

McKinsey  
Global Institute

# China and the world

Inside the dynamics of a changing relationship

July 2019

# McKinsey Global Institute

Since its founding in 1990, the McKinsey Global Institute (MGI) has sought to develop a deeper understanding of the evolving global economy. As the business and economics research arm of McKinsey & Company, MGI aims to provide leaders in the commercial, public, and social sectors with the facts and insights on which to base management and policy decisions.

MGI research combines the disciplines of economics and management, employing the analytical tools of economics with the insights of business leaders. Our “micro-to-macro” methodology examines microeconomic industry trends to better understand the broad macroeconomic forces affecting business strategy and public policy. MGI's in-depth reports have covered more than 20 countries and 30 industries. Current research focuses on six themes: productivity and growth, natural resources, labor markets, the evolution of global financial markets, the economic impact of technology and innovation, and urbanization. Recent reports have assessed the digital economy, the impact of AI and automation on employment, income inequality, the productivity puzzle, the economic benefits of tackling gender inequality, a new era of global competition, Chinese innovation, and digital and financial globalization.

MGI is led by three McKinsey & Company senior partners: Jacques Bughin, Jonathan Woetzel, and James Manyika, who also serves as the chairman of MGI. Michael Chui, Susan Lund, Anu Madgavkar, Jan Mischke, Sree Ramaswamy, and Jaana Remes are MGI partners, and Mekala Krishnan and Jeongmin Seong are MGI senior fellows.

Project teams are led by the MGI partners and a group of senior fellows and include consultants from McKinsey offices around the world. These teams draw on McKinsey's global network of partners and industry and management experts. The MGI Council, which includes leaders from McKinsey offices around the world and the firm's sector practices, includes Michael Birshan, Andrés Cadena, Sandrine Devillard, André Dua, Kweilin Ellingrud, Tarek Elmasry, Katy George, Rajat Gupta, Eric Hazan, Acha Leke, Scott Nyquist, Gary Pinkus, Sven Smit, Oliver Tonby, and Eckart Windhagen. In addition, leading economists, including Nobel laureates, advise MGI research.

The partners of McKinsey fund MGI's research; it is not commissioned by any business, government, or other institution. For further information about MGI and to download reports, please visit [www.mckinsey.com/mgi](http://www.mckinsey.com/mgi).

# China and the world: Inside the dynamics of a changing relationship

July 2019

## **Authors**

Jonathan Woetzel, Shanghai

Jeongmin Seong, Shanghai

Nick Leung, Hong Kong

Joe Ngai, Hong Kong

James Manyika, San Francisco

Anu Madgavkar, Mumbai

Susan Lund, Washington, DC

Andrey Mironenko, Sydney

# Preface

The relationship between China and the rest of the world appears to be entering a new phase. China's economic miracle was fueled by industry and investment, but today domestic consumption is the main driving force of growth. The country is becoming less exposed in economic terms to the rest of the world. However, reflecting China's rise to being the world's second-largest economy and its leading trading nation, the rest of the world is becoming more exposed to China. These shifts have been accompanied by trade tensions and rising protectionism in many countries, raising the question whether we have reached a point of peak integration between China and the world.

In this report, we look at the extent of China's global scale and integration, and highlight the findings of the new McKinsey Global Institute China-World Exposure Index. We examine the exposure of sectors and countries to the China-world relationship, with particular emphasis on the technology and consumer sectors. Finally, we simulate what value might be at stake for China and the rest of the world from less engagement and from more engagement, and briefly explore how businesses might navigate what may be a highly uncertain environment. This report is part of a series of MGI publications on global trade that includes *Digital globalization: The new era of global flows* in March 2016 and *Globalization in transition: The future of trade and value chains* in January 2019.

This research was led by Jonathan Woetzel, a director of MGI based in Shanghai, and Jeongmin Seong, an MGI senior fellow in Shanghai; Nick Leung, McKinsey senior partner and chairman of McKinsey Greater China; and Joe Ngai, McKinsey senior partner and managing partner of McKinsey Greater China; James Manyika, chairman and director of MGI in San Francisco; Anu Madgavkar, MGI partner in Mumbai; and Susan Lund, MGI partner in Washington, DC. Andrey Mironeko and James Bien led the research team, which comprised Mo Chen, Carmen Liu, Meng Meng, Raye Qin, Erik Rong, Ben Wang, and Minyu Xiao. We are also grateful for the input and guidance of Rik Kirkland, McKinsey partner for global publishing in London; Glenn Leibowitz, McKinsey's group head of external relations in Greater China; and Ziad Haider, head of risk for McKinsey, Asia.

Our academic and external advisers challenged our thinking and added new insights. We extend sincere thanks to Martin Baily, Bernard L. Schwartz Chair in Economic Policy Development and senior fellow and director of the Business and Public Policy Initiative at the Brookings Institution; Gordon Orr, director emeritus and senior adviser to McKinsey; Dr. Andrew Sheng, distinguished fellow of the Asia Global Institute; and Nicholas R. Lardy, Anthony M. Solomon Senior Fellow at the Peterson Institute for International Economics. We thank the many business leaders, policy makers, and researchers at public and private institutions who shared their insights confidentially.

This project benefited immensely from the industry expertise of many McKinsey colleagues. We thank Stefan Burghardt, Albert Chang, Wonsik Choi, Michael Chui, Karel Eloit, Paul Gao, Mingyu Guan, Patrick Hertzke, Sheng Hong, Forest Hou, Richard Huang, Daniel Hui, Mekala Krishnan, Gang Liang, Lan Luan, Katrina Lv, Felix Poh, John Qu, Dennis Schwedhelm, Sha Sha, Yezhou Shi, Antonio Sun, Florian Then, Christopher Thomas, Jin Wang, Ting Wu, Alex You, Cherie Zhang, Derek Zhang, Haimeng Zhang, Susan Zhang, Gaobo Zhou, Tiankai Zhu, and Daniel Zipser.

This report was produced by MGI senior editor Janet Bush, editorial production manager Julie Philpot, and senior graphic designers Marisa Carder and Patrick White, with support from Cathy Gui, MGI's head of external relations in Asia Pacific; Lauren Meling, MGI digital editor; and Timothy Beacom, MGI content specialist.

This report contributes to MGI's mission to help business and policy leaders understand the forces transforming the global economy and prepare for the next wave of growth. As with all MGI research, this work is independent, reflects our own views, and has not been commissioned by any business, government, or other institution. We welcome your comments on the research at [MGI@mckinsey.com](mailto:MGI@mckinsey.com).

### **Jacques Bughin**

Director, McKinsey Global Institute  
Senior partner, McKinsey & Company  
Brussels

### **James Manyika**

Director and Chairman, McKinsey Global Institute  
Senior partner, McKinsey & Company  
San Francisco

### **Jonathan Woetzel**

Director, McKinsey Global Institute  
Senior partner, McKinsey & Company  
Shanghai

**July 2019**





# China and the world: Inside the dynamics of a changing relationship

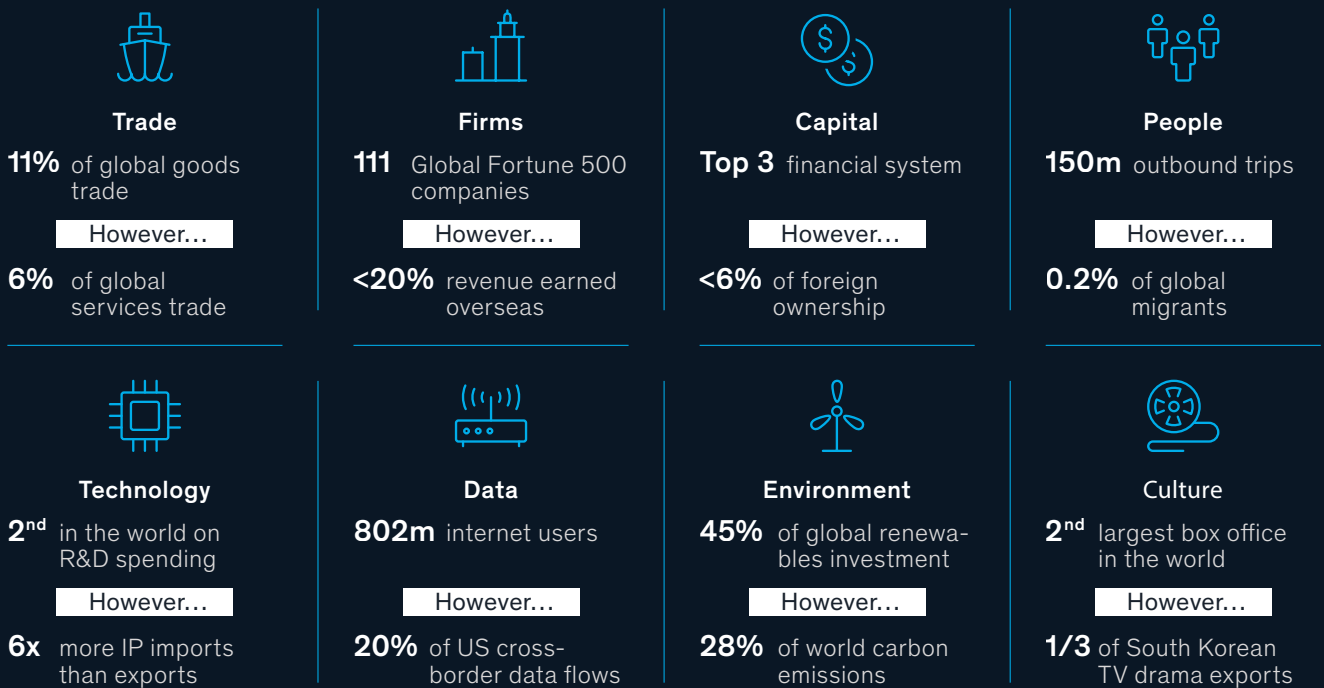
China has made progress in integrating with the world economy, achieving true global scale as a trading nation, but not in other areas such as finance. Now the relationship between China and the rest of the world is changing. A great deal of value could be at stake depending on whether there is more or less engagement. Businesses will need to adjust their approach to navigate the uncertainties ahead.

