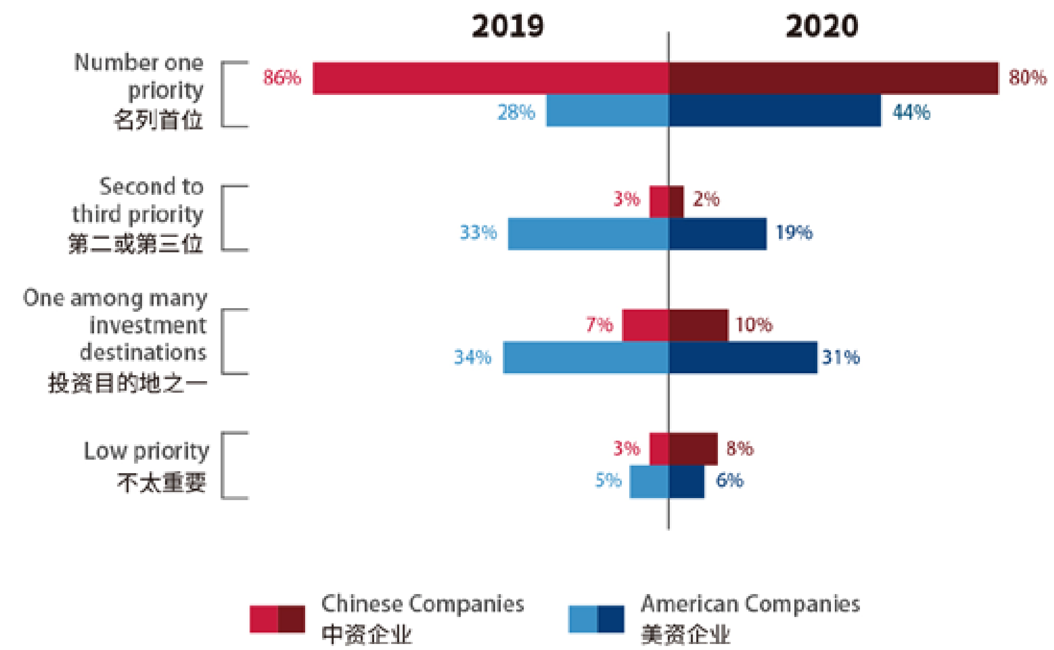
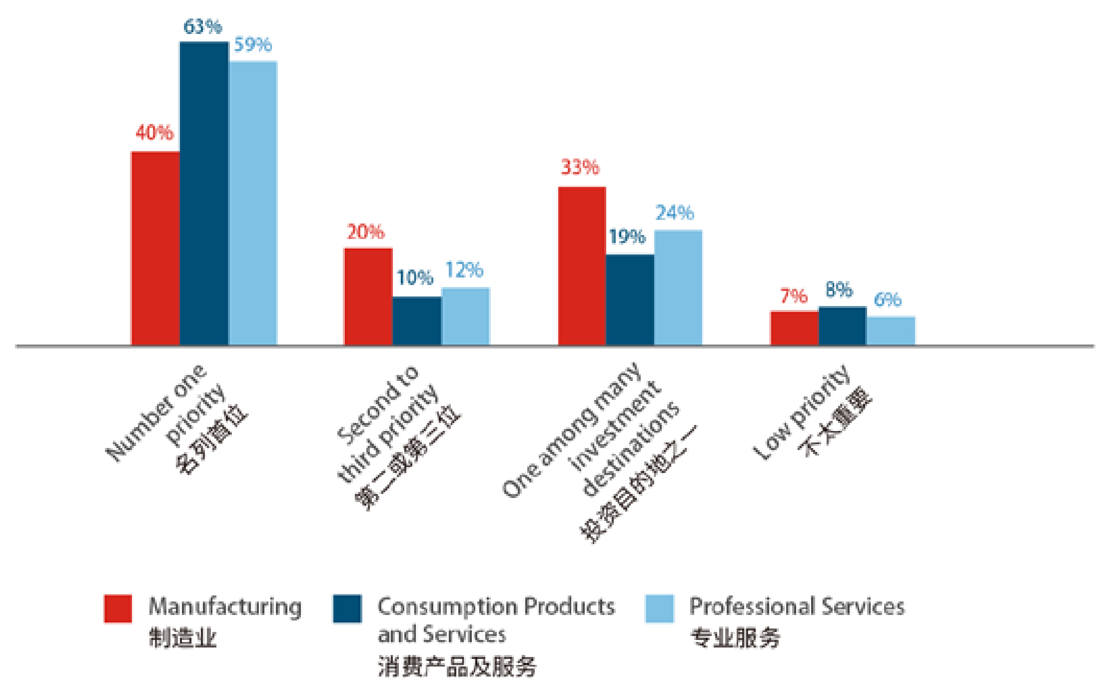


Figure 26 图表 26 China's Ranking in Companies' Global Investment Plans (by Different Industries)
中国在企业全球投资计划的地位(按照行业划分)

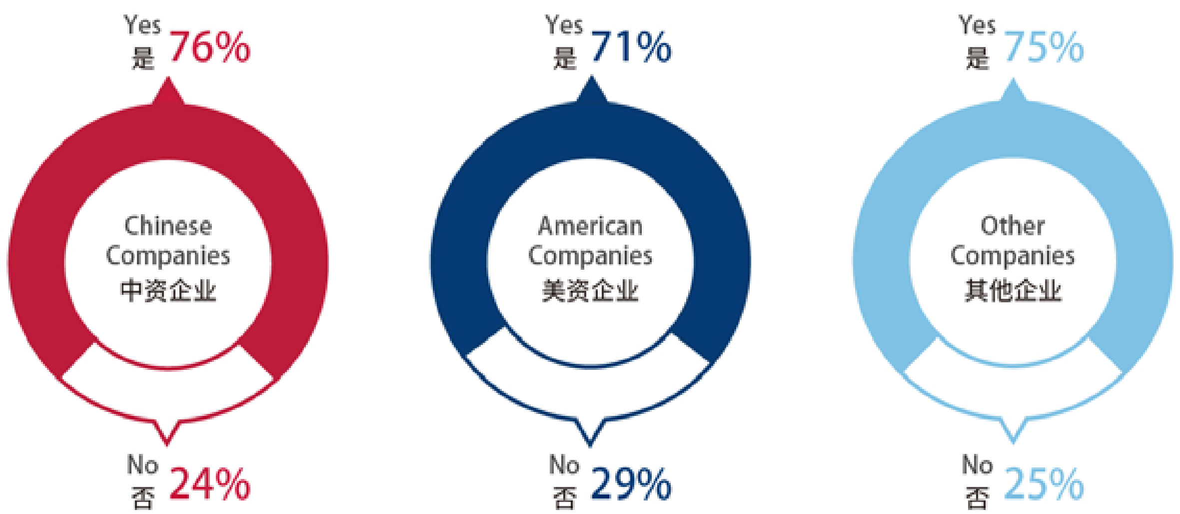


The actual reinvestment in China in 2020 was basically the same as predicted in last year's research result. Compared to the previous year, 4% fewer companies claimed that they reinvested in China in 2020.

2020年在华实际再投资情况与去年调查情况相似，对比2019年实际再投资情况，2020年进行在华实际再投资的比例下降4%。

Figure 27 图表 27 | Actual Reinvestment in China (by Origins of Companies) 在华实际再投资情况（按照来源国家划分）

	2019	2020
Yes 是	78%	74%
No 否	22%	26%



The number of companies that reinvested less than US$250 million in China in 2020 is similar to 2019. We have also witnessed the number of high-volume reinvestments (more than US$250 million) to have experienced a ten-percent drop against what was budgeted in 2020.

本期问卷调查显示，在2020年落实2.5亿美元以下的实际再投资比例与去年计划再投资的企业比例相差不大，而最终落实超过2.5亿美元再投资的企业比例比去年预估的低了10%。

Figure 28 图表 28 | Comparison of Companies' Budgeted and Actual Reinvestment in China in 2020 2020年在华预算再投资与实际再投资的企业分布情况

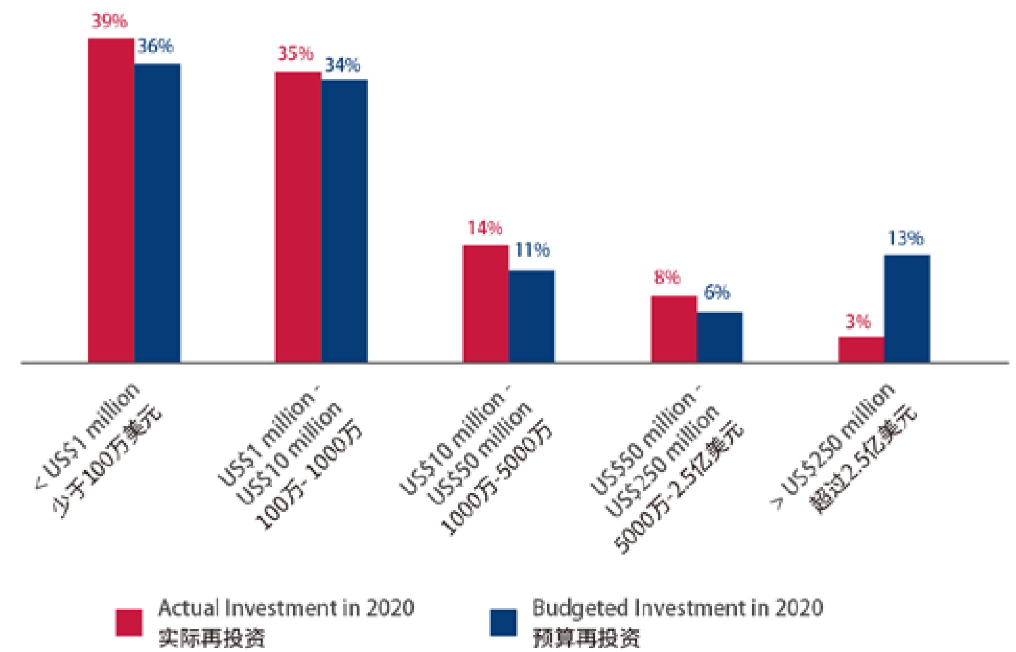
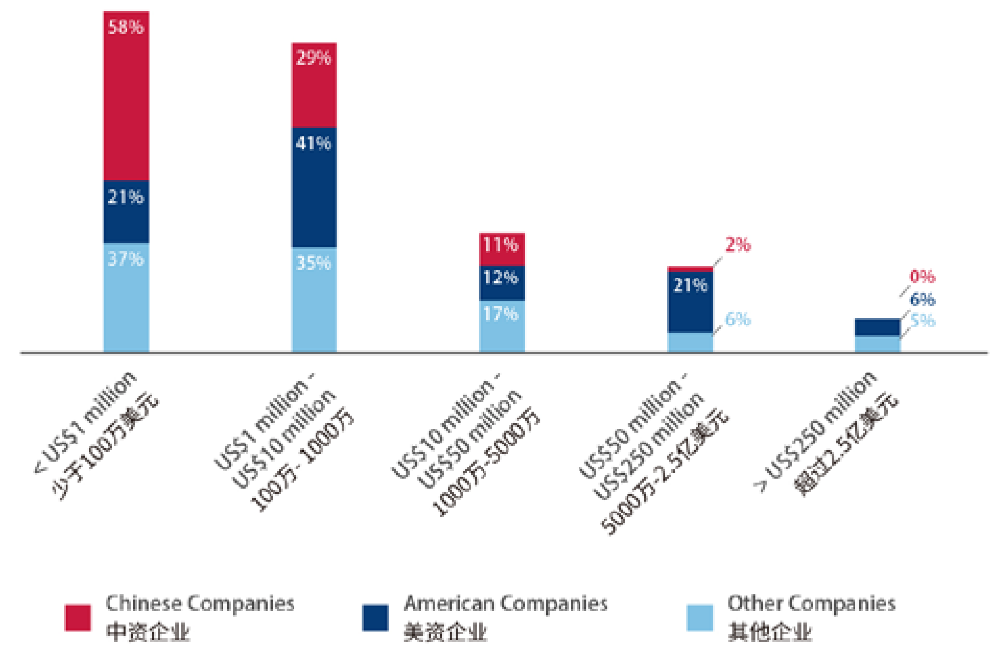


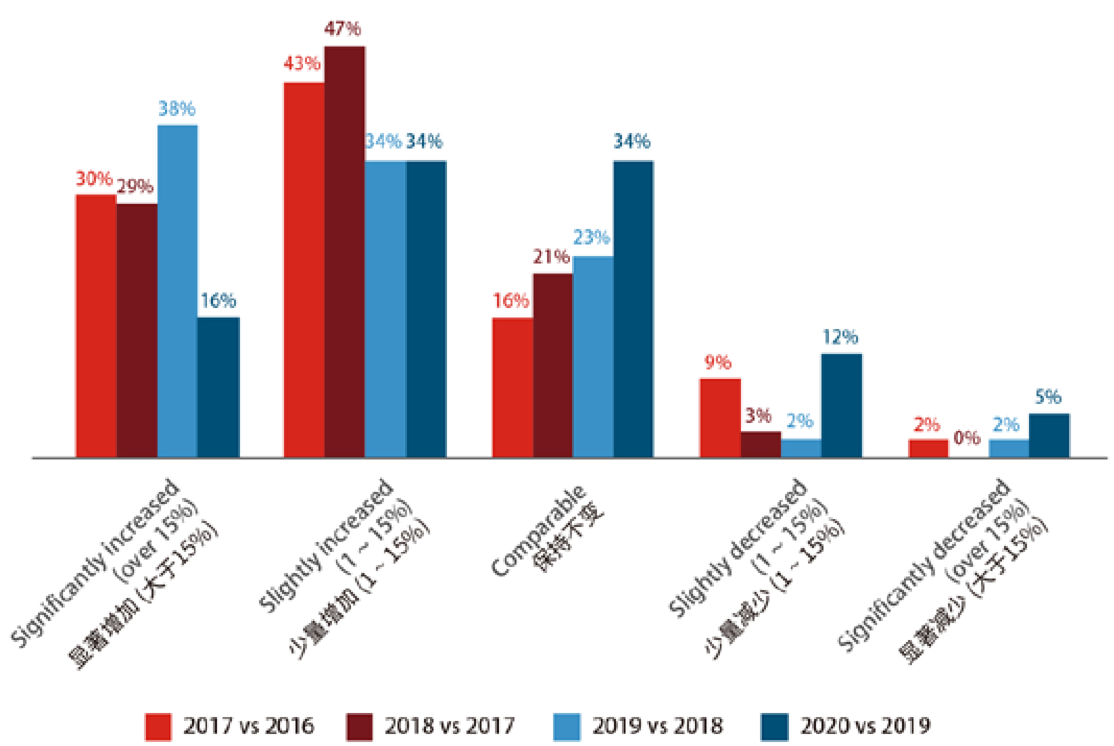
Figure 29 图表 29 | Breakdown of Companies' Actual Reinvestment in China in 2020 (by Origins of Companies) 2020年在华实际再投资的企业分布情况（按照来源国家划分）



COVID-19 has triggered the deepest global recession in decades. Various pressing factors were found to have impacted the global economy in 2020. This study shows that there was a significant change in reinvestment from profits in China year on year. More companies (17%) reported that their reinvestment quota in China in 2020 decreased compared with 2019. Compared with the last few years, there were fewer increases in reinvestment and more decreases of reinvestment in 2020.

