OCTOBER 2020

#### **EXECUTIVE SUMMARY**

In the 1950s, over 90% of the global middle class resided in Europe and North America. Today, over 20% live in China. China is experiencing the fastest expansion of the middle class the world has ever seen, during a period when the global middle class is already expanding at a historically unprecedented rate thanks in part to some of its neighbors like India. By 2027, we estimate that 1.2 billion Chinese will be in the middle class, making up one quarter of the world total.

China already makes up the largest middle-class consumption market segment in the world and is a priority market for major multinational firms. Chinese middle-class consumption initially followed the growth path of the Western middle class, with increasing consumer demand for higher quality products, large investments in home ownership, and vehicle purchases. It is now setting its own middle-class trends. Chinese fintech and e-commerce platforms are changing the way consumers and sellers interact, and they are exporting this knowledge to other developing countries.

In light of this new dynamic, we explore the ways in which the Chinese middle class is likely to impact the global middle class moving forward. First, will the world be able to sustain such a large consumer class within its planetary boundaries? Second, does China's middle class pose a competitive threat to other countries, or is it a positive force promoting global growth? Finally, how will a growing Chinese middle class impact global politics, when democracy is no longer the only way to achieve a stable middle-class lifestyle?

# INTRODUCTION

Around 1950, over 90% of the global middle class resided in Europe and North America; the United States alone was home to almost 40% of the middle class. So, it is not surprising that a middle-class lifestyle became synonymous with achieving the American Dream. The middle class consisted of those with the aspirations and means to own a home, a car, take an annual vacation, send their kids to college and achieve reasonable health and retirement security. The middle class valued hard work, education, thrift, and determination as pathways to this lifestyle — individualistic attributes that could flourish in a democracy.

This American model was so successfully developed in Western economies and Japan that by 1978 about 1 billion people in the world had become middle-class, according to one definition at least.¹ Coincidentally, 1978 also marked the year when Deng Xiaoping visited Malaysia, Thailand, and Singapore and then announced that China would henceforth pursue an "Open Door" policy to encourage foreign investment to help transform China's economy — the start of the development of China's middle class.

Since that time, China has impacted the global middle class through its size and numbers, its increasing ability to set new middle-class trends, and its challenge to the values and attributes of what belonging to the middle class really means.

#### THE NUMBERS GAME

As is true on so many economic issues, the immediate impact of China on the middle class has been in terms of numbers. We measure the size of the middle class here following the methodology laid out in a 2010 working paper by one of us, Kharas, as those individuals spending \$11 to \$110 per person per day in 2011 purchasing power parity (PPP) terms.<sup>2</sup> This metric, an absolute definition, allows us to compare numbers across countries and over time in a consistent way.3 The Chinese are relative late comers to the global middle class. Although China's economy has grown rapidly for many years now, Chinese households receive a very low share of national income and so did not have the income to achieve a middle-class lifestyle until quite recently - around 2010, household consumption was just 36% of gross domestic product (GDP), compared to 68% in the United States. So, the absolute number of Chinese middle-class consumers was guite small. In fact, in 2006, when the Chinese middle class started to explode, less than 10% of China's population was probably middle class, maybe 90 million people compared to well over 200 million in the United States. And the American middle class was far richer, more established, and therefore, the global trend-setter.

In the ensuing years, however, China has been adding an average of 60 million people to its middle class every year. By 2016, most Chinese could be classified as middle class — some 730 million of them. This mirrors findings in a recent McKinsey report, which estimates that 730 million people in urban areas in China in 2018 fell into the income categories of "aspirants" and "affluents" (roughly corresponding to our definition of middle class).4 (Rural China is still largely poor.) Part of the growth in China's middle class comes from job creation — an estimated 7.7 million per year, according to the Chinese Academy of Social Sciences.<sup>5</sup> But the vast majority of the growth is driven by higher wages as workers shift to more productive jobs. China has become the world's largest car producer, accounting for one third to one half of all global sales. 6 All the major car manufacturers are competing for a piece of the Chinese market — Ford and Volkswagen opened up new factories in 2018, and Tesla opened an electric car factory in January 2020.7 Vehicle sales grew every year between 1990 and 2017, though they have contracted slightly over the past two years.

