

SECTION 3: CHINA'S STATE-LED MARKET REFORM AND COMPETITIVENESS AGENDA

Introduction

Soviet-style, top-down planning remains a hallmark of China's economic and political system. Five-Year Plans (FYP)* continue to guide China's economic policy by outlining the Chinese government's priorities and signaling to central and local officials and industries the areas for future government support. The FYPs are followed by a cascade of sub-plans at the national, ministerial, provincial, and county level that attempt to translate these priorities into region- or industry-specific targets, policy strategies, and evaluation mechanisms.¹ While the past six FYPs successfully mobilized resources to spur three decades of double-digit economic growth, the large-scale infrastructure investment and export-led economic growth model they promoted is weakening. China's slowing economic growth combined with concerns over a deteriorating quality of life are threatening the Chinese Communist Party's (CCP) ability to deliver prosperity—the basis of its legitimacy since the Tiananmen Square Massacre of 1989.

To preserve CCP power, the newly installed CCP General Secretary and President Xi Jinping outlined an ambitious economic reform agenda at the Third Plenary Session of the CCP's 18th Central Committee (the Third Plenum)† in November 2013. The Chinese government is using or attempting to use centrally directed reforms to fulfill its stated goals to sustain economic growth, improve capital allocation and industry efficiency through state-set market incentives, and ensure a higher quality of life for its citizens. While these reforms aim to make China's economy more efficient, the Chinese government does not mean to give up control; rather, the intent is for the state to retain a central role in the economy.

This agenda requires significant political commitment to overcome entrenched interests—such as China's powerful state-owned enterprises (SOE) and its bloated, export-dependent industries—that doomed reforms under the 11th (2006–2010) and 12th (2011–2015) FYPs.² The 13th (2016–2020) FYP, to be released in March

*The National Development and Reform Commission coordinates the drafting process with input from State Council ministries, oversight by the Chinese Communist Party Politburo, and final ratification by the National People's Congress. Subordinate plans are devised for each province and for specific sectors of the economy. Katherine Koleski and Joseph Casey, "Background: China's 12th Five-Year Plan," *U.S.-China Economic and Security Review Commission*, June 24, 2011; U.S.-China Economic and Security Review Commission, *Hearing on China Ahead of the 13th Five-Year Plan: Competitiveness and Market Reform*, written testimony of Oliver K. Melton, April 22, 2015, 1–7; and Sebastian Heilmann and Oliver Melton, "The Reinvention of Development Planning in China, 1993–2012," *Modern China* 39:6 (August 2013): 580–628.

†For an in-depth analysis of the Third Plenum's proposed economic reforms, see Nargiza Salidjanova and Jacob Koch-Weser, "Third Plenum Economic Reform Proposals: A Scorecard," *U.S.-China Economic and Security Review Commission*, November 19, 2013.

2016, will build upon the Third Plenum agenda to accelerate reforms and transition China's economy toward greater domestic consumption and higher-value-added manufacturing. However, current market conditions and the government's actions have called into question China's commitment to reforms. In response to slowing economic growth and higher market volatility this year, senior leadership is increasingly stalling or rolling back reforms and returning to investment and export-led economic growth.

This section carries on the Commission's long examination of China's industrial policies and assesses the likelihood President Xi's agenda in sustaining economic growth will succeed.* Building upon expert testimony received at the Commission's hearing on April 22, 2015, and additional research throughout the year, this section examines the status of the Chinese government's reforms and explores their impact on the competitiveness of U.S. companies and the U.S. economy.

China's Economic Challenges

Traditional drivers of China's economic growth—fixed asset investment, exports, and cheap labor—are becoming less relevant.³ At the 2015 National People's Congress (NPC), Premier Li Keqiang reiterated this concern, describing China's economic growth as “unbalanced, uncoordinated, and unsustainable.”⁴ Minister of Finance Lou Jiwei warned that China faces a 50 percent chance of sliding into a middle-income trap in the next five to ten years.⁵ This middle-income trap would ensnare the Chinese economy in a cycle of low growth because its growing wages are unable to compete against low-cost countries, and high-value-added manufacturing is not yet fully developed. The 11th and 12th FYPs largely failed at reorienting China's economy away from unsustainable sources of growth.⁶ Witnesses at the Commission's April hearing outlined the challenges the Chinese government is facing:⁷

- *Smaller returns from fixed asset investments:* State-led economic planning has directed cheap capital to SOEs, large-scale infrastructure projects, and state-designated industries. This allocation of capital has contributed to industrial overcapacity and enormous growth in local government and SOE debt.
- *Lower labor productivity gains:* Higher wages, an emerging labor shortage, and lack of labor mobility are eroding China's

*For additional information on China's industrial policies, see U.S.-China Economic and Security Review Commission, *2014 Annual Report to Congress*, November 2014, 99–111; U.S.-China Economic and Security Review Commission, *2013 Annual Report to Congress*, November 2013, 113–152; U.S.-China Economic and Security Review Commission, *2012 Annual Report to Congress*, November 2012, 47–81, 393–423; U.S.-China Economic and Security Review Commission, *2011 Annual Report to Congress*, November 2011, 40–50, 70–106; U.S.-China Economic and Security Review Commission, *2010 Annual Report to Congress*, November 2010, 187–190, 199–210; U.S.-China Economic and Security Review Commission, *2009 Annual Report to Congress*, November 2009, 56–89; U.S.-China Economic and Security Review Commission, *2008 Annual Report to Congress*, November 2008, 69–82; U.S.-China Economic and Security Review Commission, *2007 Annual Report to Congress*, November 2007, 48–62; U.S.-China Economic and Security Review Commission, *2006 Annual Report to Congress*, November 2006, 30–32, 34–35, 167–181; U.S.-China Economic and Security Review Commission, *2005 Annual Report to Congress*, November 2005, 27–45, 67–75; U.S.-China Economic and Security Review Commission, *2004 Annual Report to Congress*, November 2004, 49–54, 177–192; and U.S.-China Economic and Security Review Commission, *2002 Annual Report to Congress*, November 2002, 43–44, 47–50.

labor productivity, China's residency permit system, or *hukou*,* tightly controls labor mobility and employment opportunities for all its citizens.⁸ The absolute number of working-age people in China peaked in 2012, so cheap labor is no longer as readily available.⁹ This shortage and the annual 14 percent average wage hikes from 2000 to 2013 have increased overall labor costs.¹⁰ Growing competition from countries (such as Vietnam) with lower labor costs is squeezing profit margins for low-end manufacturing.¹¹ Moreover, low-end manufacturing is not creating the types of jobs demanded by China's growing number of university graduates.¹²

- *Dwindling contribution of exports to gross domestic product (GDP)*: China's National Bureau of Statistics found the contribution of exports of goods and services to GDP has shrunk from 8 percent in 2008 to 3 percent in 2014.¹³ Slower global growth is not able to absorb ever more Chinese exports, necessitating the expansion of domestic consumption as a new engine of economic growth.[†] In addition, higher labor costs are raising the price of Chinese exports, further weakening global demand for them.¹⁴ In the first eight months of 2015, China's global exports dropped 1.5 percent year-on-year, signaling contraction.¹⁵ Despite the slowing growth of China's exports, the U.S. trade deficit in goods with China grew 9.7 percent over last year to reach \$237.3 billion in the first eight months of 2015.¹⁶
- *Severe environmental degradation*: Official reports found that 20 percent of China's arable land, more than 60 percent of its underground water, and 33 percent of its surface water are polluted.¹⁷ The World Bank and the State Council's Development Research Center estimated the costs of this environmental degradation reached approximately 10 percent of GDP in 2008, representing a significant drag on the economy.[‡] Furthermore, air pollution contributed to 17 percent of all deaths, or 1.6 million people, in China between April 2014 and March 2015, according to estimates by the U.S.-based research nonprofit Berkeley Earth.¹⁸ In early March, *Under the Dome*, an independent documentary—produced by Chai Jing, previously an investigative reporter for the official government network China Central Television (CCTV)—about the gravity of China's

*The hukou establishes eligibility for employment opportunities, compensation, education, and access to government services for all Chinese citizens based on the status of one's parents and place of birth. Since the hukou is tied to a citizen's place of birth, the holder of a given hukou can only receive government services and benefits where the citizen is registered, particularly disadvantaging the 270 million rural residents who have migrated to cities. For more information on the hukou, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 5, "China's Five-Year Plans and Technology Development and Transfers to China," in *2011 Annual Report to Congress*, November 2011, 88–106.

†In July 2015, the International Monetary Fund (IMF) revised its global economic forecasts downward as global economic growth slowed 0.8 percent below expectations in the first quarter of 2015. In October 2015, the IMF lowered its global growth expectations 0.2 percent below its July 2015 projections. International Monetary Fund, "World Economic Outlook," July 2015, 1; International Monetary Fund, "World Economic Outlook," October 2015, 1.

‡These figures incorporate the environmental externalities of pollution-related health damages, property damages, soil erosion, deforestation, fisheries loss, biodiversity loss, water pollution, and watershed degradation. World Bank and Development Research Center of the State Council of the People's Republic of China, *China 2030: Building a Modern, Harmonious, and Creative Society*, 2013, 39, 233.

air pollution was released online and seen by more than 200 million people in China before it was taken down by government censors.¹⁹ Reflecting this rising public awareness, the rate of reported environmental protests more than tripled from just 47 incidents in 2013 to 152 incidents in 2014, based on figures from the U.S. government's Open Source Center.*

China's New Normal

At the Third Plenum, President Xi and Premier Li announced an ambitious economic reform agenda they claimed would allow the “market to play a decisive role in allocating resources.”²⁰ The Third Plenum established a 60-point reform blueprint that broadly seeks to liberalize the financial sector; realign fiscal authority; accelerate urbanization; relax requirements on inbound and outbound foreign direct investment and restrictions on market access in finance, education, culture, and medical care; increase the efficiency and competitiveness of SOEs; and protect the environment.²¹ As China registered its slowest economic growth in 24 years, China's senior leadership began to promote the “new normal” principle that focuses on slower economic growth. This principle also attempts to shift the drivers of economic growth toward innovation and high technology.²² (For additional discussion of the “new normal,” see Chapter 1, Section 1, “Year in Review: Economics and Trade.”). President Xi and Premier Li are likely to seize upon the 13th FYP to push through their objectives.

While the Third Plenum agenda and promotion of the “new normal” principle largely repeat the objectives of the 11th and 12th FYPs, they are designed to signal a strong political commitment to address the underlying structural problems that previously delayed economic reform.²³ The establishment of a new Central Leading Group on Comprehensively Deepening Reform led by President Xi at the Third Plenum appears to strengthen high-level control over the content and pace of these reforms.²⁴ In addition, over the last two years, President Xi has weakened political opposition that hindered reform under the 12th FYP. Shortly after taking office in 2012, he launched an anticorruption drive that conducted at least 77,606 investigations and disciplined 102,168 officials by the end of 2014.† This campaign has attempted to uproot vested interests within the CCP and SOEs, while simultaneously eliminating potential political threats to President Xi's leadership.²⁵

Assessing the Progress of China's Reforms

State intervention remains a cornerstone of China's economic policy, despite announcements of market-oriented reforms. Eswar S. Prasad, professor of trade policy at Cornell University, cautioned in his testimony to the Commission that these market-oriented reforms will differ from Western notions of free market because they

*The Open Source Center data on unrest are based on domestic and international media reports. Since unrest is largely unreported in rural areas and censored by local governments, these figures underestimate the scale of overall unrest. Open Source Center, “Reported Civil Disturbances in 2014,” September 1, 2015. ID: CHN2015090102912195.

† In 2014 alone, the Central Commission for Discipline Inspection disciplined 71,748 cadres and conducted 53,085 investigations. Shujie Leng and David Wertime, “China's Anti-Corruption Campaign Ensnarers Tens of Thousands More,” *Foreign Policy*, January 9, 2015.

will occur “in a manner consistent with a dominant role for the state.”²⁶ However, slowing economic growth and rising unemployment have increased public unrest and weakened senior leadership’s resolve to implement needed reforms, leading the government to once again stall or roll back reforms while resuscitating old levers of economic growth.* David Shambaugh, director of George Washington University’s China Policy Program, noted this tension in August 2015, arguing, “The leadership is so paralyzed and pre-occupied by even a modest downturn that it reacts with the same old fiscal tools of investment and pump-priming.”²⁷

Through its announced state-led reforms, the Chinese government is seeking to ensure the permanent rule of the CCP by improving domestic consumption, capital allocation, industry competitiveness, and quality of life (see Table 1). First, the Chinese government is seeking to boost domestic consumption as a new driver of economic growth through expansion of the social safety net, urbanization, hukou reform, and support for the service sector. Second, fiscal and financial reforms are aimed at improving allocation of capital and resources. Third, the Chinese government is seeking to enhance China’s industrial competitiveness by pursuing SOE reform, higher-value-added manufacturing, and innovation. Finally, the Chinese government set a goal of ensuring a higher quality of life for its citizens by providing a livable environment for its population. These reforms will require significant political commitment and financial capital to succeed (see the text box, “China’s Ability to Finance Its Reform Agenda”). The rest of the section outlines the steps undertaken by the government to address these four key priorities, assesses the progress of these reforms, and evaluates the potential implications for the United States.

