

CHINA

SYSTEMATIC COUNTRY DIAGNOSTIC



TOWARDS A MORE INCLUSIVE AND SUSTAINABLE DEVELOPMENT

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Abbreviations

AML	Anti-Monopoly Law	ICOR	Incremental Capital-Output Ratio
AMCs	Asset Management Companies	ICT	Information and communications technology
APEC	Asia-Pacific Economic Cooperation	IFC	International Finance Company
ASEAN	The Association of Southeast Asian Nations	IFPRI	International Food Policy Research Institute
BIT	Bilateral investment treaties	IMF	International Monetary Fund
BRI	The Belt and Road Initiative	INDC	Intended Nationally Determined Contributions
CBRC	China Banking Regulatory Commission	IP	Intellectual Property
CCDI	Central Commission for Discipline Inspection	IPRs	Intellectual Property Rights
CNEMC	China National Environmental Monitoring Center	ITIF	Information Technology and Innovation Foundation
COD	Chemical Oxygen Demand	IWEM	Integrated Water and Environmental Management
CPC	Chinese Communist Party	LGOP	Leading Group Office of Poverty Alleviation and Development
ECE	Early Childhood Education	MDG	Millennium Development Goals
EPBs	Environmental Protection Bureau	MEP	The Ministry of Environmental Protection
EU	European Union	MLR	Ministry of Land and Resources
FAO	Food and Agriculture Organization	MOA	The Ministry of Agriculture
FDI	Foreign Direct Investment	MOF	The Ministry of Finance
FEAAP	Free Trade Area of the Asia-Pacific	MOFCOM	Ministry of Commerce
FTAs	Free Trade Agreements	MOHRSS	The Ministry of Human Resources and Social Security
FYP	Five Year Plan	MOHURD	The Ministry of Housing and Urban-Rural Development of the People's Republic of China
GCI	Global Competitiveness Index	NBS	National Bureau of Statistics
GDP	Gross Domestic Product	NCDs	Non-Communicable Diseases
GFC	Global Financial Crisis	NDC	Nationally Determined Contribution
GFSR	Global Financial Stability Report		
GHG	Global Greenhouse Gas		
GNI	Gross National Income		

NDRC	National Development Research Council	SCD	China Systematic Country Diagnostic
NPL	Non-Performing Loan	S&E	Science and Engineer
NPS	National Payments System	SEZs	Special Economic Zones
NRCMS	New Rural Cooperative Medical Scheme	SIPO	State Intellectual Property Office
ODA	Overseas Development Assistance	SMEs	Small and Medium Enterprise
ODI	Overseas Direct Investment	SOE	State-Owned Enterprises
OECD	Organization for Economic Co-operation and Development	SSA	Sub-Saharan Africa
OECD	Organization for Economic Co-operation and Development	SWIID	Standardized World Income Inequality Database
OFI	Other Financial Intermediaries	TFP	Total Factor Productivity
O&M	Operations and Maintenance	TVET	Technical and Vocational Education and Training
PADO	Poverty Alleviation and Development Outline	UEBMI	Urban Employee Basic Medical Insurance
PBOC	People's Bank of China	URBMI	Urban Resident Basic Medical Insurance
PMR	Product Market Regulation Indicators	VAT	Value-added tax
PPI	Producer Price Index	WBG	World Bank Group
PPP	Public Private Partnership	WDI	World Development Indicators
PRPD	Performance Rating and Public Disclosure	WDR	World Development Report
RCEP	Regional Comprehensive Economic Partnership	WEF	World Economic Forum
R&D	Research and Development	WHO	World Health Organization
RIA	Regulatory Impact Assessments	WIPO	World Intellectual Property Organization
SAR	Special Administration Region	WMPs	Wealth Management Products
SASAC	Administration Commission of the State Council	WTO	World Trade Organization

Executive Summary

The Systematic Country Diagnostic (SCD) for China identifies the key challenges and opportunities for the country in achieving the Twin Goals of ending extreme poverty and boosting shared prosperity in a sustainable manner.¹ It represents the World Bank Group’s (WBG’s) analysis of the key constraints to achieving the Twin Goals in China. It is not limited to the WBG’s own analysis but reflects available analysis and evidence. WBG staff worked in close consultation with national authorities and other stakeholders in China. However, the SCD represents the views of the WBG and does not represent the views of the government or other stakeholders.

The 19th National Congress of the Communist Party of China (CPC) reaffirmed the country’s commitment to eliminating poverty and promoting shared prosperity and inclusive growth. In this regard, the China SCD is supportive of the priorities of the Party Congress. The 19th National Congress of the CPC took place in Beijing from October 18 to 24, 2017. In his speech at the National Party Congress, General Secretary Xi Jinping’s report outlined a new long-term vision for China. The report stated that development is the foundation and key to addressing the country’s challenges but there is now a need to focus on the quality and equality of development. As such, the report reformulated the “principal contradiction”² as the tension between “unbalanced and inadequate development and the people’s ever-growing needs for a better life.” General Secretary Xi highlighted the importance of poverty reduction, livelihood improvement, and the need to ensure that everyone can benefit from the country’s prosperity. The report paid particular attention to income inequality, health care, education and pensions, and air, water and soil pollution.

China’s historic rapid growth resulted in a poverty decline unprecedented in its speed and scale. Rapid growth was made possible by a wide range of reforms, which transformed a state-dominated, planned, rural, and closed economy to a more market-based, urbanized, and open economy. As a result, real per capita income increased 16 times between 1978 and 2014, and real output per worker increased by a factor of 12.³ This enabled China’s extreme poverty rate, based on the international purchasing power parity (PPP) US\$1.90 per day poverty line, to fall from 88.3 percent in 1981 to 1.9 percent in 2013. This implies that China’s success enabled more than 850 million people to escape poverty.

China’s growth has been slowing, and a rebalancing of the economy is underway. Real gross domestic product (GDP) growth rates, which averaged 10.4 percent over the period 2000–2010, declined to 7 to 8 percent over 2012–15. Growth decelerated further to 6.7 percent in 2016 and is expected to remain at 6.9 percent in 2017, which is still relatively high. In many ways, slowing economic growth would be expected for countries that reach China’s level of per capita income, as the contributions from factor accumulation start to diminish. For the medium to long term, growth will depend to a significant degree on the extent of reforms carried out and could range from a projected average annual growth of 6.8 percent from 2020 to 2024 if major reforms are carried out, to 5.7 percent if only limited reforms occur. A rebalancing of the economy is underway, with consumption now contributing more to growth than investment, and services now a bigger part of the economy than industry. The global economy has weakened, and external surpluses, which reached almost 10

¹ In 2013, the World Bank Group adopted two new goals (known as the “Twin Goals”) to guide its work: ending extreme poverty (reducing extreme poverty in the world to less than 3 percent by 2030) and boosting shared prosperity (fostering income growth of the bottom 40 percent of the population in each country).

² The “principal contradiction” refers to a concept held by the CPC that defines the country’s most significant or pressing issue that needs to be addressed. It was last changed in 1981.

³ Data source is the National Bureau of Statistics.

percent of GDP before the Global Financial Crisis, are now below 3 percent. Given that the rapid economic growth in the past decades was a key driver of China's poverty reduction, the impact of the recent slowdown of economic growth on poverty reduction will need to be carefully monitored.⁴ Moreover, poverty's response to economic growth may decline over time for the remaining poor. The added complication of an economy undergoing a structural transformation raises uncertainty regarding future poverty dynamics. The impact of an aging population and the transition to a more services-oriented economy warrant careful monitoring in terms of their impact on poverty.

China is on its way to eliminating extreme poverty, but the population vulnerable to poverty will remain relatively large. China is expected to continue to make strong progress toward eliminating extreme poverty despite the slowdown of economic growth. The World Bank projects extreme poverty, based on the international PPP US\$1.90 per day poverty line, to decline to 0.5 percent by 2018.⁵ This assumes a deceleration of annual GDP growth from 6.9 to 6.5 percent between 2015 and 2018. Slower growth rates of up to a percentage point do not render significant differences in poverty forecasts. But despite the progress made in eliminating extreme poverty, the population vulnerable to poverty, as defined by the higher international poverty line of PPP US\$3.10 per day, will remain relatively large. The higher poverty line characterizes those in moderate poverty and vulnerable to falling below the poverty line. According to this higher poverty line, China is projected to have a poverty rate of 3.9 percent or 54.6 million people below this higher poverty line by 2018.