- China, which became the world's largest economy in purchasing-power-parity terms in 2014, is a global power in scale but not always in global integration. It became the world's largest trading nation of goods in 2013. However, although China has 111 Global Fortune 500 companies, more than 80 percent of their revenue is still earned at home. China's banking, securities, and bond markets rank in the global top three in size, but international players have limited presence.
- The relationship between China and the world is changing. On the new McKinsey Global Institute China-World Exposure Index, China's exposure to the world in trade, technology, and capital has fallen in relative terms. Conversely, the world's exposure to China has increased. This reflects the rebalancing of the Chinese economy toward domestic consumption. In 11 of the 16 quarters since 2015, consumption contributed more than 60 percent of total GDP growth. Exposure to China varies significantly among sectors and geographies, according to our analysis of 20 sectors and 73 economies.
- China's technology value chains are highly integrated globally. Our analysis of 81 technologies in 11 categories found that more than 90 percent of technologies used in China follow global standards. Our study of three value chains suggests that Chinese players have grown rapidly, but they still import critical components such as reduction gears (robotics), power electronics (electric vehicles), and equipment (semiconductors).
- China's consumer market is likely to remain buoyant on the back of rising incomes. The level of integration with the world in a range of consumer categories is already high, with scope for even more. The penetration of multinational corporations in Chinese consumer markets is almost double the penetration in US markets, but they are now facing competition from domestic players. Of 30 consumer categories, multinationals have lost share in 11. Two trends offer further opportunities for domestic and foreign players. First, Chinese consumers are demanding more and better choices in goods and services. Second, more Chinese people are traveling abroad. Outbound trips have grown at 13 percent per year since 2010 and reached 150 million in 2018.
- Our simulation shows that \$22 trillion to \$37 trillion of economic value (equivalent to about 15 to 26 percent of global GDP by 2040) could be at stake from less or more engagement between China and the world in five areas: (1) growth as an import destination; (2) liberalization of services; (3) globalization of financial markets; (4) collaboration on global public goods; and (5) flows of technology and innovation. Less engagement between China and the world could mean higher tariffs, more limited trade and technology flows, and continuing gaps in addressing key global challenges. More engagement could see China importing more from the rest of the world, greater two-way flows of technology, and a more competitive Chinese services sector; reaching solutions to global issues would be more likely. In both scenarios, different stakeholders could experience upsides and downsides as well as conflicting priorities.
- Businesses may need to adjust their approach to uncertain, and potentially higher, risk conditions. We suggest four areas for consideration: (1) assess their short- and long-term exposure to the China-world relationship; (2) determine their investment and value chain posture; (3) develop the operational excellence needed to manage risks and uncertainty; and (4) adopt a "survivor's mind-set," both optimistic and realistic, improving their balance sheet and maintaining robust access to capital, and looking for opportunities to acquire and restructure amid the uncertainty.



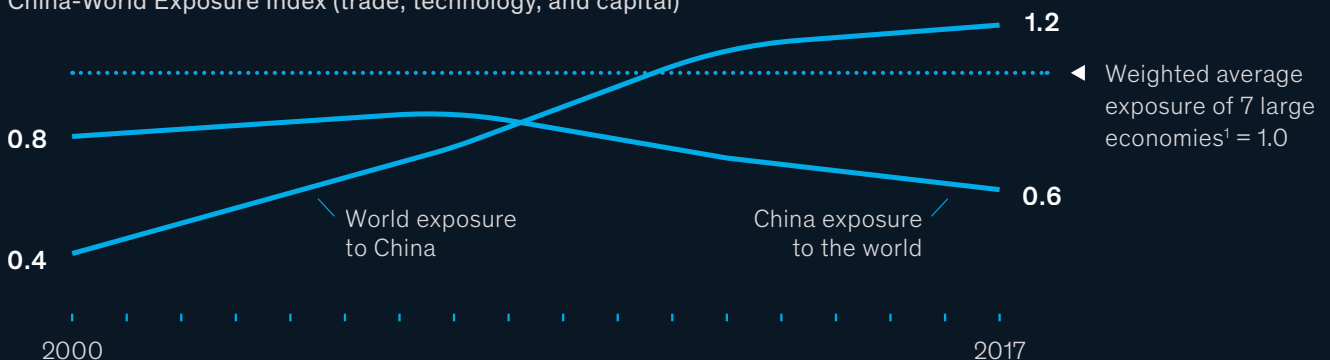
# China and the world: A changing relationship

China has achieved global scale, but more can be done to integrate



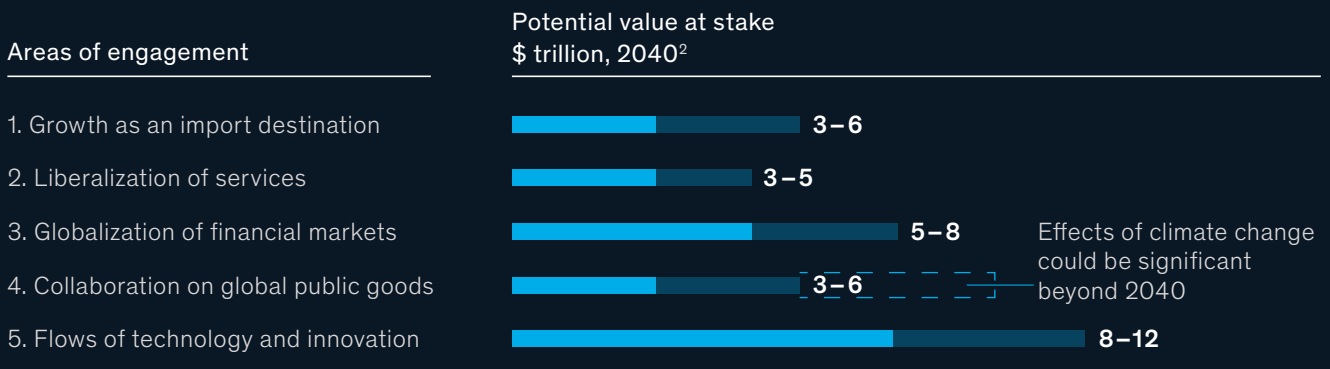
## China has been reducing its exposure to the world, while the world's exposure to China has risen

China-World Exposure Index (trade, technology, and capital)



## Significant value is at stake from less or more engagement between China and the world

Simulated impact, 2040



**Between \$22 trillion and \$37 trillion of economic value (equivalent to about 15 to 26 percent of global GDP by 2040) could be at stake from less or more engagement between China and the world**

<sup>1</sup> China, Japan, Germany, France, India, United Kingdom, and United States.

<sup>2</sup> Estimated value at stake based on specific conditions and assumptions, and should not be taken as a forecast.



# Executive summary

China's growth took off when it began to connect its economy to those of the rest of the world, and when it embraced a market-based system and global best practices of foreign partners. China today is a global power in scale. It became the world's largest trading nation in goods in 2013; has 111 Global Fortune 500 companies, comparable with the US tally; and is in the world's top two for receiving and being the source of foreign direct investment (FDI).

However, not all dimensions of China's scale have translated into global integration. A huge majority of Chinese firms' revenue still comes from the home economy. Operational and regulatory complexities in China's financial markets remain a barrier to international players. Cross-border data flows tend to be limited despite the massive amount of data China's digital ecosystem generates.

China's opening and reform have offered economies in the rest of the world large benefits. Consumers have benefited from lower prices due to Chinese imports, and multinational corporations have tapped into new sources of growth in China's quickly expanding, dynamic market. However, the evolution has entailed costs, too, notably in the form of lost middle-income jobs, particularly in advanced economies.

The relationship between China and the world now is changing. The new McKinsey Global Institute (MGI) China-World Exposure Index shows that the world's exposure to China has increased, while China's exposure to the world has fallen in relative terms. Accompanying this shift are the beginnings of a reevaluation of the relationship. Trade disputes are making daily headlines, new rules are emerging to scrutinize technology flows, protectionism is on the rise, and geopolitical tensions are becoming more heated. Could we be seeing the beginning of a trend of less engagement between China and the world after the years of deepening ties? Could we be witnessing peak integration? Conversely, what opportunities could more engagement offer? What value could be at stake for all players? How should businesses navigate what is likely to be an increasingly uncertain environment?

In this report, we examine the state of China's globalization on eight dimensions (chapter 1) and discuss shifts in the mutual exposure of China and the rest of the world, looking in detail at sectors and countries (chapter 2). We then look in particular detail at technology (chapter 3)—which is central to the economic development of all economies, including China's—and consumer markets, which are now the main engine of China's growth, and arguably one of the main sources of global growth (chapter 4). In chapter 5, we discuss the value at stake from less and more engagement between China and the world. Finally, in chapter 6, we explore how business executives may consider adjusting their approach in the face of the shifting relationship between China and the world. We note that this analysis builds on MGI's earlier research on shifting global value chain that discusses "the new China effect" driving global demand growth and reaching a new level of industry maturity.<sup>1</sup>

## **China is a global power in scale, but scale has not always translated into global integration**

China became the world's largest economy in purchasing-power-parity terms in 2014. In nominal terms, China's GDP was 66 percent that of the United States in 2018, making it the second-largest economy in the world. On the MGI Connectedness Index that ranks participation by flows of goods, services, finance, people, and data, China was the ninth-most-connected country in the world in 2017.<sup>2</sup> In 2018, China accounted for about 16 percent of world GDP.

---

<sup>1</sup> *Globalization in transition: The future of trade and value chains*, McKinsey Global Institute, January 2019.

<sup>2</sup> *Digital globalization: The new era of global flows*, McKinsey Global Institute, March 2016.

**China has achieved global scale, but more can be done.**

|                      | <b>China's scale</b>  | <b>More room to globalize further</b>   |
|----------------------|---|---|
| Trade                | China has been the world's largest goods trading nation since 2013, accounting for 11.4% of global goods trade in 2017  | ... but China accounted for only about 6.4% of global services sector trade in 2017   |
| Firms                | China has 111 Global Fortune 500 companies, comparable with the US  | ... but they are still anchored in the domestic market (18% of revenue earned overseas vs 44% for S&P 500 firms)  |
| Capital              | China has a large financial system (the largest banking system, and second- and third-largest stock and bond markets, respectively)   | ... but cross-border flows (3–4x smaller than US flows) and foreign participation are limited (foreign ownership is less than 6% in banking, stock, and bond markets)   |
| People               | China is the world's largest source of outbound students (17% of international tertiary degree students in 2017) and tourists (Chinese tourists made 150 million outbound trips in 2018, the most in the world) | ... but people flows are still geographically concentrated (~60% of outbound students go to the United States, Australia, and the United Kingdom), and migrant flows to China are only 0.2% of global total         |
| Technology           | China has invested heavily in its R&D (the world's second-largest spender with \$273 billion in 2018)   | ... but still relies heavily on imported technology (more than half of technology import contracts come from just three countries) and intellectual property (China's IP imports are six times larger than exports) |
| Data                 | China has the most internet users in the world (more than 800 million), generating huge amounts of data   | ... but cross-border data flows are limited (8th highest in the world, but only 20% of US flows)  |
| Environmental impact | China accounts for 45% of global renewables investment  | ... but it is still the world's largest source of carbon emissions (28% of total)   |
| Culture              | China has invested heavily in developing global cultural presence (12% of top 50 world movies shot in China in 2017 vs 2% in 2010)  | ... but cultural reach is still relatively limited (exports of television dramas are only one-third of South Korea's)   |

Source: McKinsey Global Institute analysis

However, China's journey to global prominence has been uneven. To gauge the extent of its integration with the world, we look at eight dimensions of China's global scale and integration (Exhibit E1).