Table 1: China’s Reform Priorities

Priorities	Reforms
Domestic Consumption	<ul style="list-style-type: none"> • Expanding urbanization, the social safety net, and hukou reform • Building a strong service sector
Capital Allocation	<ul style="list-style-type: none"> • Restructuring local government debt • Opening China’s bank-driven financial sector • Loosening capital controls while maintaining strong state control
Industry Competitiveness	<ul style="list-style-type: none"> • Reforming SOEs • Increasing higher-value-added manufacturing • Enhancing indigenous innovation • Reducing industrial overcapacity
Quality of Life	<ul style="list-style-type: none"> • Increasing energy conservation and environmental preservation

Source: Compiled by Commission staff.

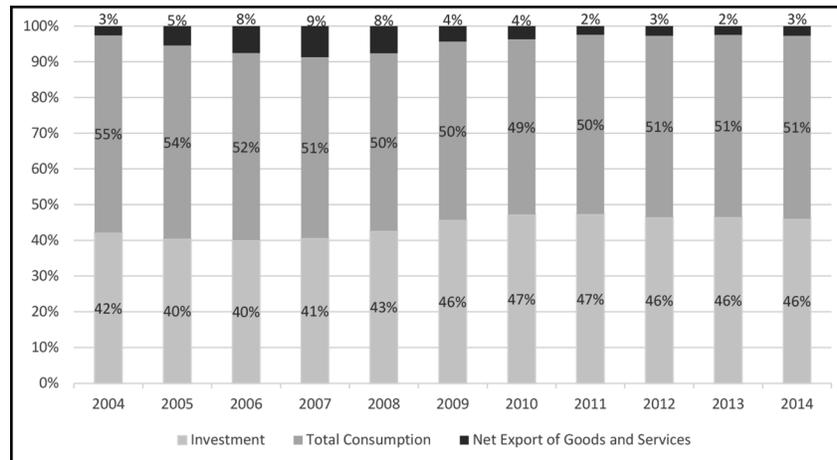
*For additional information on unrest in China, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 3, “China’s Domestic Stability,” in *2014 Annual Report to Congress*, November 2014, 347–407.

China's Ability to Finance Its Reform Agenda

Estimated costs for urbanization and environmental clean-up and protection alone total \$8.3 trillion (renminbi [RMB] 65 trillion).²⁸ Yet China's government, particularly local governments, is increasingly indebted and unable to take on significant additional financial obligations (see "Restructuring Local Government Debt," later in this section, for more information).²⁹ According to the global management consulting firm McKinsey & Company, since 2007 and the rollout of its \$586 billion (RMB 4 trillion) stimulus program in 2009, China has accumulated \$20.8 trillion of new debt, accounting for more than a third of global growth in debt.³⁰ Oliver Melton, an analyst for the U.S. Department of State, testifying in his personal capacity, noted that under the 12th FYP "debt-fueled investment in industry, real estate, and infrastructure remained a major source of growth, and has started to slow only in the face of substantial excess capacity and a mounting debt repayment burden for firms and local governments."³¹ McKinsey & Company estimated that China's total debt reached 282 percent of GDP by the end of the first half of 2014 compared with 269 percent in the United States.³² According to the global investment banking firm Goldman Sachs, China's debt-to-GDP ratio grew from 153 percent in 2008 to approximately 230 percent in 2013, representing the largest debt build-up in the world in absolute terms.³³ While China's strong credit and significant foreign exchange reserves would be able to support existing debt obligations, the enormous growth of debt raises concerns about China's ability to finance its ambitious and costly reforms.³⁴

Domestic Consumption

In the 11th, 12th, and likely 13th FYPs, the Chinese government has sought to increase the consumption power of Chinese households by expanding the social safety net, increasing urbanization, reforming the hukou, and opening the service sector to competition from private domestic and foreign firms.³⁵ Higher domestic consumption will offset the eroding returns on fixed asset investment and leverage the market power of the world's second-largest economy. In 2014, China's domestic consumption totaled 51.2 percent of GDP (see Figure 1).³⁶ Although domestic consumption has grown roughly two-fold from \$2.5 trillion (RMB 15.8 trillion) in 2008 to \$5.2 trillion (RMB 32.8 trillion) in 2014, investment in fixed assets grew even more following the global financial crisis, increasing from 41 percent of GDP expenditures in 2007 to 46 percent in 2014.³⁷ In his testimony to the Commission, Nicholas Consonery, director of Asia at the political risk consulting firm Eurasia Group, noted the composition of GDP under the 12th FYP has shifted moderately toward consumption but has "not materially changed," indicating fundamental problems remain unaddressed.³⁸

Figure 1: GDP by Expenditure, 2004–2014

Source: National Bureau of Statistics of the People's Republic of China via CEIC database.

Expanding Urbanization, the Social Safety Net, and Hukou Reform

Over the last three decades, an estimated 270 million rural residents moved to Chinese cities, enabling China's double-digit economic growth by boosting consumption and shifting labor into manufacturing and services.³⁹ The Chinese government is seeking to repeat this success by moving an additional 100 million people, or approximately 6 percent of its population, to cities by 2020.⁴⁰ This migration should significantly raise incomes of rural migrants (the income gap between urban and rural residents currently stands at more than 3:1) and enhance productivity.⁴¹ McKinsey & Company forecasts consumption by urban Chinese households will increase from \$1.6 trillion (RMB 10 trillion) in 2012 to nearly \$4.3 trillion (RMB 27 trillion) in 2022.⁴² While China's economic growth has decelerated in part due to a slowdown in fixed asset investments, "consumption growth remained steady," according to the International Monetary Fund (IMF).⁴³ Andy Rothman, an investment strategist for Matthews Asia, highlighted the continued strength of Chinese consumption with double-digit year-on-year economic growth of retail sales, real estate sales, and express parcel deliveries in July at 10.4 percent, 21 percent, and 47 percent, respectively.⁴⁴ However, further productivity and domestic consumption gains are hindered by the hukou residency system. Although nearly 54 percent of China's population resides in cities, under the hukou system only 36 percent of China's population has access to urban healthcare, housing, employment, and education opportunities.⁴⁵

As part of the 12th FYP, the Chinese government expanded the social safety net by raising provincial and city-set minimum wages, providing low-cost housing, increasing rural and urban healthcare coverage, strengthening the pension system, and creating more educational opportunities in rural areas.⁴⁶ As the government assumes responsibility for long-term costs of healthcare, retirement,

and education, Chinese citizens are expected to save less and consume more. In his testimony before the Commission, Stephen Roach, senior fellow and senior lecturer at Yale University, noted the Third Plenum addressed the significant funding shortfall for social services under the 12th FYP, and the 13th FYP is likely to provide additional provisions for China's social safety net.⁴⁷ In late August 2015, the State Council announced it will allow up to \$96 billion (RMB 600 billion) of its pension funds* to be invested in the stock market, in part to prop up the stock market and offset a roughly \$16 billion (RMB 100 billion) depreciation of its pension funds over the last two decades.⁴⁸ (For a discussion of China's stock market collapse and the government's response, see Chapter 1, Section 1, "Year in Review: Economics and Trade.") Beyond expanding social services, the Chinese government is promoting higher-value-added manufacturing and encouraging urbanization to raise wages and spark consumption.

In March 2014, the Chinese government released the National Plan on New Urbanization (2014–2020), which outlines plans to (1) move an additional 100 million rural residents to cities in central and western provinces, (2) develop affordable housing for 100 million current urban residents, (3) improve access to public services and social security by expanding urban hukou registration for 100 million rural migrants currently residing in cities,[†] and (4) enhance the environmental sustainability of cities by 2020.⁴⁹ The government hopes this migration will unleash additional economic growth by creating a new consumer base and working class.⁵⁰ In July 2015, Guangdong Province published guidelines to grant local hukou registration to approximately 13 million migrant workers in the province by 2020; however, this reform affects only 37 percent of the estimated 35 million migrant workers, and maintains restrictions on migration to its major cities of Guangzhou and Shenzhen.⁵¹ Similarly, strict controls on migration to China's megacities such as Beijing or Shanghai will remain in place, limiting access to the most lucrative employment and educational opportunities.⁵²

The continued rise in urbanization will require major investments in transportation, public utilities, healthcare facilities, and environmental infrastructure. While returns on fixed asset investments are shrinking in China, the central government is attempting to redirect its significant capital resources and construction capabilities toward more sustainable, profitable investments—such as hospitals and urban transportation—that will soften the transition to long-term, consumption-led growth. In 2014, China's Ministry of Finance estimated this transition will cost \$6.8 trillion (RMB 42 trillion), involving funding from municipal bond markets, local government revenue channels, and public-private partnerships.⁵³ In April 2014, the State Council widened the potential sources of funding for these projects by pledging to open 80 major public infrastructure projects to private and foreign investment.⁵⁴ The scale

*At the end of 2014, pension funds were worth \$560 billion (RMB 3.5 trillion). Hou Limei, "China to Invest 2 Trillion Pension Funds in Stocks and Other Assets," *CRIEnglish*, August 28, 2015.

†Collectively, these three policies are known as the "three 100 million people." *People's Daily*, "Government Work Report: The 'Three 100 Million People' Principles Expound New-Type Urbanization," March 5, 2014. Staff translation.

and number of these proposed projects creates new opportunities for both domestic and, potentially, foreign firms, including:

- *Transportation:* Additional roads, railways, airports, and urban transit systems are needed to connect the millions of people within cities and the surrounding areas with their homes, work, and schools. For example, in 2014, only 22 of the 150 Chinese cities with over one million people had urban rail transit systems.⁵⁵ To expand urban transit systems to 50 cities by 2020, the total investment in these systems will surpass \$320 billion over the next five years, according to estimates by the market research firm China Research and Intelligence.⁵⁶ Additionally, China is augmenting its general aviation infrastructure to meet expected growth in air travel demand.* In 2015, China led global airport construction, with 56 ongoing projects worth nearly \$60 billion in investment.⁵⁷
- *Healthcare:* China's rapidly aging population is demanding access to better-quality healthcare.† Accounting for this major demographic transition, McKinsey & Company estimated China's healthcare spending will increase from \$357 billion in 2011 to \$1 trillion in 2020.⁵⁸ In the pharmaceutical industry, the National Bureau of Asian Research projected China's over-the-counter and branded generic pharmaceutical market will grow from \$23 billion in 2010 to \$369 billion in 2020.⁵⁹
- *Housing:* Approximately 62 million urban Chinese residents live in substandard housing,‡ and an estimated 14 million low-income households are financially strained by housing costs, creating enormous demand for affordable housing, according to McKinsey & Company.⁶⁰ McKinsey & Company also estimates that further rural-to-urban migration could increase the number of low-income urban households by an additional 56 million by 2025.⁶¹ To fill this gap, the Chinese government built an estimated 13.4 million housing units from 2012 to 2014, and its National Plan on New Urbanization (2014–2020) outlines plans to build affordable housing for 100 million current urban residents.⁶²

Building a Strong Service Sector to Meet Demand and Create Jobs

Greater urbanization, higher wages, and an aging population are increasing demand for the service sector in areas such as healthcare and retail. In 2014, according to China's National Bureau of Statistics, services accounted for 48.2 percent of GDP and rose to

*For analysis on China's aerospace industry, see Roger Cliff, Chad J.R. Ohlandt, and David Yang, "Ready for Takeoff: China's Advancing Aerospace Industry," prepared for the U.S.-China Economic and Security Review Commission, March 1, 2011.

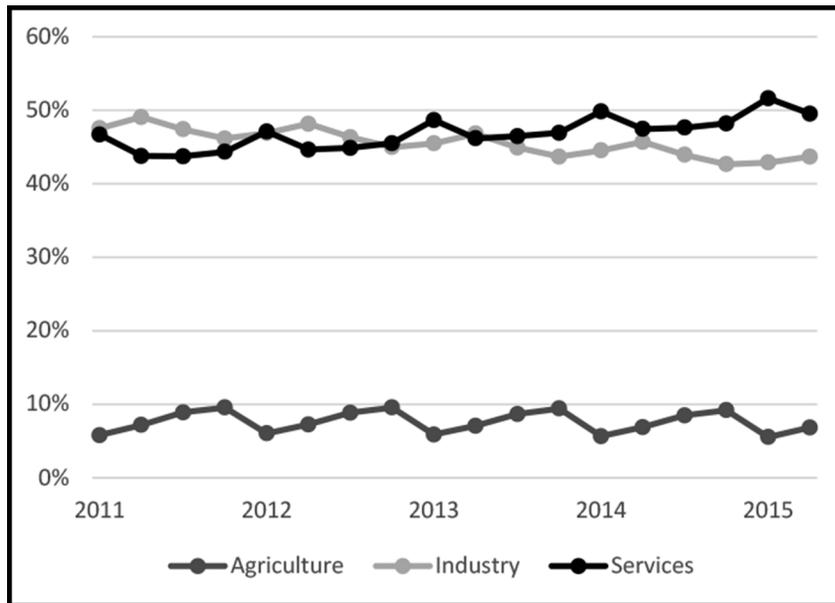
†For an in-depth background on China's healthcare industry, see U.S.-China Economic and Security Review Commission, Chapter 1, Section 3, "China's Health Care Industry, Drug Safety, and Market Access for U.S. Medical Goods and Services," in *2014 Annual Report to Congress*, November 2014, 127–182.

‡Substandard housing is defined as dwellings that lack durability, sufficient living space, access to safe water, sanitation, and security against eviction. Jonathan Woetzel et al., "A Blueprint for Addressing the Global Affordable Housing Challenge," *McKinsey & Company*, October 2014, 27.

§Research by Rhodium Group and the Center for Strategic and International Studies (CSIS) suggests flaws in official accounting methods underestimated the size of China's service sector.