Managing the Transition to a Slower but More Sustainable Growth

China's key medium-term challenge is to manage an orderly transition to a slower but more balanced and sustainable growth, thereby securing a sustainable path to the "New Normal." In May 2014, President Xi Jinping introduced the term "New Normal" to describe an economy with lower but more efficient and equitable growth. The Decisions of the 3rd, 4th, and 5th Plenums of the 18th Party Congress and Xi's commitments on "New Ideas, New Thoughts, New Strategies on State Governance" are reflected in China's 13th Five Year Plan (FYP) 2016–20. To transition to the New Normal, the government is committed to promoting innovation and opening up, structural reforms, streamlining bureaucracy, green growth, and delegating power and resources to lower levels of governments.

China's slowdown in growth places a premium on policies to increase productivity-led growth by promoting market competition and the private sector. In China, demographic dividends have disappeared because of a declining working age population. The very high levels of investments are not likely to be sustainable, and furthermore the returns from investments have been declining. Therefore, it becomes more critical to promote new drivers of growth that will enhance the productivity of the economy by improving the business climate and opening up sectors for greater market competition, which can foster entrepreneurship and entry of new firms. An important agenda will be to reform state-owned enterprises (SOEs), which still account for approximately one-third of all investments. Allowing greater private sector competition in some key sectors, such as oil and gas, electric power, finance, and telecommunications, through a greater level playing field could strengthen SOEs' performance by exposing them to greater competition. Finally, promoting greater innovation is critical to securing higher productivity. While China is currently the second largest global investor in

⁴ Chen and Ravallion (2007); and Montalvo and Ravallion (2010),

⁵ World Bank (2016),

research and development (R&D), concerns remain about the quality of the research and challenges in translating the investments in R&D into higher productivity in the economy.

Managing the transition will also require addressing legacy challenges, in particular financial vulnerabilities and overcapacity in some industries. Debt has rapidly accumulated since the Global Financial Crisis, because of the massive stimulus program in response to the crisis. A hard landing of the economy was avoided, but the post-Crisis credit boom resulted in a credit-to-GDP level that is quite high, particularly for a middle-income country, with perhaps greater risks due to the emergence of a “shadow” banking sector. Delaying domestic reforms to address financial vulnerabilities may risk a faster slowdown in growth in later years due to a disorderly deleveraging of the economy. However, the government views the debt buildup and financial sector leverage as manageable, and it believes that ongoing reform measures on deleveraging will improve the debt-to-GDP ratio. The massive investments initiated in the aftermath of the Crisis also left some heavy industries with overcapacity. The government plans to reduce the capacity in these industries, which may result in large-scale redundancies. Although structural reforms have longer-term economic benefits, the extent of these benefits depends in part on how the process is managed and how well its attendant dislocations and adjustments are mitigated. It will be critical to adequately address the economic and social losses that may result from the industrial restructurings planned by the government through targeted temporary income support, active labor market programs, and robust social protection programs.⁶

As the world’s largest trading nation, increasing integration and globalization present major opportunities to address China’s current challenges. China’s total exports in dollar terms rose by 17 percent per year over the past two decades, transforming the country into the world’s largest exporter of goods and a central hub in global production networks. China’s domestic value added in exports has similarly significantly increased but remains relatively low. In addition, compared to the exports of goods, the export of services remains relatively modest. China has also become one of the world’s largest destinations for foreign direct investment (FDI). Continuing the opening up of markets would not only attract more foreign investments, it would also help China to join more trade agreements and become better integrated with the rest of the world. China’s overseas direct investment (ODI) also significantly increased during the past decade. Large-scale initiatives by China, such as the “Belt and Road Initiative,” could greatly benefit the nation as well as the other participating countries by strengthening infrastructure connectivity, but it will also be critical to improve policy coordination and trade facilitation.

Governance and public institutions will need to continue to evolve to meet the needs of a more complex and open economy. A key agenda is the strengthening of local government public financial management, given that most public spending occurs at the provincial and local levels of government. The Budget Law of 2014 is a major milestone toward improving local government budget discipline, transparency, accountability, and comprehensiveness, but much work remains in implementing the law in local governments and building the requisite local capacity. Improving fiscal transparency will be key to strengthening bottom-up accountability, allowing for a systematic utilization of citizens’ participation mechanisms to enhance public scrutiny of government operations. Finally, improving how the government identifies and implements high-quality regulations, through strengthened “regulatory governance,” would support a transition to a more market-oriented

⁶ The Chinese government prefers to use the term “social security” instead of “social protection.” In the Chinese context, social security refers to social insurance in most cases. The World Bank uses the term “social protection” to cover social assistance and social welfare in addition to social insurance,

regulatory environment. Discretion accorded to public officials in interpreting and implementing regulations has led to rent seeking. Hence, improvements in these areas, complemented by the aforementioned citizens' oversight mechanism, could potentially make significant contributions to the government's ongoing anticorruption campaign. In response to these various challenges, the government has been focused on carrying out governance reforms in such areas as administrative streamlining, institutional decentralization, information disclosure, the financial and taxation system, and performance evaluation.

Helping the Remaining Poor and Sharing the Benefits of Growth

Despite the rapid reduction of extreme poverty, China still has a large remaining population of the poor.

The number of impoverished people in rural areas remains large, with estimates ranging from 25.2 million (2013, PPP US\$1.90 per day poverty line) to 43.4 million⁷ (end-2016, national poverty line). One of the main challenges of poverty reduction in China will be to target assistance to the remaining poor, mainly distributed in regions with poor transportation connections and in remote, mountainous, and rocky areas with fragile ecology. To help address such challenges, China created in 2014 a poverty alleviation database of the rural poor to improve the targeting of poverty reduction programs. The poverty alleviation database identifies the location and composition of China's remaining poor, as well as different aspects of their poverty and vulnerabilities. However, recent empirical research indicates that room exists to improve the poverty alleviation database and strengthen its coordination with the rural dibao beneficiary registry.⁸

China's bottom 40 percent shared in the country's growing prosperity through rapid per capita consumption growth, but inequality grew rapidly up to 2008 before gradually declining. China's bottom 40 percent of the income distribution experienced rapid per capita consumption growth, indicating that they have shared in the country's rising prosperity. But although the bottom 40 percent have enjoyed rapid per capita consumption growth, their share of total consumption declined for decades before stabilizing at around 15 percent since the 2000s.⁹ Similarly, the gap between the per capita consumption growth rate of the bottom 40 percent and the average of the population widened in the first half of 2000s, but since then the two have converged. This is also reflected in the Gini coefficient, which rose from relatively low levels in the mid-1980s to nearly 0.50 in 2008, before steadily declining to 0.46 in 2015. Other countries have higher income inequality, but the increase in inequality in China has been comparatively rapid and sustained since the mid-1980s, during which the country also experienced rapid economic growth. High inequality reduces the impact of economic growth on poverty reduction. As is the case in most countries, wealth inequality in China is likely to be greater than income inequality. However, indications suggest that it is comparable to and may in fact be less extreme than in other similar East Asian countries.¹⁰

Inequality in China is mainly reflected in large rural-urban disparity and the associated disparities in access to public services. Several studies indicate that inequality between urban and rural areas represents the largest share of total inequality. Unequal access to public services, which is associated with the rural-urban disparity, is a significant contributor to overall inequality. The poor, particularly in rural areas and among families with migrant children, would benefit from greater opportunities to access quality education and health services. The early educational (preprimary school) deficit of rural and migrant children puts them at a relative

⁷ Statistical Communiqué of the People's Republic of China on 2016 National Economic and Social Development, published February 28, 2017.

⁸ Li Shi (2015); Zuo and others (2016).

⁹ World Bank estimations, based on NBS's China Urban Household Surveys and China Rural Household Surveys.

¹⁰ World Bank East Asia and Pacific Regional Study.

disadvantage. Although recent reforms have been undertaken, rural children exhibit lower progression to senior secondary and higher education, and municipalities with a large migrant population continue to face challenges in providing education to migrant children. In response to these challenges, China has formulated the “13th Five-Year Plan for Poverty Alleviation through Education,” which focuses on policy measures targeting the poor, with the goals of “every child goes to school; everyone learns skills; every family has hope; and every county has support measures.” For health care, the rural-urban disparity remains wide, and rural areas lack affordable quality primary care. The health care system is too hospital-centric and fragmented, including the rural primary care system, and the health insurance system provides insufficient coverage of out-of-pocket health care spending by the poor and rural households.