- **Trade.** China has become a major global player in trade as a supplier and as a market. The country became the world's largest exporter of goods in 2009, and the largest trading nation in goods in 2013. Its share of global goods trade increased from 1.9 percent in 2000 to 11.4 percent in 2017. In an analysis of 186 countries, China is the largest export destination for 33 countries and the largest source of imports for 65. However, trade exposure to China varies substantially by region and sector. China has a disproportionately high impact on specific regions (particularly those close by) and sectors, notably those with globally integrated technology chains, and resource-exporting sectors for which China is a big market. China became the world's fifth-largest exporter of services with \$227 billion of exports in 2017, triple the value in 2005. China also imported \$468 billion in services in 2017, making it the second-largest services importer in the world. However, China's global scale in services trade is not as significant as in goods. China accounts for 6.4 percent of global services trade, about half that of goods trade. Globally, services trade is growing 60 percent faster than goods trade.<sup>1</sup>

<sup>1</sup> *Globalization in transition: The future of trade and value chains*, McKinsey Global Institute, January 2019.

# 14x

more Chinese traveled  
overseas in 2018 vs 2000

- **Firms.** The number of Chinese firms operating around the world has grown at an estimated 16 percent a year since 2010, from 10,167 to 37,164, according to China's Ministry of Commerce, and this is likely an underestimate. Some Chinese firms have achieved global scale. Consider that in 2018, the Global Fortune 500 included 111 firms from mainland China and Hong Kong, near the US total of 126. In 2018, MGI found that China accounted for 10 percent of global firms in the top 1 percentile of economic profit in 2014 to 2016, up from less than 1 percent in 1995 to 1997.<sup>1</sup> Although the share of these firms' revenue earned outside China has increased, less than 20 percent of revenue comes from overseas, even for these global firms.<sup>2</sup> To put this in context, the average share of revenue earned overseas for S&P 500 companies is 44 percent. Furthermore, only one Chinese company is among the world's 100 most valuable brands in 2018.<sup>3</sup>
- **Capital.** China was the world's second-largest source of outbound FDI and the second-largest recipient of inbound FDI from 2015 to 2017. However, its financial system remains far from globalized. Foreign ownership accounted for only about 2 percent of the Chinese banking system, 2 percent of the bond market, and about 6 percent of the stock market in 2018. Furthermore, in 2017, China's inbound and outbound capital flows (including FDI, loans, debt, equity, and reserve assets) were only about 30 percent those of the United States.
- **People.** Flows of people—namely students and tourists—between China and the world are rising rapidly. China is now the largest source of outbound students (608,400, or 16 times more than in 2000) and tourists (150 million trips taken in 2018, or 14 times more than in 2000). In contrast, inbound students and tourists to China accounted for only 3 percent of the global overseas student population and 4 percent of overseas trips taken in 2017. Outbound flows of students have been highly concentrated. Only three destinations—Australia, the United Kingdom, and the United States—have accounted for about 60 percent of the total. In 2017, half of the trips taken by Chinese tourists were to the Greater China area, and an additional 29 percent to Asia. Migration flows have been small. Chinese emigrants accounted for 2.8 percent of the global total, and immigrants to China for 0.2 percent, between 1990 and 2017.
- **Technology.** China's scale in R&D expenditure has soared. Spending on domestic R&D rose from about \$9 billion in 2000 to \$293 billion in 2018, the second-highest figure in the world, behind the United States.<sup>4</sup> However, China depends on imports of some core technologies, such as semiconductors and optical devices, as well as intellectual property (IP) from abroad. In 2017, China incurred \$29 billion worth of imported IP charges, while charging only about \$5 billion for exported IP (17 percent of its imports).<sup>5</sup> China's technology import contracts are highly concentrated geographically, with more than half of purchases of foreign R&D coming from only three countries—31 percent from the United States, 21 percent from Japan, and 10 percent from Germany.
- **Data.** China is home to the world's largest population of internet users, with more than 800 million people connected to the web. However, despite recent growth, its cross-border data flows are limited. China is in the global top eight for data flows in bandwidth, but these flows are small compared with the vast size of its digital economy, at only 20 percent of US data flows.<sup>6</sup>

<sup>1</sup> *Superstars: The dynamics of firms, sectors, and cities leading the global economy*, McKinsey Global Institute, October 2018.

<sup>2</sup> The share of revenue earned by Chinese firms in the Global Fortune 500 increased from 10 percent in 2007 to 19 percent in 2017. In 2017, US firms on the list accounted for 44 percent of revenue earned outside the United States, according to Standard & Poor's. See Howard Silverblatt, *S&P 500 2017: Global sales, S&P Dow Jones Indices*, August 2018, [us.spindices.com/indexology/djia-and-sp-500/sp-500-global-sales](http://us.spindices.com/indexology/djia-and-sp-500/sp-500-global-sales).

<sup>3</sup> "The world's most valuable brands," *Forbes*, [forbes.com/powerful-brands/list/](http://forbes.com/powerful-brands/list/); and Best global brands 2018 rankings, Interbrand, [interbrand.com/best-brands/best-global-brands/2018/ranking/](http://interbrand.com/best-brands/best-global-brands/2018/ranking/).

<sup>4</sup> *The China effect on global innovation*, McKinsey Global Institute, October 2015; and *Digital China: Powering the economy to global competitiveness*, McKinsey Global Institute, December 2017; [http://www.xinhuanet.com/english/2019-03/03/c\\_137865068.htm](http://www.xinhuanet.com/english/2019-03/03/c_137865068.htm)

<sup>5</sup> "Imported" IP charges are payments China makes to other countries for their IP. "Exported" IP charges are payments China receives from other countries for domestic IP.

<sup>6</sup> *Digital globalization: The new era of global flows*, McKinsey Global Institute, March 2016.

# 12%

of world's top movies at least partly shot in China in 2017 vs

# 2%

in 2010

- **Environmental impact.** China has been the world's largest source of carbon emissions since 2006, and today accounts for 28 percent of annual global emissions (although a much lower share of the accumulated stock of greenhouse-gas emissions). The country has been investing heavily in renewable energy. In 2017, it invested about \$127 billion, 45 percent of the global total and three times larger than US and European investment, each \$41 billion. In addition to being motivated by its commitment as a signatory to the Paris Agreement to reduce its carbon intensity by 40 to 45 percent from 2005 to 2020—a milestone achieved by the end of 2017—China is seeking to reduce its carbon intensity because of domestic issues including pollution.<sup>1</sup> The median exposure of China's PM 2.5, an indicator of air pollution, was 3.7 times larger than the Organisation for Economic Co-operation and Development (OECD) average in 2016, according to the World Bank.
- **Culture.** China has invested heavily in building a global cultural presence. Consider that the number of Confucius Institutes around the world expanded from 298 in 2010 to 548 in 2017. Financing of the global entertainment industry and competitive production facilities has led to more movies being shot in China: 12 percent of the world's top 50 movies were shot at least partially in China in 2017, up from 2 percent in 2010. Despite significant investment, however, China has not yet achieved mainstream cultural relevance globally. Its exports of television dramas are only about one-third of South Korea (measured by the value of exports), and the number of subscribers to top ten Chinese musicians on a global streaming platform are 3 percent those of top ten South Korean artists, for example.

## The relationship between China and the world is changing

Looking at the mutual exposure of China and the world on trade, capital, and technology on a relative basis, we find that China's exposure is falling, while the world's exposure to China is rising.

### China is becoming less exposed to the rest of the world, which, in turn, is becoming more exposed to China

Focusing on three of the eight dimensions, MGI has analyzed the mutual exposure of China and the rest of the world on trade, technology, and capital.<sup>2</sup> From 2000 to 2017, the world's exposure to China increased on all three, while China's exposure fell (Exhibit E2). MGI's new China-World Exposure Index measures the relative importance of these economic flows for the Chinese and global economies, compared with other large economies. The rest of the world's aggregate index rose from 0.4 in 2000 to 1.2 in 2017, while China's exposure to the world peaked at 0.9 in 2007 and declined to 0.6 by 2017.

China's declining exposure partly reflects the country's rebalancing of its economy toward domestic consumption. In 11 of the 16 quarters since 2015, domestic consumption contributed more than 60 percent of total GDP growth. In 2017 to 2018, about 76 percent of GDP growth came from domestic consumption, while net trade made a negative contribution to GDP growth. As recently as 2008, China's net trade surplus amounted to 8 percent of GDP; by 2018, that figure was estimated to be only 1.3 percent—less than either Germany or South Korea, where net trade surpluses amount to between 5 and 8 percent of GDP.<sup>3</sup> Rising demand and the development of domestic value chains in China also partly explain the recent decline in trade intensity at the global level. China is consuming a larger share of output produced. These are significant changes that alter China's priorities and shift the dynamics of its relationship with the world.

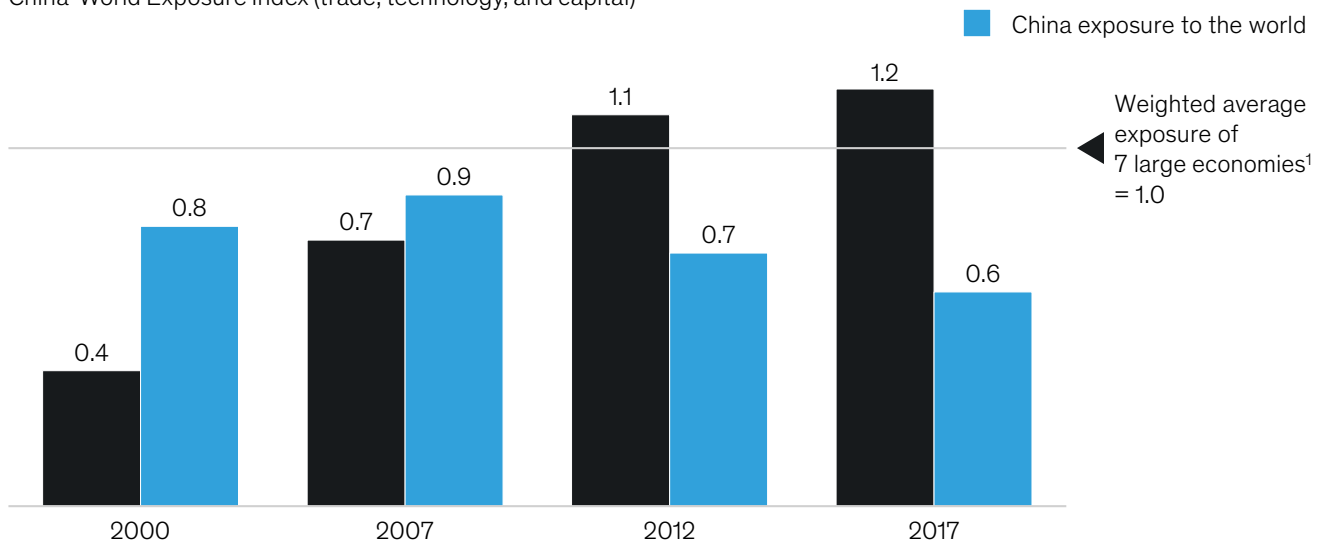
<sup>1</sup> *Global trends in renewable energy investment report 2018*, United Nations Environment Programme and Bloomberg New Energy Finance, 2018.