2020年新冠疫情带来了这数十年以来最严重的全球经济衰退。多方面因素导致2020年全球经济受到影响。我们可以在本次问卷中发现，在华投资情况较往年有了明显波动。与2019年相比，17%的受访企业表示2020年减少了在华投资。而与前几年的变化比较，更多的企业选择减少投资同时更少的企业选择增加投资。

Figure 30 图表 30 | Comparison of Change of Reinvestment in China (2017-2020)
在华再投资情况对比（2017-2020）



However, it is interesting to note that companies showed strong determination to continue investing in China in 2020. In 2020, over 80% of the companies chose not to shift its investment out of China, an improvement of about 20% year on year. As for the companies that had intention to move out, nearly four-fifths of them chose to shift less than 30% of their investment projects to countries outside of China. No company showed willingness to shift completely. Asian countries other than China were the most popular reinvestment destinations for the shifts. Most of the companies were able to realize profitability in China and remained confident in China's economic outlook. It is no wonder that they continue to utilize their profits from China and take advantage of the preferential policies. Uncertainties caused by the COVID-19 pandemic in other countries is an important reason to keep their reinvestment in China.

但有趣的是，2020年企业更坚定了继续在华投资的决心。2020年超八成的企业选择不向中国以外的国家转移投资，同比增长约20%。而选择撤离的企业，近五分之四的企业选择撤离30%以下投资项目到中国以外的国家，没有任何企业完全撤离中国。而中国以外的亚洲市场是他们转移再投资的首选。大部分受访企业已实现在华盈利，且对中国的经济前景充满信心。刺激企业增加投资或转移投资到中国的首要因素是中国市场的增长潜力，其次为政策利好及其他国家新冠疫情不确定性。

Figure 31 图表 31 | Comparison of Intentions of Shifted Reinvestment (2018-2020)
是否撤离投资百分比对比（2018-2020）

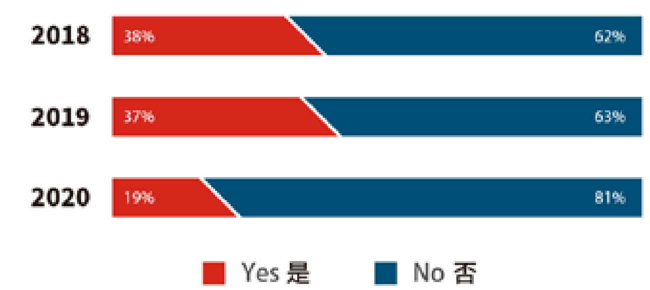


Figure 32 图表 32 | Comparison of Destinations of Shifted Reinvestment (2019-2020)
再投资转移目的地对比（2019-2020）

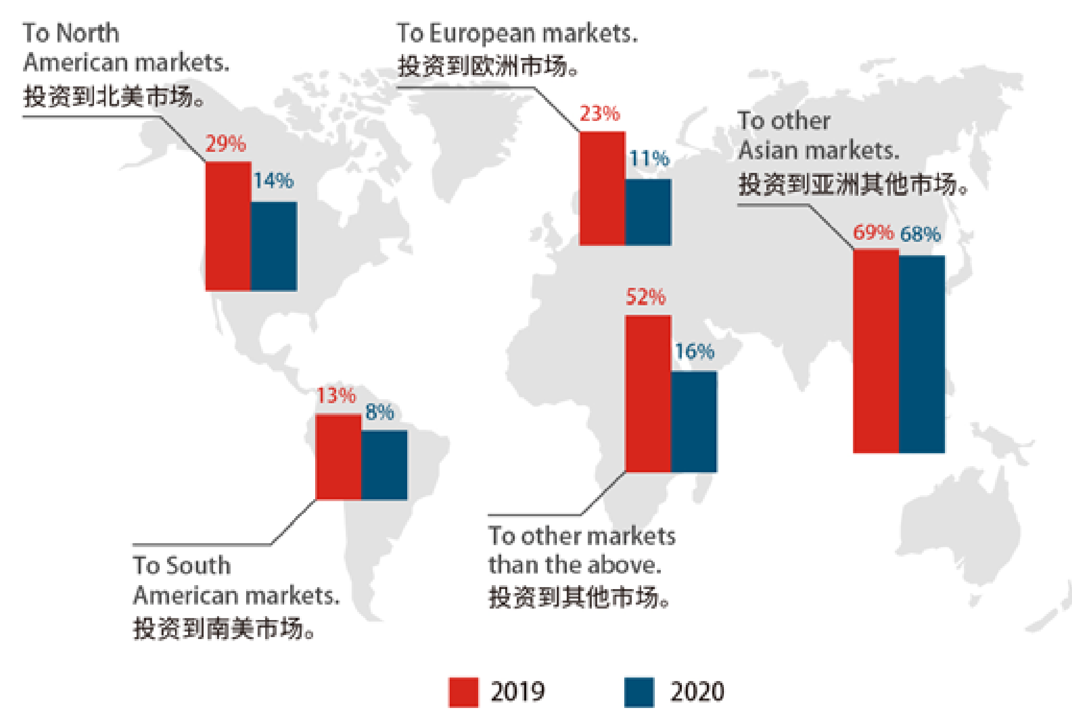
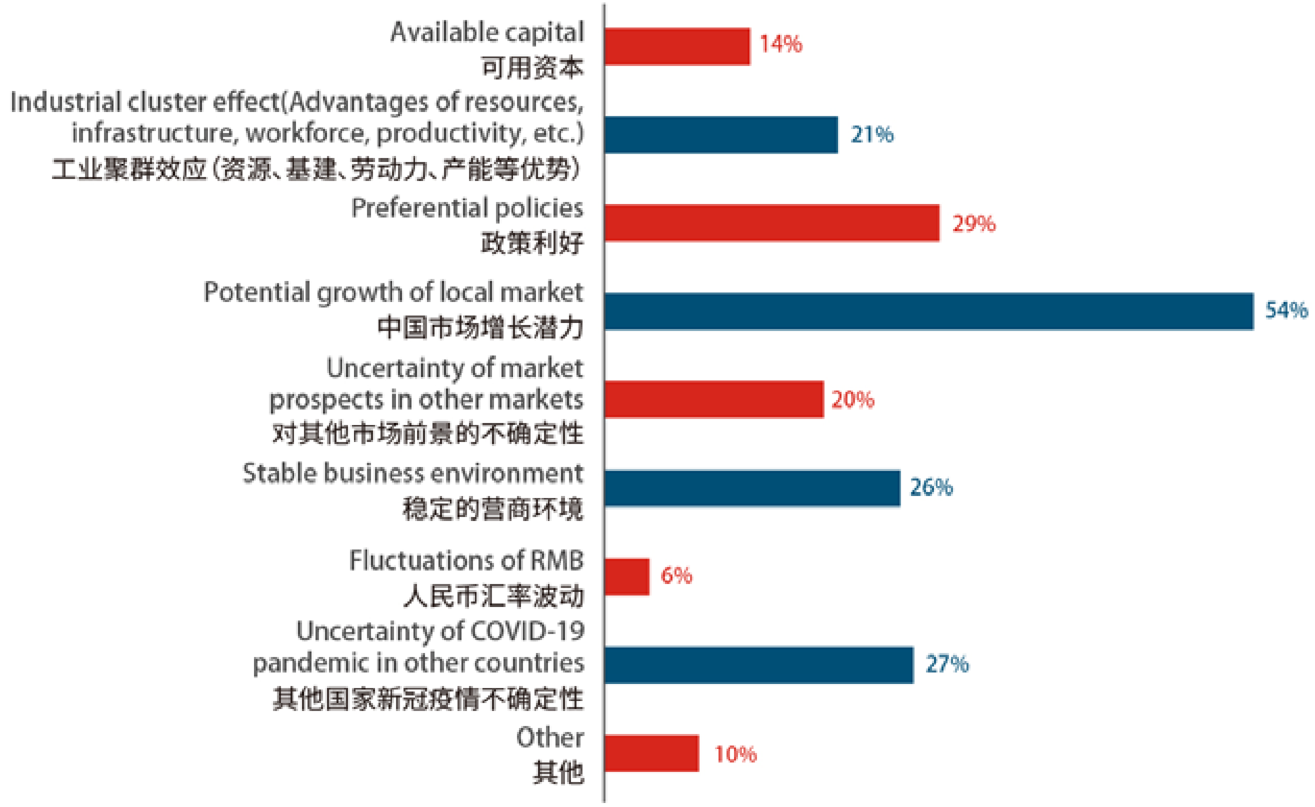


Figure 33 图表 33 | Reasons for Increasing Annual Investment in China or Shifting Investment from Other Markets to China in 2020
2020年在华投资增多或将投资从其他市场转移到中国的原因



Almost 70% of the respondents claimed that they would reinvest in China in 2021, a 10% drop compared with the number of companies making actual reinvestment in 2020. Compared to the research results in the past few years, the number of companies who would reinvest more than US$250 million is only 4% while the average of previous five years was 7.2%. Most of the companies planned to reinvest with a low quota (below US$10 million). 63% of the Chinese companies reported to reinvest below US$1 million, while 56% of American companies would reinvest in the range of US$1 million to US$10 million.

近七成受访企业表示他们将在2021年继续在华进行再投资，相比2020年有在华进行实际再投资的受访企业数量减少百分之十。与往年结果相比，投资额超过2.5亿美元的企业仅为4%，而过去五年的平均数值为7.2%。大部分受访企业2021年在华再投资预算将集中在较低额度（即1000万美元以下）。中资企业（63%）2021年在华再投资预算额主要集中在100万美元以下。而美资企业（56%）则集中在100万美元到1000万美元区间。

Figure 34 图表 34 | Plan for Reinvesting in China in 2021 (by Origins of Companies)
2021年在华再投资计划（按照来源国家划分）