Although some of the rural-urban and regional disparity may have risen as a natural consequence of rapid development, institutional factors have exacerbated market-driven spatial inequality. Further reforms of governmental fiscal arrangements and the internal migration system would help mitigate the disparity. Revenue and expenditure mismatches at the local level result in wide disparities in welfare expenditures and social service provision. Although intergovernmental transfers are progressive, they are not sufficiently progressive to compensate for a system that relies on local governments for a large share of expenditures. With regard to barriers to migration, the hukou household registration system has institutionalized a migrant population who are given unequal access to social (pension and health) insurance and public services in urban areas. Such institutional barriers to migration can delay the convergence of rural and urban incomes in China, thus contributing to the high levels of inequality. The government has initiated major reforms of the hukou system, and continued progress would facilitate labor mobility and greater job opportunities for the poor.

Raising rural income, by reversing the declining productivity growth in agriculture, will be critical in closing the rural-urban gap. China has had one of the highest annual agricultural growth rates in the world since the 1980s. Agricultural value added has increased in real terms at an average annual rate of 4.6 percent between 1978 and 2008. However, growth rates of agricultural outputs have been steadily declining since the 1990s, which reflects a declining impact of agricultural inputs on output growth, including in particularly fertilizers. Going forward, it will be critical to improve the efficiency of resource use and competitiveness of the sector. The government has recognized the need to reform the agriculture support programs toward more sustainable and greener agricultural development. This is occurring as agriculture in China is undergoing a transformation from an emphasis on quantity to greater quality, variety, safety, and improved environmental outcomes.

China has made remarkable progress in expanding its social protection system and poverty reduction programs, but several challenges remain. Since the 1990s, China has introduced an array of social protection programs at a speed that is unprecedented internationally. However, public spending on core social safety net programs, excluding subsidies to pension and health insurance program, remains relatively low by international standards. Therefore, benefits from social safety net programs such as the dibao, considered the “backbone” of the social protection system, may need to be further expanded.¹¹ One of the most pressing social challenges over the coming decades will be to develop a fiscally sustainable and coherent (less fragmented) pension system with wider coverage, particularly for rural, migrant, and urban informal sector workers. Design and

¹¹ Ministry of Civil Affairs (2015), “2015 Statistical Bulletin of Social Service Development,” <http://www.mca.gov.cn/article/sj/tjgb/201607/20160700001136.shtml>; National Bureau of Statistics (2015), “2015 Statistical Bulletin of National Economy and Social Development,” http://www.stats.gov.cn/tjsj/zxfb/201602/t20160229_1323991.html; Puguang Gong (2016), “Current Situation and Task of China’s Social Assistance Development,” speech made at the training workshop of senior management organized by the Ministry of Civil Affairs.

interlinkages of social assistance programs would benefit from improved coordination within social assistance programs to avoid disparities between the poor and the near-poor, greater standardization of social assistance programs across locations, and better coordination between social assistance, social insurance programs, and labor market programs. Social protection programs would need to be complemented by programs to promote economic development of poverty-stricken areas and enhance the capacity of poor families to generate income.

Meeting the Challenges of Pollution and Climate Change

China's rapid growth has been accompanied by significant challenges with pollution, environmental degradation, and greenhouse gas emission. Pollution has a sizable impact on health, natural resources and ecosystems degradation, and direct losses to agriculture and industry. China is facing critical challenges in sustainably managing its natural resources, including the preservation of its land, its water, and its biodiversity. China is the world's largest global greenhouse gas (GHG) emitter. Climate change will exacerbate many of the preexisting pressures on China's environment. In recognition of the challenges, China's Nationally Determined Contribution (NDC) targets a cut in its CO₂ emissions per unit of GDP by 60 to 65 percent from 2005 level by 2030. China's NDC indicates that it is serious about moving toward a comprehensive framework for addressing GHG emissions by continuing to build on significant gains already achieved. Climate change is also expected to increase the risks of natural disasters. China is already one of the countries most affected by natural hazards, particularly flooding and earthquakes, and the poor and vulnerable are disproportionately affected because they often live in high-risk areas.

The scale and complexity of China's environmental problems require a fundamentally new approach to growth policy, based on "green growth." "Green growth" can be defined as maximizing economic growth and development while decoupling upward trends in resource use, carbon emissions, and environmental degradation. Clear signs abound that the government seeks a transition to green growth with lower GHG emissions. The 13th Five Year Plan (FYP) for 2016–20 reflects a continuing shift in China's growth model to promote environmental sustainability, and investments in "greening" growth will likely have high rates of return. According to World Bank estimates,¹² China already spends annually approximately 1.2 percent of GDP on environmental protection each year, mostly on industrial pollution. By spending 0.5 to 1 percent more of GDP each year, putting it on par with high-income European countries, China is expected to reduce environmental degradation and resource depletion by 6 percent of gross national income (GNI) by 2030, a significant net return.

Air pollution is a major environmental and health challenge for China. China has the world's largest coal industry and the second largest power industry. China aims to reduce the share of coal consumption in its total primary energy from 68.5 percent in 2012 to below 62.0 percent by 2020. This would require China to continue the significant gains in energy efficiency that it has achieved in past decades; China reduced energy intensity by about 70 percent over the past 30 years, a remarkable achievement that helped decouple energy consumption growth from economic growth. Part of this was achieved through an unprecedented growth of renewable energy in China, which can continue to grow through further tariff adjustments and reforms of dispatch rules to reduce curtailment. Although energy prices have risen considerably over the past two decades, prices still do

¹² World Bank estimates based on MEP (2010), Eurostat (2010), Eurostat database, Ministry of Finance (2009), State Forestry Administration (2009), and Wang and others (2010).

not fully internalize the environmental and health costs of fossil fuels. Agriculture, vehicles, and solid fuel are other major sources of air pollution.

Water and soil contamination are also important threats to health and the environment. Although surface water quality has improved in the past decade, it remains a serious problem. The problem with water quality is made more acute by the scarcity of water; China's per capita availability of water is just 28 percent of the world's average. "Nonpoint" sources are now the dominant sources of water pollution, including from industries and agriculture. Climate change may exacerbate existing problems with water quality. Regarding soil pollution, sources vary considerably between regions. Efforts to address soil contamination are still in their early stages and face numerous legal, institutional, technological, financial, and information challenges, including information about the type and volume of contaminants.

China will need to rely more on market mechanisms to boost green innovation and reduce environmental costs and waste. In the past, pollution control focused on administrative approaches applied to end-of-pipe pollution control, but this could not fully support source prevention and pollution control. By contrast, market mechanisms have been relatively underutilized in further reducing pollution. Although China has removed many direct subsidies in the energy sector and energy prices are now more market-driven, policy-driven distortions remain. China needs a more competitive market environment for green sectors. Rebalancing environmental policy instruments toward more market-based tools such as taxes and trading systems for carbon, air and water pollution, and energy use would help create a greener urban environment. The strengthening of market mechanisms would require effective regulation and enforcement of rules and policies. This will likely require further strengthening the capacity of China's environmental enforcement agencies and continuing to improve the accessibility and transparency of environmental data in China. Channels for public participation in monitoring and holding polluters accountable also remain relatively limited, despite recent openings.

Improving Data and Addressing the Knowledge Gap

Urban poverty is a particularly critical knowledge gap in understanding China's poverty challenges. There are no urban poverty lines or official estimates of urban poverty, despite a growing awareness that cities may hold new forms of poverty. However, since the fourth quarter of 2012, China's National Bureau of Statistics (NBS) has been conducting integrated urban and rural household surveys, which may eventually lead to poverty estimates of urban in addition to rural areas. The problems of imputed rents, differential cost-of-living, migration, and changes in rural and urban definition of counties are challenges to properly analyzing poverty, inequality, and shared prosperity in coming years. The integrated household surveys, as well as new administrative data from antipoverty programs, could be used to improve the impact evaluation of China's poverty reduction strategy and programs.

Tackling China's acute environmental challenges is predicated on good data on the sources, impacts, and costs of pollution. This will mean investing in the capacity of city and county offices to gather and publicly report accurate energy and water use statistics as well as data on industrial discharges. For more advanced locales, improving the collection of environment data will mean conducting detailed emissions inventories to

identify specific sources and analyzing their contribution to monitored pollution levels. Lack of information and knowledge about specific sources, causes, and risks of pollution is probably greatest with soil contamination. As of mid-2015, more than 350 cities were already monitoring and reporting fine particulate matters in near-real time, but the establishment of monitoring networks for soil quality and soil contaminants such as wastewater irrigation continues to lag, along with monitoring of municipal drinking water sources and the implementation of tracking systems for hazardous materials. Real-time data collection and accurate reporting of emissions is a precondition for many market-based policy instruments, including emissions trading. A work plan could be established to identify critical knowledge gaps that remain in monitoring pollution and environmental health.