<sup>2</sup> The index covers trade (exposure measured by a country's exports divided by rest-of-world consumption) and demand (country's imports divided by rest-of-world production); technology (country's exports of IP and technology services and equipment divided by rest-of-world R&D spending); and capital (country's outbound FDI divided by rest-of-world inbound FDI) and investment opportunities (country's inbound FDI divided by rest-of-world outbound FDI). We first measured the exposure between China and the world over the past two decades. We set a value of 1.0 as an average exposure index between the world and seven large economies (China, France, Germany, India, Japan, the United Kingdom, and the United States): a value greater than 1.0 suggests the world is more exposed to China than to the seven large economies, on average, whereas a value less than 1.0 suggests the world is less exposed to China than to the seven large economies.

<sup>3</sup> *Globalization in transition: The future of trade and value chains*, McKinsey Global Institute, January 2019.

## China has been reducing its relative exposure to the world while the world has been increasing its exposure to China.

China-World Exposure Index (trade, technology, and capital)



<sup>1</sup> China, France, Germany, India, Japan, United Kingdom, and United States.

Source: McKinsey Global Institute analysis

The decline in China's exposure also reflects the reality that the economy is still relatively closed in comparison with developed economies. On trade, after joining the World Trade Organization (WTO), China cut tariffs from an average of 16 percent in 2000 to about 9 percent in 2009. However, the average tariff rate edged up to 10.6 percent in 2017 (although we note that it may come down again to 7.5 percent with the 2018 announcement of a new round of tariff cuts), according to data from the United Nations Conference on Trade and Development (UNCTAD).<sup>1</sup> In comparison, the US and European Union (EU) average tariff was around 3 to 4 percent in 2017. On capital, barriers persist. On the OECD's FDI Regulatory Restrictiveness Index for services, the index has come down to 0.39 from 0.74, but this is still far higher than the 0.08 OECD average.<sup>2</sup> We note that the index may not capture recent moves to ease restrictions, such as progress in adopting a "negative list" approach.<sup>3</sup>

The increasing exposure of the rest of the world to China reflects China's increasing importance as a market, supplier, and provider of capital. China accounts for 35 percent of global manufacturing output. Although it accounts for only 10 percent of global household consumption, it was the source of 31 percent of global household consumption growth from 2010 to 2017, according to World Bank data. Moreover, in many categories including automobiles, spirits, luxury goods, and mobile phones, China is the largest market in the world, accounting for about 30 percent (or more) of global consumption. As we have noted, it was the world's second-largest source and second-largest recipient of FDI between 2015 and 2017. However, exposure to China varies among sectors and countries, according to our analysis of 73 economies and 20 sectors.

<sup>1</sup> "China to cut tariffs on imports including machinery, textiles," Bloomberg News, September 26, 2018. Tariff figures are simple averages drawn from announcements collected by UNCTAD. We note that, on a weighted-average basis, enforced tariffs are lower overall, although the comparison with developed markets is still of the same order of magnitude.

<sup>2</sup> The OECD index was last updated in 2017, and the calculations may not capture changes to Chinese regulations since then.

<sup>3</sup> The negative list stipulates procedures, standards, and approvals needed before access is granted to a "restricted" market. Sectors that do not appear on the list are "permitted" and therefore have no special requirements for investors. For more, see Dorcas Wong, "China's new negative list targets unified market access," *China Briefing*, January 2019.

## Countries with regional proximity, significant trade in resources, and cross-border capital flows are most exposed to China

We studied country-level exposure to Chinese imports (share of domestic production exported to China), exports (share of domestic consumption imported from China), and capital (inbound FDI from China as a share of domestic investment). Of the 73 economies we studied, 69 had increased their exposure to Chinese imports as a share of domestic production, 72 had increased their exposure to Chinese exports as a share of domestic consumption, and 58 had increased their exposure to Chinese capital as a share of domestic investment since 2007 (Exhibit E3).

# 16%

of gross Australian output imported by China today vs

# 4%

in 2003–07

### — Asian economies are tightly linked with China through regional supply chains.

Exposure of Asian countries to China, especially China as an export destination, has been growing. In many cases, these countries are tightly connected to China in global value chains, and trade with China accounts for a large portion of domestic production. For example, trade with China (including both imports and exports) amounts to almost 30 percent of Singaporean production. MGI has found that value chains are becoming more regional and less global; the intraregional share of global goods rose by 2.7 percentage points from 2013 to 2017.<sup>1</sup> This development is particularly noticeable in Asia. China is the largest trading partner for Malaysia, Singapore, and the Philippines, for instance. In some of these economies, Chinese capital is equally significant. Between 2013 and 2017, Chinese outbound FDI was equivalent to 6 percent of domestic investment in Malaysia and 5 percent in Singapore.

— **Resource-rich countries are highly exposed to Chinese demand.** Countries that export natural resources are highly exposed to Chinese demand. For example, Chinese imports now account for 15 percent of production in South Africa, compared with only 2 percent in the period from 2003 to 2007. Similarly, Chinese imports now account for 16 percent of gross output in Australia, compared with just 4 percent in the earlier period. Iron ore alone accounts for 48 percent of Australia's exports to China (minerals and metals in total represent 84 percent of exports), and 21 percent of Australia's mining and quarrying output is exported to China.

— **Some emerging and smaller mature economies are highly exposed to Chinese investment.** From 2013 to 2017, Chinese outbound FDI was equivalent to 13 percent of domestic investment in Egypt and 8 percent in Pakistan, for example. MGI research in 2017 found that China was not only Africa's largest trading partner, but also its largest source of finance for infrastructure and its third-largest source of foreign aid.<sup>2</sup> Significant shares of Chinese FDI have gone to the real estate, energy, and transportation infrastructure sectors.


— **In contrast, large developed economies have relatively lower exposure to China.** Given the sizes of their domestic economies, developed economies (especially those in Western Europe and North America) have relatively lower trade and investment exposure to China. Exports to China typically account for less than 5 percent of gross output, and imports from China account for less than 5 percent of domestic consumption. Furthermore, Chinese FDI was equivalent to less than 1 percent of domestic investment.

<sup>1</sup> *Globalization in transition: The future of trade and value chains*, McKinsey Global Institute, January 2019.

<sup>2</sup> In many cases, exposure to Chinese capital is driven by the country's involvement in the Belt and Road Initiative (BRI), although we should note that Chinese investment in African economies predated the announcement of the initiative. For more on the China-Africa relationship, see *Dance of the lions and dragons: How are Africa and China engaging, and how will the partnership evolve?*, McKinsey & Company, June 2017.



## Countries with regional proximity, significant trade in resources, and cross-border capital flows are the most exposed to China.

Exposure    Least  Most

| Archetypes                  | Countries      | Exports to China as a share of domestic production, % |         | Imports from China as a share of domestic production, % |         | Inbound FDI from China as a share of domestic investment, % |         |
|-----------------------------|----------------|---|---------|---|---------|---|---------|
|                             |                | 2003–07   | 2013–07 | 2003–07   | 2013–07 | 2003–07   | 2013–07 |
| Regional proximity exposure | South Korea    | 8   | 11      | 4   | 6       | <1  | <1      |
|                             | Malaysia       | 8   | 11      | 5   | 11      | <1  | 6       |
|                             | Philippines    | 12  | 8       | 6   | 14      | 6   | <1      |
|                             | Singapore      | 10  | 11      | 12  | 18      | 2   | 5       |
|                             | Vietnam        | 3   | 11      | 6   | 13      | 3   | 1       |
| Resource-related exposure   | Australia      | 4   | 16      | 3   | 7       | <1  | 3       |
|                             | Chile          | 5   | 13      | 3   | 10      | <1  | <1      |
|                             | Costa Rica     | 9   | 9       | 2   | 5       | 3   | <1      |
|                             | Ghana          | <1  | 8       | 5   | 18      | <1  | 4       |
|                             | South Africa   | 2   | 15      | 2   | 6       | <1  | 3       |
| Capital exposure            | Egypt          | <1  | <1      | 3   | 5       | 1   | 13      |
|                             | Pakistan       | <1  | 1       | 3   | 7       | 2   | 8       |
|                             | Peru           | 4   | 7       | 1   | 5       | 2   | 6       |
|                             | Portugal       | <1  | 2       | <1  | 3       | <1  | 3       |
| Developed economies         | United States  | <1  | 2       | 3   | 6       | <1  | <1      |
|                             | Germany        | 2   | 4       | 2   | 3       | <1  | <1      |
|                             | Japan          | 4   | 5       | 3   | 5       | <1  | <1      |
|                             | United Kingdom | <1  | 2       | 2   | 5       | <1  | 2       |

Source: IHS Markit; National Bureau of Statistics; McKinsey Global Institute analysis


### Key sectors' exposure to China varies

We studied 20 primary industries and manufacturing sectors and the global exposure to Chinese consumption and production as well as Chinese imports and exports (Exhibit E4). We note that our analysis largely covers primary and manufacturing sectors rather than services sectors because primary and manufacturing sectors are more traded and because more data on them are available.

Almost all sectors are exposed to China, given the sheer size of its economy. China accounts for more than 20 percent of global consumption in 17 out of 20 categories in manufacturing, and China's share of services consumption has also increased.<sup>1</sup> This implies that companies looking for sources of growth may not be able to afford to overlook opportunities in China.

<sup>1</sup> *Globalization in transition: The future of trade and global value chains*, McKinsey Global Institute, January 2019.

## Technology, labor-intensive tradables, and resource value chains are exposed to trade with China.

Trade exposure to China    Low  High

| Archetype   | Sector name                                | Trade intensity:<br>global exports<br>as a % of global<br>production | Chinese share of<br>global exports,<br>% |             | Chinese share of<br>global imports,<br>% |             |
|---|--|--|--|-------------|--|-------------|
|   |  |  | 2003–<br>07                              | 2013–<br>17 | 2003–<br>07                              | 2013–<br>17 |
| High level of<br>integration                                  | Computer, electronic, and optical products | 68   | 15                                       | 28          | 12                                       | 16          |
|   | Electrical equipment                       | 32   | 16                                       | 27          | 7  | 9           |
|   | Other machinery and equipment              | 45   | 7  | 17          | 8  | 9           |
| High<br>exposure to<br>Chinese<br>exports                     | Textiles, apparel, and leather             | 46   | 26                                       | 40          | 5  | 5           |
|   | Furniture, safety, fire, other             | 63   | 17                                       | 26          | 2  | 4           |
|   | Other non-metallic mineral products        | 12   | 11                                       | 22          | 5  | 8           |
|   | Rubber and plastics                        | 25   | 10                                       | 19          | 5  | 7           |
|   | Basic metals                               | 35   | 8  | 13          | 8  | 8           |
| High<br>exposure to<br>Chinese<br>imports                     | Mining and quarrying                       | 49   | 1  | 1           | 7  | 21          |
|   | Chemicals                                  | 43   | 4  | 9           | 9  | 12          |
|   | Paper and paper products                   | 24   | 3  | 9           | 6  | 12          |
| Global chains<br>with little<br>trade<br>exposure to<br>China | Other transport equipment                  | 58   | 3  | 6           | 3  | 5           |
|   | Pharmaceuticals                            | 42   | 2  | 4           | 1  | 3           |
|   | Motor vehicles and trailers                | 34   | 1  | 3           | 2  | 7           |
|   | Coke and refined petroleum products        | 28   | 2  | 4           | 4  | 6           |
| Local<br>production<br>for local<br>consumption               | Food, beverages and tobacco                | 15   | 3  | 4           | 3  | 6           |
|   | Fabricated metal products                  | 10   | 14                                       | 23          | 3  | 5           |
|   | Wood and wood products                     | 13   | 11                                       | 22          | 2  | 3           |
|   | Printing and media                         | 10   | 8  | 18          | 2  | 4           |
|   | Agriculture, forestry, and fishing         | 13   | 5  | 5           | 7  | 19          |