There are other indicators of China's rapidly growing middle class. China is the world's largest smartphone market, accounting for 20% of Apple's iPhone sales as well as providing a large home market for domestic Chinese brands. Chinese citizens took 300 million vacation and business trips in 2019; 166 million of these trips were abroad and 140 million were within China.<sup>8</sup>

Over 90% of Chinese own their own home. While home prices in first and second tier cities are skyrocketing, home ownership is still seen as a status symbol, so parents, families and friends often chip in to help young couples starting out. Indeed, 70% of millennials in China own their own home, compared with 35% in the United States. 10

44

The gap between China's middleclass market size and that of other countries is only set to expand as China continues to enjoy more rapid economic growth than any other major economy.

Already. China has the largest middle-class consumption market segment in the world (Figure 1). The global middle-class market is massive — over \$41 trillion in 2020 measured in purchasing power parity terms, meaning adjusted for price differences across countries. Of this total, Chinese middle-class consumers are on track to spend \$7.3 trillion in 2020. Of course, each individual middle-class consumer in the United States spends more than the Chinese counterpart on average, but the sheer numbers of the Chinese middle class make its market size larger. And the gap between China's middle-class market size and that of other countries is only set to expand as China continues to enjoy more rapid economic growth than any other major economy, a gap accentuated by the seemingly limited impact of COVID-19 on the Chinese economy compared to other countries.

FIGURE 1: TOP 10 COUNTRIES BY TOTAL MIDDLE-CLASS EXPENDITURES IN 2020 (TRILLION USD, 2011 PPP)

Country	Middle-class consumption
China	\$7.3
United States	\$4.7
India	\$2.9
Japan	\$2.0
Russian Federation	\$1.6
Germany	\$1.5
Indonesia	\$1.2
United Kingdom	\$1.1
Brazil	\$1.1
France	\$1.0

Table shows consumption by the middle class only. Total household consumption in the United States is higher than in China because of consumption by rich U.S. consumers. Source: Authors' calculations, based on methodology in Kharas (2010) and using International Monetary Fund June 2020 GDP estimates. <sup>11</sup>

China's transition to a middle-class country is not yet complete. It will continue adding significant numbers until 2027 when an estimated 1.2 billion Chinese will be in the middle class, one-quarter of the global total. The historically unprecedented rate of this expansion is further reinforced by the development of Asia's other giant, India, as well as the other large countries in the Indian subcontinent and in Southeast Asia.

The growth in China's middle-class consumption on a global scale is exceptional by historical standards. Other countries have also increased their share of the global middle-class market, starting with the United Kingdom, where the middle class was launched by the Industrial Revolution. The United States followed soon thereafter, quickly adopting many of the new technologies invented in Europe but often perfected in America. France, Germany, and later Japan have also enjoyed periods of rapid middle-class expansion.

But none of these episodes has been as dramatic as China's rise. As Figure 2 shows, China is still in its most expansionary phase, and by the time it is over it will have raised its share of global middle-class consumption by almost 20 percentage points.

FIGURE 2: BIGGEST CHANGE OVER 20 YEARS IN SHARE OF MIDDLE-CLASS CONSUMPTION EXPENDITURES, 2011 PPP



Source: Maddison Historical Statistics; International Monetary Fund; author calculations. 12

The speed with which Chinese consumer spending has grown has meant that China is a priority market for global multinational companies, who are used to serving their own domestic middle-class consumers. European, Japanese, and American brands have been a status symbol in China, a marker of middle-class consumption. So much so that China has accounted for 31% of global consumption growth between 2010 and 2017, and retail sales doubled over this period, averaging 10% growth each year. Although the traditional view is that China's growth has been driven by investment and exports, in the last two decades, consumption has been the fastest growing segment of the Chinese economy. Since 2009, per capita consumption growth has outpaced per capita GDP growth. 14

# FROM COPYING TO TREND-SETTING

The initial phase of China's middle-class expansion copied Western trends in many ways. It was defined by increased spending on consumer durables like cars and appliances, preferences for upgraded quality, and expanded home ownership. It even adopted middle-class marketing techniques like those in the West, but on a grander scale. China introduced Singles Day

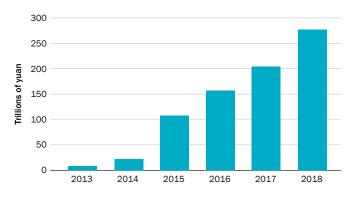
(November 11, or 11/11 signifying four "singles") which has, over time, become the largest single shopping day in the world. Total sales in 2019 were estimated at over \$58 billion, more than Black Friday and Cyber Monday sales in the U.S. combined.<sup>15</sup> Even though COVID-19 has hit the Chinese market hard, total sales from the first day of shopping after the lockdown was lifted in May reached \$2.2 billion in Shanghai alone. <sup>16</sup>