50.2 percent of GDP in the first half of 2015 (see Figure 2).⁶³ In his testimony before the Commission, Dr. Roach argued the development of China's service sector could provide higher-paying jobs for China's recent college graduates and meet growing public demand for retail, healthcare, tourism, and public services. He calculated that services employ 30 percent more workers per unit of GDP than manufacturing or construction, creating more jobs despite slower growth.⁶⁴ In addition, research by Bloomberg found an annual shift of 1 percent of GDP from the energy-intensive heavy industry to the service sector over the next five years would decrease emissions by about 8 percent relative to the no-reform baseline scenario, meeting China's environmental reform priorities.⁶⁵

Figure 2: Service Sector Composing Greater Share of GDP, 2011–2015H1
(Quarterly)



Source: National Bureau of Statistics of the People's Republic of China via CEIC database.

To accelerate service sector growth, the Third Plenum pledged to open a number of largely state-dominated service sectors, such as financial services, education, healthcare, e-commerce, and logistics, to competition from private domestic and foreign firms.⁶⁶ Progress, however, has been slow. Mr. Consonery said in his testimony that “each sector will have a distinct story about how the government balances the need for new investments against the desire to protect

The Rhodium-CSIS recalculation of China's 2008 GDP revises the value of the service sector upward by 22.2 percentage points and finds the services share of GDP was already larger than the manufacturing share in 2009. Dan Rosen and Beibei Bao, “Broken Abacus? A More Accurate Gauge of China's Economy,” *Center for Strategic and International Studies*, September 2015, 158–160.

local firms.” He remarked that “sectors that see greater openings will be those where the government sees continued need for foreign expertise, and those that have been classified as ‘market competitive’ and where Beijing is more interested in reducing the state’s role,” but in strategic sectors such as finance, resistance from vested interest groups will remain substantial.⁶⁷

In August 2013, the State Council created the Shanghai Free Trade Zone (FTZ) to serve as a pilot program for national implementation of financial sector reforms and opening China’s service industries to foreign investment.⁶⁸ In December 2014, Premier Li announced the expansion of the Shanghai FTZ area and creation of three new FTZs in Tianjin municipality, Guangdong Province, and Fujian Province.⁶⁹ While some restrictions are being lifted gradually, significant limitations still remain.⁷⁰ As of April 2015, the negative list,* which designates the sectors restricted or prohibited to foreign investment, has only been trimmed down to 119 sectors from the initial 190.⁷¹ Furthermore, the U.S.-China Business Council found the 2015 *Catalogue for the Guidance of Foreign Investment Industries*, which guides national foreign investment policies, removed few restrictions and ownership caps on priority areas for foreign companies in areas such as agriculture, automotive, and banking.⁷² (For more information on China’s treatment of foreign investment, see Chapter 1, Section 2, “Foreign Investment Climate in China.”)

Capital Allocation

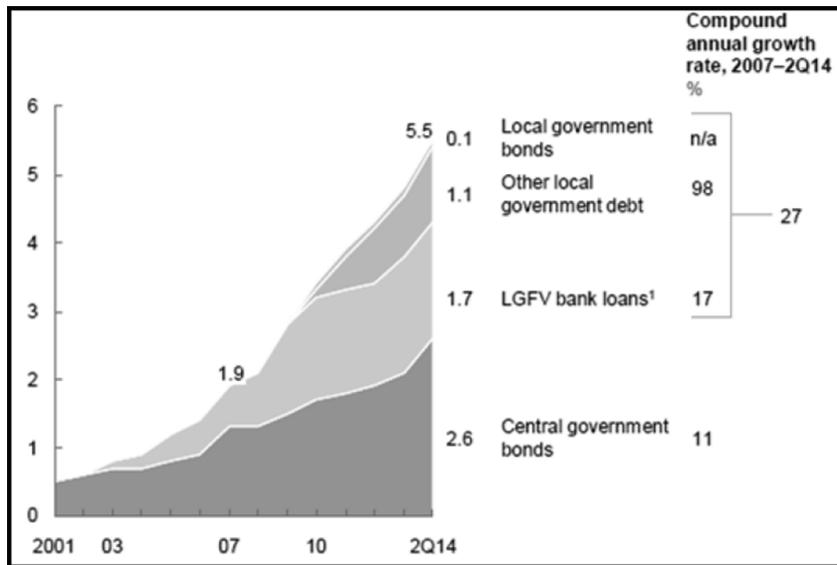
China’s fiscal system has saddled local governments with high levels of debt that is increasingly costly to pay off. Without fiscal reform, local governments will be challenged in financing China’s other reform objectives, such as urbanization, expansion of social and healthcare benefits, and infrastructure projects (see the text box, “China’s Ability to Finance Its Reform Agenda” earlier in this section). A 2015 World Bank report analyzed the status of China’s financial reform and found distorted incentives, poor governance structures, and pervasive implicit government guarantees have exacerbated China’s inefficient allocation of financial resources.⁷³ Subsequently, the World Bank redacted the section on China’s financial reform, allegedly due to Chinese government interference.⁷⁴ Significant reforms are needed to realign lending incentives, introduce risk and market competition, and reduce the role of the government within the financial sector. However, the Chinese government’s continued intervention in the market weakens the impact of these stated reforms.

*China traditionally has used purchasing catalogues such as the annual *Catalogue for the Guidance of Foreign Investment Industries* to designate the products, services, and investments approved for market access. Sectors not listed in the catalogs are restricted from foreign competition. In contrast, a negative list designates only those sectors that face market access restrictions; sectors not listed are considered open. The use of a negative list represents a shift toward a more widely used global approach.

Restructuring Local Government Debt

China’s fiscal system* allocates only 53 percent of tax revenue to local governments, while placing on local governments the responsibility for funding 85 percent of centrally mandated programs.⁷⁵ Prevented from issuing bonds as U.S. municipalities do, local governments in China largely rely on land-use sales, commonly seized from local farmers at below-market prices,[†] and off-balance-sheet local government financing vehicles (LGFV), which use land and other government assets as collateral to raise funds for major infrastructure and real estate projects.⁷⁶ The 2009 stimulus program exacerbated the debt crisis as the central government encouraged local governments to take on substantial high-cost LGFV debt to finance infrastructure projects. According to McKinsey & Company, LGFV debt nearly tripled from \$600 billion in 2007 to \$1.7 trillion by the second quarter of 2014, accounting for 58.6 percent of total local government debt (see Figure 3).⁷⁷ With falling land prices and lower growth in tax revenues from slower economic growth, it is becoming more difficult for local governments, particularly those in poorer provinces, to service these debts.⁷⁸

Figure 3: Outstanding Balance of China’s Government Debt by Source
(US\$ trillions; constant exchange rate, 2013)



Note (1): LGFV refers to local government financing vehicles.
Source: McKinsey Global Institute, “Debt and (Not Much) Deleveraging,” February 2015, 81.

*China’s fiscal system determines tax revenue allocation and funding responsibilities for central and local governments. For additional information on China’s fiscal system and local government challenges, see Jacob Koch-Weser, “China Fiscal Policy Revamp Faces Hurdles,” *U.S.-China Economic and Security Review Commission*, September 30, 2014.

†These land seizures are a leading cause of domestic unrest in China. For additional information, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 3, “China’s Domestic Stability,” in *2014 Annual Report to Congress*, November 2014, 352.

In 2014, the State Council outlined its fiscal restructuring plan to reduce the risk of local government default and create more affordable revenue sources by taking steps to calculate the magnitude of debt, rein in lending, remove the heavy debt burden, and introduce new sources of local government revenue.⁷⁹ However, fiscal reforms have been subject to numerous reversals as the central government struggles to maintain employment and growth. An analysis on the status of reforms finds that:

- *The magnitude of local government debt is unknown:* In 2013, the National Audit Office assessed the scale of local debt and found local government debt and liabilities totaled \$2.9 trillion (RMB 17.9 trillion), with nearly half in costly LGFVs.⁸⁰ Private estimates highlight the unreliability of these government figures. McKinsey & Company estimated total local government debt at \$2.9 trillion at the end of the first half of 2014.⁸¹ BCA, an independent investment research house, estimated \$3.2 trillion (RMB 20 trillion) at the end of 2014,⁸² and Goldman Sachs estimated LGFV debt alone reached \$3.4 trillion (RMB 21 trillion) by the end of 2014.⁸³ To address this ambiguity, China's Ministry of Finance required provincial governments to update their debt figures by January 2015. Implementation, however, has been exceedingly difficult because provincial governments are incentivized to overstate their debt figures to qualify for better loan concession and a higher bank debt ceiling. The subsequent inability of provincial governments to submit revised figures by a March 2015 deadline led the Ministry of Finance, National Development and Reform Commission (NDRC), People's Bank of China (PBOC), and China Banking Regulatory Commission (CBRC) to establish a centrally controlled audit system that will rely less on local government figures.⁸⁴ This system assigned the NDRC to audit enterprise debt and LGFV debt, the PBOC and CBRC to jointly audit bank loans and short-term commercial debt, and local governments to audit payments and accounts payable for buy-transfer projects* and project financing.⁸⁵
- *Local government borrowing continues:* In October 2014, the Chinese government outlawed the expansion of LGFV borrowing to rein in runaway local debt.⁸⁶ But in May 2015 the central government reversed course in the face of faltering economic growth and rising unemployment.⁸⁷ The State Council reopened LGFVs' access to short- and medium-term bond markets and relaxed previous restrictions on LGFV-financed infrastructure spending. That same month, the Ministry of Finance, PBOC, and CBRC explicitly required financial institutions to extend existing loans for insolvent infrastructure projects that were started before January 2015, resuming the very lending practices reforms were meant to reverse.⁸⁸ According to Deut-

*Buy-transfer is a type of financing model used in China for public infrastructure projects. Investors bid for government projects then the winning investor provides the financing and constructs the project. Once complete, the government pays for the cost of construction as agreed upon in the contract through installment payments. Liu Hongyong and Deng Li, "Study on the BT Financing Model of Non-business Public Building in the Post-Disaster Reconstruction—Case Study of Guangyuan," *Proceedings of 2011 International Symposium—Geospatial Information Technology & Disaster Prevention and Reduction*, May 2011.

sche Bank economists Zhang Zhiwei and Audrey Shi, this policy change represented “a 180-degree reversal of the fiscal policy from tightening to loosening.”⁸⁹

- *Central intervention ensures debt-for-bonds swap succeeds:* To prevent defaults and reduce the burden of repayments, the Ministry of Finance in March 2015 issued a \$161 billion (RMB 1 trillion) quota to convert roughly half of the nearly \$296 billion (RMB 1.85 trillion) of local governments’ high-risk debt due this year into lower-yielding, longer-maturity municipal bonds.⁹⁰ Expected purchasers of these new bonds—primarily state-owned commercial banks—delayed the launch of the pilot program until the PBOC intervened to offer more favorable terms, such as higher yield rates and access to low-interest loans.⁹¹ According to the central government, state banks will buy 70–80 percent of these local government bonds.⁹² In April 2015, the State Council widened the pool of purchasers by permitting its nearly \$200 billion (RMB 1.24 trillion) national state-security fund to invest up to 20 percent of its portfolio in local government debt and corporate bonds.⁹³ In May 2015, Jiangsu Province sold \$8.4 billion (RMB 52.2 billion) worth of bonds, the first provincial government in China to do so. The provinces of Hebei, Shandong, Hubei, and Guangxi, as well as the Chongqing and Tianjin municipalities, have followed suit.⁹⁴ In June 2015, the Chinese government doubled the bond quota to turn over the rest of the local government debt due this year.⁹⁵ While these policies significantly reduced local government financing costs, Barry Naughton, professor of economics at the University of California, San Diego, cautioned that because the costs for reckless borrowing were negligible and central intervention reaffirmed central government backing for bonds, “the debt swap failed to achieve its most essential objectives as market-oriented reform.”⁹⁶
- *New sources of local government revenue introduced:* The Chinese government is attempting to create more transparent and affordable revenue streams by increasing the amount of central proceeds reallocated to local authorities, reinstating the provincial bond issuance system* in 2014, and restructuring the tax system.⁹⁷ The Chinese government is in various stages of rolling out value-added, resource, and property taxes.⁹⁸
 - *Value-added tax:* The State Administration of Taxation and Ministry of Finance are in the process of phasing out the “business tax”† that disadvantages the service sector, and expect to fully replace it with a value-added tax (VAT)‡ by the end of 2015.⁹⁹ This transition in part spurred the growth of newly registered businesses by 46 percent in 2014, according to the written testimony of Dali

* The local government bond issuance was outlawed in 1994 after local governments built up enormous debt in the early 1990s.

† Business tax is calculated based on the gross revenue of a business.

‡ VAT is calculated based on the difference between a good’s price before taxes and its cost of production.