Source: IHS Markit; McKinsey Global Institute analysis

In examining engagement through trade, five distinct types with varying degrees of exposure emerge from our analysis:

# 21%

of global mining and quarrying imports went to China in 2013–17 vs

# 7%

in 2003–07

- **China is integrally embedded in the value chains of the electronics, machinery, and equipment sectors.** Sectors with a high level of integration across the board are exposed to China as both a supplier and a market. These sectors are highly traded in general. China's high level of integration in these sectors is reflected in its share of global trade. It accounts for 17 to 28 percent of global exports and for 9 to 16 percent of global imports. China's share of output in these sectors is also considerable, at 38 to 42 percent of the global total.
- **The world depends on Chinese output in highly tradable light manufacturing and labor-intensive sectors.** Sectors in which China has served as factory to the world are exposed to Chinese production. China's share of global production in light manufacturing can be as high as 52 percent (in the case of textiles and apparel). In many cases, global exposure to Chinese exports can also be high. For instance, China accounts for 40 percent of global exports in textiles and apparel, and 26 percent in furniture.
- **Upstream sectors have increased exposure to China as a result of China's industrialization.** Sectors that produce inputs for further processing are exposed to Chinese imports. The growth of China's manufacturing sector has significantly increased its demand for raw materials and intermediate goods that are processed into final goods, and growth in per capita income has increased demand for goods overall in China. China accounted for 7 percent of global mining and quarrying imports in 2003 to 2007, and its share grew to 21 percent by 2013 to 2017.
- **In other sectors that are highly traded globally, China is not a major player.** In sectors where companies focus on serving rapidly growing local demand and local content requirements are in place, trade exposure to China has remained relatively low despite high trade intensities. For example, China accounts for only 4 percent of global pharmaceuticals exports and 3 percent of global imports. Similarly, in motor vehicles, China accounts for only 3 percent of global exports and 7 percent of global imports, despite a relatively high trade intensity. However, given that China is a large market for these sectors, a local presence is important for companies wishing to serve that market.
- **Sectors that are not globally traded tend to have low exposure to China.** We classify five that have relatively low trade intensities, as a "local production for local consumption" archetype. Despite relatively low trade intensity, China accounts for a large share of trade in some of these sectors. For instance, it accounts for 23 percent of global exports of fabricated metals and for 18 percent of global imports of agricultural products.

# 14%

of revenue earned by US information technology sector is in China (MSCI Index)

## China's technology value chains are globally integrated

China has made huge strides in innovation in recent years, becoming a global force in the world's digital economy and artificial intelligence (AI) technologies.<sup>1</sup> In many types of technology, it is already the largest consumer. For instance, China accounted for 40 percent of global mobile phone sales in 2017, 64 percent of battery electric vehicles (BEVs) sales, and 46 percent of semiconductor consumption. Access to the Chinese market has provided many high-tech players with significant growth opportunities. According to an MSCI index, the US information technology sector makes 14 percent of its revenue in China.

China's continued innovation is at the heart of its economic development in an era of spreading digital, automation, and AI technologies. Because technology value chains are some of the most complex, they require the most collaboration, and China is highly integrated in these value chains, with a large share of global exports and imports. Consider, for instance, that in the case of integrated circuits and optical devices, Chinese imports outstrip China's domestic production by a factor of five.

Technology is arguably at the center of the changing relationship between China and the world. Because China is highly exposed to foreign technology flows, it needs continued—if not enhanced—access to technologies to fuel its innovation and enhance productivity. The rest of the world, notably the advanced economies, pays increasing attention to China's rapid technological development. New legislation more closely evaluates Chinese investment that grants access to foreign technology. Close attention has been paid to whether China's technology value chains are becoming decoupled from global value chains, and to China's stated aims to localize technology sectors.<sup>2</sup> China's Made in China 2025 plan sets targets for local players' market share of 40 to 90 percent in 11 of 23 subsectors prioritized by the government.<sup>3</sup>

China has been localizing value chains in different sectors. Rising demand and the development of domestic value chains in China also partly explain the recent decline in trade intensity at the global level. A larger share of output is being consumed domestically in China.<sup>4</sup> In many respects, China's technology markets already appear to be localized, but the degree varies. In the case of solar panels, high-speed rail, digital-payment systems, and electric vehicles (EVs), Chinese players account for more than 90 percent of the domestic market. In other segments including semiconductors and aircraft manufacturing, Chinese players have a very small market share both at home and internationally, and they depend heavily on foreign technology. In the majority of value chains we studied, China has huge room to expand its global presence. At the high end, China has up to 50 percent of the rest-of-world market in solar panels; at the low end, its aircraft manufacturing market share abroad is less than 1 percent (Exhibit E5).

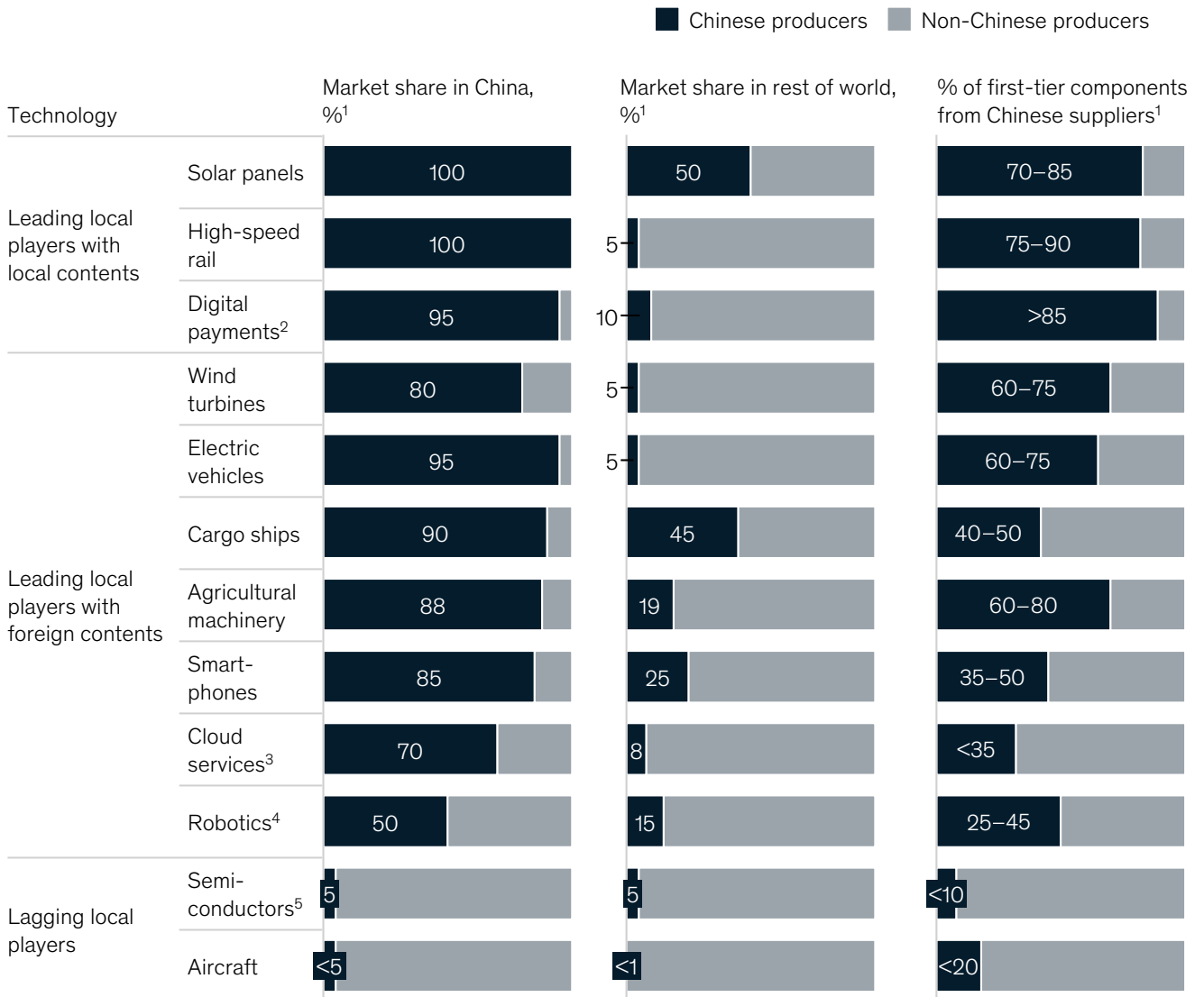
<sup>1</sup> *Digital China: Powering the economy to global competitiveness*, McKinsey Global Institute, December 2017; *Artificial intelligence: Implications for China*, McKinsey Global Institute, April 2017; and *Notes from the AI frontier: Modeling the impact of AI on the world economy*, McKinsey Global Institute, September 2018.

<sup>2</sup> *Made in China 2025 and the future of American industry*, Project for Strong Labor Markets and National Development, US Senate Committee on Small Business & Entrepreneurship, February 2019.

<sup>3</sup> *Made in China 2025 key area technology innovation green book*, National Manufacturing Power Building Strategy Advisory Committee, October 2015.

<sup>4</sup> *Globalization in transition: The future of trade and value chains*, McKinsey Global Institute, January 2019.

**Chinese technology producers have gained market share in key subsegments but still rely on global value chains for inputs.**



<sup>1</sup> Based on 2018 or the latest available data.  
<sup>2</sup> Compares local vs imported software development costs.  
<sup>3</sup> Servers used for cloud storage purposes.  
<sup>4</sup> Captures only industrial robots.  
<sup>5</sup> China and rest-of-world market shares assumed to be equal due to data availability.

Source: Annual reports; literature search; McKinsey Global Institute analysis

# 60– 80%

of inputs to technologies studied come from Chinese suppliers

To gauge China's integration with the world in technology value chains, MGI studied 81 technologies in 11 areas and found that China uses global standards for more than 90 percent of them (Exhibit E6). In the minority of sectors where China's standards have diverged from global ones, economic drivers can explain the shift. For example, in polyvinyl chloride (PVC) manufacturing, the costs associated with adopting a coal-based process versus an ethylene-based process that is more common outside China are lower because China has an abundance of coal. Our analysis finds that China's local producers are able to provide 60 to 80 percent of the technologies studied, which means that China still uses inputs from multinational corporations in at least 20 to 40 percent of cases. Finally, an analysis of comparable standards found that Chinese suppliers may be able to achieve performance on a par with, or better than, global suppliers in 40 to 60 percent of the technologies studied. In some emerging technologies (for instance, 5G, AI, and quantum computing) where a global standard may not yet have been defined, China has begun to make headway. Nevertheless, even in the case of these technologies China has benefited from, and continues to use, foreign equipment, talent, and investment.