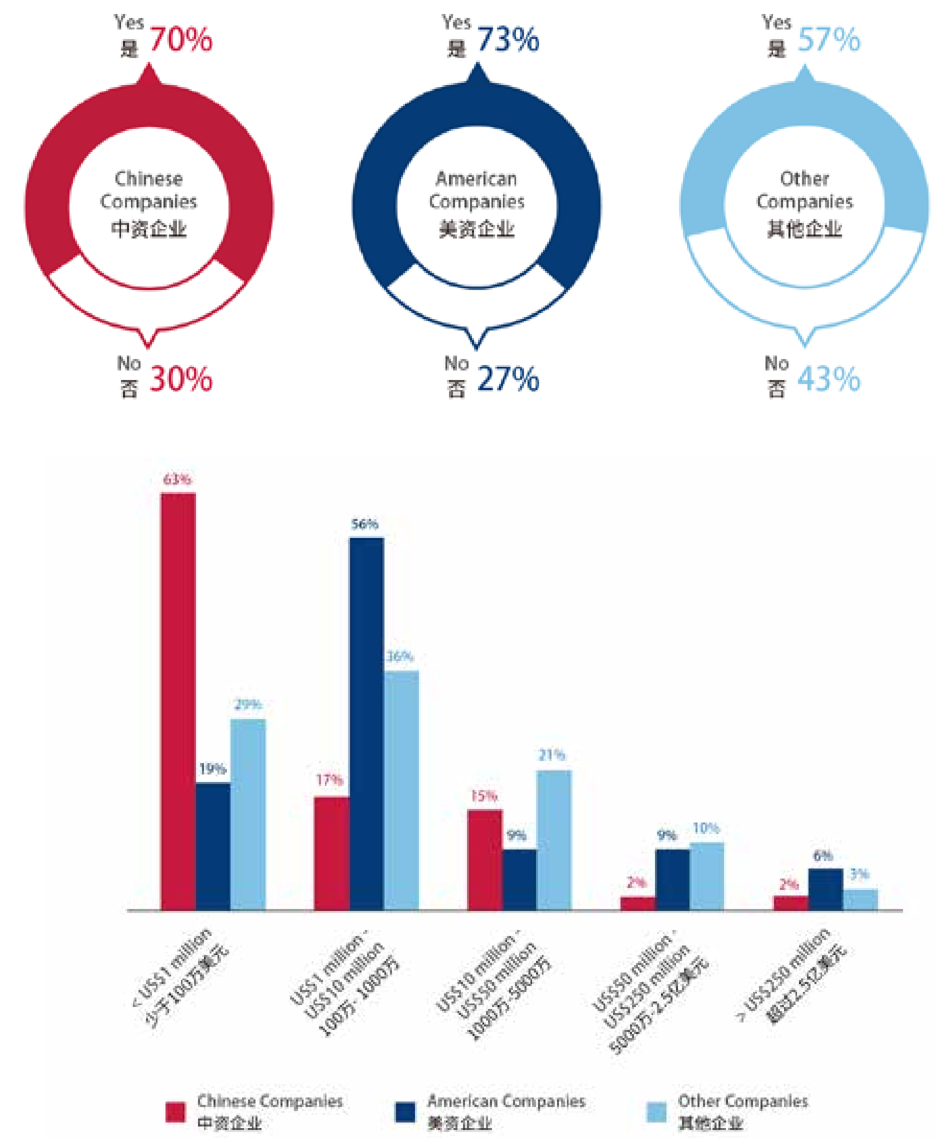
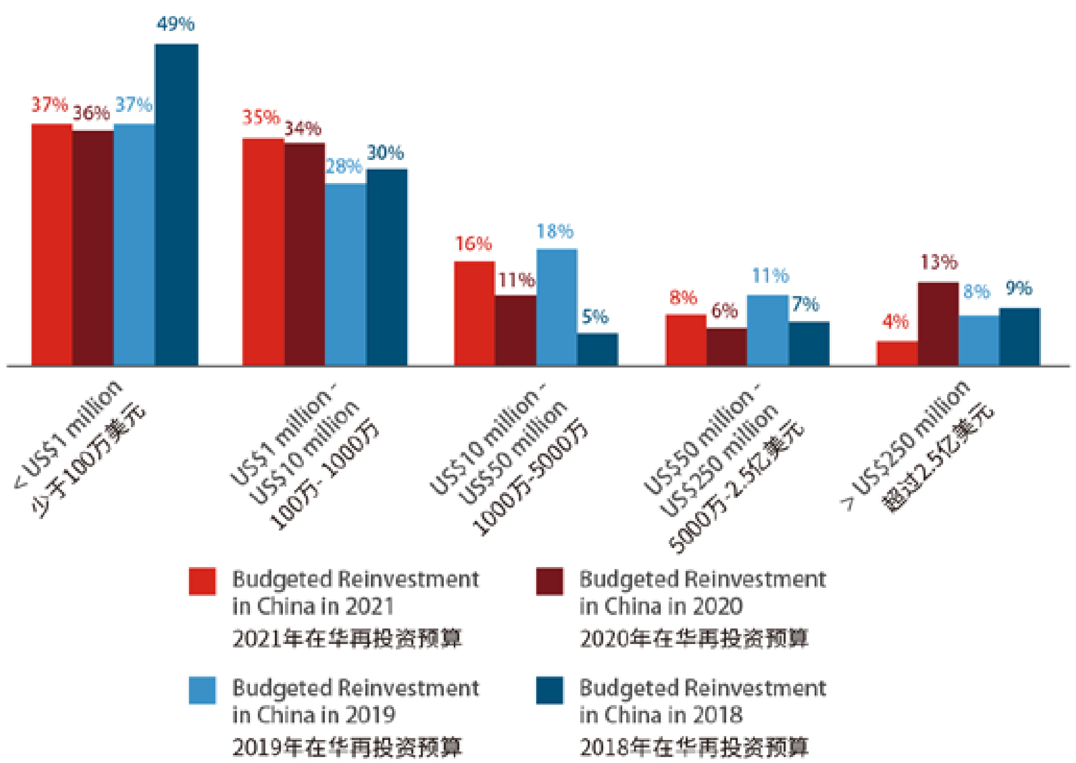


Figure 35 | Comparison of Companies' Budgeted Reinvestment in China (2018-2021)
图表 35 | 在华预算再投资情况(2018-2021)



To accommodate the fluctuating sample sizes, for the past few years we have reported reinvestment figures normalized to 100 companies as a primary year on year comparison. The figure is calculated as the products of the mean of each category range and the percentage of total respondents indicating that category, except in the case of the largest (US$250 million or more) category, for which the minimum value is used.

Noticeably we find that the reinvestment in China in 2021 will be expected to drop approximately 3% and it is estimated to amount to US$18.3 billion among all AmCham South China members.

为了降低受访企业数量变化对调查结果的影响，我们今年采用以100家企业为基数，对其进行同期的再投资预算对比，数据的计算方法是每一个类别的中间值乘以该类别在所有受访企业所占的比例，而投资额的最高项（达到或超过2.5亿美元）则取最小值2.5亿美元。

根据我们的调查结果，2021年在华再投资将下降3%，投资额预计达到183亿美元。

Normalized reinvestment figures
(Response distribution applied to 100 companies by percentage share)

标准化投资数据
（以100家企业所占比例为标准）

Projected 2021: US$ 3,065,000,000 (-3.1%)
Projected 2020: US$ 3,163,800,000 (-2.7%)
Projected 2019: US$ 4,362,500,000 (+37.9%)
Projected 2018: US$ 3,163,800,000 (+11.8%)
Projected 2017: US$ 2,829,650,000 (-4.12%)
Projected 2016: US$ 3,296,485,000 (+8.79%)
Projected 2015: US$ 3,030,100,000 (-9.30%)
Projected 2014: US$ 3,343,500,000 (+30.10%)

2021年未来一年: US$ 3,065,000,000 (-3.1%)
2020年未来一年: US$ 3,163,800,000 (-2.7%)
2019年未来一年：US$ 4,362,500,000 (+37.9%)
2018年未来一年：US$ 3,163,800,000 (+11.8%)
2017年未来一年：US$ 2,829,650,000 (-4.12%)
2016年未来一年：US$ 3,296,485,000 (+8.79%)
2015年未来一年：US$ 3,030,100,000 (-9.30%)
2014年未来一年：US$ 3,343,500,000 (+30.10%)

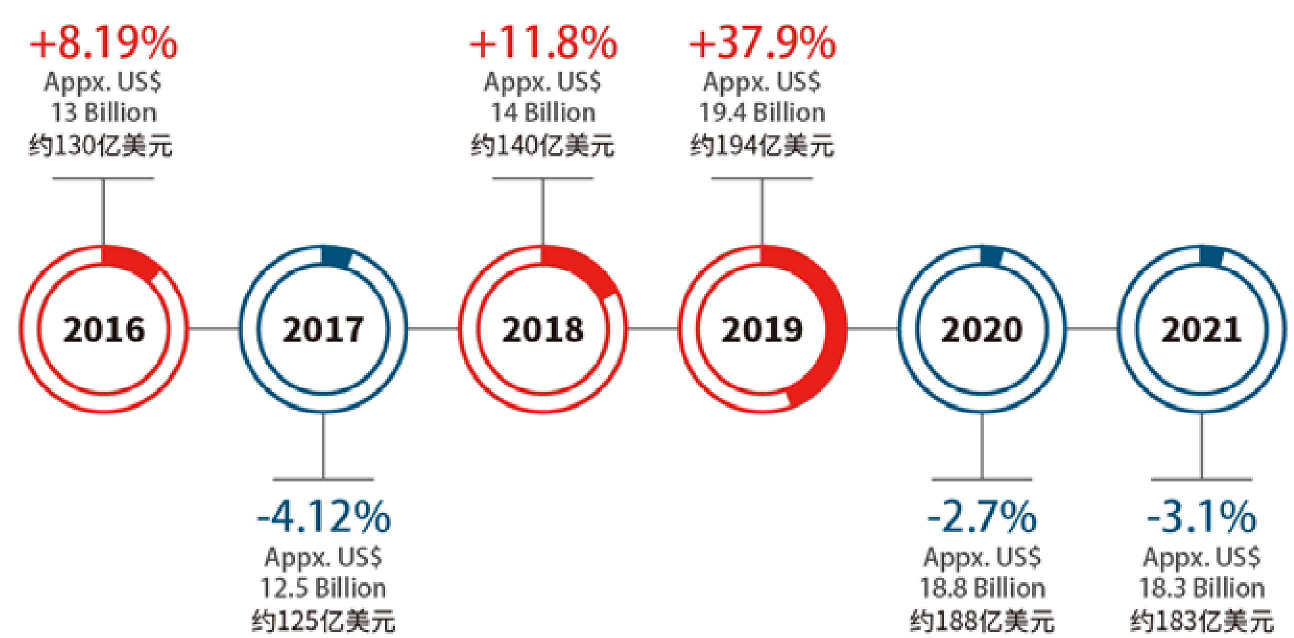
Estimated reinvestment volumes
(Normalized, scaled by an adjusted factor representing chamber members)

预估投资额
（标准化预估，以会员企业为系数）

Estimated 2021: US$ 18,260,166,062 (-3.1%)
Estimated 2020: US$ 18,848,780,877 (-2.7%)
Estimated 2019: US$ 19,377,342,953 (+37.9%)
Estimated 2018: US$ 14,052,959,916 (+11.8%)
Estimated 2017: US$ 12,568,733,177 (-4.12%)
Estimated 2016: US$ 13,087,053,000 (+8.79%)
Estimated 2015: US$ 12,029,504,000 (-9.30%)
Estimated 2014: US$ 13,273,703,00 (+30.10%)

2021年未来一年: US$ 18,260,166,062 (-3.1%)
2020年未来一年: US$ 18,848,780,877 (-2.7%)
2019年未来一年：US$ 19,377,342,953 (+37.9%)
2018年未来一年：US$ 14,052,959,916 (+11.8%)
2017年未来一年：US$ 12,568,733,177 (-4.12%)
2016年未来一年：US$ 13,087,053,000 (+8.79%)
2015年未来一年：US$ 12,029,504,000 (-9.30%)
2014年未来一年：US$ 13,273,703,000 (+30.10%)

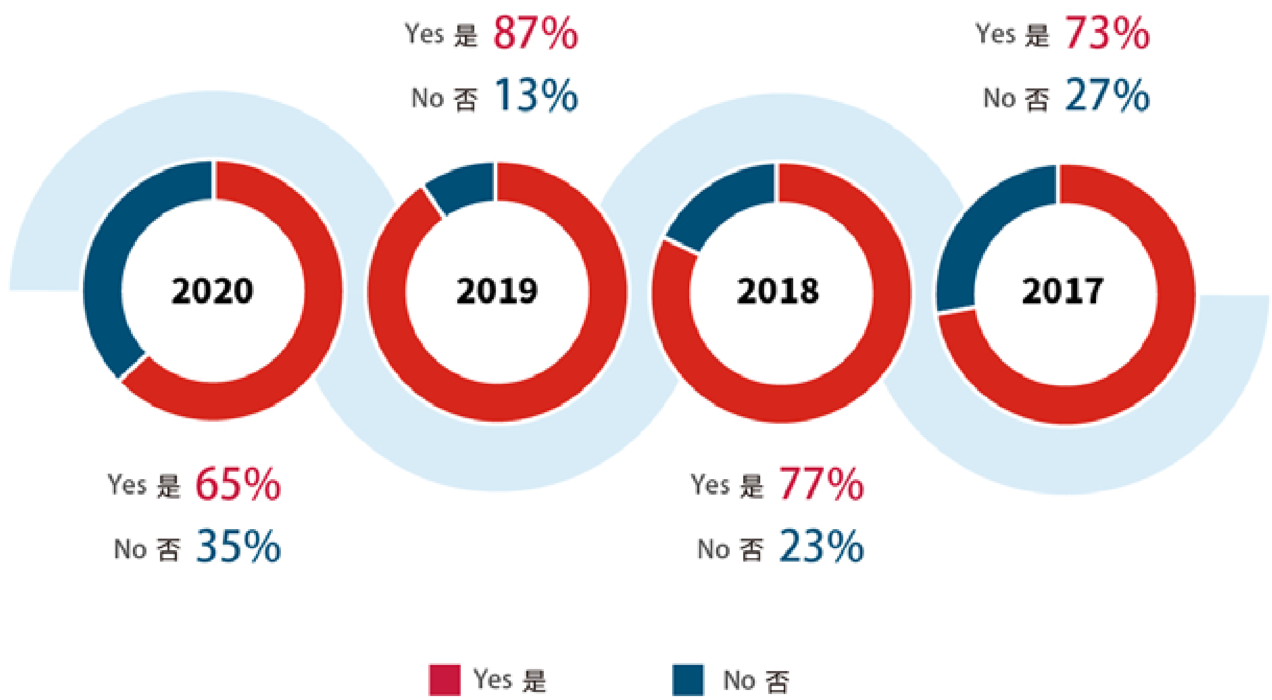
Figure 36 | Volume of Budgeted Reinvestment from Profits in China(2016-2021)
图表 36 | 在华利润再投资预算额(2016-2021)



Referring to the future expansion in the next three years, a vast majority of the respondents (65%) still plan to expand in China. However, as the COVID-19 may cast a long shadow, the proportion of companies who have expansion plans in China (in next three years) fell to a new low compared to the past five years.

绝大部分的受访企业(65%)在未来三年有在华扩张的计划。但是由于新冠疫情可能带来的长期影响，未来三年在华扩张的企业比例达到五年间最低点。

Figure 37 图表 37 | Comparison of Expansion Plan in China in Next Three Years (2017-2020) 未来三年在华扩张计划对比(2017-2020)



Guangzhou remains the top preferred reinvestment destination in China. This is the fourth consecutive year that Guangzhou ranks the most popular city for investment in China in our research. Other most favored reinvestment destinations by companies are China's top-tier cities Shanghai, Shenzhen, and Beijing. For this study other popular investment destination cities include Dongguan, Chengdu, and Zhuhai. However, free trade zones in South China have become decreasingly attractive to investors in recent years. Only about a quarter of enterprises expressed interest in investing in the South China Free Trade Zones. Nansha Free Trade Zone in Guangzhou was the most popular among studied companies, followed by Qianhai in Shenzhen and Hengqin in Zhuhai.