SCD Prioritization

The SCD identifies a select number of major priorities for achieving the Twin Goals from among the many priorities and critical constraints identified in the analysis. Many of these priorities are clearly interrelated and complementary. The approach was to define broad focus areas, within which specific priorities were identified. Prioritization was achieved through a series of structured discussions within the country and SCD teams and reflects consultations with the government. The objective was to arrive at a select number of priorities that were considered most critical for achieving the Twin Goals. First, the key priorities for each of the major areas were identified through the discussions; second, the prioritization criteria were discussed and agreed on; third, based on the prioritization criteria, a select number of the top priorities were identified from the larger number of priorities from the first stage of discussions; and fourth, priorities in terms of the remaining knowledge gap on achieving the Twin Goals were discussed and identified.

Three selection criteria were used for the SCD prioritization exercise: (1) the expected magnitude of the impact of removing or reducing the constraint on the Twin Goals; (2) consistency with government strategy and programs; and (3) feasibility of addressing the constraint and achieving an impact within the timeframe of the 13th Five Year Plan.

The five major SCD priority areas selected from the prioritization exercise are given below. More specific priority policy and institutional reforms were identified for each of the five priority areas (see table).

- Manage the transition to a slower but more balanced and economically sustainable growth.
- Address the economic and social dislocation that may result from the economic transition.
- Reduce the disparity in access to quality public services.
- Improve agricultural productivity and efficiency in rural areas, thereby reducing the income gap with urban areas.
- Make fuller use of market mechanisms to promote green growth and more sustainable use of natural resources.

There is a need for coordinated reforms across a broad range of areas given important interlinkages and complementarities. Reforms that would enable the transition to a more economically sustainable growth

could also yield benefits in terms of environmental sustainability and greater inclusion. For example, measures to reduce overcapacity in heavy industries could facilitate the transition toward less resource intensive and more environmentally sustainable industries. Another example is hukou reforms complemented by pension reforms to reduce the fragmentation across different pension schemes, which combined would have a greater impact on rural-urban migration. In such a manner, coordinated reforms in a broad range of areas could help China maximize the development impact and address its development challenges in a more sustainable manner.

Governance is a foundational cross-cutting issue in the China SCD. The SCD analyzed the major priorities and challenges to strengthening governance and institutions in China. The SCD views governance reforms as the foundation for the major SCD priorities. Although a separate chapter in the SCD covers governance and institutions (chapter 3), the governance challenges are also essential to addressing the other major priorities for achieving the Twin Goals, and the associated priority reforms are often in the form of governance and institutional reforms.

SCD Priorities	Potential Reforms
Manage the transition to a slower but more balanced and economically sustainable growth.	<ul style="list-style-type: none"> •Structural reforms may require accepting slower growth now to establish the basis for a more balanced and sustainable growth in the future. •Promote market competition and the private sector by reducing market constraints and ensuring level playing fields. •Address the significant stock of debt in the financial and corporate sectors. •Strengthen local government fiscal and debt management capacity, including by enhancing fiscal transparency. •Promote greater innovation in the economy, including by strengthening intellectual property rights, expanding basic research, and helping firms strengthen their managerial capacity.
Address the economic and social instability that may result from the economic transition.	<ul style="list-style-type: none"> •Address the economic and social losses that may result from the industrial restructuring planned by the government, through targeted temporary income support, active labor market programs, and robust social security programs.
Reduce the disparity in access to quality public services.	<ul style="list-style-type: none"> •Address remaining barriers to migration by continuing to reform the hukou system to reduce the bias against migrants in urban areas. •Make the intergovernmental fiscal systems (transfers) more progressive, and rebalance the intergovernmental allocation of revenues and expenditures. •Address the large disparities in public spending on education to equalize education opportunities for the poor, including for early childhood education, and implement a quality assurance system. •Improve the availability of affordable quality health care in rural areas and strengthen health insurance for the poor. •Provide stronger incentives and enhanced supervision for local governments to focus on service delivery, beyond the current dominant focus on investments and growth.
Improve farm productivity and efficiency in rural areas, thereby reducing the income gap with urban areas.	<ul style="list-style-type: none"> •Establish more efficient and sustainable climate-smart agricultural production systems with green ecology-oriented agricultural subsidies. •Promote rural land transfers, greater farm scale, and the specialization and professionalization of agricultural operations. •Promote the application of new technologies, such as information communication technologies and ecommerce platforms, to the agriculture sector.
Make fuller use of market mechanisms to promote green growth and more efficient, sustainable use of natural resources.	<ul style="list-style-type: none"> •Continue to pursue market reforms to promote competition in the energy markets and expand the use of market instruments to manage pollution and climate change. •Strengthen the focus on environmental sustainability in the cadre management system, including by clarifying the acceptable tradeoffs with economic growth. •Adjust resource and energy prices, including the tax regime, to fully reflect environmental costs. •Mobilize private sector financing and encourage private sector participation in pollution cleanup and restoration. •Strengthen the governance and institutions for the environment, including with regard to the monitoring and enforcement of environmental laws and regulations. •Improve the availability of critical environmental information.

Chapter I

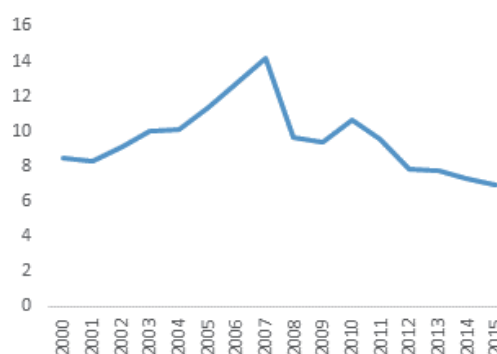
Securing a Sustainable Path to the “New Normal”

Introduction

China is entering a new phase in its remarkable development story, undergoing an economic transition to a slower but more balanced and sustainable growth. China’s GDP growth is on course to gradually decline in the medium term as the economy undergoes structural adjustments toward a “new normal.” At 7.8 percent in 2013, 7.3 percent in 2014, and 6.9 percent in 2015, growth has already fallen from the 10.2 percent annual growth rate China averaged from 1983 to 2012 (Figure 1.1). Since the global financial crisis in 2008, China has been the largest contributor to world growth, and even its projected slower growth remains impressive by current global standards.

China’s economy is rebalancing—from investments to consumption and from manufacturing to services. The old growth model based on heavy-industrial investments and low-wage and energy-intensive manufacturing and construction will transition to a new model based more on household consumption, services, innovation, and increased private sector participation. The leadership of the Chinese Communist Party, under President Xi Jinping, has set out a comprehensive reform agenda in the Thirteenth Five-Year Plan (2016–20) to facilitate the ongoing economic transition to a higher quality and more balanced growth that is both economically and environmentally sustainable and that aims to achieve better social outcomes for the people of China through greater shared prosperity.

Figure 1.1: China: Real Growth Rate



Source: China NBS.

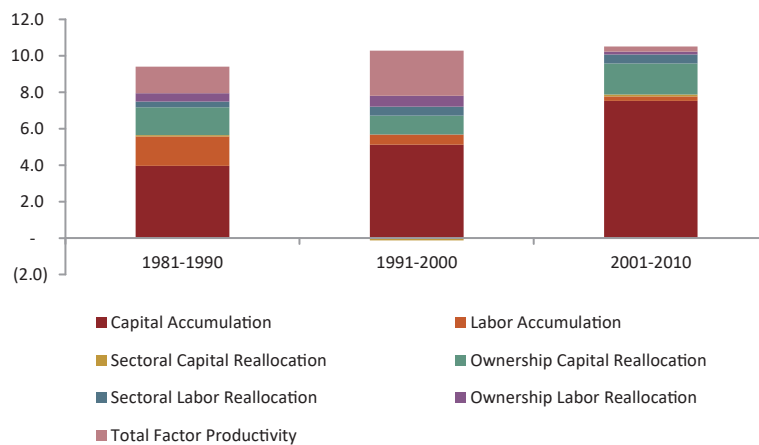
Decades of rapid economic growth have resulted in an unprecedented reduction of poverty in China. Within 35 years, China has transformed itself from an impoverished and mostly agrarian economy to an increasingly wealthy, internationalized, and urban economy. Between 1979 and 1997, the flow of labor from agriculture to manufacturing and services contributed about one-fifth of GDP growth, making it the single most important driver of economic growth in China. This transformation, based on high levels of industrial investments, manufacturing, and exports, was accompanied by rapid urbanization, increased labor productivity, raised living standards, and a significant boost in incomes. Real per capita incomes increased 16 times over 1978 to 2014, which lifted more than 850 million Chinese people out of poverty. China’s poverty rate fell from 88.3 percent in 1981 to 1.9 percent in 2013, an achievement that is unprecedented in scope and scale.¹³