However, China has moved beyond copying the model of middle-class growth in other countries and is now setting global trends. China has emerged as a leader in e-commerce, fintech, and social networking platforms, driven by tech giants like Alibaba and Tencent. Fintech innovations have transformed the way consumers make purchases and interact with vendors. Members of the new Chinese middle class are young, tech savvy, and ready to spend; they accounted for 50% of domestic spending growth from 2017-2018. Indeed, young people make up an important part of the consumer class in China—Gen Z accounts for 15% of all household spending, compared with 4% in the United States and the United Kingdom.

This profile is shifting spending power toward tech products. For example, the Chinese phone manufacturer Huawei became the world's largest smartphone seller in April 2020, surpassing Apple and Samsung, even though they sold no phones in the United States. <sup>19</sup> Chinese smartphone makers now account for 40% of the global market share — Transsion, another Chinese phone company, has become the number one phone supplier in Africa since entering the market in 2018; Huawei and ZTE are leading players in the race to 5G. <sup>20</sup>

China now accounts for 40% of global e-commerce transactions and is seeing exponential growth (Figure 3). Online sales account for 15% of total retail sales in China, compared with 10% in the United States. <sup>21</sup> The Chinese middle class has leapfrogged from using cash as a dominant form of payment to using mobile money on platforms like Alibaba and WeChat. There are now over 1 billion users on each of these platforms, and 90% of Chinese consumers reply on mobile money as their primary form of payment. <sup>22</sup> The intermediate step of using credit cards, which still dominates Western consumer spending, is small in China; there were just 34 million point-of-sale terminals in the country in 2018. <sup>23</sup>

# FIGURE 3: CHINA'S MOBILE PAYMENT TRANSACTION VOLUME, 2013-2018



Source: The Brookings Institution, reprinted from Aaron Klein, "China's digital payments revolution." Data from People's Bank of China, Caixin Data, CEIC.<sup>24</sup>

In addition to changing the way Chinese consumers spend and interact with sellers, fintech is changing the ecosystem of small and medium-sized enterprise (SME) finance in China. Credit card processing fees cost American small business an average of 2% of gross sales.<sup>25</sup> Alipay and WeChat Pay, on the other hand, have no transaction fees on purchases made within their digital commerce platform, and a 0.1% fee on outside transfers.<sup>26</sup> Since 60% of e-commerce occurs on Alibaba, it is fairly easy for firms to use money in their Alipay wallet to pay other vendors. In addition to low transaction fees, fintech is opening credit and financing options for SMEs. Only 20% of SMEs in China have borrowed from a formal financial institution. Banks have traditionally not lent to SMEs due to perceived credit risk, though the government is working to incentivize greater SME lending.<sup>27</sup> E-commerce and fintech players are entering the lending space and using new digital tools to improve risk assessments. MYbank (backed by Alibaba) and WeBank (backed by Tencent) are using real time transaction data, social network and behavioral data from social media, and machine learning to come up with their own credit scores to assess loan eligibility. Fintech players are thus able to offer loans almost instantly to firms that may have been unable to access credit before, due to limited or poor credit history. These platforms have now lent to over 10 million SMEs, with a non-performance rate of just 1%. Fintech credit reached \$543 billion globally in 2017, \$170 billion of which came from tech players like Alibaba and Tencent. 28

This Chinese model is now being exported. Due to the purchasing power of Chinese tourists around the world, Alipay and WeChat Pay are now accepted as valid forms of payment at retailers in 28 countries.<sup>29</sup> China also accounts for 88% of SME fintech lending.<sup>30</sup> Based on the changing nature of the economy that these platforms have enabled, the Chinese leadership is trying to encourage mass entrepreneurship and innovation as a driver of economic growth, jobs for graduates, and quality upgrading.<sup>31</sup> If successful, this will change the nature of the middle class, from "salaryman" to "small businesswoman," from a risk-averse worker to a risk-taking, creative, independent gig contractor.

# THE CHALLENGES AND COSTS OF CHINESE MIDDLE-CLASS EXPANSION

As China's middle class grows, it poses three challenges and costs for others around the world. First, can the world sustain such a large consumer class within the boundaries set by the planet's natural resources? Second, does China's middle class pose a competitive threat to the middle class elsewhere, or is it a positive force promoting global growth? Third, how will the politics of China's new middle class play out?