广州连续第四年在我们的调查中被受访企业列为最受欢迎的投资城市，其次是上海、深圳、北京。今年调查中其他热门投资目的地城市包括东莞、成都、珠海。华南自贸区近年来对投资者的吸引力不断下降。仅约四分之一的企业表示对华南地区自贸区投资感兴趣。其中广州南沙自贸区最受欢迎，其次是深圳前海以及珠海横琴。

Figure 38 图表 38 | Comparison of Top Investment Destinations (2017-2020) 首选投资目的地对比(2017-2020)

	Guangzhou 广州	Shenzhen 深圳	Shanghai 上海	Beijing 北京	Other 其他
2020	34%	15%	19%	3%	23%
2019	40%	22%	13%	2%	23%
2018	31%	10%	20%	15%	24%
2017	31%	18%	15%	7%	29%

Figure 39 图表 39 | Comparison of Interest in South China's Free Trade Zone (FTZ) (2016-2020) 对华南地区自贸区的兴趣对比(2016-2020)

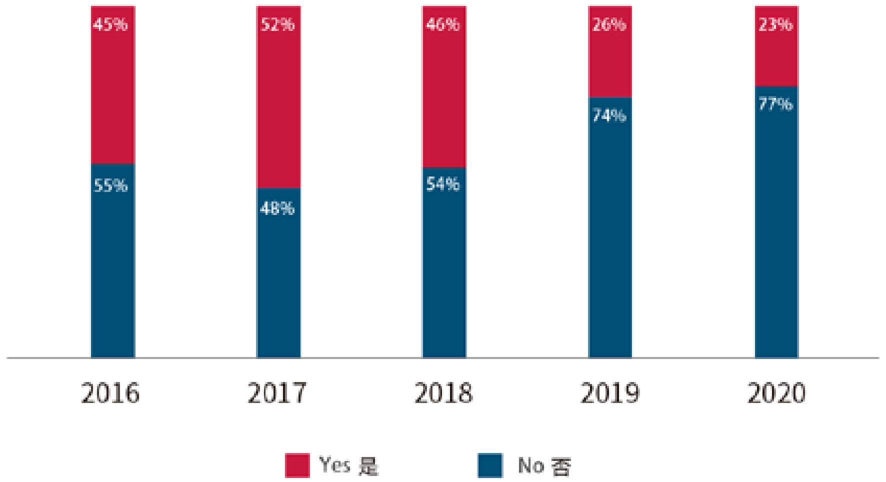


Figure 40 图表 40 | Comparison of Investment Interest in South China's Free Trade Zone (FTZ) (2016-2020) 华南自贸区投资兴趣的对比(2016-2020)

	2016	2017	2018	2019	2020
Nansha FTZ 南沙自贸区	48%	55%	59%	20%	55%
Qianhai FTZ 前海自贸区	35%	29%	18%	53%	42%
Hengqin FTZ 横琴自贸区	6%	10%	18%	27%	26%
Fuzhou FTZ 福州自贸区	7%				1%
Xiamen FTZ 厦门自贸区	2%	5%			4%
Pingtan FTZ 平潭自贸区	2%				
Hainan FTZ 海南自贸区			6%		19%

4.4 *Business and Operational Environment* 营商及运营环境

A steadily increasing trend of the business environment in South China can be easily found in this research. While the number of studied companies rating the business environment in South China as very good or good was higher than the previous year, accounting for nearly 80%, those seeing a decline in the business environment account for only about 14%, a decrease of 6% year on year.

华南地区营商环境持续改善总体呈现上升趋势。认为华南地区营商环境"很好"及"好"的受访企业比例都高于去年并且接近80%。而认为华南地区整体营商环境同比有所下降的企业也减少,今年仅为14%,同比下降百分之六。

Figure 41 图表 41 | Comparison of Business Environment in South China (2016-2020) 华南地区营商环境对比(2016-2020)

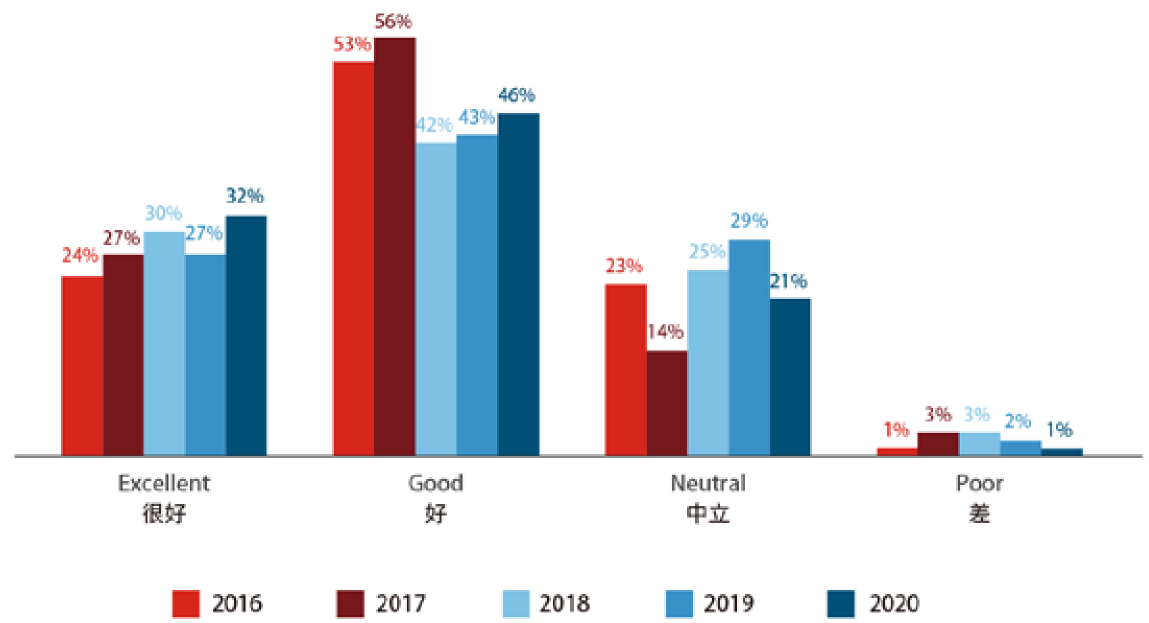
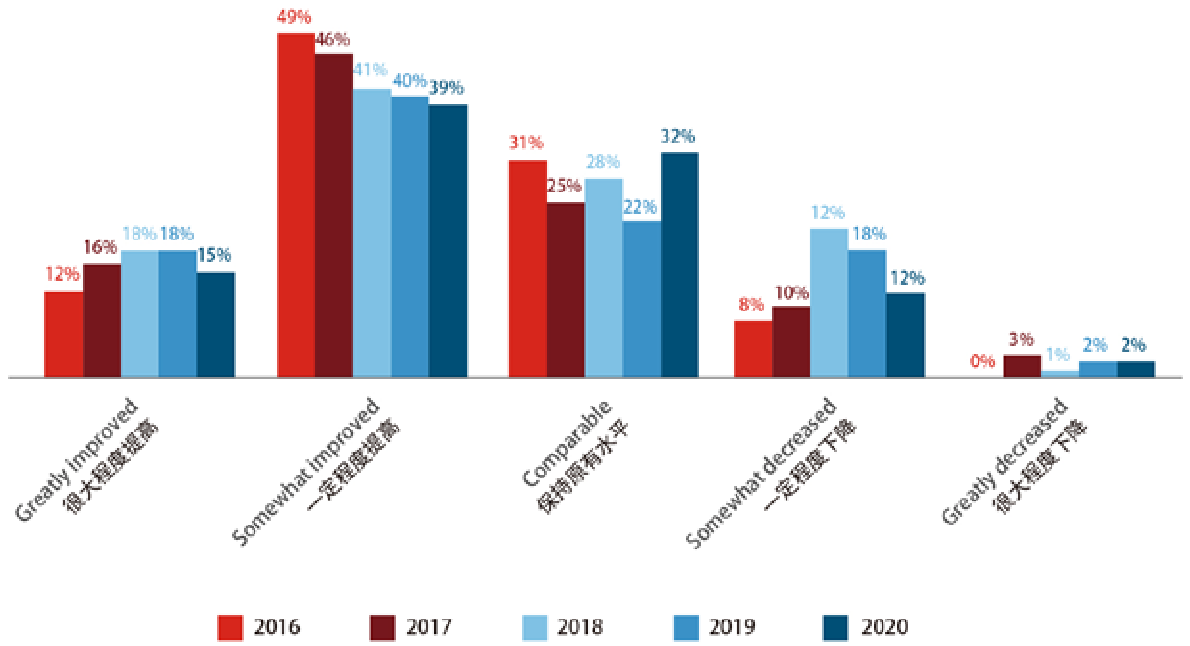


Figure 42 图表 42 | Comparison of Improvement/Deterioration of Overall Business Environment in South China (2016-2020) 华南地区整体营商环境对比(2016-2020)



Similar to previous years, most of the companies explained that they chose South China mainly because of the potential for market growth, seconded by the advantage of proximity to Hong Kong, Macao, and Taiwan. Better infrastructure than other places in China became the third reason. What is noticeable is the shortage of qualified personnel, fierce local competition, and rising labor costs were the top three concerns for a majority of the companies in previous years. The fierce local competition dropped out of the top three major challenges last year. The results in this study were roughly the same as the previous year, but the first challenge is rising operation costs, followed by the rising labor costs, and the third challenge is the shortage of qualified personnel. This shows that the fierce local competition has eased, but also implies that talents and costs issues are still unresolved.

与往年的调查结果相仿，大部分的受访企业表示选择在华南地区发展的主要原因是其具有市场增长的潜力，其次是毗邻港澳台地区的优势。而华南地区更好的基础设施则成为第三个原因。值得一提的是，回顾过去的调查，缺乏合格的人才、本地竞争激烈及人力资源成本的增加一直是大部分受访企业在华南地区发展的前三项主要挑战。而本地竞争激烈在2019年退出了前三项主要挑战的行列。这次调查结果与前一年大体一致，但第一大挑战是不断上升的运营成本，其次是人力资源成本增加，第三大挑战是缺乏合格的人才。这说明本地激烈的竞争得以缓解，但人才和成本问题仍未得到很好的解决。

Figure 43 图表 43 | Comparison of Strategic Reasons for Establishing Companies in South China (2017-2020) 企业在华南地区运营的战略考虑对比(2017-2020)