China’s key medium-term challenge is to manage an orderly transition to slower but more equitable and

¹³ Using the new international poverty line of US\$1.90 per day in 2011 PPP.

economically sustainable growth. Growth is expected to decline because of the lower contribution from capital as the capital-labor ratio rises and the lower contribution from labor as China's working-age population is expected to decline. Finally, total factor productivity (TFP) growth is projected to be lower as the massive reallocation of resources, including labor, within the economy is expected to decline. China will need to transition to a new growth model based on higher productivity, which will require reversing the declining contribution to growth from TFP (Figure 1.2). The projected TFP growth could remain relatively high by international standards, depending on the extent of structural reforms that promote market competition and upgrading of technologies. Firms operating in a competitive environment are more likely to innovate and increase their productivity. Competitive markets boost investment, generate employment, and ultimately speed economic growth and improve overall welfare.

Figure 1.2: Growth Accounting for China



Sources: World Bank calculations and China NBS.

Extent of Reforms Will Determine China's Growth Outlook

The contribution to growth from labor and capital accumulation is expected to continue to moderate. Growth of the working age population is expected to slow further, consistent with the latest UN population projections¹⁴ and the sixth national census conducted in 2012. They indicate that the population aged 15 to 59 already peaked in 2011 and in fact will decline by 1.4 percent by 2020 and by 2.3 percent by 2025. The demographic transition will continue to gradually decrease the savings rate, leading to a lower investment rate. The decline in high investment rates will gradually lower capital stock's contribution to potential growth. The expected investment rates could decline further because of policy efforts to tighten credit growth, reduce excess capacity, internalize costs of industrial pollution, and harden budget constraints of local governments.

For growth to be more sustainable, domestic demand has to rely more on consumption and less on investments. Private consumption growth has been insufficient to offset declining export demand, and as a result, domestic demand became increasingly dependent on investments in recent years. This has led to a build-up of excess capacity, which translated into a long period of deflationary pressures. Most of the pressure stems

¹⁴ UN (2015).

from heavy industry, which suffers from overcapacity and consequently has experienced strong deflationary pressures. However, since 2016, however, a recovery in commodity prices has helped push up the Producer Price Index (PPI) into positive territory.

China has the potential to unlock significant growth dividends through structural reforms, although this is not expected to fully reverse the ongoing moderation of growth. Structural reforms can increase labor force participation (see Box 1.1), facilitate the migration of remaining surplus labor from agriculture to higher productivity sectors, improve the allocation of capital, and support the transition to a knowledge-based economy focused on raising TFP. However, even implementation of structural reforms is not expected to fully reverse the moderation of economic growth over the following decades. Many second-generation reforms are likely to have a smaller impact on growth compared to the first-generation reforms that led to rapid expansion of the manufacturing sectors.

Box 1.1: Female Labor Force Participation in China

With China's labor supply past its peak, a key challenge will be to ensure a sufficient stock of working-age adults participating in the labor market. China's labor force participation rate compares relatively well with middle-income countries. In particular, female labor force participation rate is significantly higher than the average of middle-income countries.¹⁵ However, the labor force participation in China is low among local urban workers over age 50, especially for women. This low labor force participation is due in part to the low retirement age and limited possibilities for lifelong learning.¹⁶ Another contributing factor for early labor market withdrawal by urban women may be the gender wage gap. Gender analysis of urban wages suggests that the male-female gap has been widening since the late 1990s in both urban and rural areas, perhaps because of growing marketization and the presence of private firms.¹⁷ Hourly wage differentials between urban men and women were consistently at 22–25 percent between 2001 and 2010. Decomposing the differential to take account of both individual and job characteristics (sector and ownership type), the overwhelming bulk of the wage gap cannot be explained by observable characteristics, with the unexplained share of the difference ranging from 76 to 90 percent over the period.

The SCD carried out growth projections to analyze the impact of continued rebalancing of the economy and the implementation of structural reforms. The methodology is based on the concept of conditional growth convergence whereby a country's growth rate depends on its institutions and policies.¹⁸ The World Economic Forum's Global Competitiveness Index (GCI) is used to measure the quality of institutions and policies. The "major reform" scenario assumes the successful implementation of structural reforms so that China either catches up with or exceeds the Republic of Korea's ranking on the various components of the GCI by 2020. The scenario also assumes that measures are taken to address vulnerabilities in the financial system and in public finances. Under this scenario, average projected growth is about 6.8 percent in 2020–24 and declines to 5.7 percent in 2025–29 (Table 1.1). The "limited reform" scenario assumes a slower pace of reform, that is, no significant change in China's GCI ranking. This scenario also assumes a more gradual process of debt deleveraging than in the "major reform" scenario. Long-term growth under this scenario weakens to 5.7

¹⁵ ILOSTAT database.

¹⁶ Giles, Wang, and Cai (2011).

¹⁷ Analysis based on Chinese Women Social Status Surveys for 1990, 2000, and 2010. Also see Liu (2011), Ding, Dong, and Li (2009), Appleton, Son, and Xia (2014), Chi Li, and Yu (2013).

¹⁸ See Wilson and others (2013).

percent in 2020–24 and further down to 4.6 percent in 2025–29. In short-term growth, it is expected that the limited reform scenario would result in higher growth in 2017–19 as short-term stimulus measures and rapid credit growth help maintain a pace of GDP growth above its potential level. However, this higher short-term growth comes at the expense of significantly slower growth in later years.

Table 1.1 China: Long-Term GDP Growth Projections, 2014–20

	Historical	Near-Term Outlook	Long-Term Projections	
	2010–14	2015–19	2020–24	2025–29
<i>Working-age population growth*</i>	0.6	–0.1	–0.2	–0.4
GDP growth				
Major reform	8.6	6.6	6.8	5.7
Limited reform			5.7	4.6

Source: World Bank staff estimates and projections.

The above scenarios do not reflect the risks from China’s significant stock of accumulated debt and the possible impact on growth in later years due to a disorderly deleveraging of the economy. The increase in corporate and local government leverage in China since the Global Financial Crisis has been rapid. Global experience suggests that such rapid rises in the credit-to-GDP ratio are usually followed by slower economic growth. This pattern has held in economies as varied as Chile, Ireland, Japan, Malaysia, and the United States. Cross-country evidence shows that credit booms can stimulate economic activity, but a rapid buildup of leverage has a long-lasting impact on corporate and household behavior, leading to subsequent below-trend economic growth, which on average slows by 2.2 percentage points after a credit boom. The empirical evidence suggests that the negative impact of a high debt burden on growth can be considerable even in the absence of a financial crisis.¹⁹ In Japan in the mid-1990s, high levels of corporate debt triggered a slowdown of economic growth caused by the corporate sector’s collective focus on paying down debt rather than on investing and spending.²⁰ However, the government of China views the debt buildup and financial sector leverage as manageable and believes that ongoing reform measures on deleveraging will improve the debt-to-GDP ratio.

Although China currently has sufficient policy buffers to prevent a sharp slowdown, continued demand stimulus could erode this over time. At less than 60 percent of GDP, government debt levels still provide the fiscal space to employ limited stimulus in the event of a sharper than expected slowdown. Sovereign debt furthermore is currently mostly held domestically. Regulations restrict savings instruments outside the banking system, and the financial system is still predominantly state-owned. Capital controls on portfolio investment and bank lending can in certain cases help prevent sharp capital outflows. If reduced confidence in the financial system were translated into attempts to convert local currency deposits into foreign currency, spikes in demand for foreign currency could be met with the country’s large central bank international reserves, which still amount to more than US\$3 trillion. However, continued high government deficits while growth moderates would raise the levels of debt to GDP over time, and a more open capital account could put further pressures

¹⁹ Using 1800–2011 data for advanced countries, Reinhart and Rogoff (2012) show that, on average, public debt to GDP levels above 90 percent sustained for at least five years are associated with 1.2 percentage points lower average growth compared with periods with debt below 90 percent, and the slow-growth period lasts an average of 23 years.