Yang, professor of political science at the University of Chicago.¹⁰⁰

- *Resource tax*: The Ministry of Finance has also been rolling out a resource tax based on prices rather than volumes, raising costs of these resources for producers and consumers from virtually nonexistent levels.¹⁰¹ The Ministry of Finance imposed a 2–10 percent tax on coal in October 2014, increased its fuel-consumption tax for the first time in five years in November 2014, and expanded the resource tax structure for rare earths and metals in May 2015.¹⁰² According to Dr. Yang, these taxes create new revenue streams while curbing resource use. The increase of China’s fuel-consumption tax raises revenue, marking the largest growth in tax revenue this year.¹⁰³ These taxes also keep the costs of fuel high—despite the significant drop in oil prices over the last year—and discourage additional consumption.¹⁰⁴
- *Property tax*: In 2011, Chongqing and Shanghai municipalities launched pilot property tax programs, but these programs generated low levels of revenue due to lax enforcement and widespread exemptions.¹⁰⁵ Despite these issues, in March 2015, the Ministry of Land and Resources launched a nationwide property registration system that sets the stage for a nationwide property tax and expanded crackdown on official corruption.¹⁰⁶ Jia Kang, director of the Ministry of Finance’s Research Institute on Fiscal Science, expects that the property tax will be implemented in 2017, but Dr. Yang remains skeptical, citing a history of inaction on property tax reform and the recent failures of the Chongqing and Shanghai pilot programs.¹⁰⁷

Opening China’s Bank-Driven Financial Sector

China’s financial system is “repressed, unbalanced, costly to maintain, and potentially unstable,” according to a joint report released in 2013 by the World Bank and the State Council’s Development Research Center.¹⁰⁸ State-set interest rates, tight regulations on capital flows, and de facto state control of 95 percent of commercial bank assets have led to politically driven capital allocation and a burgeoning shadow banking* sector.¹⁰⁹ High levels of savings by the Chinese public and extremely low interest rates offered to depositors have created approximately \$21.5 trillion of cheap capital for China’s state-dominated banking sector. These banks lend to SOEs over more efficient private firms based on the implicit government guarantees on SOE debt and explicit government pressure on state-owned banks to lend to their government cousins.¹¹⁰ Small- and medium-sized enterprises (SME) receive only 20 percent of bank lending despite holding 65 percent of patents and contributing 70 percent of employment, 60 percent of GDP, and 50 percent

*Shadow banking is lending—to include wealth management products, credit guarantees, entrusted loans, and peer-to-peer lending—that occurs outside of the official banking system. For more information on China’s shadow banking sector, see U.S.-China Economic and Security Review Commission, Chapter 1, Section 3, “Governance and Accountability in China’s Financial System,” in *2013 Annual Report to Congress*, November 2013, 113–152.

of tax revenue.¹¹¹ This inefficient allocation of capital has contributed to “wasteful investments, excess capacity, and weaker loan capacities,” forcing SMEs to seek credit in the unofficial shadow banking sector.¹¹²

To address these issues, the Chinese government is taking small steps toward loosening its interest rate controls, increasing competition in the banking sector, reducing moral hazard, and enhancing capital convertibility. Thus far, financial reforms have made the most headway, but policymakers have begun to reassert control in light of the market volatility these reforms create.¹¹³ Anemic economic growth in 2015 led the PBOC to ease financial constraints by lowering interest rates five times in 2015.¹¹⁴ The PBOC also cut reserve requirements four times in 2015.¹¹⁵

At the same time, the Chinese government supported the rapid growth of its stock markets to accelerate economic growth. According to BCA, the financial sector accounted for close to 30 percent of GDP growth this year compared with only 10 percent previously—driven primarily by the growth of equity trading in the stock market.¹¹⁶ The subsequent collapse of the stock market this summer despite significant government intervention has shaken the faith of investors in the Chinese government’s ability to manage the economy. (For a discussion of China’s stock market and the government’s response, see Chapter 1, Section 1, “Year in Review: Economics and Trade.”)

Initial Steps toward Market-Set Interest Rates and Opening Banking Sector to Competition

The Chinese government is slowly loosening control over interest rates and opening the state-controlled banking sector to new entrants. Reforms have:

- *Partially deregulated interest rates:* In November 2014, the PBOC lowered the benchmark interest rate, but permitted banks to offer deposit rates up to 20 percent above the benchmark, allowing banks to compete for depositors within a set range.¹¹⁷ In August 2015, the PBOC further loosened interest rates by allowing banks to set savings rates for deposits that are longer than a year and offer short-term deposit rates up to 150 percent above the benchmark.¹¹⁸ According to Le Xia and Jinyue Dong, economists from the Spanish-based multinational banking firm Banco Bilbao Vizcaya Argentaria S.A., these reforms will foster competition between banks for depositors and borrowers; banks are increasing returns for ordinary depositors to attract them, but will need to offset these higher costs by seeking higher returns from their loans. In addition, Dr. Xia and Dr. Dong found “the lift of the deposit rate cap also means that the PBOC will lose one of its important monetary policy tools.”¹¹⁹ The PBOC previously leveraged its ability to cut interest rates to channel China’s cheap capital toward government priorities such as financing SOEs and to spur investment-led economic growth.¹²⁰
- *Loosened market access restrictions for Chinese firms in banking:* In January 2015, China launched its first fully online private bank. Several Chinese Internet companies, including

JD.com, Alibaba, and Tencent, have since entered the financial service industry.¹²¹ This entry of new competitors into the previously state-controlled sector could foster additional competition between banks for depositors interested in higher returns, and between borrowers for banks' capital, thus encouraging the flow of capital to higher-return private firms.

Steps to Reduce Moral Hazard

The Chinese government is making small changes to alter the perception that it will bail out any company in danger of default. In May 2015, the PBOC introduced a deposit insurance program and set upper limits on insurance coverage for bank deposits at \$80,000 (RMB 500,000) to introduce risk and erode the view that all deposits at state-owned banks are implicitly guaranteed by the Chinese government.¹²² In addition, over the past year, the government has allowed the domestic bond market to experience its first defaults.¹²³ In April 2015, the Chinese government stood by while state-owned Baoding Tianwei Group Co. defaulted on its \$13.8 million interest payment.* Nor did the government prevent the \$1 billion default of Kaisa Group Holdings Ltd. later that month, marking the first defaults in the offshore bond market.¹²⁴ More defaults are likely as overcapacity, particularly in the property sector, squeezes profitability and cash flows.¹²⁵ Although limited defaults have been tolerated, the Chinese government's strong history of intervention and recent steps to prop up the stock market demonstrate that the government is unlikely to allow more substantial losses or defaults.

Loosening Capital Account Controls but Maintaining Strong State Control

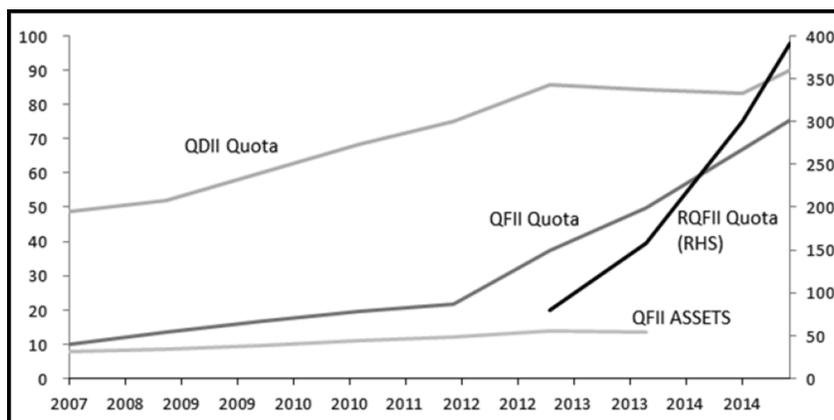
Over the last two decades, the Chinese government has gradually loosened its tight capital controls to allow greater flow of RMB across borders. These small steps serve to promote the RMB as an international currency and set the stage for China's emergence as a key player in the global financial markets.¹²⁶ Since 2010, the China Securities Regulatory Commission and State Administration of Foreign Exchange have incrementally expanded the Qualified Domestic Institutional Investor (QDII) and Qualified Foreign Institutional Investor (QFII) schemes† that allow greater capital flows while maintaining government control through quotas, approvals, and ceilings (see Figure 4).¹²⁷ The QFII scheme remains underutilized; however, signaling that though controls are loosening, additional reforms are necessary to entice greater foreign investment.¹²⁸

* For more information about the April 2015 defaults, see U.S.-China Economic and Security Review Commission, *Monthly Analysis of U.S.-China Trade Data*, May 5, 2015, 7–9.

† For background on the QDII and QFII schemes, see Nargiza Salidjanova, "The RMB's Long Road to Internationalization," *U.S.-China Economic and Security Review Commission*, September 22, 2014.

Figure 4: Quotas for the Qualified Domestic and Foreign Institutional Investors, 2007–2014

(RMB billions [LHS]; number [RHS])



Source: Sean Miner, “Equity Series Part 6: The Equity Market’s Role in Cross-Border Capital Flows,” *China Economic Watch* (Peterson Institute for International Economics blog), July 23, 2015.

In November 2014, the Shanghai-Hong Kong Stock Connect opened, allowing for greater usage of the RMB across previously closed borders and removing the arbitrage gaps between the two stock markets.¹²⁹ (For a discussion of the Shanghai-Hong Kong Stock Connect, see Chapter 3, Section 4, “Hong Kong.”) China has also expanded offshore RMB trading centers beyond Hong Kong and Taiwan to a number of international financial centers, such as Frankfurt, London, and Singapore.¹³⁰ In July 2015, the London Metal Exchange, the world’s largest trading venue for metals, announced it would accept the RMB as collateral for trades on its platform by banks and brokers.¹³¹ That same month, the PBOC announced that central banks, sovereign wealth funds, and international financial institutions will have immediate open access to China’s interbank debt market worth \$6.1 trillion.¹³² The RMB became the fourth-most-active currency for global payments in August 2015, according to data from the Society for Worldwide Interbank Financial Telecommunications, the global leader in processing payments.¹³³

Despite these limited steps forward, PBOC Governor Zhou Xiaochuan noted in April 2015 that the Chinese government will maintain control over cross-border financial transactions, external debt, short-term capital flows, and temporary capital control measures.¹³⁴ In June 2015, U.S.-based stock market index provider MSCI yet again delayed the inclusion of China’s “A” shares into its Emerging Markets Index, citing the continued use of opaque and unequal investment quotas and concerns regarding the recognition of foreign ownership under Chinese law.¹³⁵ The IMF extended the current special drawing rights (SDR) basket of currencies until September 30, 2016, and will decide on whether to add the RMB to the composition of its SDR basket by the end of this year.¹³⁶ The IMF’s decision to include the RMB would legitimize China’s man-

aged convertibility approach.¹³⁷ (For a discussion of China's exchange rate management, see Chapter 1, Section 1, "Year in Review: Economics and Trade.")

Industry Competitiveness

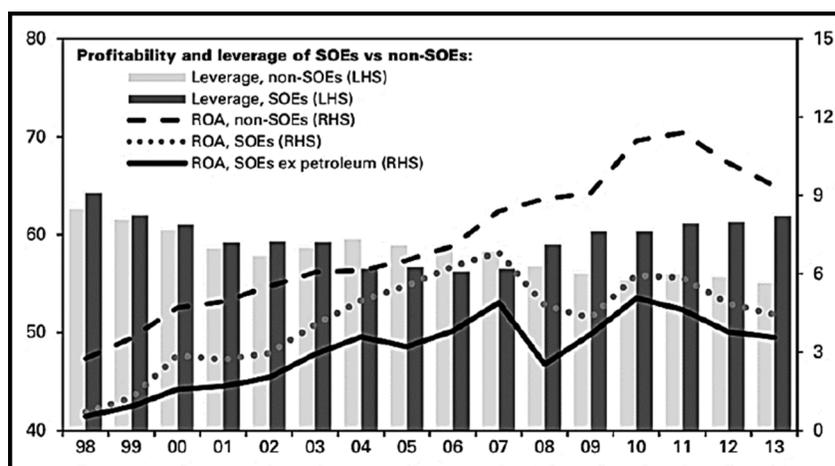
China's old industrial model created bloated, export-dependent industries, inefficient SOEs, and severe overcapacity. The 2008 stimulus exacerbated these issues. Reforms are seeking to revitalize China's industrial sector and boost innovation by restructuring SOEs, moving up the value-added chain, and minimizing overcapacity.

Reforming State-Owned Enterprises

Although they are less profitable than private Chinese companies, SOEs remain an important driver of economic growth due to preferential government treatment and subsidies.¹³⁸ Lack of competition, high operating costs, overstaffing, significant debt, and cronyism continue to erode SOEs' productivity and global competitiveness. A 2015 Goldman Sachs study found the return on assets (ROA) gap between private Chinese firms and SOEs widened in 75 percent of the 36 sectors surveyed, while the debt-to-equity ratio for SOEs increased faster than for private Chinese firms for 70 percent of the 36 sectors surveyed (see Figure 5).¹³⁹

Figure 5: SOEs Are Less Profitable and More Indebted than Private Chinese Firms

(percentage points [LHS]; ROA, percentage points [RHS])



Source: Yu Song et al., "Harnessing Global Capital to Drive the Next Phase of China's Growth," *Goldman Sachs*, February 2015, 27.