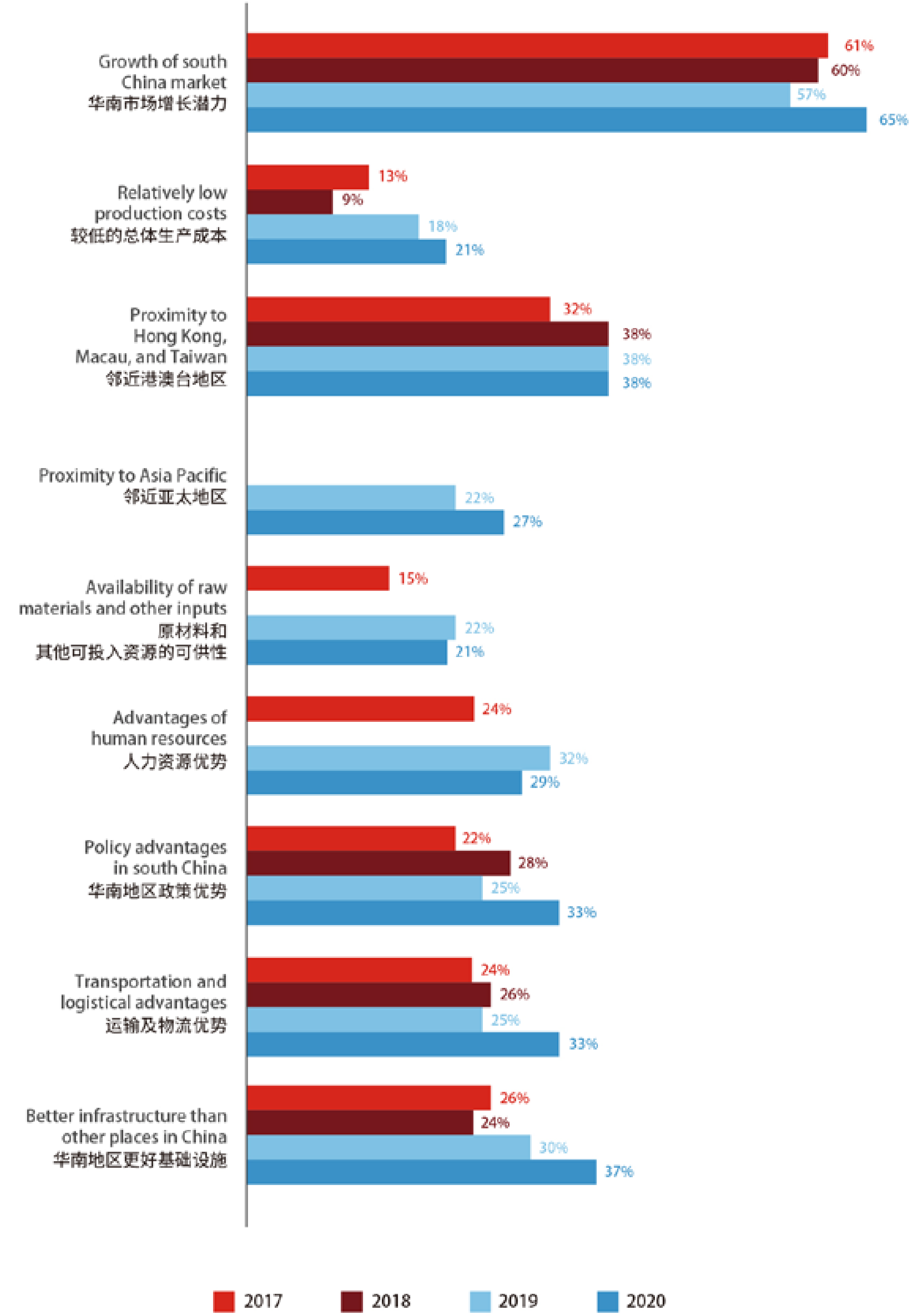


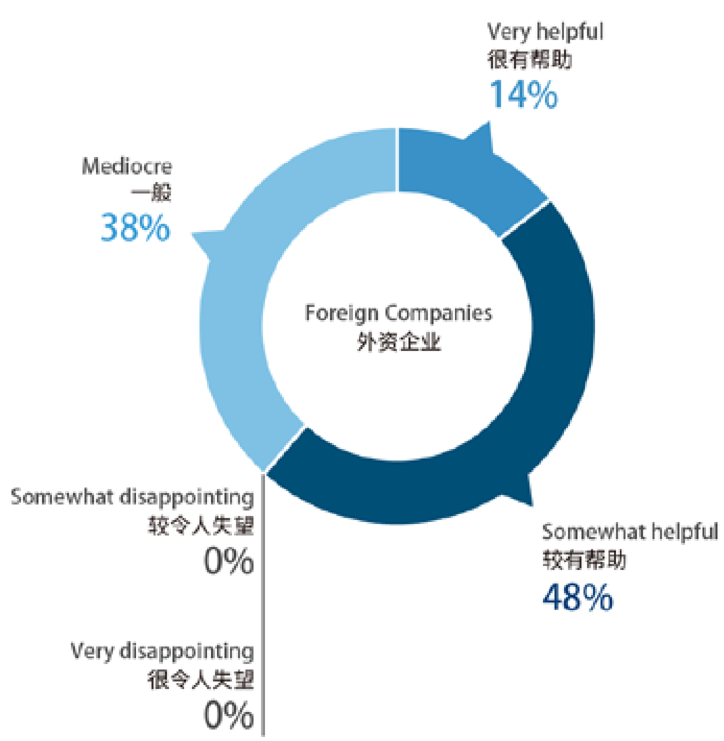
Figure 44 | Comparison of Top Three Challenges Companies Face in South China (2017-2020)
图表 44 | 企业在华南地区发展的前三项主要挑战对比 (2017-2020)

	2020	2019	2018	2017
Top One 第一大挑战	Rising operation cost 上升的成本	Fierce local competition 本地竞争激励	Shortage of qualified personnel 缺乏合格的人才	Fierce local competition 本地竞争激励
Top Two 第二大挑战	Rising labor costs 人力资源成本增加	Shortage of qualified personnel 缺乏合格的人才	Fierce local competition 本地竞争激励	Rising labor costs 人力资源成本增加
Top Three 第三大挑战	Shortage of qualified personnel 缺乏合格的人才	Rising operation cost 上升的成本	Rising labor costs 人力资源成本增加	Shortage of qualified personnel 缺乏合格的人才

More than half of the respondents from foreign companies consider the MOFCOM Order No. 3 of 2020 on *Rules on Handling Complaints of Foreign-Invested Enterprises* helpful. None of them feel disappointed with it.

超过一半的外企认为商务部2020年第3号令《外商投资企业投诉处理规则》对企业有帮助，没有任何企业对此感到失望。

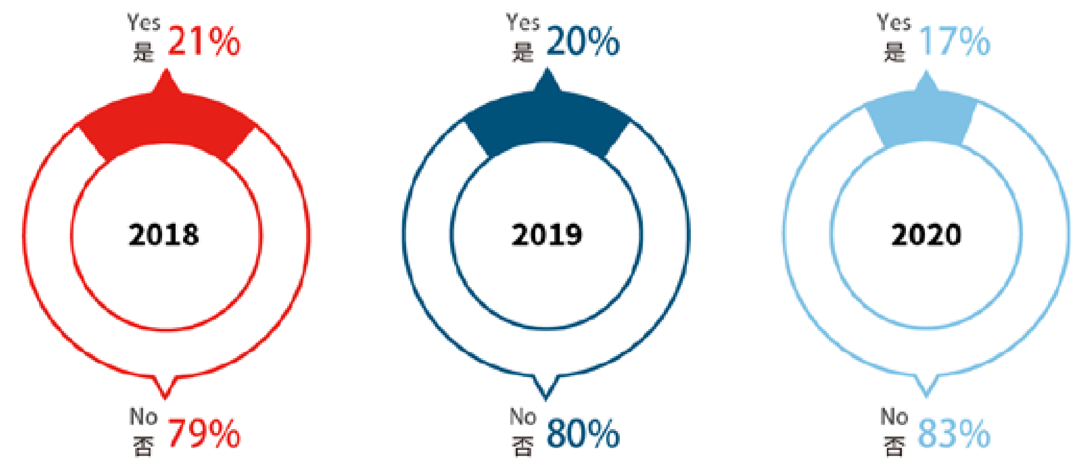
Figure 45 | Outlook on the MOFCOM Order No. 3 of 2020 on *Rules on Handling Complaints of Foreign-Invested Enterprises*
图表 45 | 对商务部2020年第3号令《外商投资企业投诉处理规则》的看法



Even though only a small number of the companies have appealed a case in China's intellectual property rights courts, most of those with such experience consider the establishment of the courts as "very helpful" or "somewhat helpful".

尽管只有较少一部分受访企业有在中国知识产权法庭处理案件的经历，大部分有该经历的受访企业认为中国知识产权法庭"很有帮助"或"较有帮助"。

Figure 46 | Comparison of Experience of Appealing a Case in China's IPR Court (2018-2020)
图表 46 | 在中国知识产权法院处理案件的经历的对比 (2018-2020)



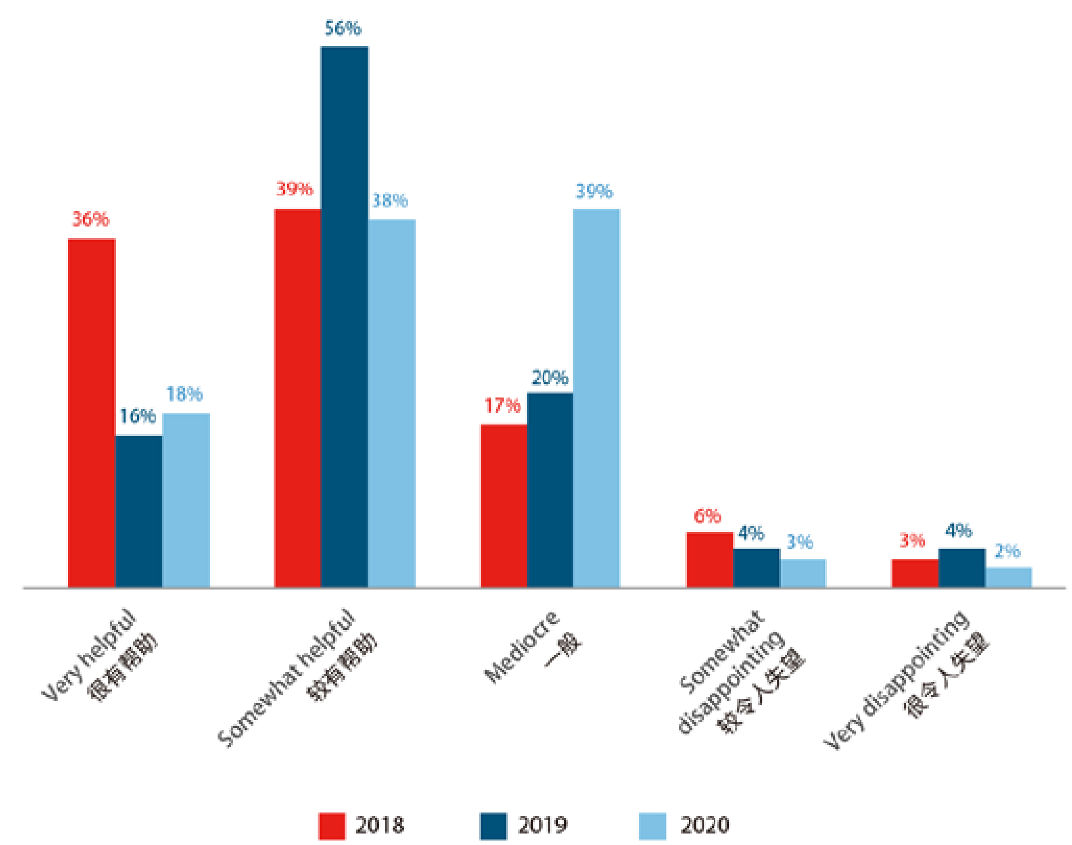
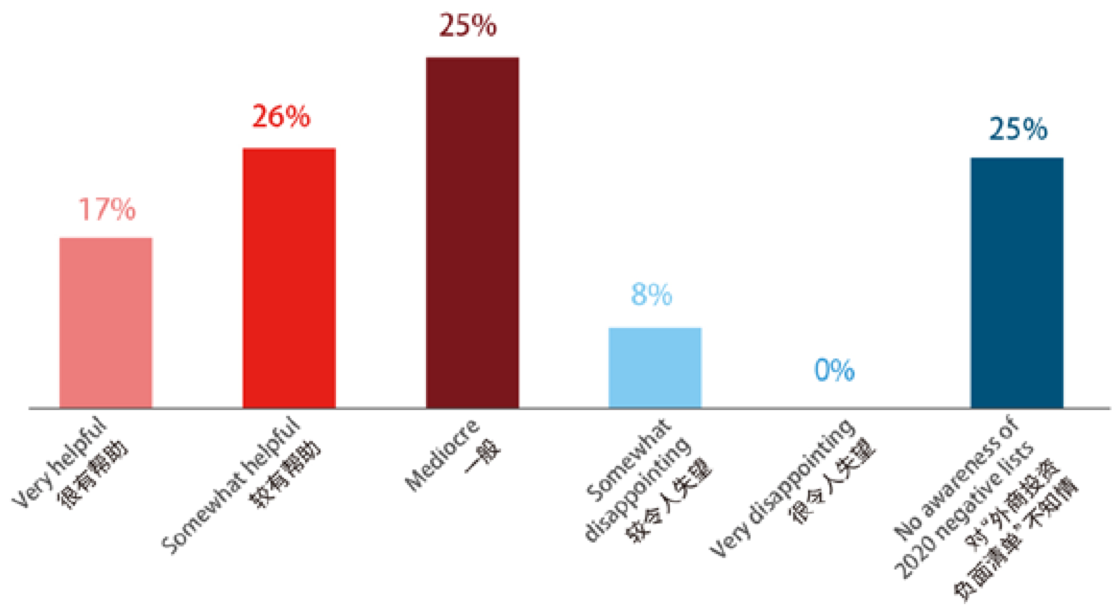


Figure 47 图表 47 | Evaluation of 2020 Negative Lists for Foreign Investment 对2020年外商投资负面清单评价



Three quarters of the respondents claiming that their operations have been impacted by the visa and travel restrictions due to COVID-19, more than half of the companies were affected by China's visa and travel restrictions while nearly 40% experienced US restrictions. Impacts of the travel restrictions on operations in China included cancellation of all international business travel, followed by cancellation of international events/meetings in China and the absence of management due to executives being unable to return to China.

四分之三的受访企业表示受到新冠疫情相关签证与旅行限制的影响，其中过半的企业受到中国签证和旅行限制的影响，同时也有近四成的企业受到美国签证和旅行限制的影响。而旅行限制对在华业务的影响主要包含取消所有国际商务旅行，其次是取消在中国的国际活动，然后是企业高管无法返华影响了企业管理。

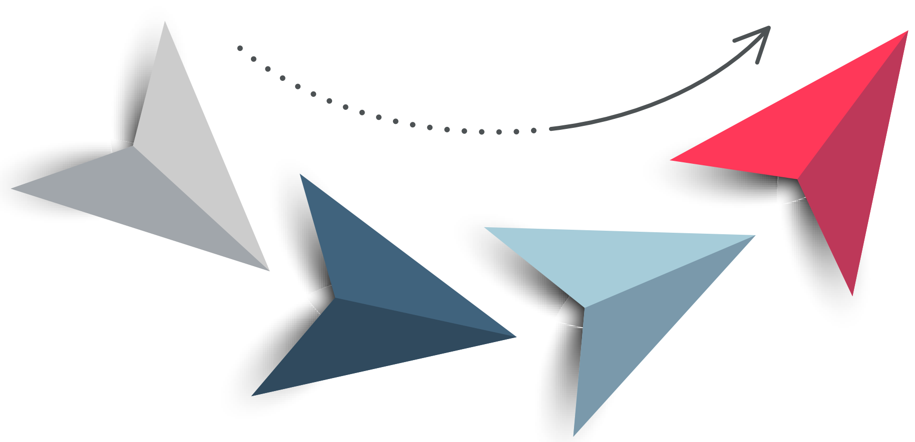


Figure 48 图表 48 | Impacts of the Visa and Travel Restrictions due to COVID-19 on Company Operations 由于新冠疫情导致的签证和旅行限制对企业运营的影响