#### Planetary boundaries

Consumerism across the world is damaging our planet. Climate change, zoonotic disease, species extinction, plastic contamination of marine areas, overfishing and collapsing fish stocks, and excess use of phosphorus and nitrogen are all by-products of the unsustainable consumption and production structures that try to satisfy the middle and rich classes' demand for more, and cheaper, goods, services, and food.

China is a contributor to this problem — China is the world's largest builder of new coal plants and the largest carbon emitter in absolute terms.<sup>32</sup> But the problem has not been caused by China alone. Pollution damage is cumulative — the impact of two centuries of growth since the Industrial Revolution. With the entry of China, India, and the rest of developing Asia into middle-class powerhouses, there is now a new sense of urgency to tackle these issues on a global

scale. All countries must do their part. China's recent announcement to reach carbon neutrality by 2060,<sup>33</sup> its efforts to develop smart cities,<sup>34</sup> and its leadership in various green technologies including solar, rail, and batteries,<sup>35</sup> suggest it is mindful of commercial opportunities in sustainable development. Europe, too, is leading the way through the European Green Deal. But the problems are global and need global collective action involving all large economies if planetary sustainability and global prosperity are to co-exist.

#### Does China's middle class help or hurt others?

Traditionally, international trade has been seen as beneficial to the middle class. Trade brings prosperity. If a trading partner grows, everyone benefits in the new equilibrium. In the United Kingdom, the first major trade liberalization of the 19th century — the repeal of the Corn Laws — helped bring down the price of wheat and raise real wages of the fledgling middle class. In much the same way, the new middle classes of China and the rest of Asia have provided cheap consumer goods (and a greater variety of consumer goods) to the middle-class markets of America and Europe. At the same time, Chinese middle-class consumers provide a large and growing market for American firms — the top 20 U.S. firms alone had sales in China of \$158 billion last year. These are classic gains from trade.

44

The better the ability of governments to compensate losers from the gains of winners, the greater the likelihood the middle class supports free trade.

Because of China's size, however, and the failure in many countries to pre-adjust to the global decision to terminate the Agreement on Textiles and Clothing in 2005, there have been significant adjustment costs to workers in specific sectors and places. For these workers, job losses and depressed wages have damaged their middle-class standing.<sup>36</sup> Indeed, the whole issue of whether the middle-class gains or losses from trade and globalization is being re-evaluated. Most academic studies show a mixed pattern of some

winners and some losers, but an aggregate net gain. The better the ability of governments to compensate losers from the gains of winners, the greater the likelihood the middle class supports free trade.

#### The politics challenge

In America and the West, becoming middle class is no longer synonymous with being happy. The General Social Survey in the United States has been asking the same question since 1973: "taken all together, how would you say things are these days — would you say that you are very happy, pretty happy, or not too happy?" The results for adults show a steep decline in perceived happiness since the late 1980s.<sup>37</sup> Mortality from suicide, opioids, and alcohol in the United States and deaths of exhaustion in the case of Japan suggest a large disconnect between people's lived experiences in middle-class households and the theory that the middle class is the ticket to a good life.

In China, by contrast, middle-class households are seemingly more content with the way things are going. China leads the world in the Edelman Trust Barometer, both in terms of the general population's trust that the system is working for them, as well as among the "informed public," a group that corresponds more closely with the middle class. Shinese households are far more likely to reply affirmatively to a question about whether they and their families are likely to be better off in five years' time than their Western counterparts.

Amongst the Chinese middle class, administrative efficiency and performance seem to be valued above, or as much as, participation in political affairs.<sup>39</sup> This "authoritarian bargain,"<sup>40</sup> however, can lead to a toxic mix of politics and economics. Just as the middle class lent its support to fascism in Germany and Italy, a middle class in China could support nationalism and expansionism if it believes these to be necessary to safeguard their economic interests. This is not inevitable — indeed there is almost no correlation across countries or over time between the size of the middle class and the degree of liberalism in domestic politics — but equally not a scenario to be ignored.