Experience around the world suggests that four elements need to be in place to move up the technology value chain: (1) investment at scale; (2) channels through which to acquire technology and know-how; (3) access to large markets; and (4) an effective system to encourage competition and innovation. Historical cases of technological progress in Japan (automotive), South Korea (semiconductors), and China (high-speed rail and LCD) suggest that all four elements have played critical roles in technology development and innovation. In Chinese high-speed rail, for instance, the sector has benefited from continued state-led investment that has supported the construction of 20,000 kilometers of railroad since 2004. China arranged technology transfer agreements with four leading high-speed rail incumbents. China is the world's largest market for high-speed rail with 65 percent of global mileage. Given that it was a national priority, business executives and engineers understood the urgency and effectively mobilized resources to “digest and innovate” in order to develop solutions for the Chinese environment and deploy at scale.<sup>1</sup>

Looking at the four elements in China's technological sectors, we find that China has substantial scale in investment (the first element) and markets (the third element). It has capacity to support a great deal of investment in technological R&D and to create new markets to commercialize the technologies.<sup>2</sup> Therefore, the critical ways for China to move up the value chain are to make progress on developing and acquiring core technology and know-how (the second element), and designing an effective system to ensure that its ecosystem has the competitive dynamics to fuel innovation (the fourth element). In both cases, participation in global value chains and stronger flows of capital, knowledge, and talent could accelerate China's move up the value chain.

---





















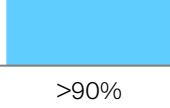
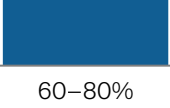
<sup>1</sup> *The China effect on global innovation*, McKinsey Global Institute, October 2015.

<sup>2</sup> *Digital China: Powering the economy to global competitiveness*, McKinsey Global Institute, December 2017.

**China has integrated with global standards for most technologies and is showing different technology localization across value chains.**

0–20  80–100

Share where Chinese companies technically provide better than or on par with global leader<sup>1</sup>

| Areas/sectors                     | Technologies reviewed  | Share using global standard <sup>1</sup> | Share that has local provider <sup>1</sup>   | Share where Chinese companies technically provide better than or on par with global leader <sup>1</sup> |
|-----------------------------------|--|--|--|---|
| Basic materials                   | <ul style="list-style-type: none"> <li>Mining</li> <li>Steel</li> </ul>  | 7  |    |                      |
| Chemicals                         | <ul style="list-style-type: none"> <li>Oil and gas</li> <li>Commodity and specialty chemicals</li> <li>Textiles</li> </ul>   | 12                                       |    |                      |
| Components                        | <ul style="list-style-type: none"> <li>Display</li> <li>Integrated circuits</li> </ul>                                       | 8  |    |                      |
| Electric vehicles                 | <ul style="list-style-type: none"> <li>Battery electric vehicles</li> <li>PHEVs</li> </ul>                                   | 7  |    |                      |
| Transportation                    | <ul style="list-style-type: none"> <li>High-speed rail</li> <li>Marines</li> </ul>   | 10                                       |   |                     |
| Consumer electronics and internet | <ul style="list-style-type: none"> <li>Consumer electronics</li> <li>Digital payments</li> <li>Drones</li> </ul>             | 11                                       |  |                    |
| Equipment                         | <ul style="list-style-type: none"> <li>Surgical robots</li> <li>Industrial robots</li> </ul>                                 | 4  |  |                    |
| Pharmaceuticals and biotech       | <ul style="list-style-type: none"> <li>Small-molecule drugs</li> <li>Biomolecule drugs</li> </ul>                            | 6  |  |                    |
| Artificial intelligence           | <ul style="list-style-type: none"> <li>Speech recognition</li> <li>Facial recognition</li> <li>Autonomous driving</li> </ul> | 5  |  |                    |
| Next-generation technologies      | <ul style="list-style-type: none"> <li>Quantum technology</li> <li>5G</li> <li>Space</li> </ul>                              | 8  |  |                    |
| Genomics                          | <ul style="list-style-type: none"> <li>Genotyping</li> <li>Gene sequencing</li> <li>Gene editing</li> </ul>                  | 3  |  |                    |
| <b>Total</b>                      |  | <b>81</b>                                | <b>&gt;90%</b>   | <b>60–80%</b>   |

<sup>1</sup> We estimated "share using global standard" by identifying key technologies in different areas and assessing whether China utilizes the same technical standards and processes that are most commonly used outside China. We assessed "share that has local supplier" by analyzing whether Chinese companies have a presence among global suppliers for each key technology. We analyzed the "share that is better than it on par" by defining specific performance indicators and whether local Chinese suppliers are able to deliver technical outcomes that are better, or on par with, incumbents outside China.

Source: Literature search; expert interviews; McKinsey Global Institute analysis

# >90%

annual growth in China's EV market 2011–17

We looked at three value chains to explore where China stands and evaluate the impact of a more integrated technology chain for both China and the world:

- **EVs: China has developed a significant domestic industry and shows signs of integrating more globally.** China's EV market posted annual growth of more than 90 percent between 2011 and 2017, driven by major investment and government support. However, candidates for government subsidies were restricted to locally produced vehicles.<sup>1</sup> In 2017, Chinese original equipment manufacturers (OEMs) commanded more than 90 percent of the domestic market but less than 5 percent of the market in the rest of the world. Despite the large share of domestic OEMs, China has benefited from integration with global value chains. In the case of power electronics and electrical circuits, China imports a huge majority from Europe, Japan, and the United States. In quality, Chinese manufacturers lag behind others in some areas. For instance, leading Chinese batteries have 30 to 40 percent lower density than leading Japanese batteries.<sup>2</sup> China has announced plans to raise the competitiveness of the local EV industry, with subsidies expected to end by 2020 and restrictions on joint ventures being relaxed, opening up new opportunities for multinational corporations.
- **Robotics: Local producers have gained competitiveness in some subsectors, but China has used integration in global value chains to access core components and high-end solutions.** China is the largest robotics market in the world, accounting for 36 percent of total industrial robot unit sales. Overall, foreign players account for more than 50 percent share of the domestic market, although Chinese companies are making progress especially in small-scale, low-complexity applications. Chinese OEMs now have a more than 50 percent share in dispensing, palletizing plastic molding, and metal casting robots, but only about 10 percent of robots for welding and material handling, for instance. China continues to rely on foreign production in China, or foreign imports to China, of leading-edge technology in core components such as servo motors, reduction gears, and control systems.
- **Semiconductors: China still largely depends on integration in global technology value chains.** This has been a strategic industry for China, receiving substantial government attention and investment. Nevertheless, the domestic industry has made only moderate advances. China imported more integrated circuits in 2018 than crude oil. China's presence in integrated device manufacturing and equipment is minimal, but it has made some progress in fabless, increasing global market share from 11 percent in 2013 to 15 percent in 2017. The government has announced a plan to expand domestic supply for semiconductors (including from foreign players in China) to 80 percent of domestic demand by 2030 from 33 percent in 2016. Integration with global value chains can accelerate that journey. Abiding by global standards could open more access to global technology know-how and facilitate needed capital, knowledge, and talent inflows. More integration could also create healthy competition for local players, especially for state-owned enterprises (SOEs). For the rest of the world, the advantages of integration include access to the largest consumer of semiconductors in the world. There could be opportunities for new collaborations in innovative areas. For instance, as silicon-based semiconductor chips are nearing the theoretical limit proposed by Moore's Law, new materials such as graphene and gallium nitride, and ways of designing including 3D and photonics, offer new opportunities for global partnerships.

<sup>1</sup> *Supercharging the development of electric vehicles in China*, McKinsey & Company, April 2015. Locally produced products typically include output from joint venture companies.

<sup>2</sup> "Will Ningde era be surpassed by LG Chem? The world's top battery oligos divide 80% of market," *Battery China*, December 11, 2018, <http://www.cheyun.com/content/25122>.



# 25%

of Chinese urban household spending on food in 2017 vs

# 50%

in 2000

## **China's rapidly expanding consumption offers significant further opportunities to both domestic and foreign players**

China's rapidly expanding consumer market—confident, becoming richer, increasingly sophisticated, and willing to experiment—offers a strong link between China and the world. It is not only the prime engine for economic growth but a huge opportunity for international businesses. By 2030, 58 percent of Chinese households are likely to be in the “mass affluent” category or above, surpassing today's South Korean share of 55 percent.<sup>1</sup> The spending profile of urban Chinese consumers is converging with that of their counterparts in cities around the world. Chinese urban consumers are devoting a greater share of their income to discretionary spending. Spending on food declined from 50 percent of total household consumption in 2000 to 25 percent in 2017. This is already similar to urban consumers in developed countries today—Japan at 26 percent, South Korea at 29 percent, and the United States at 17 percent.

## **Multinational corporations in China face a changing competitive landscape**

China's consumer markets are already heavily integrated with the world. Since it joined the WTO in 2001, China has gradually reduced barriers for foreign firms operating in China, and in 2004 it began to allow foreign investors to operate retailers across all parts of its domestic market. It also opened up distribution, allowing foreign distribution companies to apply for national licenses.<sup>2</sup> As a result, multinational corporation penetration in China is considerable. Our analysis of top 30 brands across the ten large consumer categories suggests that foreign multinational corporations' average penetration in China was 40 percent in 2017, compared with just 26 percent in the United States. In some categories, penetration is even higher; for instance, in beauty and personal care, multinational corporation penetration is as high as 73 percent (Exhibit E7).