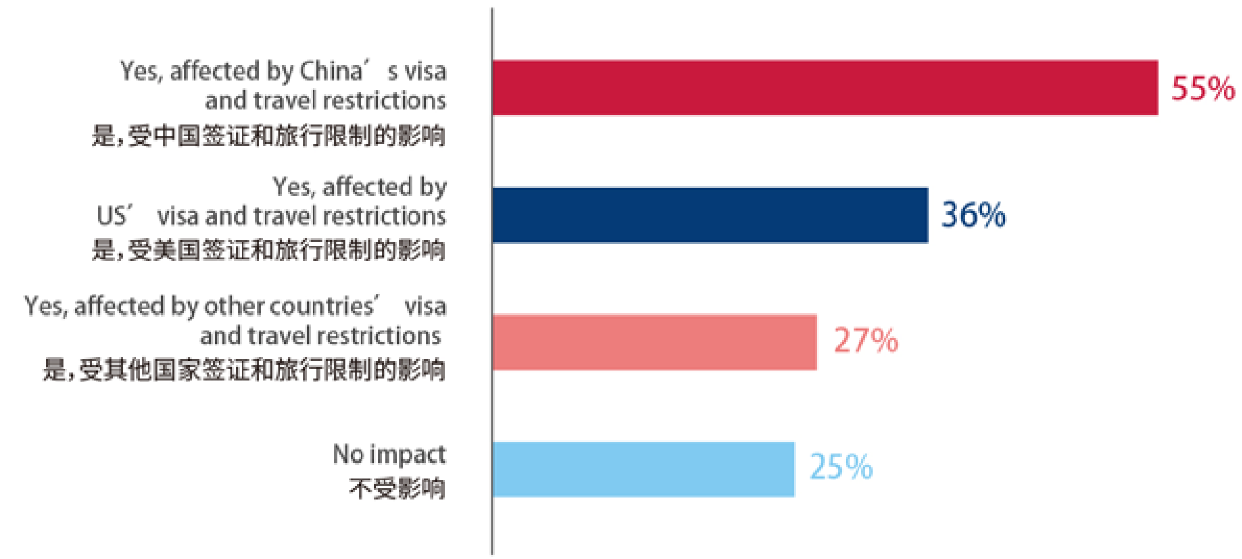
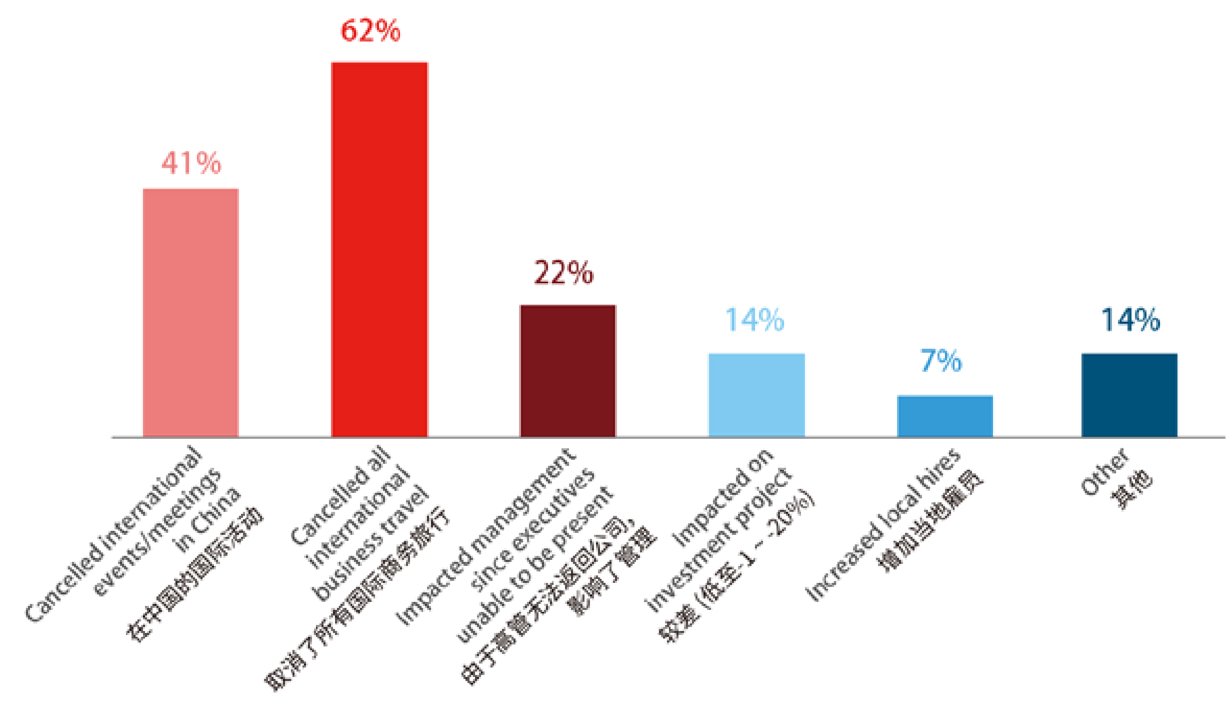


Figure 49 图表 49 | Impacts of the Travel Restrictions on Operations in China 旅行限制对在中国的业务的影响



4.5 US-China Bilateral Relations

美中双边关系

95% of respondents state that they will not decouple from China despite US-China trade tensions. Generally speaking, companies are more optimistic about US-China relations in 2021 compared to previous years. While Chinese companies (40%) are more optimistic, 53% of US companies hold a neutral attitude and 10% feel pessimistic toward the relations.

95%的受访企业表示不会因中美贸易摩擦而完全撤离中国市场。总体而言，相较往年受访企业对2021年美中关系前景更为乐观。四成的中资企业持乐观的态度，超过五成的美资企业持中立的态度而仅一成美资企业持悲观态度。

Figure 50 Comparison of Intention to Decouple from China due to US-China Trade Tensions
图表 50 因中美贸易摩擦完全撤离中国市场意向对比

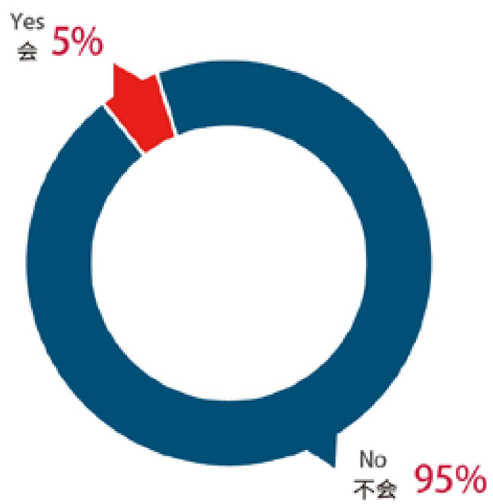
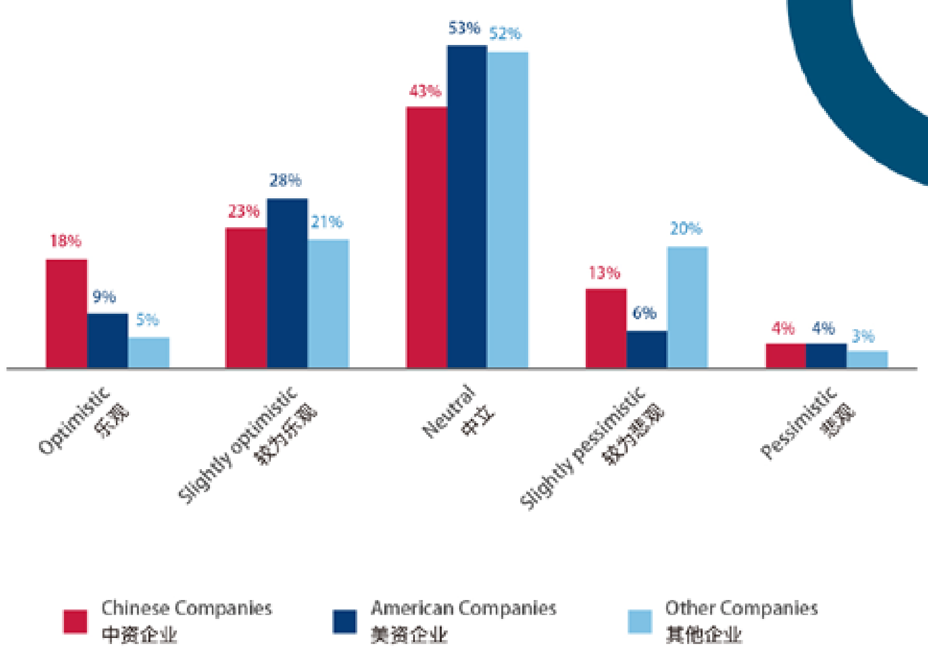


Figure 51 Confidence in US-China Relation in 2021 (by Origins of Companies)
图表 51 看待2021年美中关系的前景（按照来源国家划分）



Even though the majority of companies studied believe the US-China trade dispute is more likely to expand in 2021, which is similar to last year's result, 86% of them believed that it is "very likely" or "probably" to expand, but this was slightly lower from last year. As the trade dispute between the two countries has continued for quite a long time, more companies expect that its impact will last longer than in our previous research.

2020年调查结果显示虽然与往年相似，大多数受访企业认为美中贸易纷争在2021年扩大的可能性较大，86%的受访企业认"非常可能"或"可能"扩大，但相较去年该比例稍有回落。由于美中贸易纷争已持续一段时间，相比我们之前的调查更多受访企业预计贸易纷争对其影响的时间增长。

Figure 52 Escalation of US-China Trade Dispute in 2021 (by Origins of Companies)
图表 52 美中贸易纷争在2021年扩大的可能性（按照来源国家划分）

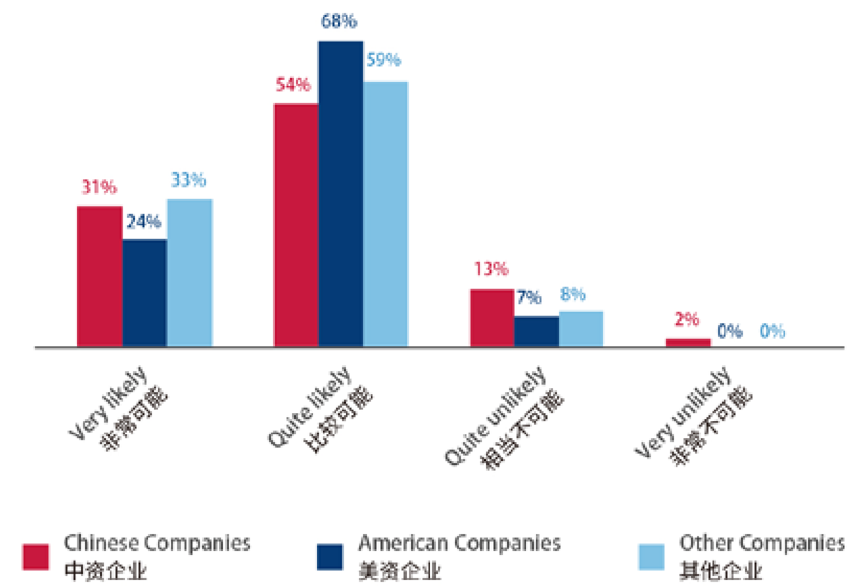
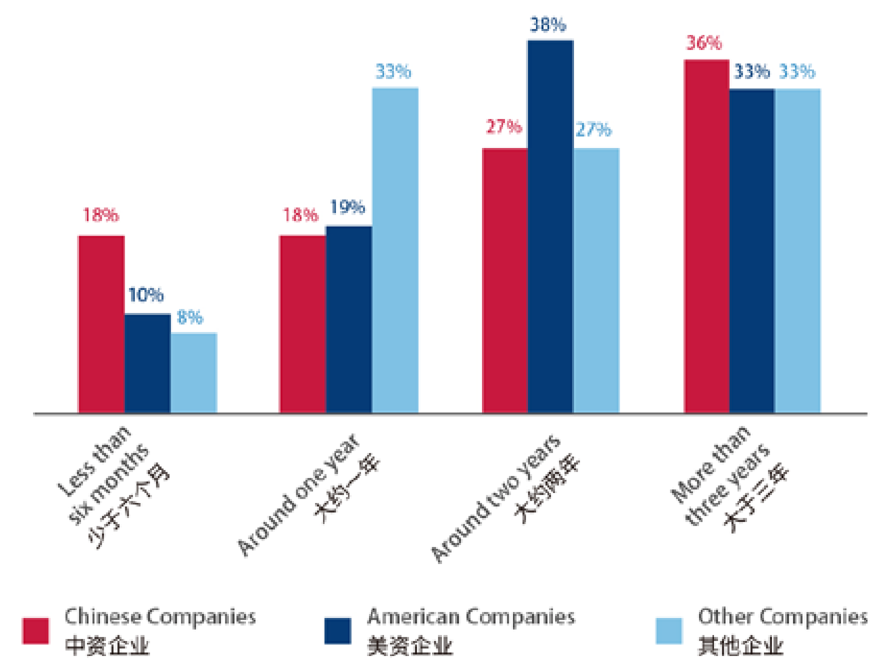


Figure 53 Estimated Period of the Impact of US-China Trade Dispute on Business (by Origins of Companies)
图表 53 预计美中贸易纷争将对企业运营的影响时间（按照来源国家划分）



More than half of the companies claimed that the US tariffs have brought negative impact, but compared to the last two years, the negative impact was relatively moderated by a 12% decrease year on year. The US companies were hurt most, followed by companies from other countries (other than China and US). However, we still found more than 30% of Chinese companies not certain about it.