The dominance of SOEs in core strategic industries and the authority of SOE executives within the government hierarchy have created strong vested interests and endemic corruption.¹⁴⁰ President Xi's aggressive anticorruption drive that detained at least 124 high-level SOE officials has weakened but not fully eliminated re-

sistance to reform.¹⁴¹ Last year, reforms of the state sector stalled largely due to resistance from SOEs and struggles for control between the Ministry of Finance and the State-Owned Assets Supervision and Administration Commission of the State Council.¹⁴² The anticipated announcement of other major reforms in March this year was also pushed back until September.¹⁴³

In September 2015, the State Council and Central Committee of the CCP jointly released the *Guiding Opinion on Deepening the Reform of State-Owned Enterprises*.¹⁴⁴ These guidelines cemented the commitments the Chinese government has already made this year to improve SOEs' productivity and global competitiveness through mixed ownership and consolidation, but offered few concrete steps forward.¹⁴⁵ Andrew Batson, the China Research Director at the economics and market research firm Gavekal Dragonomics, described the guidelines as "an ungainly mishmash of bureaucratic compromises that sets no clear goals and is riven by internal contradictions."¹⁴⁶ Gordon Orr, senior advisor to McKinsey China, summed up the guidelines as "we still want to do what we said we were going to do before but haven't yet done."¹⁴⁷ Concurrently, these guidelines build upon President Xi's earlier calls for greater CCP leadership within SOEs, the very driver of inefficiency and cronyism.¹⁴⁸ As Dr. Prasad explained, SOE reforms do not "intend to upend state control of key enterprises but, rather, subject them to greater market discipline."¹⁴⁹ Announced reforms seek to:

- *Reinforce the CCP and state control over SOEs:* The guidelines specifically reinforce the importance of CCP control within SOE management and personnel, placing it at odds with the push for mixed ownership.¹⁵⁰ Zhang Yi, head of the State-Owned Assets Supervision and Administration Commission, emphasized the CCP's central role, stating, "In the process of deepening reforms of state-owned enterprises, the leadership of the party can only be strengthened, not weakened."¹⁵¹
- *Separate SOEs into commercial and public interest enterprises:* In his testimony before the Commission, Mr. Consonery argued that with SOE restructuring, the Chinese government is "doubling down and intensifying support for and control over some sectors, while opening others to more market competition and even foreign competition."¹⁵² The guidelines further clarified this distinction, stating that the Chinese government will separate SOEs into commercial and public interest enterprises (without providing any detail on which sectors or firms would be commercial or public interest).¹⁵³ Commercial SOEs will seek to maximize profits and incorporate both mixed-ownership and greater market competition; for strategically important SOEs, the state will maintain a controlling share. In contrast, public interest SOEs will remain wholly state-owned with a focus on delivering quality, efficient, and reasonably priced products and services to the Chinese public.¹⁵⁴
- *Increase private capital while preserving state control:* The Chinese government is continuing to increase the amount of non-state investment—private equity, social welfare funds, and private enterprises—in local and central SOEs' ownership structure by expanding mixed-ownership of SOEs.¹⁵⁵ Mixed-owner-

ship enterprises, with various combinations of state and private controls, already comprise 40 percent of China's industrial economy, and expansion of this ownership model would seek to increase technology transfer and managerial expertise and enhance productivity.¹⁵⁶ Marshall Meyer, emeritus professor of management at the University of Pennsylvania Wharton School of Business, explained that in practice, mixed ownership often means cross-ownership among SOEs.¹⁵⁷ In March 2015, the oil refiner Sinopec sold a 30 percent stake in its sales arm to 25 non-Sinopec entities, mainly SOEs and SOE subsidiaries.* In June 2015, the Bank of Communications announced it will sell minority stakes to private investors.¹⁵⁸ In addition, over 20 provinces have announced plans to list or sell off the assets of up to 70 percent of their provincially owned SOEs by 2017.¹⁵⁹ In May 2015, Shandong Province announced it will transfer equity shares in 471 of its provincially owned SOEs to its pension fund in order to pressure the companies to maximize profits and provide sufficient capital for its retirement fund.† In September 2015, Jiangxi Province sold a 47 percent stake in its local SOE Jiangxi Salt to other SOEs and SOE subsidiaries.‡ However, Dr. Meyer cautioned that “no matter how many shares are privately-owned, the decision lies with the state,” limiting the ability of non-state shareholders to influence corporate decision making.¹⁶⁰

- *Create global players through megamergers:* The State Council is seeking to capitalize on economies of scale and ample funding resources by consolidating (and in some cases reconsolidating) central SOEs into global competitors. This consolidation is a reversal of reforms in the 1990s that sought to increase SOE efficiency through managed competition.¹⁶¹ According to the German-based think tank Mercator Institute for China Studies (MERICS), the Chinese government is using megamergers to reduce overcapacities, enhance SOEs' international competitiveness, increase state control and oversight of SOE operations, and rectify the fierce price wars among Chinese SOEs in the global market.¹⁶² As one Chinese government official said, “They're [SOEs] increasingly fighting amongst each other. . . . That has led to lots of waste and ineffi-

*Six SOEs and 11 state-controlled asset management companies account for 16 of the 25 shareholders and control 20.2 percent of the 30 percent stake offered by Sinopec. Some of these state-controlled shareholders include Citic Securities, China Life Insurance Company, Bank of China, Cinda Asset Management, and China Post Life Insurance. Xinhua (English edition), “China to Tighten Supervision of State Assets,” May 26, 2015; Shirley Yam, “Sinopec Offers Master Class in SOE Mixed Ownership Reform,” *South China Morning Post*, September 20, 2014 (Updated April 28, 2015); and Neil Gough, “Sinopec Stake Sale Leaves Investors Unimpressed,” *New York Times*, September 15, 2014.

†This pension fund will act as a shareholder with profits invested by the National Council for Social Security Fund. Shi Rui, “In First, Shandong Has SOEs Hand Over Stakes to Its Social Security Fund,” *Caixin* (English edition), May 20, 2015.

‡These shareholders include: Cinda Asset Management Company (controlled by China's Ministry of Finance) at 22.8 percent, Zhongxinjian Merchants Investment (owned jointly by central SOE China Merchants Group and the Chinese government's quasi-military, quasi-commercial Xinjiang Production and Construction Corps) at 9.1 percent, Ximen ITG Group (owned by the Xiamen municipal government) at 7.6 percent, and Jianggangshan Investment (the private equity arm of the municipal SOE Beijing Automotive Industry Corporation) at 7.6 percent. Jiangxi Province's State-Owned Assets Supervision and Administration Commission retains 46.9 percent, and Jiangxi Salt management has 5.9 percent. David Keohane, “SOE You Think You Can Reform? Mixed-Ownership Edition,” *Financial Times*, September 28, 2015.

ciency.”¹⁶³ In April 2015, official Chinese media announced the government will consolidate the existing 112 centrally controlled SOEs into 40 large SOE conglomerates under the oversight of 16 ministries and authorities.¹⁶⁴ For example, the merger between China North Railway and China South Railway in December 2014 combined the world’s largest railway contractors in terms of sales. Their collective market capitalization totaled approximately \$130 billion—far ahead of its main competitors: the German firm Siemens AG with \$84.2 billion and French firm Alstom SA at \$8.7 billion.¹⁶⁵ Similarly, major mergers of China Power Investment with State Nuclear Power Technology and China Huafu Trade and Development Group with China National Cereals, Oils and Foodstuffs Corporation are creating firms as large as their leading global competitors.¹⁶⁶ While consolidation will increase economies of scale, it merely reinforces SOEs’ dominance of the state in key sectors of the economy. The guidelines provided little direction on how the Chinese government will manage these mega conglomerates, reflecting internal divides on how to balance its desire to supervise these merged firms while achieving more market-oriented operations.¹⁶⁷ The Ministry of Finance has advocated for Singapore’s Temasek model of governance, where the state collects dividends and operates as an asset manager allowing SOEs to largely operate unfettered, while the State-Owned Assets Supervision and Administration Commission prefers to maintain strong managerial oversight.¹⁶⁸

Increasing Higher-Value-Added Manufacturing

Chinese manufacturing is moving up the value-added chain, driven by fierce domestic and international competition, higher labor costs, and government incentives.¹⁶⁹ To accelerate its shift, China implemented an indigenous innovation policy in 2006* and established “strategic emerging industries” under the 12th FYP (see Table 2 for a list of these sectors). Strong state-directed subsidies for renewable energy—a strategic emerging industry—allowed China to achieve global dominance in the solar and wind sectors† in less than a decade.¹⁷⁰ Testifying before the Commission in his personal capacity, Mr. Melton, cautioned that despite producing successful Chinese companies and new technologies, such state-directed policies exacerbate corruption, misallocate resources, and distort the market.¹⁷¹

The 2015 NPC Government Work Report, which reviewed last year’s accomplishments and established tasks for 2015, announced two new initiatives, “Made in China 2025” and “Internet Plus,” to accelerate China’s transition to higher-value-added manufacturing (for additional discussion of the Internet Plus initiative, see Chapter 1, Section 4, “Commercial Cyber Espionage and Barriers to Dig-

*The indigenous innovation policy was first introduced in the National Medium- and Long-Term Program for Science and Technology Development (2006–2020) and later incorporated into the 12th FYP. Although the Chinese government no longer uses the term “indigenous innovation” after pressure from the United States to roll back those policies, its current innovation policy continues to reflect the spirit of indigenous innovation.

†For in-depth coverage of China’s wind and solar policies, see Jacob Koch-Weser and Ethan Meick, “China’s Wind and Solar Sectors: Trends in Deployment, Manufacturing, and Energy Policy,” *U.S.-China Economic and Security Review Commission*, March 9, 2015.

ital Trade in China”). These initiatives focus on innovation and upgrading key emerging industries, including high-end equipment, integrated circuits, biomedicines, cloud computing, mobile Internet, and e-commerce—sectors in which the United States currently enjoys technological advantages.¹⁷²

Dr. Prasad has warned that while U.S. companies in industries such as finance or insurance could leverage their “technological forte” to gain a foothold in the Chinese market, the Chinese government has made clear it will demand that foreign firms transfer technology and corporate governance know-how in exchange for market access.¹⁷³ Eurasia Group noted that in the high-value-added sectors outlined as priorities by the Chinese government, “foreign firms are likely to face a tougher competitive landscape in the coming years as the need for foreign know-how decreases.”¹⁷⁴ In August 2015, 19 U.S. technology and industry associations submitted a letter to President Barack Obama regarding China’s adverse policies toward U.S. information technology (IT) and communications firms.¹⁷⁵ For example, the letter highlighted China’s new program that attempts “to acquire or indigenize U.S. semiconductor technology,” a sector where U.S. multinational firms account for 11 of the top 20 global semiconductor suppliers and made up nearly 51 percent of the global market in 2014.* Such policies are seeking to dislodge established U.S. market leaders and replace them with domestic firms, to the detriment of U.S. businesses and workers.

Made in China 2025

In May 2015, the State Council released the Made in China 2025 action plan that outlines a ten-year strategy to build intelligent manufacturing capabilities, enhance innovation, and upgrade ten key sectors. These sectors are: (1) energy saving and new energy vehicles, (2) next-generation IT, (3) biotechnology, (4) new materials, (5) aerospace, (6) ocean engineering and high-tech ships, (7) railway, (8) robotics, (9) power equipment, and (10) agricultural machinery.¹⁷⁶ Many of these sectors are not new, and merely re-double government support for long-held strategic interests (see Table 2). In June 2015, the State Council announced that to support this plan, it will be creating a leading group headed by Vice Premier Ma Kai.¹⁷⁷ To build intelligent manufacturing capabilities and support the development of these ten sectors, Citigroup estimates China will invest \$1.3 trillion (RMB 8 trillion) in the next few years, while the consultancy PRC Macro forecasts funding will increase between \$64 billion (RMB 400 billion) and \$128 billion (RMB 800 billion) by the fall of 2016.¹⁷⁸

*For an overview of the semiconductor industry, see U.S.-China Economic and Security Review Commission, *Monthly Analysis of U.S.-China Trade Data*, August 5, 2015, 10–14; American Chamber of Commerce in China et al., “Letter to President Barack Obama,” August 11, 2015.

Table 2: China's Key Industries

Made in China 2025 (2015)	Strategic Emerging Industries (2010)	Strategic Industries (2006)	Heavyweight Industries (2006)
(1) Clean energy vehicles (2) Next-generation IT (3) Biotechnology (4) New materials (5) Aerospace (6) Ocean engineering and high-tech ships (7) Railway (8) Robotics (9) Power equipment (10) Agricultural machinery	(1) Clean energy technologies (2) Next-generation IT (3) Biotechnology (4) High-end equipment manufacturing (5) Alternative energy (6) New materials (7) Clean energy vehicles	(1) Armaments (2) Power generation and distribution (3) Oil and petrochemicals (4) Telecommunications (5) Coal (6) Civil aviation (7) Shipping	(1) Machinery (2) Automobiles (3) IT (4) Construction (5) Iron, steel, and non-ferrous metals

Source: State Council of the People's Republic of China, *Made in China 2025*, May 8, 2015; U.S.-China Economic and Security Review Commission, *Hearing on China's Five-Year Plan, Indigenous Innovation and Technology Transfers, and Outsourcing*, written testimony of Willy C. Shih, June 15, 2011; U.S.-China Economic and Security Review Commission, *Hearing on the Extent of the Government's Control of China's Economy, and Implications for the United States*, written testimony of George T. Haley, May 24–25, 2007; and U.S.-China Economic and Security Review Commission, Chapter 1, Section 1, "The Relationship's Current Status and Significant Changes during 2007," *2007 Annual Report to Congress*, November 2007, 38–39.

While the plan seeks to strengthen China's industrial base with automation and technological efficiency, it continues China's state-directed innovation policy with the establishment of 15 manufacturing innovation centers in the next five years, and an additional 25 by 2025.¹⁷⁹ Of concern to U.S. companies is the plan's goal of raising domestic localization of core components and materials for sectors such as railway, home appliances, aerospace, telecommunications, and power generation to 40 percent by 2020 and to 70 percent by 2025.¹⁸⁰ The presence of these absolutist requirements supports the view that China may be violating fair and equal treatment for domestic and foreign firms under the World Trade Organization (WTO).