# **CONCLUSION**

The global middle class is evolving fast. It will be influenced by the preferences of Chinese consumers, by the attitudes of a younger generation toward risk and their willingness to seize opportunities offered by digital platforms for gig contractors, and by preferences for the type of politics that will best serve middle-class interests of stability and steady growth of economic opportunities for themselves and their families. Chinese leadership in the world of fintech and e-commerce will likely drive global middle-class consumption trends in the future, while expanding access to finance for SMEs could provide a new path towards middleclass jobs. This middle-class expansion poses some key questions for sustainable growth, namely can the planetary boundaries support increasing middleclass consumption, and will competition with China help or hurt the middle class in other countries? While the climate threat is existential, it is important to remember that China is both a contributor to the problem and a potential ally, and that progress will require global collective action. It remains to be seen how much competition with China will impact other countries; while increased Chinese production has led to worker dislocation in some industries, the flood of cheap goods from Asia is raising the purchasing power of the middle class around the world.

The sheer size of the Chinese middle class suggests that its power and influence is here to stay – as young Chinese professionals move to second and third tier cities so that they are able to afford a middle-class lifestyle, their preferences will increasingly shape global consumption. Whether these new middle-class citizens push for more openness and liberalism, or opt for the current nationalist model that provides predictability and stable growth remains to be seen.

# REFERENCES

- 1 Homi Kharas, "The emerging middle class in developing countries," (Paris: OECD Development Centre, 2010), <a href="https://www.oecd.org/development/pgd/44457738.pdf">https://www.oecd.org/development/pgd/44457738.pdf</a>.
- 2 Ibid.
- 3 There are many alternative definitions of the middle class. None of these measures are right or wrong. Generally speaking, the thresholds used fall into two categories; relative thresholds (xx% to yy% of median income for example), and absolute thresholds. Absolute thresholds, including ours, are more appropriate for looking at comparisons over time and across countries. However, absolute numbers and growth rates of the middle class will vary according to the definition used. Richard V. Reeves, Katherine Guyot, and Eleanor Krause, "A dozen ways to be middle class," The Brookings Institution, May 8, 2018, <a href="https://www.brookings.edu/interactives/a-dozen-ways-to-be-middle-class/">https://www.brookings.edu/interactives/a-dozen-ways-to-be-middle-class/</a>.
- 4 Johnny Ho, Felix Poh, Jia Zhou, and Daniel Zipster, "China consumer report 2020: The many faces of the Chinese consumer," (New York: McKinsey and Company, December 18, 2019), <a href="https://www.mckinsey.com/featured-insights/china/china-consumer-report-2020-the-many-faces-of-the-chinese-consumer#">https://www.mckinsey.com/featured-insights/china/china-consumer-report-2020-the-many-faces-of-the-chinese-consumer#</a>.