美国的贸易关税给超过一半的受访企业带来了负面影响，而相对去年来说强烈的负面影响相对缓和，同比下降了12%。其中，美国贸易关税对美资企业的负面影响最为严重，其次是除中资与美资以外的其他企业。但仍有超三成的中资企业表示不明确美国关税带来的影响。

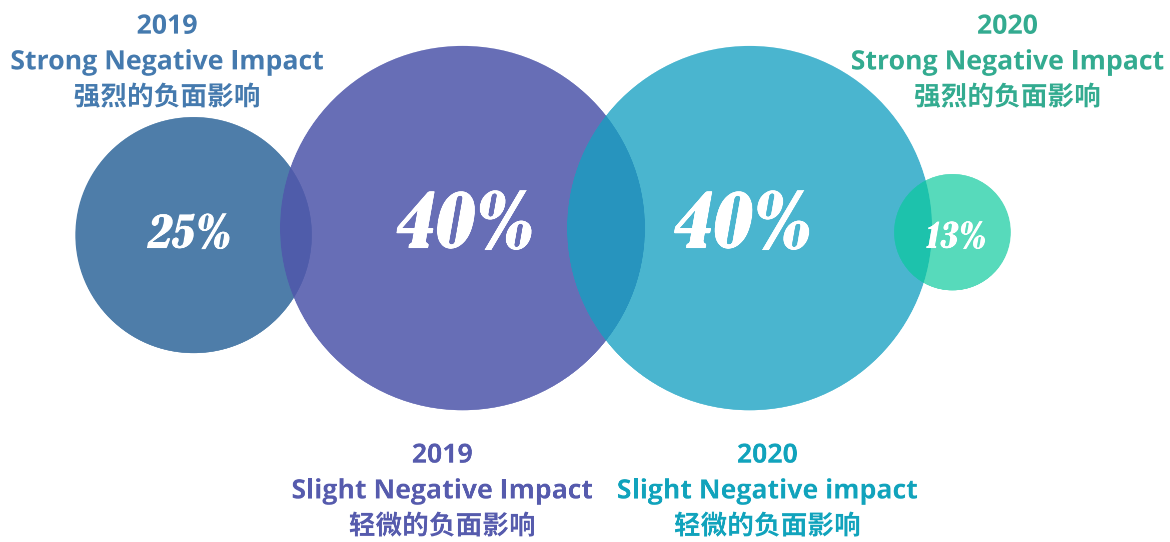
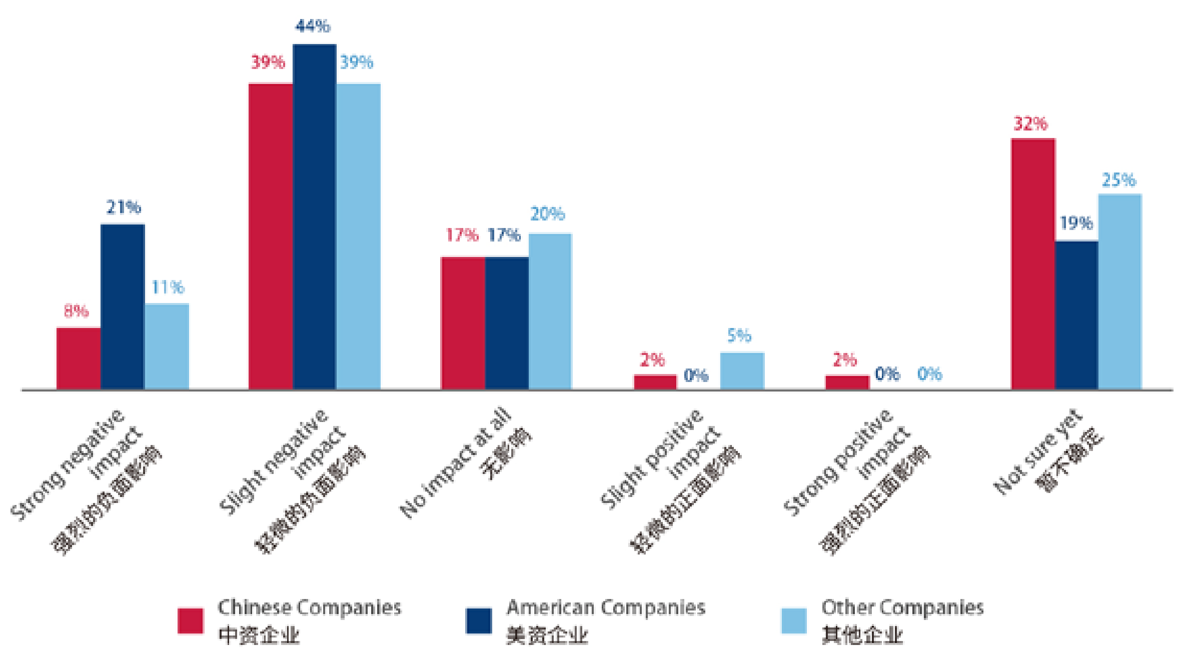


Figure 54 | Impact of US Tariffs on Business (by Origins of Companies)
图表 54 | 美国贸易关税对企业的影响(按照来源国家划分)



Negative impact brought by Chinese tariffs on companies also receded in 2020, decreasing by 6% in contrast to the previous year. Compared with the US tariffs, the impact brought by the Chinese one was slightly lower, though the US companies felt more negative impact than the others. Still it is worth noting that around 30% of the companies claim that the influence is not certain yet.

2020年中国关税对受访企业带来的负面影响也稍有缓和，同比下降6%。相比美国关税，中国关税对受访企业的负面影响较小。而受访美资企业同样是受影响最为严重的企业。但依然值得注意的是，仍然有三成受访企业表示不明确中国关税所带来的影响。

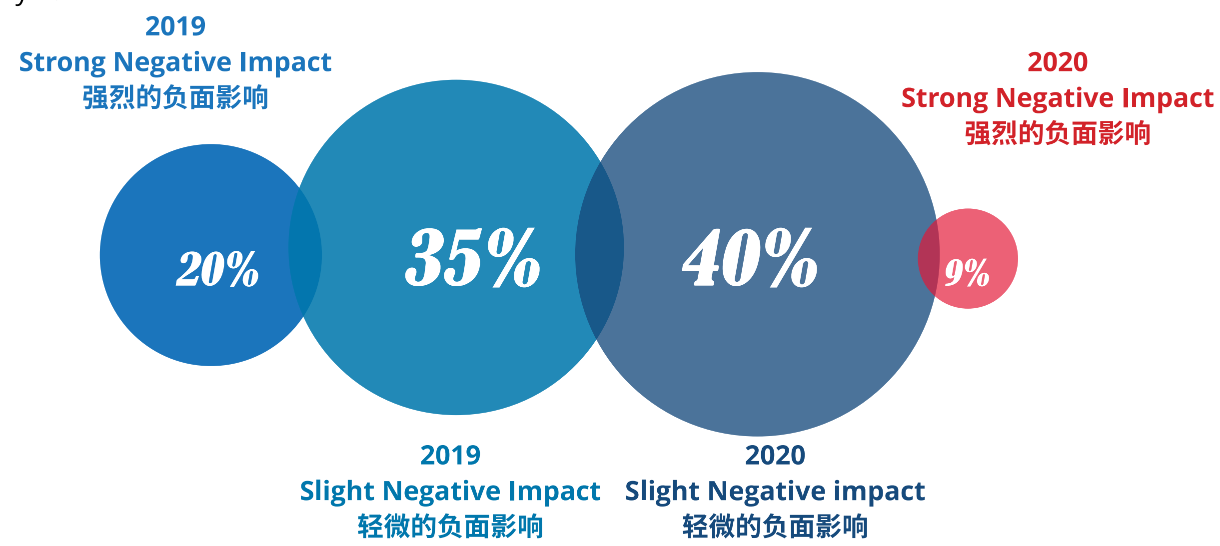
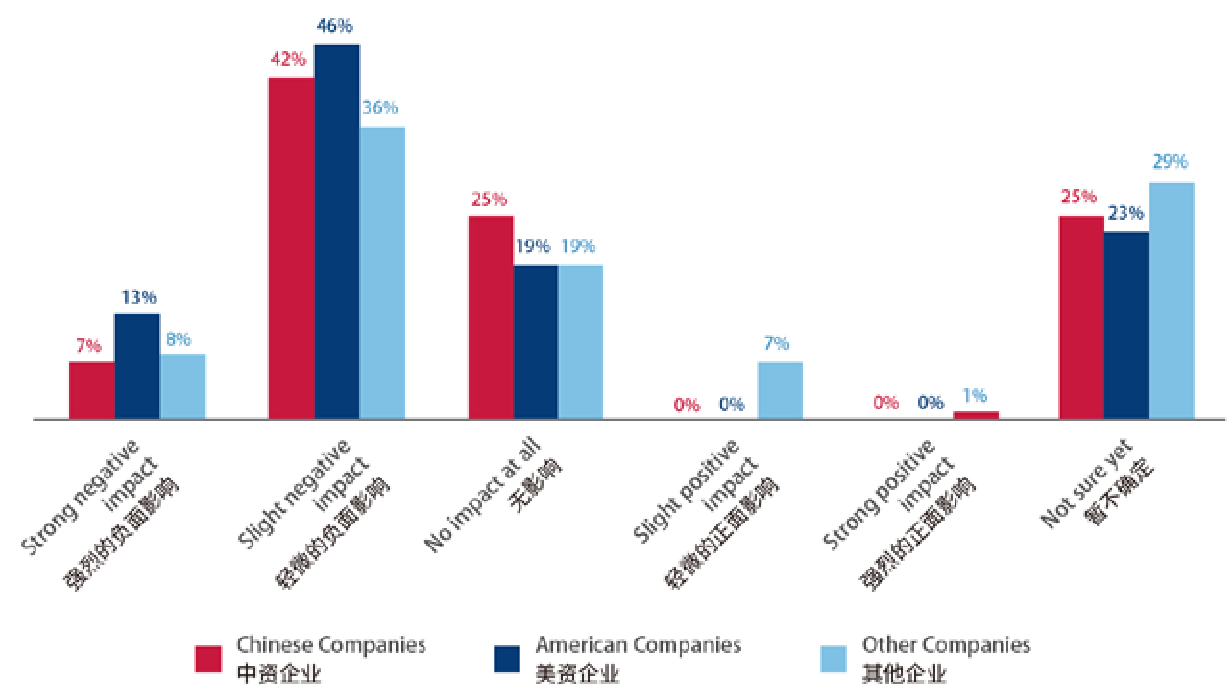


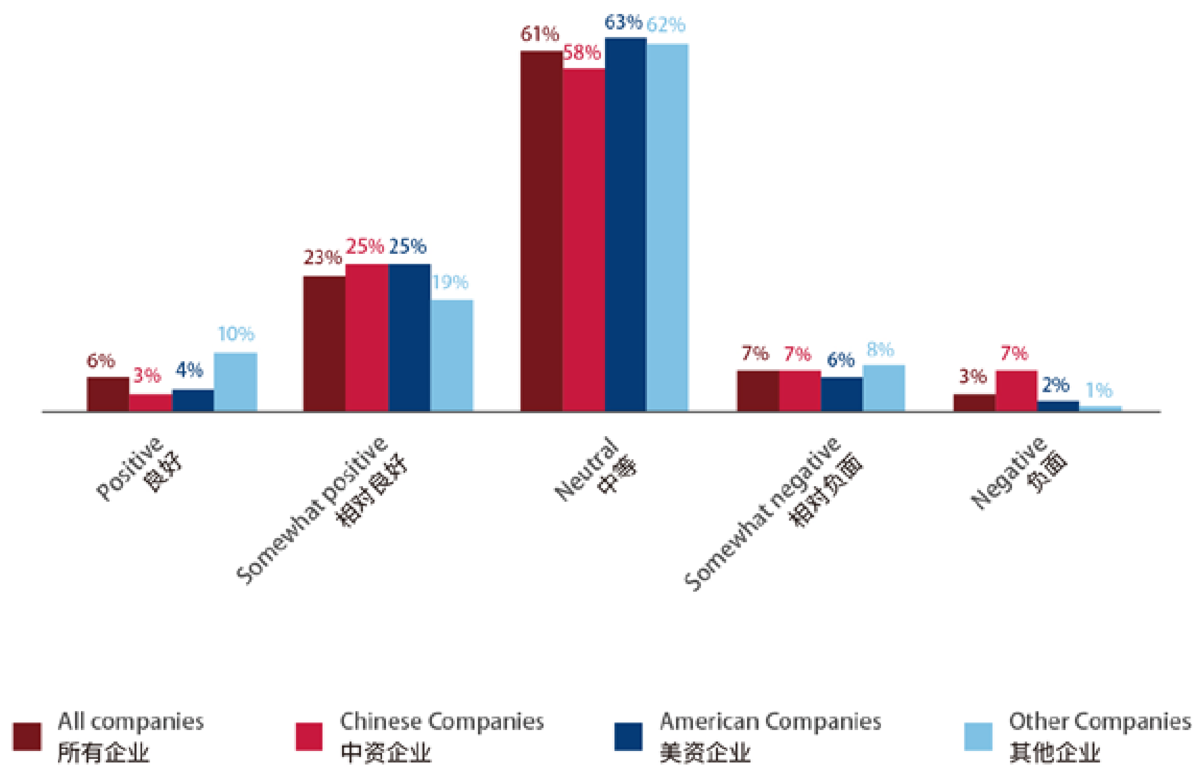
Figure 55 | Impact of Chinese Tariffs on Business (by Origins of Companies)
图表 55 | 中国贸易关税对企业的影响(按照来源国家划分)



Due to the impact of the epidemic, parts of the *China-US Phase One Economic and Trade Agreement* were difficult to implement in 2020. Therefore, unsurprisingly, over 60% of the respondents expressed a neutral attitude towards the implementation of the agreement. 30% were positive, while 10% held a negative outlook.