---

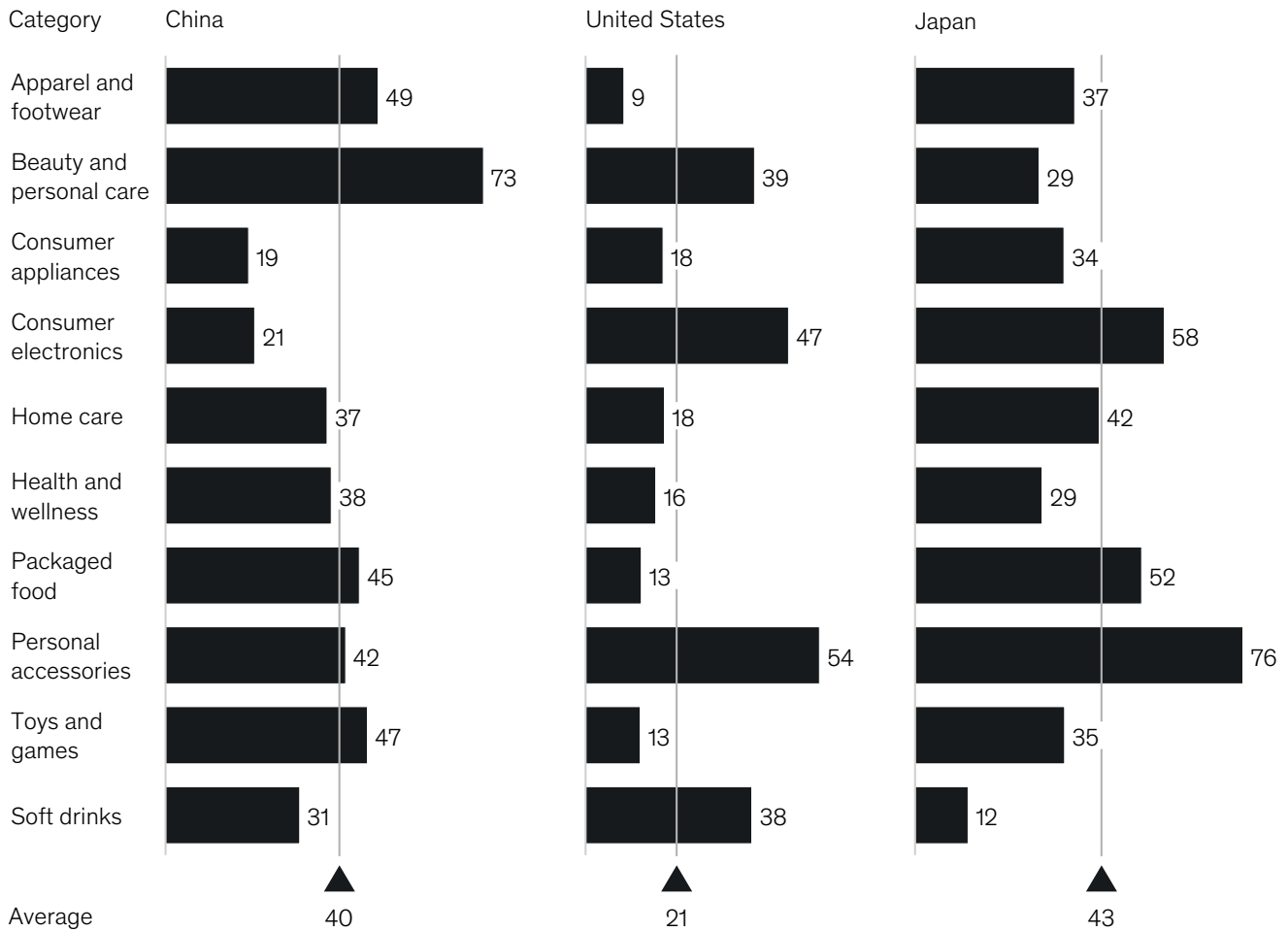
<sup>1</sup> Defined as a household with disposable household income of 18,000 renminbi or more per month.

<sup>2</sup> Christina Nelson, “Developing China sales and distribution capabilities,” *China Business Review*, July 1, 2010.

**Multinational corporation penetration in China is higher than in the United States.**

Foreign multinational corporation market share of top 30 brands by category and market, 2017

%



Note: Figures may not sum to 100% because of rounding.

Source: Euromonitor; McKinsey Global Institute analysis

# >30%

of smartphones in  
Africa are Chinese

As more multinational corporations have entered the Chinese market, they have catalyzed the development of homegrown companies and brands. In our study of 30 categories of consumer goods, foreign brands have lost share in 11 categories. In those categories, Chinese players have upgraded products to match the quality and performance of those offered by foreign companies. In some cases, Chinese players are beginning to go global. US and South Korean manufacturers once had strong positions in the smartphone market (especially in the premium segment), but Chinese brands' products are now being exported to countries in Southeast Asia, Africa, and Europe. Chinese smartphones have market shares of more than 30 percent on the African continent and in India and Malaysia, according to IDC data. In mobile gaming, which grew by 250 percent from 2016 to 2018, Chinese titles such as Arena of Valor and Rules of Survival are now being exported.

### **Two trends offer significant business opportunities for both domestic and foreign players**

We highlight two trends that offer significant business opportunities for both domestic and foreign players:

- **Chinese consumers demand more and better choices in goods and services.** As incomes rise, consumers want more choice, and, despite discussion about a consumption downgrade, we find evidence of a broad trend of trading up. McKinsey's 2018 Global Consumer Sentiment Survey showed that 26 percent of Chinese respondents were trading up overall, compared with 17 percent in ten other top economies. In some cases, Chinese consumers are not satisfied with domestic brands partly because of perceived quality issues and a lack of choice—attitudes observed in both goods and services. A fast-growing channel for Chinese consumers to access goods from overseas is cross-border e-commerce. From 2015 to 2017, cross-border e-commerce retail imports in China almost doubled to 111 billion renminbi (\$17 billion) according to iResearch data. Services are the next area in which we expect to see competition leading to higher quality. Chinese services sectors still lag behind those in other countries, with productivity of only 20 to 50 percent of the OECD average. In healthcare and education, some higher-income citizens have explored and used foreign provision because of perceived quality and capacity issues domestically. Although the government has put in place initiatives to open up services to foreign players, their participation remains limited.
- **A rising number of Chinese people go abroad and spend more.** China's increasing flows of people—particularly students and tourists—represent an expanding business opportunity for businesses in destination countries. China is already the largest source of outbound tourists in the world. Their spending is equivalent to 7 to 9 percent of domestic private consumption in Singapore and Thailand, respectively. China's outbound students can have a significant impact on other economies, too. Australian education exports to China amounted to 10 billion Australian dollars in 2017 (not including additional spending of Chinese students for day-to-day living). Companies can take advantage of these trends by adapting to Chinese tastes and tailoring offerings.

## Significant potential value could be at stake from less and more engagement between China and the world

China and the rest of the world appear to be reevaluating their relationship. In the rest of the world, particularly in advanced economies, the unintended consequences of globalization and unequal distribution of benefits are a topic of discussion, and in the United States, there are concerns about the “China shock” displacing manufacturing jobs.<sup>1</sup> Several major economies are putting in place legislation making foreign investment deals—particularly where technology deemed strategically important is involved—subject to stricter review. These developments could presage lessening engagement between China and the world. However, disengagement is not inevitable.

We highlight five choices for China and the world that could lead to more or less engagement, and we simulated the potential economic value that could be created or lost depending on these choices. The five areas where China could be more—or less—engaged are: (1) growth as an import destination; (2) liberalization of services; (3) globalization of financial markets; (4) collaboration on global public goods; and (5) flows of technology and innovation.

The results of our simulation, which uses McKinsey’s Global Growth Model and calibrates its findings with external research, suggest that deeper engagement in these five areas could potentially create significant value for China and the world, and that less engagement could put a large amount of economic value at risk by 2040. A huge majority of this value is in the form of impact on GDP, with the remainder in other types of value such as higher or lower social costs depending on choices associated with tackling climate change. The total value at stake could be \$22 trillion to \$37 trillion by 2040, equivalent to about 15 to 26 percent of global GDP (Exhibit E8).

In scenarios of both more and less engagement, there will be upsides and downsides for different stakeholders. For example, less engagement between China and the world could benefit countries in Southeast Asia through greater demand for their exports. Conversely, more engagement between China and the world could create short-term shocks for Chinese workers and firms in certain sectors as the country imports more from the rest of the world. We note that our estimates of the value at stake are the result of a simulation based on a specific set of conditions and assumptions, and they should not be taken as forecasts.<sup>2</sup> For example, for the scenarios, we have made assumptions on how various factors could affect the total factor productivity of the economy. Our analysis is sensitive to the degree of liberalization that would occur in the Chinese services sector, increases in capital productivity as a result of greater financial globalization, and productivity improvements from technology exchange. There are several factors that we have excluded from this simulation including risks associated with political agenda and military interventions. The simulation focuses on long-term impact. We are not attempting to predict the outcome of current debates on trade and tariffs.

---

<sup>1</sup> See, for instance, Daron Acemoglu and Pascual Restrepo, *Robots and jobs: Evidence from US labor markets*, July 16, 2018; Daron Acemoglu et al., “Import competition and the great U.S. employment sag of the 2000s,” *Journal of Labor Economics*, 2016, Volume 34, Number 1; and David H. Autor, David Dorn, and Gordon H. Hanson, “The China shock: Learning from labor market adjustment to large changes in trade,” *Annual Review of Economics*, 2016, Volume 8.

<sup>2</sup> Our simulation was built by synthesizing insights from more than 30 academic papers and by combining the modeled effects of key economic indicators in McKinsey Global Institute’s Global Growth Model and external models. For more information on our methodology, please refer to the technical appendix.

# ~\$6

trillion growth in Chinese consumption expected in period to 2030, comparable with the United States and Western Europe combined