²⁰ The drop in asset prices in Japan in 1989–91 severely weakened the balance sheets of heavily indebted households, lending institutions, and nonfinancial corporates (Koo 2011). As banks faced mounting impaired loans, lending to sound companies contracted—partly the result of rolling over loans to weak companies (Caballero, Hoshi, and Kashyap 2006). Investment and consumption growth declined sharply and persistently.

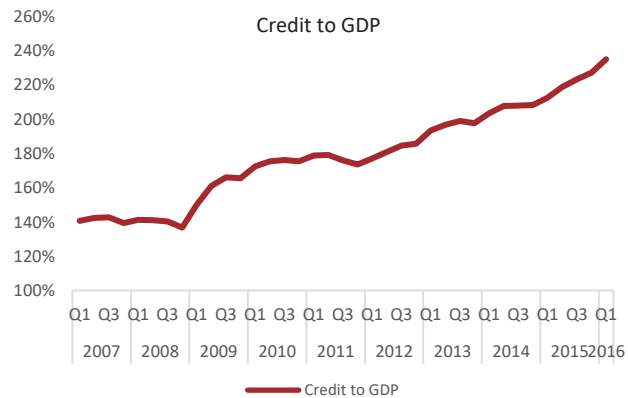
on international reserves. Thus, over time the degrees of freedom for policy makers could decline.

Financial Sector Reforms

Along with China's growth and economic transformation, its financial sector developed and grew very rapidly over the last decade. High domestic savings sustained China's high investment rates, and the financial system was instrumental in channeling them to strategic sectors, in particular infrastructure projects and large enterprises, at low cost. China's financial system increased almost tenfold in terms of assets between 2005 and 2016, from 201.5 percent of GDP to 466.1 percent of GDP. Today, China is not only home to some of the largest banks in the world by asset value and tier 1 capital, but its banking sector, stock market, and bond market are among the world's largest.

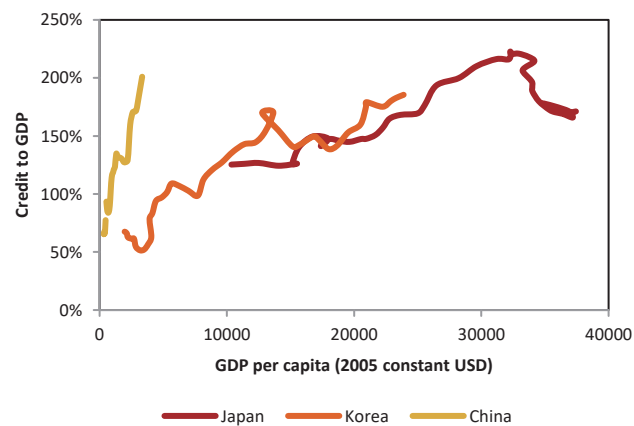
China's financial sector is facing important challenges at a critical juncture of economic rebalancing. In response to the Global Financial Crisis, China embarked on a massive stimulus program, relying on the banking sector to sharply increase credit and investments. A hard landing of the economy was avoided, but the post-Crisis credit boom also increased the credit-to-GDP ratio ²¹ up to 232 (end-2016) percent, nearly 100 percentage points higher than before the Crisis (Figure 1.3). At comparable levels of development, the credit-to-GDP ratios significantly exceed those of other East Asian countries (Figure 1.4). The credit boom resulted in a significant increase in leverage in corporations and local governments, as well as the buildup of excess capacity in the economy. However, recently the year-on-year growth rate of credit has declined, and the increase of leverage in the nonfinancial sector has decelerated. According to the People's Bank of China (PBOC), at the end of June 2017 outstanding RMB loans grew 12.9 percent year-on-year, a decline of 1.4

Figure 1.3: Quarterly Credit-to-GDP Ratio



Source: World Bank staff calculations based on Wind Info data.

Figure 1.4: Credit-to-GDP Ratio



Source: World Bank.

²¹ Credit is the sum of outstanding stock of central and local government debt and aggregate financing outstanding.

percentage points from the previous month. The slowing economic growth, the high stock of corporate debt, the decline in corporate profitability, and overcapacity in certain sectors have raised concerns about the overall credit quality. Although the headline nonperforming loan rates remain relatively low at 1.75 percent of banking assets,²² careful monitoring of asset quality is crucial for effective credit management and to contain financial sector risks. Going forward, the country's high savings rate, low share of external debt, and the heavy presence of the state in the banking sector make China uniquely positioned to address the risks and implement necessary reforms to address the debt buildup and high leverage. The government views the debt buildup and financial sector leverage as manageable, and believes that ongoing reform measures on deleveraging will improve the debt-to-GDP ratio. The government also believes that the bulk of debt financing is invested in infrastructure, which will enhance growth and productivity, and boost long-term economic development, and hence is more sustainable than perceived.

In the past few years, financing activities have increasingly involved instruments of “shadow banking.” Shadow banking refers to various types of debt financing outside of explicit commercial bank credit or bonds and involves nonbank financial institutions. It covers a diverse set of instruments, such as “wealth management products” (WMPs), wealth management plans, trusts, entrusted loans, and peer-to-peer (P2P) lending. There are various measurements of shadow banking. Other financial intermediaries’ (OFI) financial assets, which can be considered one possible broad measure of shadow banking, are estimated to be about 18 percent of total financial assets in China, or roughly 70 percent of GDP in 2015.²³ China reported an increase of 35 percent year on year in OFI loans in 2015, one of the highest growth rates globally. WMPs grew particularly quickly in recent years. According to data from China Banking Regulatory Commission (CBRC),²⁴ the stock of WMPs associated with commercial banks stood at 39 percent of GDP at the end of 2016. Shadow banking poses risks because of lower transparency and weaker supervision. The financial sector has become more complex because of the expansion of shadow banking, making effective supervision and oversight increasingly challenging. It

Figure 1.5: Incremental Capital-Output Ratio (ICOR) and Real GDP Growth



Source: World Bank staff calculations based on Wind Info data.

²² The government (China Banking Regulatory Commission) has indicated that loan classification is consistent with international standards; banks have strict financial disclosure and auditing requirements and are appropriately monitored and supervised; and, upon identifying problems, banks are required to take appropriate measures, including loan provisioning, debt restructuring, and transferring loans to asset management companies.

²³ OFIs comprise all financial institutions that are not classified as banks, insurance corporations, pension funds, public financial institutions, central banks, or financial auxiliaries.

²⁴ China Banking Sector Wealth Management Market Annual Report (2016).

will be critical to strengthen supervisory and regulatory coordination mechanisms across banking, securities, and insurance sectors. In this light, China has recently prioritized strengthening the regulation of shadow banking and has cracked down in particular on WMPs associated with commercial banks that represent “substandard” products that are not traded on the interbank market. Consequently, the stock of WMPs associated with commercial banks has decreased to about 36 percent of GDP in May 2017. In addition, in 2017, China announced plans to establish a State Council Financial Stability and Development Commission to improve coordination and strengthen financial regulation.

Financial sector reforms are needed to enhance the efficient allocation of financial resources and strengthen financial sector stability. Credit is increasingly ineffective in stimulating economic growth, as suggested by the increase in incremental capital output ratios (ICORs) and credit intensity ratios (Figure 1.5). A concentration of recent credit in public infrastructure and real estate can be associated with declining returns to economic growth, while the return to capital in the business sector appears to remain relatively high. High rates of investments and the economic slowdown left some sectors with excess capital stock. Market distortions have been associated with the provision of financing to nonviable firms, contributing to the excess capacity in industries and allowing “zombie enterprises” to survive and thereby take resources away from other more productive firms. Firms enjoy privileged access to credit if creditors assume they are implicitly supported by the government. The World Bank’s 2012 Enterprise Survey indicated that SOEs are more likely to have access to finance than their private counterparts, even after controlling for industry and individual firm characteristics. The removal of implicit guarantees would help to improve efficient allocation of financial resources, generate higher returns, and strengthen debt sustainability. The government can play a central role in the necessary reforms through the state-owned commercial banks. Greater private sector competition in the financial sector could help improve the efficiency of financial intermediation.