由于疫情的影响，中美第一阶段经贸协议的部分内容很难在2020年落实。所以不出意料，超六成受访企业对《中美第一阶段经贸协议》的实施持中立态度，而正面评价约占三成，高于负面评价（仅占一成）。

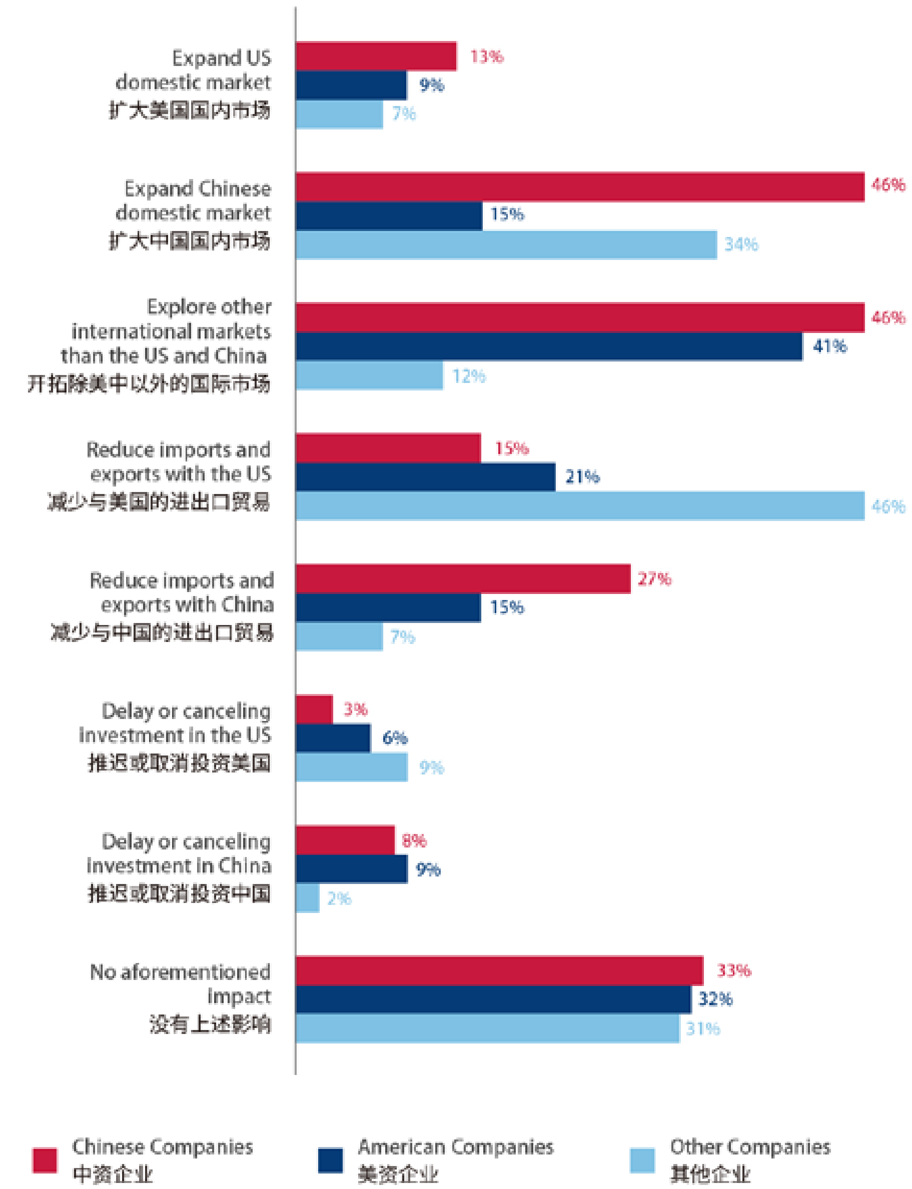
Figure 56 图表 56 | Evaluation of the Implementation of the *China-US Phase One Economic and Trade Agreement* (by Origins of Companies)
对《中美第一阶段经贸协议》实施的评价（按照来源国家划分）



With regard to the reactions and strategies to the US-China trade tensions, most of the respondents reported that they will be more willing to expand their Chinese domestic market, which is followed by reducing import and export trade with the US and exploring other international markets than the US and China. Around half of the Chinese companies' respondents would prefer to expand their Chinese domestic market and explore other international markets than the US and China. US companies would also like to explore other markets (41%) and reduce imports and exports with the US (21%).

对于美中贸易纷争的反应，大部分的受访企业表示更愿意扩大中国国内市场，其次是减少与美国的进出口贸易以及开拓除美中以外的国际市场。约五成的中资受访企业的发展策略主要集中在扩大中国国内市场以及开拓美中以外的国际市场，而美资企业则是主要集中在开拓美中以外的国际市场（41%）及减少与美国进出口的贸易（21%）。

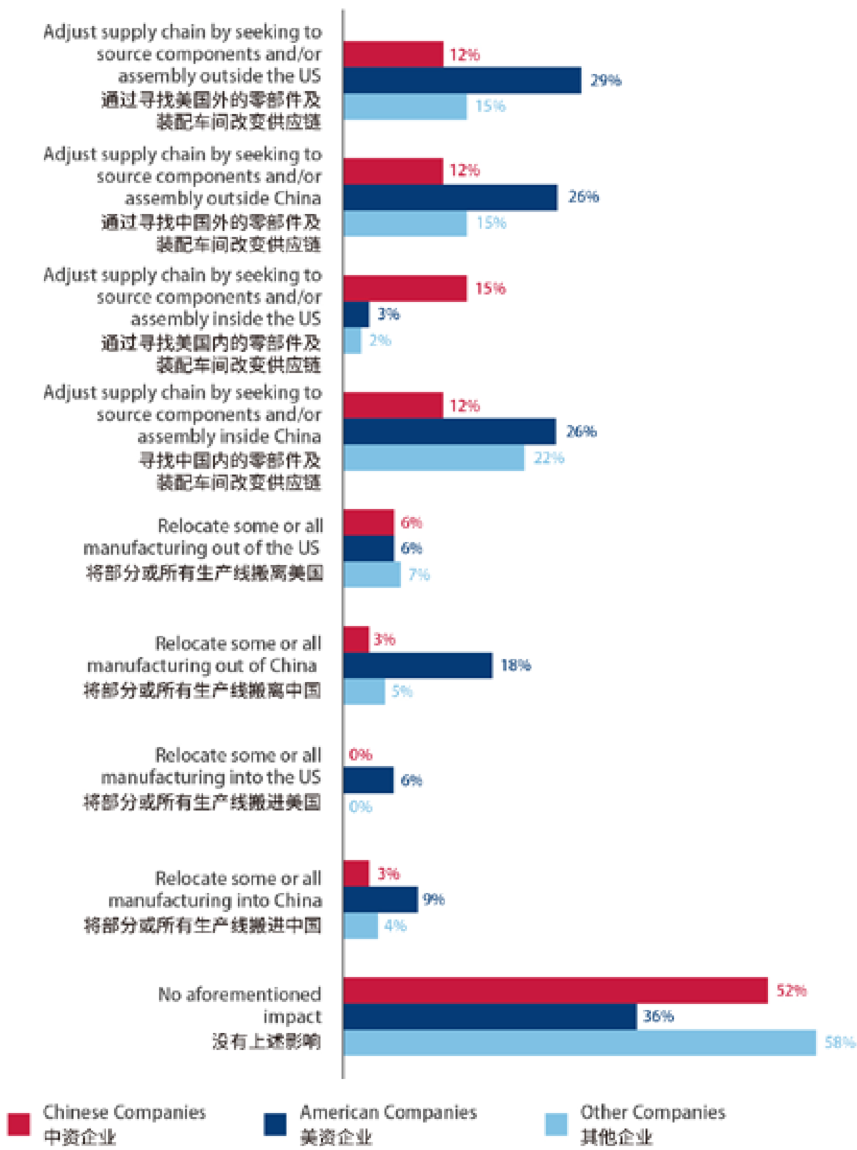
Figure 57 图表 57 | Influence of the US-China Trade Tensions on Business Strategy (by Origins of Companies)
关税政策对发展战略的影响（按照来源国家划分）



Interestingly, adjusting the supply chain by seeking to source components and/or assembly inside China became the primary reaction to the trade dispute, which is followed by seeking to source components and/or assembly outside the US and China. The number of respondents who seek to source components and/or assembly inside China increased by 10% year on year while the number of those looking to relocate some or all manufacturing out of the China decrease by 15%. The number of US companies and other companies (other than China) considering adjusting their supply chain by sourcing within China showed a 20% increase compared to last year while the number of those looking to relocate some or all manufacturing out of China dramatically decreased by 25% and 38% respectively.

有趣的是，受访企业对贸易纠纷所做出的回应各不相同，但首选是通过在华采购零部件或在华组装来调节供应链中断问题，其次是通过寻找美国与中国外的零部件及装配车间。寻找中国内的零部件及装配车间调节供应链的比例同比上涨一成，而将部分或所有生产线搬离中国的比例则下降约15%。对于受访的美资企业与其他外资企业（除美资与中资外）而言，寻找中国内的零部件及装配车间调节供应链的策略选择率上升约两成，而将部分或所有生产线搬离中国则分别大幅下降25%及38%。

Figure 58 | Influence of Imposed Tariffs on Supply Chain (by Origins of Companies)
图表 58 | 新增的关税政策对供应链的影响（按照来源国家划分）



In this report, the results of relocation destinations are not quite the same as in previous years. Although Vietnam was still the primary destination choice, the percentage dropped by 8% year on year. Singapore has replaced Thailand as the second destination, and Thailand has dropped to the third. The results are even more scattered, with about 5% of the respondents choosing Malaysia, the United States, India, Indonesia and Japan respectively.

在本次调查中，与往年的结果不太相同，虽然越南依旧是第一热门目的地，但是同比下降了8%，而新加坡则取代泰国成为第二目的地，泰国退为第三。今年的结果更加分散，约5%的受访者分别选择了马来西亚、美国、印度、印尼及日本。

Figure 59 | Relocation Destination
图表 59 | 搬离中国的目的地

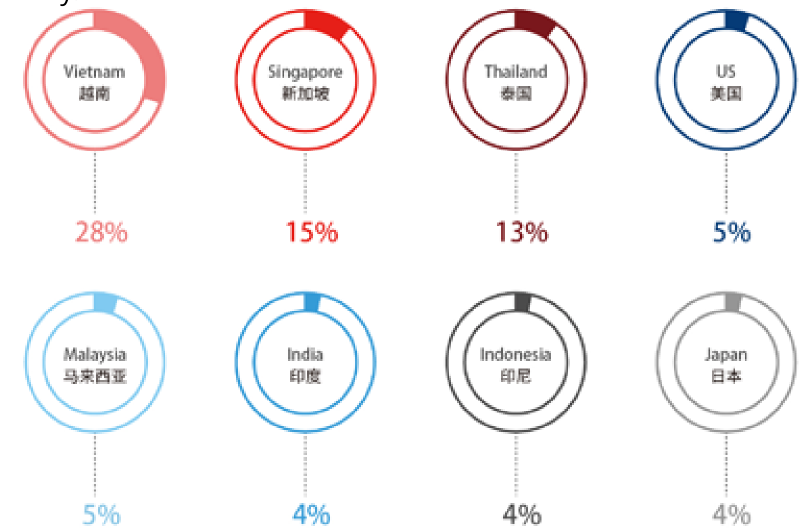
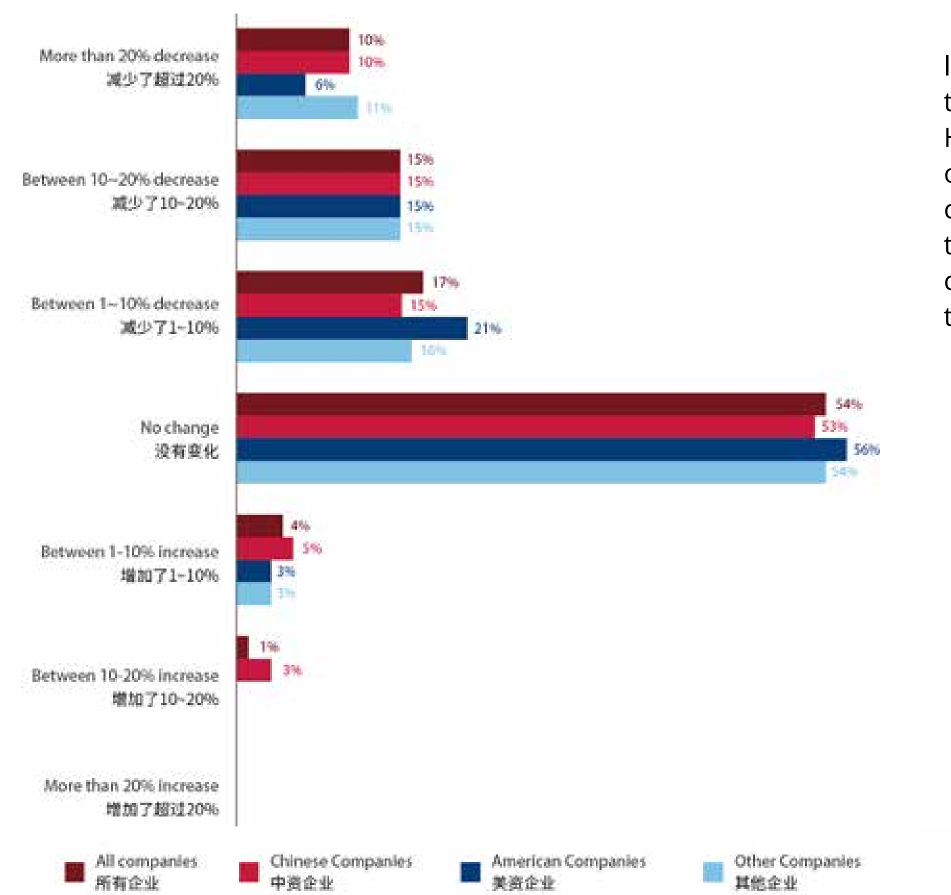


Figure 60 | Change of Market Share due to Combined Tariffs (by Origins of Companies)
图表 60 | 因两国贸易关税产生的市场份额变化（按照来源国家划分）



The number of companies reporting market share losses due to the US-China trade disputes fell to 42%. However, still more than half of the respondents claim no change of market share due to trade tariffs while 5% of the companies said they increased their market share.

在本次的调查中，受美中贸易纷争而损失市场份额的企业跌至42%。但仍有超过一半的企业表示没有因贸易关税而丢失市场份额。5%的受访企业表示因此增加了市场份额。

AMCHAM SOUTH CHINA

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