- 5 Lu Xueyi, "现在是中国中产阶层发展的黄金时期" [It's the "golden age" of Chinese middle-class development], 中国青年报 [China youth daily], February 11, 2010, <a href="http://zqb.cyol.com/content/2010-02/11/content\_3088401.htm">http://zqb.cyol.com/content/2010-02/11/content\_3088401.htm</a>.
- 6 Tom Hancock, "Carmakers face cuts and gloom as China sales shift into reverse," *Financial Times*, January 15, 2019, <a href="https://www.ft.com/content/bcb902e4-1895-11e9-9e64-d150b3105d21">https://www.ft.com/content/bcb902e4-1895-11e9-9e64-d150b3105d21</a>.
- 7 Tom Hancock, "Carmakers face cuts and gloom as China sales shift into reverse"; Jeanne Whalen, "The next China trade battle could be over electric cars," *The Washington Post*, January 17, 2020, <a href="https://www.washingtonpost.com/business/2020/01/16/next-china-trade-battle-could-be-over-electric-cars/">https://www.washingtonpost.com/business/2020/01/16/next-china-trade-battle-could-be-over-electric-cars/</a>.
- 8 "2019 China Tourism Facts & Figures," Travel China Guide, 2019, <a href="https://www.travelchinaguide.com/tourism/2019statistics/">https://www.travelchinaguide.com/tourism/2019statistics/</a>.
- 9 Wade Shepard, "How People In China Afford Their Outrageously Expensive Homes," *Forbes*, March 30, 2016, <a href="https://www.forbes.com/sites/wadeshepard/2016/03/30/how-people-in-china-afford-their-outrageously-expensive-homes/#2baa4d76a3ce">https://www.forbes.com/sites/wadeshepard/2016/03/30/how-people-in-china-afford-their-outrageously-expensive-homes/#2baa4d76a3ce</a>.
- 10 Sarah Zheng, "Why so many Chinese millennials can afford their own homes," *South China Morning Post*, April 11, 2017, <a href="https://www.scmp.com/news/china/policies-politics/article/2086636/why-rate-home-ownership-so-high-among-chinese">https://www.scmp.com/news/china/policies-politics/article/2086636/why-rate-home-ownership-so-high-among-chinese</a>.
- 11 Homi Kharas, "The emerging middle class in developing countries"; "World Economic Outlook Update, June 2020," (Washington, DC: International Monetary Fund, June 2020), <a href="https://www.imf.org/en/Publications/WEO/lssues/2020/06/24/WEOUpdateJune2020">https://www.imf.org/en/Publications/WEO/lssues/2020/06/24/WEOUpdateJune2020</a>.
- "Maddison Project Database 2018," Groningen Growth and Development Centre, University of Groningen, based on Jutta Bolt, Robert Inklaar, Herman de Jong, and Jan Luiten van Zanden, "Rebasing 'Maddison': new income comparisons and the shape of long-run economic development," (Groningen Growth and Development Centre, University of Groningen, January 2018), <a href="https://www.rug.nl/ggdc/historicaldevelopment/maddison/releases/maddison-project-database-2018?lang=en">https://www.rug.nl/ggdc/historicaldevelopment/maddison/releases/maddison-project-database-2018?lang=en</a>; "World Economic Outlook Update, June 2020," International Monetary Fund.