China has made considerable progress in financial inclusion over the past few years; remaining challenges include reaching the “last mile” of the unbanked and providing access to a wider range of appropriate financial products. According to a 2014 Global Findex survey, account coverage of adults (age 15+) rose from 64 percent in 2011 to 79 percent in 2014. The government strongly feels that account penetration in China is even higher. According to the PBOC survey, bank settlement accounts coverage of adults is 92 percent in the poorest rural areas in Fujian, Henan, and Shanxi provinces, and the percentage is likely to be higher if adults from urban areas are included and all saving accounts and nonbank payment accounts are taken into consideration. The difference between the Global Findex and PBOC data could reflect methodological differences. The increase in the coverage rate shown in Global Findex reflects strong progress on the National Payments System (NPS) and integration of rural credit cooperatives and village and township banks to the NPS, as well as increasingly more dense deployment of commercial bank branches, ATMs, point-of-sale terminals, expansion of rural agents,²⁵ rapid expansion of nonbank payment service providers, and the cash-to-card shift for various government payments and social transfers. However, Global Findex showed that 21 percent of China’s adult population, the “last mile” of consumers, continued to lack formal accounts in 2014 (though this percentage has likely decreased over the past two years) and are thus constrained in using the formal financial system to save, make payments, borrow, and manage risks. The “unbanked” are disproportionately poor, tend to live in less developed, rural, or remote areas, and cite lack of money, distance, and cost as barriers to account

²⁵ By end-2014, PBoC reports there were 920,000 agents or service stations throughout the country.

ownership. As importantly, further progress is needed to expand access to a broader range of appropriate financial products and services to the already banked but underserved, such as credit and insurance, as well as to improve usage of accounts.

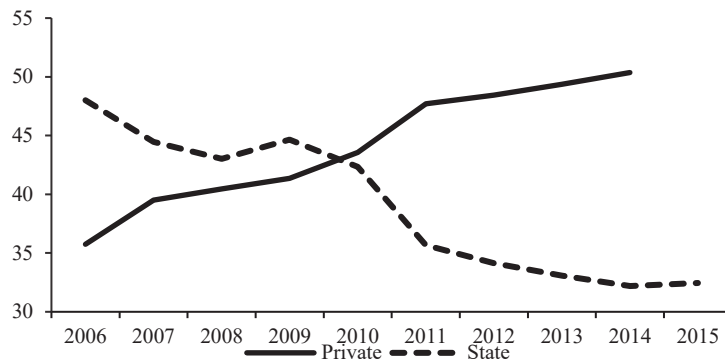
During the Financial Work Conference (FWC, July 14-15, 2017), Chinese authorities highlighted the importance of financial sector development and financial stability. The authorities expressed the need for financial services to “go back to the origin” of serving the real economy and preventing and containing financial risk and deepening financial reform. Reflecting concerns about high and rising leverage in the economy, the FWC called for: (a) financial institutions to disclose truthfully and dispose in a timely manner bad assets; (b) continue deleveraging, with the focus on reducing leverage of state-owned enterprises (SOEs) and dealing with assets in “zombie companies”; and (c) strictly controlling new local government debt and establishing a lifetime responsibility mechanism for local officials for government debt. In addition, a holistic approach to financial regulation has been emphasized as a solution to the existing fragmentation in regulatory oversight.

Expanding the “Decisive Role” of Markets and SOE Reforms

Significant market-oriented reforms of the enterprise sector have been a major driver of China’s growth and have resulted in the rapid expansion of the private sector in the past decades. At the outset of reform in 1980, state firms accounted for more than 95 percent of the workforce and 80 percent of investment. The remaining balance was under collective firms, which at the time were usually closely aligned with, if not directly controlled by, local governments. Since then, the state share has declined to less than 20 percent of the workforce (in 2011) and 34 percent of investments (in 2012), as the private sector rapidly expanded (Figure 1.6). Many of the small and medium-sized state firms became privately owned. While the “commanding heights” of the economy, such as in electricity, petroleum, aviation, and telecommunication, remain largely state-owned, even these SOEs underwent reforms through corporatization and restructuring. Competition among SOEs was promoted, and the scope for private competition expanded. As a result, the profitability and the average returns on equity of SOEs increased.

China has made strong progress in improving its business climate. China was recognized in Doing Business 2013 as showing the most improvement in its region between 2005 and 2012. The government implemented a range of substantive legal and institutional reforms during that period, including a new company law in 2005, a new credit registry in 2006, its first bankruptcy law in 2007, a new property law in 2007, a new civil procedure law and a new

Figure 1.6: Fixed Investment by Ownership, 2006-15

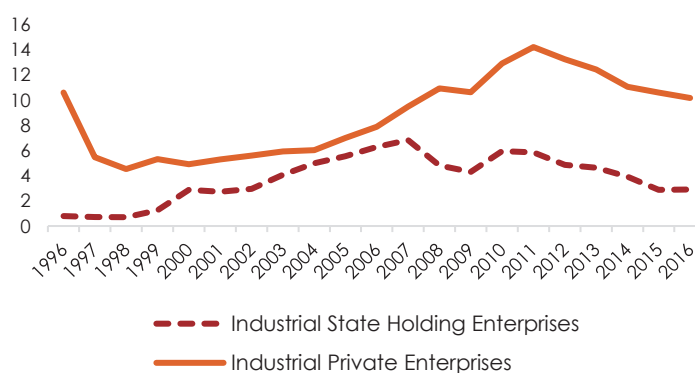


Source: China NBS.

corporate income tax law in 2008. China continued to reform in subsequent years and in Doing Business 2016 was recognized among the 190 economies covered by the report as having made the greatest improvement in its “distance to frontier” score between 2002 and 2015. More recently, China’s overall ranking in Doing Business improved from 96th in 2014 to 78th in 2017. According to the Doing Business indicators, over the past 10 years China advanced the most in reforms on getting credit, starting a business, dealing with construction permits, and paying taxes. To support businesses, the government has carried out initiatives to streamline administrative processes, for example, with regard to requirements for government reviews, approvals, accreditation and inspections, and to delegate power to lower levels of government.

Despite the expansion of the private sector, China’s state sector still plays a major role in key areas of the economy. China has more than 155,000 SOEs, accounting for 43 percent of industrial assets, 30 percent of revenues, and 15 percent of jobs. By comparison, in OECD countries, SOEs account on average for less than 5 percent of the economy and typically less than 15 percent in most other developing countries. Enterprises managed by the State Owned Assets Supervision and Administration Commission (SASAC) total 102 and are relatively large and cluster around China’s strategic industries. Forty-seven of such centrally owned SOEs are in the 2014 Fortune Global 500 list. However, most SOEs are smaller and are owned by provinces or municipalities and controlled by the local governments. SOEs still control around one-third of all investments, and the share has been increasing recently. In 2016, state-owned and controlled enterprises’ investments grew at 18.7 percent, compared with less than 5 percent growth for private investments. Part of this wide divergence may have been due to reclassification of private firms to state firms, but the decline of the growth rate of private (minjian) versus SOE investments started as far back as 2012, when private sector investments grew by 27.5 percent. In addition, the return on assets of SOEs has been below private firms and the gap has widened since the Global Financial Crisis (Figure 1.7). From 2009 to 2013, the average return on assets for state holding enterprises in the industrial sector was 4.4 percent, compared to 12.0 percent average for private enterprises in China.²⁶

Figure 1.7: Return on Assets of State and Private Industrial Firms, 1996–2016



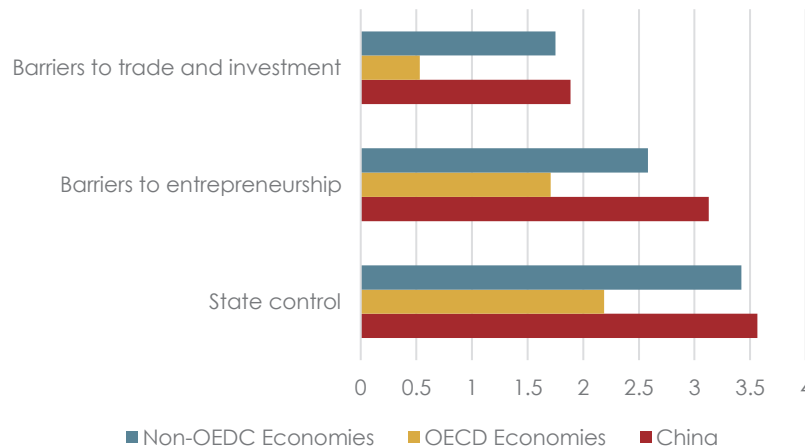
Source: China NBS

Entry into some key sectors remains limited for private firms, as regulatory barriers to competition remain relatively high in China, including in oil and gas, electric power, finance, and telecommunica-

²⁶ Figure 1.7 covers industrial enterprises (manufacturing, mining and electricity, water and gas). State holding enterprises cover both central and local enterprises and are defined as enterprises for which the state is the largest shareholder, even if state ownership is not the majority. Returns are defined as profits after taxes, interest payment and depreciation.

tions. The OECD's Product Market Regulations (PMR) indicators measure the stringency of regulatory policy in specific areas on a scale of 0 to 6, with a higher number indicating a policy stance that is deemed less conducive to competition. The PMR indicators for China are comparable with non-OECD countries, but relatively high on barriers to trade and investment, barriers to entrepreneurship, and degree of state control compared with OECD countries (Figure 1.8). In particular, the services sector appears to have comparatively greater market entry barriers than the manufacturing sector. At present, SOEs account for a much larger share of fixed asset investments in services compared with manufacturing (43 percent in services compared to less than 10 percent in manufacturing), with particularly high shares in transportation, environmental management, and financial service. The government recognizes that further removing market entry barriers would help promote improvements in productivity. In this regard, the National Development and Reform Commission issued a policy document in October 2016 outlining measures to promote private investment, in particular by widening market access to private investments in specific sectors, such as telecommunication, electricity, and oil and gas exploration.