Chinese service sector labor productivity only

# 20– 50%

of OECD average

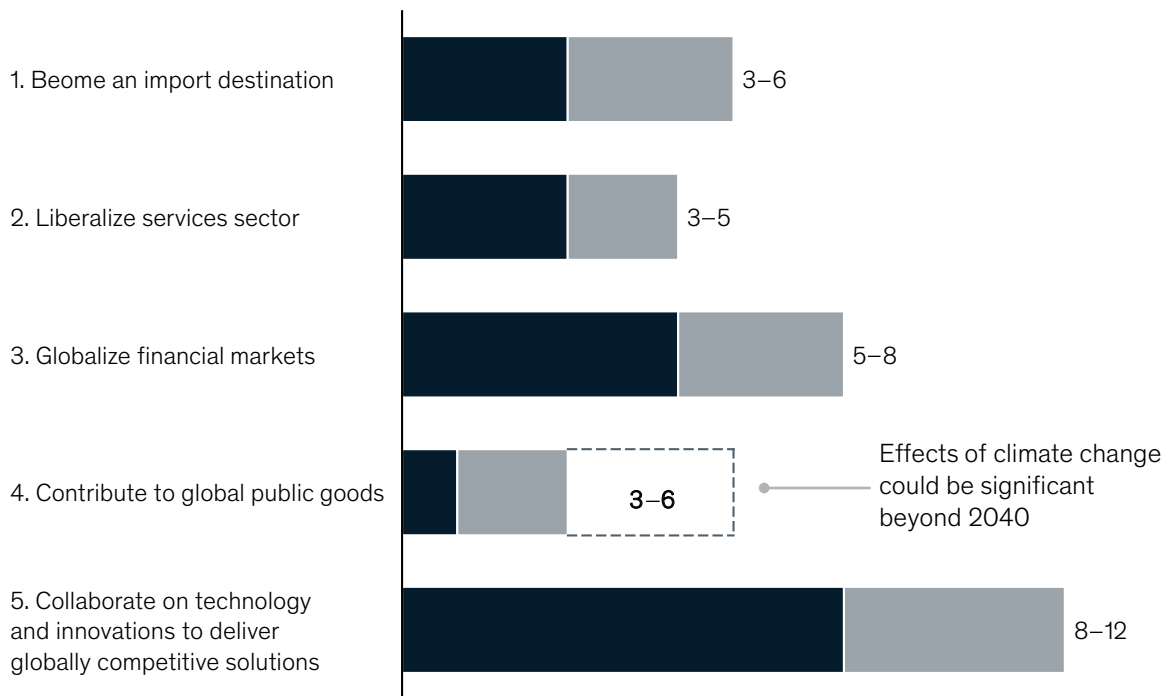
- **China could develop itself as a major destination for imports from emerging and advanced economies; with less engagement, global trade flows could contract.** According to consensus forecasts, growth in Chinese consumption in the period to 2030 is likely to be about \$6 trillion, comparable with that of the United States and Western Europe combined, and double that of India and the Association of Southeast Asian Nations (ASEAN) combined. By importing more—and higher-quality—goods, China could meet the rising expectations of middle-class consumers and stimulate more domestic consumption. The world would also benefit. As China moves into higher-value-added industries, it can import more labor-intensive goods from emerging economies and high-quality goods from advanced economies, helping to create more employment in other economies. However, with less global engagement, continued trade disputes may lead to higher long-term tariffs, a contraction in global trade volumes, and lost productivity. Consumer goods prices in developed markets could increase. In China, contraction in trade could lead to oversupply of manufacturing employment. Our simulation indicates that the value at stake related to trade could be \$3 trillion to \$6 trillion.
- **China and foreign players could benefit from liberalization of services; if services remained restricted, China would continue to operate at a productivity gap with developed economies.** Services are a growing part of China’s economy, accounting for 52 percent of GDP in 2018, compared with 44 percent in 2010. Yet quality, capacity, and access issues affect many service subsectors, and many restrictions on foreign players may be holding back competition, modernization, and therefore higher productivity. Labor productivity in Chinese services sectors can be 20 to 50 percent that of the OECD average. A range of recent government initiatives signals greater openness, although a range of operational barriers to foreign players may remain. Our simulation suggests that \$3 trillion to \$5 trillion could be at stake from more or less global engagement in Chinese services.<sup>1</sup>
- **Further globalizing and modernizing China’s financial system could broaden choice and allocate capital more efficiently; choosing not to do so could risk more volatility and low productivity growth.** China’s relatively closed financial system means that consumers have limited options for asset allocation, fueling a real estate price increase and depressing returns. SOEs account for about 70 percent of corporate debt but generate only slightly over 20 percent of industrial output.<sup>2</sup> A more globally integrated financial system would give Chinese consumers, businesses, and investors more choice and would improve resource allocation. Conversely, less global engagement could lead to higher levels of risk in the financial system (from nonperforming loans, for example), which could raise the cost of capital as the spread between commercial interest rates and risk-free rates potentially widens.<sup>3</sup> Overall, \$5 trillion to \$8 trillion of value could be at stake according to our simulation.

<sup>1</sup> For more details on the impact of services-sector liberalization, see Denise Eby Konan and Keith E. Maskus, *Quantifying the impact of services liberalization in a developing country*, policy research working paper WPS3193, World Bank, 2004; Aaditya Mattoo, Randeep Rathindran, and Arvind Subramanian, *Measuring services trade liberalization and its impact on economic growth: An illustration (English)*, policy research working paper WPS2655, World Bank, 2001; Oleksandr Shepotylo and Volodymyr Vakhitov, *Impact of services liberalization on productivity of manufacturing firms: Evidence from Ukrainian firm-level data*, discussion paper number 45, Kyiv School of Economics, 2011.

<sup>2</sup> Lingling Wei, “As China faces slowdown, Stimulus will have smaller global reach,” *Wall Street Journal*, March 16, 2019. One IMF study estimates that removing Chinese zombie companies, reducing overcapacity, and reforming inefficient SOEs could increase total output by 0.7 to 1.2 percentage points. See W. Raphael Lam et al., *Resolving China’s zombies: Tackling debt and raising productivity*, International Monetary Fund, November 27, 2017.

<sup>3</sup> Christopher Balding, “Rising interest rates challenge China’s growth,” *Bloomberg Opinion*, August 15, 2018.

**The value at stake from more and less engagement between China and the world is significant.**



**Between \$22 trillion to \$37 trillion of economic value (equivalent to about 15 to 26 percent of global GDP by 2040) could be at stake from less or more engagement between China and the world**

Note: Our estimates of the value at stake are the result of a simulation based on a specific set of conditions and assumptions; they should not be taken as forecasts. We used McKinsey's Global Growth Model as the basis for simulation and modeled potential upsides and downsides depending on how more- or less-engagement scenarios affect key economic drivers. The simulation focuses on the long-term economic impact and is not an attempt to predict the outcome of current debates on trade and tariffs.

Source: McKinsey Global Institute analysis

- **China could increase its contribution to solving global challenges; in a scenario of less engagement, leadership and collaboration would be weaker.** The rules underpinning the global economic system are in flux, and China can contribute to addressing global issues. It is already increasing its commitment to (and financing of) international institutions and its support of new ones representing emerging economies, such as the Asian Infrastructure Investment Bank and the New Development Bank, in which China holds 30 and 20 percent stakes, respectively. It is also forming regional trade blocs and emerging as a key player in the development of solutions to global issues—in the case of climate change, through its development of renewable energy and clean coal solutions. China could nonetheless potentially do more to innovate and export solutions to the world, for instance helping to define global digital governance, and to fill the world's estimated \$350 billion annual infrastructure investment gap.<sup>1</sup> We estimate that \$3 trillion to \$6 trillion could be at stake from more or less global engagement with China and as a result broader international collaboration on topics related to global public goods such as the environment and cyberspace.
- **Global flows of technology between China and the world could increase, supporting the development of globally competitive, productivity-enhancing solutions; alternatively, reduced technology flows could undermine global productivity.** One of the largest drivers of China's recent economic growth has been innovation—both home-grown and imported—that has enabled the economy to move up the value chain. Greater technology flows require a mutually acceptable system of IP protection. Global engagement on this issue, and a transparent and reliable process for resolving IP issues, could increase the revenue of foreign firms selling technology to China and reduce IP leakage. One study estimated large costs incurred by US firms.<sup>2</sup> For China, greater integration could broaden access to needed foreign technology and enable collaboration with foreign investors, institutions, and talent to codevelop leading solutions. However, if current trade tensions were to lead to higher long-term tariffs and substantial restriction of technology flows, innovation could be hampered and productivity growth could decline significantly. For the rest of the world, less engagement with China would undermine access to a key supplier and market for technologies, as well as a growing innovator that can export domestic solutions abroad. China became the first nation to land a spacecraft on the far side of the moon in early 2019, and it is codeveloping satellites with emerging economies such as Egypt. With less engagement, China could also lose access to critical technologies that it needs to fuel its economy. According to our simulation, \$8 trillion to \$12 trillion could be at stake, depending on how technology flows scenarios unfold and the subsequent impact on productivity growth.

We note that these choices and scenarios—and the resulting outcomes—are not China's alone but also dependent on the actions and reactions of the rest of the world. Reforming the global trading system to make it more effective at resolving disputes and more inclusive so that benefits from any further opening up of its economy by China can be captured and shared broadly is a collective task.<sup>3</sup> If and when China globalizes its financial sector, the rest of the world would need to be more open to Chinese investment. On tackling climate change, all countries need to commit to specific goals and milestones to avoid a situation in which some countries pursue self-interest to the detriment of the world as a whole. The magnitude of technology and IP flows between China and the rest of the world is subject to the stance taken by each country involved in these flows on technology-related investment and national security.

<sup>1</sup> *Bridging global infrastructure gaps*, McKinsey Global Institute and McKinsey's Capital Projects and Infrastructure Practice, June 2016.

<sup>2</sup> *The theft of American intellectual property: Reassessment of the challenge and United States policy*, Update to the IP Commission Report, 2017, [ipcommission.org/report/IP\\_Commission\\_Report\\_Update\\_2017.pdf](https://ipcommission.org/report/IP_Commission_Report_Update_2017.pdf).

<sup>3</sup> Wendy Cutler, *Global trade is broken. Here are five ways to rebuild it*, World Economic Forum, September 12, 2018; and *Current trade challenges and opportunities*, OECD, <https://www.oecd.org/trade/understanding-the-global-trading-system/trade-challenges-and-opportunities/>.

## **Businesses may need to adjust their approach to thrive in the face of a more uncertain relationship between China and the world**

Given the uncertainty and potential risk of the changing relationship between China and the world, businesses may need to adjust their strategies. There are four areas for consideration:

- **Assess short- and long-term exposure to the China-world relationship.** To understand the likely impact of changing relations between China and the world, companies should first assess their level of exposure to the China-world relationship. Exposure can take many forms. Our eight dimensions of the China-world relationship employ specific metrics that businesses could examine and track. Depending on their exposure, companies can assess risks and benefits depending on different engagement scenarios. Even in the face of short-term volatility and uncertainty, companies should also incorporate a view on China's long-term fundamentals. What long-term trends—including rising incomes, technology flows, and intensifying local competition—may have an impact?
- **Determine investment and value chain posture.** Given the scenarios and value at stake for every company, executives should determine their China strategy in terms of measures such as investment commitment compared with other countries, and the role that China should play in the company's global value chains. They should define and be clear about their aspirations for China—for instance, do they want to make China their key growth engine, or do they want to play only in niche areas? They could, for example, optimize investment as part of a long-term strategy, potentially investing more and doubling down on core value creation activities by, for instance, driving innovation and R&D, if China remains an important source of growth and innovation. If not, shifting business activities and investment to other geographies could also be considered.
- **Develop operational excellence needed to manage risks and uncertainty.** Given increased regulatory and economic uncertainty, companies need to be much more agile in delivering their value proposition. Governments around the world are playing an increasingly important role in cross-border investment, M&A, and flows of technology and people. Businesses should address the local context in which they are operating, because it can change quickly, sensitivities can grow, and operational mistakes can quickly escalate, drawing the attention of stakeholders. They may think about adjusting their operational footprint, which requires agility, and they need to devote more resources to risk management.
- **Adopt and maintain a survivor's mind-set.** Companies that have thrived despite recessions and crises in the past have tended to maintain a healthy balance sheet, take care to ensure access to finance, and have a broad range of businesses to insulate them from downturns in particular sectors. However, crises and uncertainty also bring opportunity; the pressure that accompanies them can be a catalyst to reorganization that improves the long-term health of a company, and new opportunities may emerge to expand footprints or market positions through business development and inorganic growth.



•••

China is now the world's second-largest economy and a global trading powerhouse, but it has scope to extend its global integration further. The relationship between China and the world is changing. Given China's shift toward growth largely driven by domestic consumption while the world is reevaluating its relationship with China, could a measure of disengagement be emerging? If China and the world were to diminish their engagement with each other, both could lose significant value. Conversely, further deepening of their integration could produce large benefits. Whichever way the future relationship unfolds, businesses exposed to China's economy need to position themselves to thrive in what appears likely to be an uncertain period ahead.





McKinsey Global Institute  
July 2019  
Copyright © McKinsey & Company  
Designed by the McKinsey Global Institute

[www.mckinsey.com/mgi](http://www.mckinsey.com/mgi)

 @McKinsey

 @McKinsey