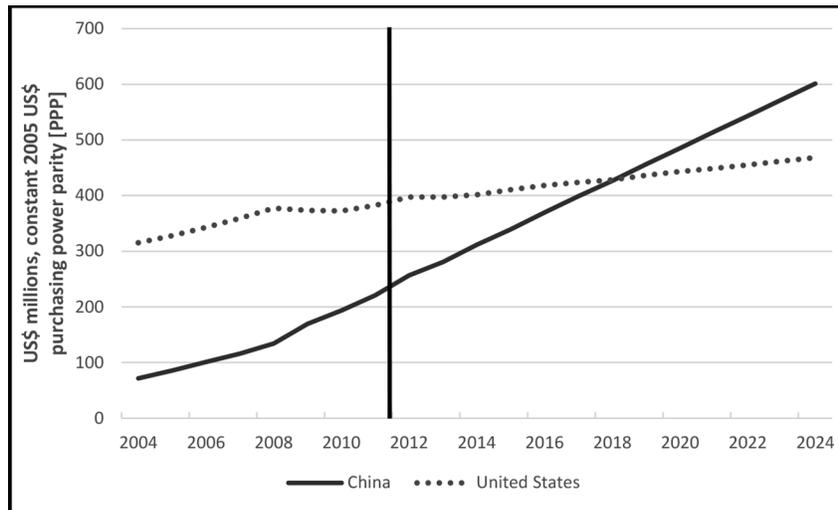
Enhancing Indigenous Innovation

The Chinese government has accelerated efforts to become a global center of innovation through its indigenous innovation policy. This policy is designed to ensure its future global competitiveness and technological edge. Created under the auspices of the 12th FYP, China's indigenous innovation policy has centered on research and development (R&D) funding, high-technology industrial clusters, and market creation. According to Mr. Melton, these policies seek to address its perceived shortcomings: "low R&D expenditure by firms, lack of marketable technologies from research institutes, insufficient financial resources for small technology firms, and the uneven performance of China's firms abroad."¹⁸¹ In his opinion, these shortcomings reflect China's legal and institutional failures rather than a need for greater government intervention; therefore, "less nationalistic innovation policies would have the same—or

greater—economic value at a much lower cost and fewer distortions in the economy.”¹⁸²

Over the past decade, China’s overall R&D spending increased an average of 23 percent per year, making it the world’s second-largest investor in R&D after the United States since 2011.¹⁸³ Spending on R&D as a share of GDP reached 2.1 percent in 2014 and is expected to grow at the same rate in 2015.¹⁸⁴ In comparison, Batelle, a nonprofit R&D organization, projected that the combined public and private spending on R&D in the United States would reach 2.8 percent of GDP in 2014.¹⁸⁵ While the United States is currently the world’s largest investor in R&D, the Organization for Economic Co-operation and Development (OECD) expects China will outspend the United States by 2019 (see Figure 6).¹⁸⁶

Figure 6: Current and Projected R&D Spending by China and the United States, 2004–2024



Note: These figures are based on gross domestic expenditure on R&D. Trends are projected after 2012 based on linear growth from U.S. and Chinese data since 2000.

Source: Organization for Economic Co-operation and Development, “Science, Technology, and Industry Outlook 2014,” November 12, 2014, 58.

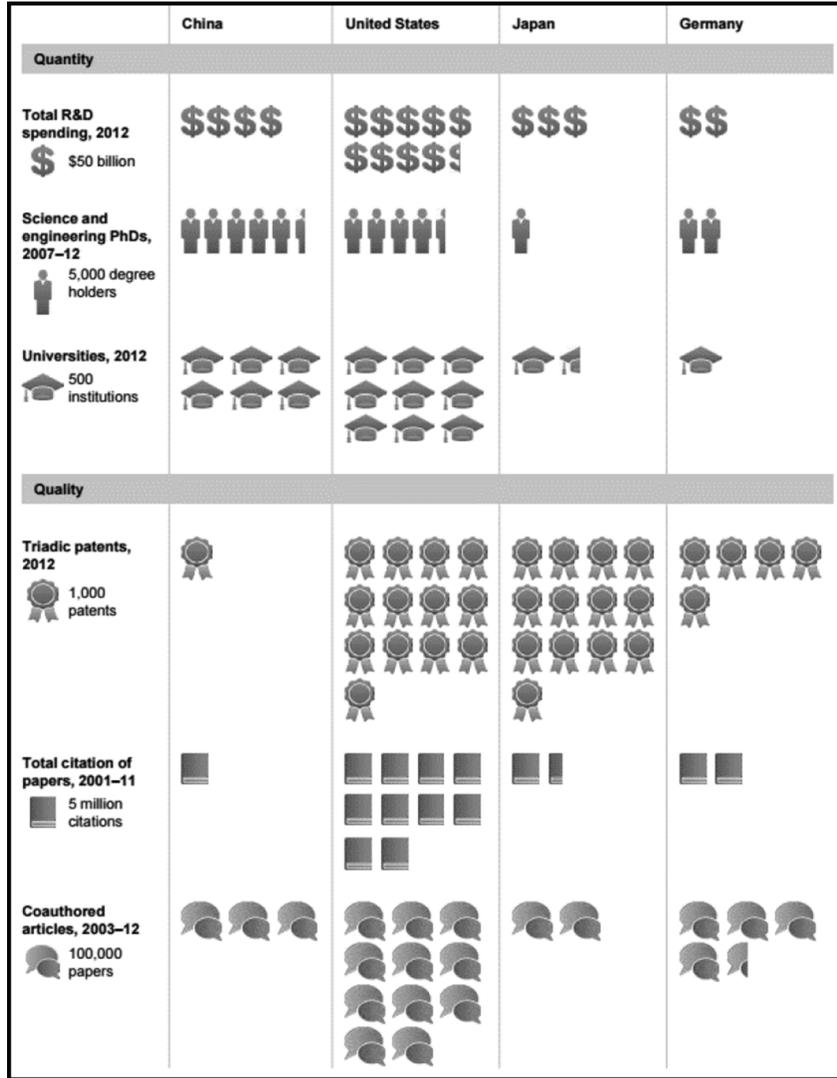
The Chinese government has set up hundreds of high-technology industrial clusters similar to Silicon Valley and uses a variety of tools to attract and expand foreign high-technology firms’ R&D operations in China in order to encourage technology transfer and create synergies with domestic firms.¹⁸⁷ These incentives include tax rebates, customs duty and VAT exemptions, or refunds for R&D purchases.¹⁸⁸ Chinese firms such as telecommunications firms Huawei and ZTE have successfully leveraged these foreign partnerships to build technological capability and gain access to external markets.¹⁸⁹ The Chinese government also created new markets to encourage innovation in designated sectors. For example, under the 12th FYP, the NDRC expanded feed-in tariffs, renewable portfolio standards, and capacity targets to incentivize renewable energy production.¹⁹⁰

Despite China becoming one of the largest R&D investors and leading applicants for patents in the world, Gary Jefferson, professor of international trade and finance at Brandeis University, argues that China's transformation is due less to a fundamental shift in innovation capability than it is to forces unrelated to innovation, such as increased filing for placeholder patents.* A comparison of the quality of China's innovation capability through proxies such as the number of triadic patents† and total citations of papers with the United States finds that China lags far behind (see Figure 7).¹⁹¹ According to testimony from Xiaolan Fu, professor and director of the Technology and Management for Development Center at Oxford University, state-led innovation in sectors such as solar and semiconductors has created a strong production capacity rather than the more profitable technology or innovation capacity.¹⁹² Mr. Melton found China's state-led industrial plan approach to innovation produced meaningless patents, excess capacity, and aggressive protectionist policies.¹⁹³ Jost Wübbeke, research associate at MERICS, further cautioned that China's innovation system remains plagued by inefficient allocation of funding, weak quality management, and plagiarism.¹⁹⁴

*Placeholder patents are provisional utility patents that are filed more for strategic value to extend the duration of a patent, reduce up-front costs, and provide the firm more time for more ground-breaking developments than to secure intellectual property rights. Gary Jefferson, "A Great Wall of Patents: What Is behind China's Recent Patent Explosion?" *Working Paper*, January 30, 2006; Albert G.Z. Hu, Zhang Peng, and Zhao Lijing, "China's Patenting Surge from 2007 to 2011: More Innovation or Just More Patents?" *Working Paper*, 2014; Gary Jefferson, Carl Marks Professor of International Trade and Finance, Brandeis University, discussion with the Commission, April 15, 2015; for more information on patent placeholder strategy, see John T. McNelis, "A Power Patent Strategy ... Provisionally," *Fenwick & West*, February 26, 2004; and for more information on China's utility model patent practices and procedures, see Thomas T. Moga, "China's Utility Model Patent System: Innovation Driver or Deterrent," *U.S. Chamber of Commerce*, November 2012.

†Triadic patents are patents that are simultaneously filed at the European Patent Office, U.S. Patent and Trademark Office, and the Japan Patent Office, and are considered a strong indicator of high-quality patents. These types of patents require lengthy processing in exchange for protection in three of the world's largest markets.

Figure 7: Comparison of China's Innovation Capability with the United States, Japan, and Germany



Note: The number of coauthored articles refers to the number of papers coauthored with foreign academics.

Source: McKinsey Global Institute, "The China Effect on Global Innovation," July 2015, 19.

Although they benefited from establishing over 1,200 R&D centers in China, in recent years U.S. businesses started to protest China's domestic procurement requirements, forced technology transfer policies, opaque standards-setting processes, and intellectual property theft.¹⁹⁵ In May 2015, the U.S.-China Business Council criticized local governments for favoring Chinese products in government procurement at the expense of U.S. firms. This practice

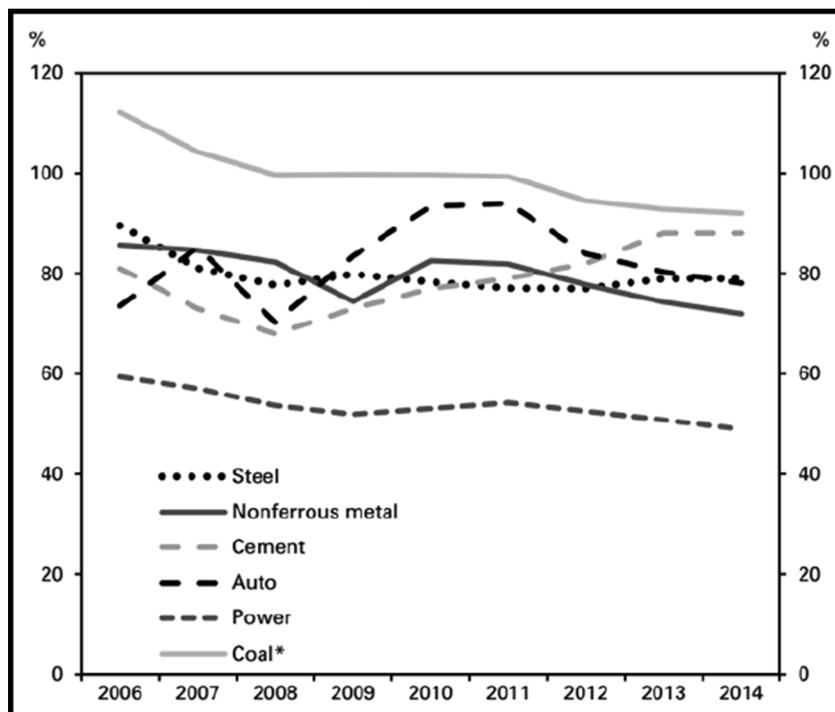
persists despite China's commitment to join the WTO Government Procurement Agreement, as well as repeated promises from senior Chinese leaders to eliminate the policy.¹⁹⁶ (For more information on China's investment climate, see Chapter 1, Section 2, "Foreign Investment Climate in China"; for more information on cyber theft, see Chapter 1, Section 4, "Commercial Cyber Espionage and Barriers to Digital Trade in China.")

Reducing Industrial Overcapacity

While housing, commercial real estate, and large infrastructure projects have contributed to job creation in the past two decades, China's subsidies to these sectors have created pervasive overcapacity in related sectors, particularly steel and cement (see Figure 8).¹⁹⁷ In 2013, the Ministry of Industry and Information Technology identified more than 1,400 companies in 19 industries that need to reduce their capacity.¹⁹⁸ For instance, an additional \$60 billion in annual demand is needed to absorb China's excess supply of steel.¹⁹⁹ Where oversupply in a market economy would cause firms to reduce production in order to minimize losses, continued subsidies in China have created cascading oversupply.²⁰⁰ This excess production has artificially lowered global prices below production costs and significantly reduced the industry's profitability.²⁰¹ In April 2015, industry estimates found nearly three-quarters of China's iron ore mines were unprofitable.²⁰² Rather than letting them close, the State Council reduced the iron ore resource tax from 80 percent to 40 percent to shore up struggling producers, thus exacerbating excess global production.²⁰³ In the steel sector, government subsidies have allowed Chinese steel firms to sell at below production costs despite falling prices, putting U.S. competitors at a disadvantage.²⁰⁴ While China's steel policies have bolstered domestic employment, they have also contributed to the decline in employment levels and profitability of steel firms in the United States* and other countries, resulting in antidumping and countervailing duty investigations.²⁰⁵

* For analysis on the steel industry, see U.S.-China Economic and Security Review Commission, *Monthly Analysis of U.S.-China Trade Data*, September 3, 2015, 8–10.

Figure 8: China's Capacity Utilization Rates in Selected Sectors



Note 1: Capacity utilization is the operating rate of a firm measured by the (actual output—potential output)/potential output. The gap between the sectors' rate and full utilization (100 percent) indicates a slump in demand.

Note 2: Coal industry utilization rate is shown as over 100 percent in past years because many coal mines' production was over their respective designed production capacity.

Source: Yu Song et al., "Harnessing Global Capital to Drive the Next Phase of China's Growth," *Goldman Sachs*, February 2015, 10.