- 13 Johnny Ho, Felix Poh, Jia Zhou, and Daniel Zipster, "China consumer report 2020."
- 14 Martin Wolf, "Consumption to replace investment as key to China growth," *Financial Times*, May 29, 2018, <a href="https://www.ft.com/content/627ab75c-4256-11e8-97ce-ea0c2bf34a0b">https://www.ft.com/content/627ab75c-4256-11e8-97ce-ea0c2bf34a0b</a>.
- 15 Johnny Ho, Felix Poh, Jia Zhou, and Daniel Zipster, "China consumer report 2020."
- 16 Naomi Xu Elegant, "'Revenge' buying vs. ration consumption: How China is spending after coronavirus lockdowns," *Fortune*, May 17, 2020, <a href="https://fortune.com/2020/05/17/china-coronavirus-consumer-spending/">https://fortune.com/2020/05/17/china-coronavirus-consumer-spending/</a>.
- 17 Johnny Ho, Felix Poh, Jia Zhou, and Daniel Zipster, "China consumer report 2020."
- 18 Tom Hancock, "Chinese consumers: your country needs you," *Financial Times*, <a href="https://www.ft.com/content/074395d2-38f2-11e9-b72b-2c7f526ca5d0">https://www.ft.com/content/074395d2-38f2-11e9-b72b-2c7f526ca5d0</a>.
- 19 Sareena Dayaram, "Huawei, OnePlus and beyond: China's biggest smartphone brands you should know about," CNET, September 1, 2020, <a href="https://www.cnet.com/news/huawei-oneplus-china-biggest-smartphone-brands-you-should-know-about-lenovo-meizu-xiaomi-oppo-vivo/">https://www.cnet.com/news/huawei-oneplus-china-biggest-smartphone-brands-you-should-know-about-lenovo-meizu-xiaomi-oppo-vivo/</a>; "Huawei overtakes Samsung as the world's largest smartphone maker in april 2020, <a href="https://www.gsmarena.com/huawei-overtakes-samsung-as-the-worlds-largest-smartphone-maker-in-april-2020-news-43818.php">https://www.gsmarena.com/huawei-overtakes-samsung-as-the-worlds-largest-smartphone-maker-in-april-2020-news-43818.php</a>.
- 20 "Shunned by U.S., Huawei Winning in China's \$170 billion 5G Race," Bloomberg, April 21, 2020, <a href="https://www.bloomberg.com/news/articles/2020-04-21/shunned-by-u-s-huawei-winning-in-china-s-170-billion-5g-race">https://www.bloomberg.com/news/articles/2020-04-21/shunned-by-u-s-huawei-winning-in-china-s-170-billion-5g-race</a>.
- 21 Longmei Zhang and Sally Chen, "China's Digital Economy: Opportunities and Risks," (Washington, DC: International Monetary Fund, January 17, 2019), <a href="https://www.imf.org/en/Publications/WP/lssues/2019/01/17/Chinas-Digital-Economy-Opportunities-and-Risks-46459">https://www.imf.org/en/Publications/WP/lssues/2019/01/17/Chinas-Digital-Economy-Opportunities-and-Risks-46459</a>.
- 22 Aaron Klein, "China's digital payments revolution," (Washington, DC: The Brookings Institution, April 2020), https://www.brookings.edu/research/chinas-digital-payments-revolution/.
- 23 Gerry Shih and Jeanne Whalen, "Beijing's blockade of U.S. credit card companies may finally end now that Chinese companies dominate," *The Washington Post*, January 21, 2019, <a href="https://www.washingtonpost.com/business/economy/beijings-blockade-of-us-credit-card-companies-may-finally-end-now-that-chinese-companies-dominate/2019/01/20/d52d8ad4-1354-11e9-803c-4ef28312c8b9\_story.html">https://www.pbc.gov.cn/en/3688259/3689026/3706133/3825632/3793316/index.html</a>.
- 24 Aaron Klein, "China's digital payments revolution"; "Chart of the Day: China's Mobile Payment Transaction Volume Hits \$41.51 Trillion in 2018," Caixin Global, March 22, 2019, <a href="https://www.caixinglobal.com/2019-03-22/chart-of-the-day-chinas-mobile-paymenttransaction-volume-hits-4151-trillion-in-2018-101395789.html">https://www.caixinglobal.com/2019-03-22/chart-of-the-day-chinas-mobile-paymenttransaction-volume-hits-4151-trillion-in-2018-101395789.html</a>.
- 25 Chris Kissell, "How Small Businesses Can Save on Credit Card Processing Fees," *U.S. News & World Report*, October 24, 2018, <a href="https://creditcards.usnews.com/articles/how-small-businesses-can-save-on-credit-card-processing-fees">https://creditcards.usnews.com/articles/how-small-businesses-can-save-on-credit-card-processing-fees</a>.
- 26 "Alipay to charge bank transfer free from Oct 12," *China Daily*, September 13, 2016, <a href="http://www.chinadaily.com.cn/bizchina/2016-09/13/content\_26778445.htm">http://www.chinadaily.com.cn/bizchina/2016-09/13/content\_26778445.htm</a>; Zen Soo, "Tencent to charge users in China for transferring money from WeChat Wallet to bank accounts," *South China Morning Post*, February 16, 2016, <a href="https://www.scmp.com/tech/apps-gaming/article/1913503/tencent-charge-users-china-transferring-money-wechat-wallet-bank">https://www.scmp.com/tech/apps-gaming/article/1913503/tencent-charge-users-china-transferring-money-wechat-wallet-bank</a>.
- 27 Huang Yiping, "This is how digital banking could boost China's economy," World Economic Forum, February 17, 2020, <a href="https://www.weforum.org/agenda/2020/02/china-digital-revolution-bank-lending-finance-econamy">https://www.weforum.org/agenda/2020/02/china-digital-revolution-bank-lending-finance-econamy</a>.