The overcapacity issue remained largely unaddressed under former President Hu Jintao (2002–2012), but President Xi and Premier Li have publicly stated their desire to consolidate the industries by closing outdated facilities and creating new markets to soak up excess supply. In his 2015 NPC Work Report, Premier Li noted the closing of outdated facilities in 15 industries, but overcapacity persists.²⁰⁶ Continued local and central support for domestic industries—including lowering the iron ore tax in April 2015—have limited the effort's overall effectiveness.²⁰⁷

The Chinese government is also attempting to spark new demand for its overcapacity through urbanization and exports to emerging economies. Urbanization is providing an important domestic market for fixed asset investments in housing, transportation, and other sectors.²⁰⁸ The anticipated massive infrastructure projects in rail and ports emerging from the "One Belt, One Road"* initiative and the creation of the Asian Infrastructure Development

*President Xi's One Belt, One Road initiative seeks to facilitate access to natural resources and encourage economic development in China's poorer western provinces. This initiative is composed of a land-based road through Central Asia and a maritime counterpart that will run through Southeast Asia and the Indian Ocean to Africa and the Mediterranean Sea.

Bank and New Development Bank could spur new demand for the excess iron, steel, and cement capacity.²⁰⁹ As Guo Wensan, chairman of Anhui Conch Cement, noted, “The Silk Road initiative gives the cement industry a great opportunity to expand overseas.”²¹⁰ (For additional discussion of the One Belt, One Road initiative, see Chapter 3, Section 1, “China and Central Asia,” and Chapter 3, Section 2, “China and Southeast Asia.”)

Quality of Life

The Chinese government is attempting to improve the quality of life for its citizens by meeting public demands for greater prosperity and a safe, healthy environment. Urbanization, hukou reform, higher-value-added manufacturing, and innovation initiatives are attempting to increase wages and employment opportunities for the country’s citizens. At the same time, the Chinese government is seeking to address its severe environmental degradation.

Increasing Energy Conservation and Environmental Protection

At the March 2015 NPC meeting, Premier Li acknowledged the seriousness of air, water, and land pollution in China, describing it as a “blight on people’s quality of life.”²¹¹ Public anger over hazardous levels of air pollution in 2013 forced the Chinese government to redouble its efforts.* In the last two years, the Chinese government has pursued a multipronged approach, including:

- *Government spending:* The Chinese government spent approximately \$32.5 billion (RMB 203.3 billion) last year to build over 1,400 air monitoring stations, subsidize the purchase of energy-efficient vehicles, construct nearly 8,813 miles (14,100 kilometers) of pipelines to urban sewage water treatment facilities, and implement air pollution mitigation efforts in the Beijing-Tianjin-Hebei region.† In its 2015 budget, the Chinese government allocated \$21.9 billion (RMB 137 billion) for energy conservation and environmental protection, including \$14.1 billion (RMB 88.2 billion) to address air pollution and subsidize emissions reductions, \$2.8 billion (RMB 17.6 billion) in subsidies for forest protection, and \$4.9 billion (RMB 30.9 billion) to return cultivated land to forest.‡ An April 2015 report by more than 40 leading Chinese financial policy and regulation experts and government officials estimated that an annual investment of at least \$320 billion (RMB 2 trillion) § in

* For more information on environment-related unrest, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 3, “China’s Domestic Stability,” in *2014 Annual Report to Congress*, November 2014, 357–358.

† The central government spent approximately \$5.5 billion (RMB 34.5 billion) while transfer payments to local governments totaled roughly \$27 billion (RMB 168.8 billion). China’s Ministry of Finance, *Report on the Implementation of the Central and Local Budgets for 2014 and on the Draft Central and Local Budgets for 2015* (Third Session of the 12th National People’s Congress, Beijing, China, March 5, 2015), 12.

‡ The central government appropriated \$4.7 billion (RMB 29.1 billion) and set aside \$17.3 billion (RMB 107.9 billion) in special transfer payments. China’s Ministry of Finance, *Report on the Implementation of the Central and Local Budgets for 2014 and on the Draft Central and Local Budgets for 2015* (Third Session of the 12th National People’s Congress, Beijing, China, March 5, 2015), 25–26.

§ A further breakdown of investment needs anticipates \$128 billion (RMB 800 billion) in environmental protection, \$80 billion (RMB 500 billion) to clean energy, \$80 billion (RMB 500 billion) to clean transportation, and \$32 billion (RMB 200 billion) to energy efficiency. People’s Bank of China and UN Environment Program, *Establishing China’s Green Financial System: Report of the Green Finance Task Force*, April 2015. 6.

environmental protection, energy efficiency, clean energy, and clean transportation is required over the next five years.* However, according to the same report, the Chinese government will only be able to fund between 10 and 15 percent or around \$48 billion (RMB 300 billion) of this needed annual investment due in part to slowing growth rates of fiscal revenue. Private capital will need to contribute the remaining 85 to 90 percent, estimated at \$272 billion (RMB 1.7 trillion).²¹²

- *Emissions and water quality targets:* At the March 2015 NPC meeting, Premier Li established additional reduction targets in chemical oxygen demand† and emissions of sulfur dioxide, ammonia nitrogen, and nitrous oxides.²¹³ China is also expanding its seven pilot carbon trading emissions projects under the 12th FYP to launch a national carbon trading market,‡ expected to be the world's largest carbon offset market, in 2017.²¹⁴ Similar adjustments are being made to improve the quality of water in Chinese cities. In 2011, around half of the 634 Chinese rivers, lakes, and reservoirs tested met drinking standards, and in April 2015, the government announced it would increase the amount of drinkable water for cities to 93 percent by 2020.²¹⁵ In June 2015, the Chinese government released its Intended Nationally Determined Contributions to combat climate change, in which it pledged by 2030 to both cut carbon dioxide emissions per unit of GDP by 60–65 percent of the 2005 level and expand the share in its non-fossil fuels for primary energy consumption from about 11 percent in 2014 to 20 percent.²¹⁶
- *Stronger regulations and harsher penalties:* In January 2015, new environmental regulations came into effect with harsher penalties and more stringent emissions caps.²¹⁷ Five months later, after nearly two years of delays, the State Council released a draft law on environmental taxes that would penalize heavily polluting industries, such as coal and steel, with taxes on water and air pollution.²¹⁸ In Hebei Province, which is one of China's most polluted provinces and responsible for a significant portion of Beijing's air pollution, the provincial government in 2014 spent an estimated \$1 billion on environmental protection, and is seeking to close small factories while forcing larger firms to adhere to regulations and upgrade equipment.²¹⁹ Already, steel facilities in Tangshan, China's largest steel-producing city, are either closing or undergoing upgrades to meet these regulations.²²⁰

*This estimate is based on the 12th FYP Environmental Protection Plan and the Ministry of Environmental Protection (final investment expected to exceed RMB 5 trillion under the 12th FYP); 2014 Plan on Water Pollution Prevention (RMB 2 trillion expected); 2014 Plan on Air Pollution Prevention and Control (RMB 1.7 trillion expected); *China Railway Annual Report* (RMB 800 billion allocated in 2014); Renewable Energy Policy Network (RMB 350 billion invested in 2013); and Bloomberg's estimate of renewable energy investment (RMB 420 billion invested in 2012). People's Bank of China and U.N. Environment Program, *Establishing China's Green Financial System: Report of the Green Finance Task Force*, April 2015. 5.

†Chemical oxygen demand indirectly measures water quality by determining the amount of oxygen-consuming capacity of organic and inorganic matter in the water. U.S. Environmental Protection Agency, *Terminology Services*.

‡The national carbon trading market was initially scheduled to begin in 2015. For additional analysis on China's cap-and-trade system, see U.S.-China Economic and Security Review Commission, *Monthly Analysis of U.S.-China Trade Data*, October 6, 2015, 4–5.

- *Environmental targets within CCP and Chinese government promotion structure:* In May 2015, the Chinese government attempted to strengthen the importance of its environmental targets in the evaluation and promotion process for local government officials, who were previously judged almost entirely on their ability to generate economic growth.²²¹ In August 2015, the State Council and the CCP Central Committee tightened accountability for CCP and government officials, restricting promotion based on achieving environmental targets and enacting retrospective punishment for environment harm. But Wang Yi, director of the Institute of Policy Management at the Chinese Academy of Science, cautioned that data collection and verification of environmental harm remains limited.²²²
- *Public interest lawsuits:* In October 2014, Taizhou City Environmental Protection Association* sued local factories for contaminating waterways, leading to a \$25.6 million (RMB 160 million) settlement, the largest environmental fine ever awarded in China.²²³ In May 2015, China's Supreme People's Procuratorate announced it would expand such public interest lawsuits into a two-year pilot program.²²⁴ While these steps create new opportunities, Scott Wilson, professor at The University of the South, found that state-backed nongovernmental organizations are crowding out grassroots participation and reasserting government control at the expense of public accountability.²²⁵ Elizabeth Economy, senior fellow and director of Asia Studies at the Council on Foreign Relations, also cautioned that President Xi's clampdown on civil society organizations and the Internet along with its proposed Overseas NGO Management Law † could significantly limit the ability of these organizations to push forward reform.²²⁶
- *Support for the development of the clean technology industry:* The International Energy Agency estimated China spent more than \$80 billion in new renewables-generating capacity in 2014—more than the United States and European Union combined.²²⁷ The Made in China 2025 action plan reaffirmed strong support for clean technology and green manufacturing through an increase in R&D spending, creation of thousands of green demonstration factories, reinforcement of energy intensity targets, and designation of clean energy vehicles as a key sector.²²⁸

* Taizhou City Environmental Protection Association is a local government-backed civil society organization, officially known as a government-organized nongovernmental organization. Taizhou City Environmental Protection Association's chairman is the local head of Taizhou's environmental protection bureau. Such types of organizations allow the Chinese government to tacitly control civil society organizations and protect its interests while providing a venue for expressing public outrage and holding firms accountable. Edward Wong, "Fines Total \$26 Million for Polluters in China," *New York Times*, December 31, 2014; Scott Wilson, "Mixed Verdict on Chinese Environmental Public Interest Lawsuits," *Diplomat* (Tokyo), July 20, 2015; and Jennifer YJ Hsu and Reza Hasmath, "The Local Corporatist State and NGO Relations in China," *Journal of Contemporary China* 23:87 (2014): 516–534.

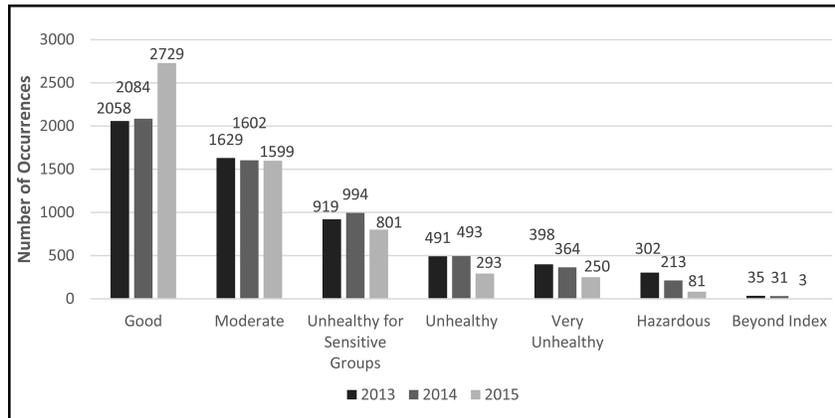
† This proposed law would further tighten restrictions on foreign nongovernmental organizations, such as foreign charities and international development organizations operating in China, and preclude Chinese nongovernmental organizations from accepting foreign funding. Stephen Noakes and Victoria Brownlee, "The Pacific Implementation of China's Proposed NGO Law," *Diplomat* (Tokyo), July 10, 2015.

Despite robust public spending and success in meeting most of its environmental targets, the Chinese government's efforts overall have fallen short in addressing the severity of existing environmental degradation.* Fundamental issues such as fragmented enforcement, conflicting legislation that can override the environmental protection law, lack of capacity, and competition between economic growth objectives and environmental protection interests remain largely unaddressed (see the text box, "Tianjin Chemical Explosion," for a recent example of these systemic challenges).²²⁹ Research by the environmental activist organization Greenpeace found that although China's strict pollution controls lowered particulate matter (PM2.5) † levels in the 189 cities analyzed in the study an average of 16 percent for the first half of 2015 compared with the same period last year, China's average annual PM2.5 level is five times the World Health Organization's recommended levels.²³⁰ A comparison of hourly PM2.5 levels from the U.S. Embassy in Beijing for the first eight months of the last three years similarly found improvements in the overall air quality in Beijing, though hazardous levels of air pollution still remain (see Figure 9).²³¹ Zhai Qing, China's Deputy Minister of Environmental Protection, noted the gravity of the pollution problem, stating, "Emissions will have to fall another 30–50 percent below current levels if we are to see noticeable changes in environmental quality."²³²

* China is on track to meet its 12th FYP targets to include meeting its 16 percent reduction in energy intensity, 17 percent reduction in carbon intensity from 2010, 11.4 percent composition of non-fossil fuel in primary energy, and 21.7 percent forest coverage. China has been able to meet these targets through a command-control approach of shutting down inefficient and polluting factories, but this approach is becoming less effective as the most egregious violators have already been shuttered and Chinese households become a larger share of energy consumption. For additional analysis of China's energy and environmental policy implementation under the 12th FYP, see Ranping Song et al., "Assessing Implementation of China's Climate Policies in the 12th 5-Year Period," *World Resources Institute, Working Paper*, September 2015; Damien Ma, "Rebalancing China's Energy Strategy," *Paulson Papers on Energy and Environment* (Paulson Institute), January 2015, 10, 19–20.