- 28 Giulio Cornelli, Vukile Davidson, Jon Frost, Leonardo Gambacorta, and Kyoko Oishi, "SME Finance in Asia: Recent Innovations in Fintech Credit, Trade Finance, and Beyond," (Tokyo: Asian Development Bank Institute, October 2019), <a href="https://www.adb.org/sites/default/files/publication/535836/adbi-wp1027.pdf">https://www.adb.org/sites/default/files/publication/535836/adbi-wp1027.pdf</a>.
- 29 Longmei Zhang and Sally Chen, "China's Digital Economy."
- 30 Ghada Teima, Miguel Soriano, Luis Maldonado, Volha Monfiston, and Matthew Gamser, "Promoting Digital and Innovative SME Financing," (Washington, DC: World Bank, 2020), <a href="https://cdn.smefinanceforum.org/sites/default/files/saudi\_digitalSME.pdf">https://cdn.smefinanceforum.org/sites/default/files/saudi\_digitalSME.pdf</a>.
- 31 "China to upgrade mass entrepreneurship and innovation," Xinhua, September 6, 2018, <a href="http://www.xinhuanet.com/english/2018-09/06/c">http://www.xinhuanet.com/english/2018-09/06/c</a> 137450275.htm.
- 32 Thomas Hale and Leslie Hook, "China expands coal plant capacity to boost post-virus economy," *Financial Times*, June 24, 2020, <a href="https://www.ft.com/content/cdcd8a02-81b5-48f1-a4a5-60a93a6ffa1e">https://www.ft.com/content/cdcd8a02-81b5-48f1-a4a5-60a93a6ffa1e</a>; Steve Inskeep and Ashley Westerman, "Why Is China Placing A Global Bet on Coal?," NPR, April 29, 2019, <a href="https://www.npr.org/2019/04/29/716347646/why-is-china-placing-a-global-bet-on-coal">https://www.npr.org/2019/04/29/716347646/why-is-china-placing-a-global-bet-on-coal</a>.
- 33 Somini Sengupta, "China, in Pointed Message to U.S., Tightens Its Climate Targets," *The New York Times*, September 22, 2020, <a href="https://www.nytimes.com/2020/09/22/climate/china-emissions.html">https://www.nytimes.com/2020/09/22/climate/china-emissions.html</a>.
- 34 Katherine Atha, Jason Callahan, John Chen, Jessica Drun, Ed Francis, Kieran Green, Dr. Brian Lafferty, Joe McReynolds, Dr. James Mulvenon, Benjamin Rosen, and Emily Walz, "China's Smart Cities Development," (Vienna, VA: SOS International LLC, January 2020), <a href="https://www.uscc.gov/sites/default/files/China\_SmartCities\_Development.pdf">https://www.uscc.gov/sites/default/files/China\_SmartCities\_Development.pdf</a>.
- 35 Scott Malcomson, "How China Became the World's Leader in Green Energy," *Foreign Affairs*, February 28, 2020, <a href="https://www.foreignaffairs.com/articles/china/2020-02-28/how-china-became-worlds-leader-green-energy">https://www.foreignaffairs.com/articles/china/2020-02-28/how-china-became-worlds-leader-green-energy</a>.
- 36 David Autor, David Dorn, and Gordon Hanson, "The China Shock: Learning from Labor Market Adjustment to Large Changes in Trade," *Annual Review of Economics* 8, no. 1 (October 2016): 205-240, <a href="https://www.annualreviews.org/doi/10.1146/annurev-economics-080315-015041">https://www.annualreviews.org/doi/10.1146/annurev-economics-080315-015041</a>.
- 37 "The General Social Survey," NORC at University of Chicago, https://gss.norc.org/.
- 38 "2019 Edelman Trust Barometer Global Report," (Chicago: Edelman, 2019), <a href="https://www.edelman.com/sites/g/files/aatuss191/files/2019-02/2019">https://www.edelman.com/sites/g/files/aatuss191/files/2019-02/2019</a> Edelman Trust Barometer Global Report 2.pdf.
- 39 Michael Swaine and Ryan DeVries, "Chinese State-Society Relations: Why Beijing Isn't Trembling and Containment Won't Work," Carnegie Endowment for International Peace, March 14, 2019, <a href="https://carnegieendowment.org/2019/03/14/chinese-state-society-relations-why-beijing-isn-t-trembling-and-containment-won-t-work-pub-78596">https://carnegieendowment.org/2019/03/14/chinese-state-society-relations-why-beijing-isn-t-trembling-and-containment-won-t-work-pub-78596</a>.
- 40 Raj M. Desai, Anders Olofsgård, and Tarik Yousef, "The logic of authoritarian bargains," *Economics & Politics* 21, no. 1 (March 2009): 93-125, <a href="https://www.brookings.edu/articles/the-logic-of-authoritarian-bargains/">https://www.brookings.edu/articles/the-logic-of-authoritarian-bargains/</a>.

# **ABOUT THE AUTHORS**

**Homi Kharas** is a senior fellow in the Global Economy and Development program at Brookings. In this capacity, he studies policies and trends influencing developing countries, including aid to poor countries, the emergence of the middle class, and global governance and the G-20. He previously served as interim vice president and director of the Global Economy and Development program.

Meagan Dooley is a senior research analyst in the Global Economy and Development program at Brookings.

### **ACKNOWLEDGEMENTS**

Emilie Kimball and Ted Reinert edited this paper, and Rachel Slattery provided layout.

The Brookings Institution is a nonprofit organization devoted to independent research and policy solutions. Its mission is to conduct high-quality, independent research and, based on that research, to provide innovative, practical recommendations for policymakers and the public. The conclusions and recommendations of any Brookings publication are solely those of its author(s), and do not reflect the views of the Institution, its management, or its other scholars.