† PM2.5 is made up of metal, organic chemical, acid, soil or dust, and allergen particulates measuring 2.5 micrometers or smaller in diameter. Excessive exposure to PM2.5 aggravates existing heart and lung disease and is linked to higher incidences of heart attacks, asthma attacks, and bronchitis. U.S. Environmental Protection Agency, *Basic Information*. www3.epa.gov/pm/designations/basicinfo.htm.

Figure 9: Hourly PM2.5 Data Finds Improvement in Beijing's Air Pollution Levels, January–August 2013–2015



Note: The data are hourly and cover January 1–August 31 of each year. The classification of these data is based on the U.S. Environmental Protection Agency's *Guideline for Reporting of Daily Air Quality-Air Quality Index*.

Source: U.S. Department of State, U.S. Embassy in Beijing, *Historical Data*.

Tianjin Chemical Explosion

In August 2015, massive chemical explosions in Tianjin killed more than 100 people, injured nearly 700 people, and destroyed more than 17,000 homes.²³³ Excessive levels of cyanide—up to 277 times normal levels, according to the Tianjin Environment Protection Bureau—have contaminated the area and placed the city's groundwater and the Bohai Sea at risk.²³⁴ Already, reports of thousands of dead fish washing up on shore near the blast site have heightened public concern.²³⁵ The volume and types of chemicals released and the scale of the damage represent both a major manmade industrial and environmental disaster and a significant test for the Xi Administration's handling of political malfeasance and public outcry.

Investigations by the Chinese government into the explosion have unveiled that the company responsible, Rui Hai International Logistics, leveraged its political connections to improperly obtain licenses and skirt existing safety regulations.²³⁶ Zhang Ming, a political scientist at Renmin University, said, "It was a man-made disaster that could have been prevented, and it has exposed a range of systemic problems, from the lack of regulation for handling hazardous chemicals to the collusion of business and corrupt officials."²³⁷ The Supreme People's Procuratorate is investigating ten officials and port executives for their involvement and dereliction of duty.²³⁸

Tianjin Chemical Explosion—*Continued*

This explosion is an example of the depth of corruption and pervasive safety violations that remain in China today.²³⁹ Each year more than 68,000 people die in industrial accidents, according to official statistics.²⁴⁰ Inspections conducted at 124 sites that handle toxic chemicals in Beijing shortly after the explosion found 70 percent contained “hazards,” highlighting the depth and pervasiveness of safety violations.²⁴¹

Given strong public outcry and the seriousness of environmental degradation, demand for environmental technologies is likely to grow, creating a potential new market for U.S. environmental services companies. From 2004 to 2014, sectors related to energy efficiency, emissions reduction and monitoring, and environmental remediation experienced 20 percent annual growth, and the Chinese government’s recent efforts and increases in spending will only accelerate this growth.²⁴² A 2015 Goldman Sachs report forecasts enormous opportunities for domestic and foreign firms in soil remediation, solid and hazardous waste management, wastewater treatment, clean energy, and pollution monitoring equipment.²⁴³ For example, the report predicts China’s spending on soil remediation will reach \$109.6 billion (RMB 685 billion) from 2016 to 2020 (a 585 percent increase over current levels) and wastewater treatment will total \$304 billion (RMB 1.9 trillion) over the next five years, creating significant new market opportunities.²⁴⁴ These investments could also benefit the United States, where pollutants from China are eroding emissions reductions on the West Coast.²⁴⁵

Implications for the United States

China’s status as the world’s most populous nation, second-largest economy, top trading nation, and largest manufacturer means its economic reform agenda, even if partially implemented, will redefine the global competitive landscape. China’s focus on services and technology may create one of the world’s largest consumer markets, which could generate enormous benefits for the United States. If high market access barriers to U.S. investors and preferential government policies for domestic companies continue, they will prevent U.S. firms from competing on a level playing field. As an example, U.S. technology firms such as Google and Facebook are shut out of China’s domestic market while facing growing competition from Chinese state-supported firms such as Baidu and Renren in global markets.²⁴⁶ In addition, the government has been reluctant to relinquish control of key sectors of the economy and has rolled back reforms in politically sensitive areas, which bodes ill for the progress of the reform agenda and could prevent U.S. companies from participating.

With consumer spending expected to increase approximately \$10.9 trillion in the next decade, China’s service sector could create up to \$6 trillion of new market opportunities for U.S. firms, according to one estimate.²⁴⁷ Service sectors such as film, express delivery, environmental technologies, and IT are experiencing double-

digit growth in China.²⁴⁸ China is already the world's largest express delivery market in terms of workload and the largest e-commerce market* with over 600 million users; it is also the world's second-largest market for film.²⁴⁹ Access to China's market could benefit the U.S. service sector—which in 2014 comprised 80 percent of the U.S. economy, employed 80 percent of the U.S. workforce, and accounted for 30 percent of U.S. exports.²⁵⁰ Dr. Roach argued in his testimony before the Commission that China's service sector is a huge opportunity for the United States, “provided we can bargain effectively for market access.”²⁵¹ In spite of limited market access in many industries, U.S. service exports to China have grown in the last five years from \$17.1 billion in 2009 to \$42.5 billion in 2014.²⁵² In the first half of 2015, U.S. service exports to China grew 9.4 percent over the same period last year to reach \$22.3 billion.²⁵³

But strict market entry criteria, opaque regulations, China-specific technical standards, and state-set pricing are increasing costs for U.S. companies to compete in the Chinese market. The Office of the U.S. Trade Representative identified market access challenges for U.S. banking, film, express delivery, and several other service sectors.²⁵⁴ U.S. financial firms continue to face quotas, approvals, and ceilings that restrain their growth in China's capital markets. As a result, foreign firms accounted for less than 2 percent of China's nearly \$6 trillion (RMB 36.8 trillion) debt market in April 2015, and less than 5 percent of China's \$8.2 trillion stock market as of August 2015.²⁵⁵ U.S. multinationals FedEx Corporation and United Parcel Service (UPS) lost access to China's express package delivery market in 2009 following a revision to China's Postal Law, and did not regain it until August 2014.† Furthermore, U.S. IT and communications firms encounter onerous cyber regulations and standards as well as extensive censorship of Internet content and social media that limit U.S. digital service exports (see Chapter 1, Section 4, “Commercial Cyber Espionage and Barriers to Digital Trade in China,” for analysis of China's barriers to digital trade). Such restrictions cap U.S. export growth, to the detriment of U.S. businesses and workers.

The U.S. government has challenged China's market restrictions at the WTO with mixed success. For example, in June 2015—after a favorable 2012 WTO ruling—foreign payment processors such as Visa and MasterCard earned the right to compete against China's state-owned Union Pay. This ruling promised to open a market that last year reached \$6.8 trillion (RMB 42 trillion) in retail sales.²⁵⁶ However, after implementing changes to comply with the WTO ruling, the PBOC instituted a China-specific technical standard different from the international payments standard, forcing MasterCard and Visa to redesign their credit cards, and yet again delaying their entry into the market.²⁵⁷ In July 2015, the U.S. government again raised the issue to the WTO Dispute Settlement Body.²⁵⁸

* For more information on China's e-commerce industry, see U.S.-China Economic and Security Review Commission, *Monthly Analysis of U.S.-China Trade Data*, July 7, 2015, 5–10.

† For more information on China's express delivery services sector, see U.S.-China Economic and Security Review Commission, *Monthly Analysis of U.S.-China Trade Data*, September 4, 2014, 8–10.

The Chinese government is leveraging market access to force U.S. businesses to transfer technology and know-how to Chinese competitors in order to replace foreign businesses with domestic firms.²⁵⁹ In its 2014 Report to Congress, the Office of the U.S. Trade Representative reported “longstanding concerns” about China’s technology transfer policies that have been largely “unaddressed.”²⁶⁰ For example, in September 2014, the CBRC issued requirements for foreign IT and communication firms to turn over proprietary software codes and encryption keys for market access.²⁶¹ In April 2015, the CBRC temporarily suspended the rules, but as James Zimmerman, chairman of the American Chamber of Commerce in China, cautioned, “These [rules] were suspended but that doesn’t mean it’s over yet.”²⁶² Four months later, the CBRC revived these regulations, highlighting the continued pressure China is placing on U.S. firms.²⁶³

Subsidies and other forms of government support create unfair competitive advantages for Chinese firms at the expense of their foreign competitors. Under the 12th FYP, extensive subsidies for solar and wind manufacturers enabled Chinese firms to dump their products in the global market. In response, U.S. competitors petitioned the U.S. Department of Commerce to impose tariffs beginning in 2012, and even higher tariffs in 2015.²⁶⁴ State-supported national champions, such as Huawei and China Railway Construction Company, have also benefited from preferential loans to successfully dislodge established industry leaders and take over the global market.²⁶⁵

Proposed reforms to SOEs incorporate market drivers while reaffirming CCP control. The recent SOE consolidations attempt to build national brands to compete with established international competitors.²⁶⁶ For example, the recent merger between China Huafu Trade and Development Group and China National Cereals, Oils and Foodstuffs seeks to challenge established U.S. multinationals Archer Daniels Midland, Bunge Limited, and Cargill.²⁶⁷ The proposed merger of China’s oil SOEs would create the Chinese equivalent of U.S. multinational ExxonMobil in terms of size; similarly, the proposed deal between the Aluminum Corporation of China and China Power Investment Corporation would make it the world’s largest aluminum producer by capacity.²⁶⁸ In addition to strengthening the state’s control, these mergers by themselves do not solve the existing overcapacity and inefficiency issues. Excess production has artificially lowered global prices below production costs and severely limited profitability in many key U.S. industries.²⁶⁹ Alcoa, the largest U.S. aluminum producer, expects China will add more than 80 percent of new global capacity in 2015, in spite of falling global prices.²⁷⁰ China’s strong support for its steel industry is contributing to layoffs, factory closures, and financial losses in the U.S. steel industry.²⁷¹ In response, the U.S. Department of Commerce’s International Trade Commission has pursued several antidumping investigations against China.²⁷²

Finally, the recently announced Made in China 2025 and Internet Plus initiatives target sectors in which the United States currently enjoys technological advantages, such as e-commerce and biotechnology. Both plans reinforce preferential support for domestic firms, effectively shutting U.S. firms out of the market. While

Chinese social media firms Baidu, RenRen, and Weibo enjoy unfettered access to the world's largest Internet market, U.S. firms such as Google, Facebook, and Twitter remain blocked. Boosted by strong government support, Chinese firms will seek to challenge U.S. firms in industries such as biotechnology, clean energy, e-commerce, railway, and robotics, both in China and abroad.

Conclusions

- President Xi Jinping and Premier Li Keqiang announced an ambitious reform agenda at the Third Plenary Session of the Chinese Communist Party's (CCP) 18th Central Committee (the Third Plenum) in November 2013 to transition China's economy toward consumption-led growth and allow the market to play a "decisive role." However, these reforms still reserve a dominant role for the Chinese government in the economy. As the economy slows and markets have shown volatility, the Chinese government is once again stalling or rolling back reforms while resuscitating old levers of economic growth—fixed asset investments and export-led growth—in order to boost economic growth and maintain employment.
- The Chinese government is calling for greater CCP leadership within state-owned enterprises, while simultaneously subjecting them to market forces such as competition, mixed ownership, and consolidation. These policies merely reinforce state-owned enterprises' special status and do little to level the playing field for private sector and foreign competitors.
- China's efforts to upgrade its industries and enhance innovation are largely state driven and target sectors in which the United States currently enjoys technological advantage. Recent policies clearly favor domestic Chinese firms, placing pressures on U.S. firms to transfer technology and shift production to China, to the detriment of U.S. businesses and workers.
- China's growing level of consumption, increasing rate of urbanization, opening of the service sector, and massive spending on the environment and clean technology are creating one of the world's largest markets. However, strict market entry criteria, opaque regulations, China-specific technical standards, state-set pricing, and preferential support for domestic firms are increasing the costs to compete in this market.
- While fiscal reforms have made progress in providing new sources of local government revenue such as bonds and new forms of taxes, the Chinese government abandoned its attempt to rein in local government debt after sluggish first and second quarter data in 2015. Instead, the Chinese government restarted local government lending and required financial institutions to continue supporting insolvent infrastructure projects. Central intervention to prop up the debt-for-bonds swap for local governments ensured the costs of local governments' borrowing were negligible.
- China's financial sector reforms have made the most headway with progress in the liberalization of interest rates, opening of

the banking sector, and loosening of capital controls. However, Chinese policymakers are uncomfortable with the market volatility these reforms create. This year, the Chinese government reaffirmed its role in managing capital accounts and reasserted state control over the stock market after it faced volatility beginning in June 2015.

- Public alarm over environmental degradation within China continues to rise. Robust public spending has contributed to enormous demand for technologies focused on energy efficiency, emissions reduction and monitoring, and environmental remediation, creating potential opportunities for U.S. environmental technology firms. China's environmental reforms could also benefit the U.S. environment through reduced emissions and pollution.
- China has achieved its enormous economic growth through investment and export-led policies that now must be coupled with greater domestic consumption to ensure a more balanced economy. CCP leaders could persevere in structural reforms, which—assuming the short-term dislocation is not too destabilizing—could confirm China as one of the world's great markets. If, however, the CCP draws back from such reforms as it has in the past, there is a possibility China could enter a period of low or stagnant growth, which affects its potential as a market and a producer. In either case, economic pressure on CCP leaders could lead to greater discrimination against foreign firms and investors or an enhancement of other practices, like technology theft, which will make China less attractive as a market for investment.

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