Figure 1.8: OECD Product Market Regulation Indicators (2013)



Source: OECD Product Market Regulation Indicators.

Note: Non-OECD countries are representative and include only Brazil, India, Indonesia, Russia, and South Africa, given limited coverage in the OECD database.

In November 2013, the Third Plenum of the 18th Communist Party Congress announced the transformation of China's SOEs as part of a wide-ranging economic and social reform program. The Third Plenum affirmed the continued importance of SOEs in the economy to provide public goods and promote strategic industries, including natural resources, military security, and technology. To help bolster efficiency and commercial orientation, the announced SOE reform plans highlighted ownership diversification and the reorganization of state-owned capital investment and operational companies. According to the communiqué, government functions of SOEs would be separated from enterprise management, and numerous state-owned capital investment companies and operation companies would be established by creation of new entities and reorganization of existing ones. In July 2014, the SASAC, which supervises the central SOEs, announced that six SOEs had been selected for a pilot program to deepen mixed ownership reform, with the aim of increasing private ownership in SOEs.²⁷ The 2014 government work report, delivered by Premier Li Keqiang, reiterated the goals of SOE reform, including the establishment of a sound modern corporate structure and corporate

²⁷ The pilot SOEs for establishing state-owned capital investment companies are China National Cereals, Oils and Foodstuffs Corp. (COFCO) and State Development & Investment Corp. (SDIC). The pilot SOEs for development mixed ownership structure are China National Building Materials Group (CNBMG) and China National Pharmaceutical Group Corporation (Sinopharm). The pilot SOEs for granting authority for a board of directors to hire, evaluate, and compensate senior managers are China Energy Conservation and Environment Protection Group (CECEPH), Xinxing Cathay International Group (XCIG), CNBMG, and Sinopharm.

governance. The increasing role of private stakeholders in SOEs is designed to improve management skills at the executive level and improve the transparency of the decision-making process.

Ensuring a more level playing field would put greater competitive pressures on incumbent firms, including SOEs, to raise their productivity. In the context of China, it would require ensuring a level playing field between enterprises with or without state ownership. Relevant reforms could include requiring a market rate of return on state equity capital and removing perceived government-implicit guarantees of SOE borrowing. It could include equal access to land, natural resources, and government subsidies as well as equal treatment in regulations, tax, government procurement, and administrative approvals. In an economy still transitioning to a fully market-based system, it will take well-designed and implemented actions to ensure a level playing field. As part of this effort, in 2016 the State Council issued an opinion on the establishment of a fair competition review system, which mandates competitive assessment of policy measures and scrutiny of monopolistic conduct in accordance with the Anti-Monopoly Law.

China adopted the Anti-Monopoly Law (AML) in 2007. Competition policy has risen to a priority on the government's agenda. In 2016, the State Council published its opinions concerning the establishment of a fair competition inspection system on the basis of the AML and policy measures on competition review and inspection of monopoly behavior. Competition policy involves the promotion of measures to enable contestability, firm entry and rivalry, enforcement of antitrust laws and a level playing field, and control of public support for measures and incentives that distort competition. Ensuring a level playing field will require greater tolerance of bankruptcies, including with regard to the ongoing process to reduce overcapacity in the heavy industry sectors

Promoting Innovations to Support Productivity-Led Growth

Promoting innovation in the economy will be key to China's transition to a more productivity-led growth model. As capital accumulation and inexpensive labor are fading as sources for further growth, China is looking to increasingly rely on innovation for productivity gains. On March 13, 2015, the State Council issued a strategic document, "Opinions on Accelerating Implementation of Innovation Driven Development Strategy through Strengthening Institutional Reforms," which outlines the overarching principles, thinking, and goals in advancing institutional reforms to realize China's innovation-driven development strategy and key reform tasks. These reforms are directed at the supply side, the demand side, and the market structures and intermediaries that underpin both.

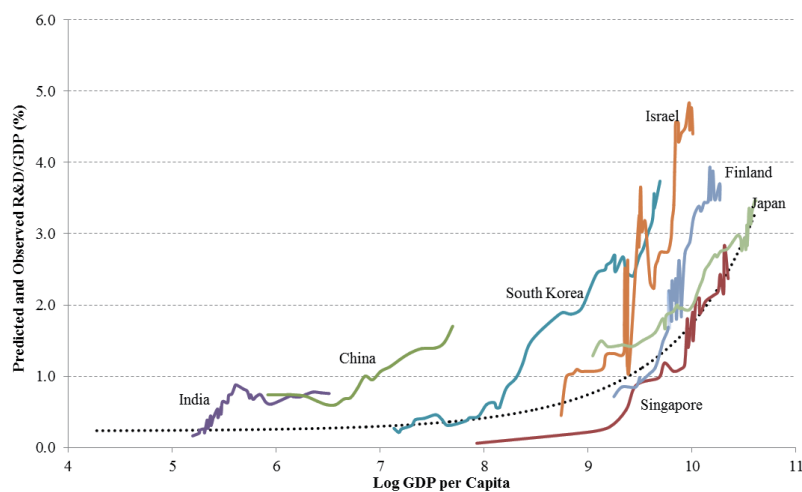
China is still in the technology catching-up phase, and its innovation capabilities and the underlying learning and creative culture may take some time to mature. This assessment is based on various assessments of China's innovation capacity by the INSEAD/World Intellectual Property Organization (WIPO)/Cornell University, the World Economic Forum (WEF), and the Information Technology and Innovation Foundation (ITIF). The Global Innovation Index by INSEAD/WIPO/Cornell University has shown steady improvements for China since 2011: China was ranked 29th in 2011 and improved to 25th in 2016 and 22nd in 2017. According to the WEF, since 2010–11 China's ranking has held steady at around 27th to 28th in overall

competitiveness (28th in 2015–16) and 74th in terms of technological readiness, out of 144 countries. China is also the highest ranking developing country according to the WEF assessment. In earlier ITIF reports, China was in 33rd place in a group of 40 countries; in 2016, it was 44th in a sample of 56 countries.²⁸

Over the past decade China significantly increased research & development (R&D) spending and patent applications. China spends 2.07 percent of its GDP on R&D (2015). Its total spending on R&D is the second highest in the world after the United States and accounts for over 14.4 percent of the total global spending on R&D.²⁹ R&D expenditures as a share of GDP is multiples above what is common for a country at China's level of development (Figure 1.9). Industry expenditures on R&D have been increasing and make up the majority of R&D. In line with increased spending on R&D, China's patenting activities have increased rapidly over the last decade. In 2016, the number of applications for patents for invention accepted by the State Intellectual Property Office totaled more than 1.3 million, and according to WIPO, since 2011 China has had the world's largest number of patent applications. Concerns have been expressed regarding the quality of the patents, but there are also indications, such as number of citations, that quality is improving. Increased patenting activities could have been due to multiple factors, including greater investments in R&D and possibly improved intellectual property rights (IPRs) protection, but they may also reflect government incentives to encourage patent registration.

Increased R&D spending has to be complemented by institutional reforms in order for it to improve innovation and productivity. Goni and Maloney³⁰ showed that returns to R&D is higher in countries that are further away from the global technology frontier, as one would expect given that those countries have more potential to catch-up growth. However, their research also indicated that returns to R&D peak at around higher middle-income countries, and the returns decline for countries that are further away from this peak. This arises because countries that are distant from the frontier lack critical complementary policy and institutional factors, such as research institutes and a private sector of sufficient quality and capacity. Without those factors, simply increasing R&D spending may not result in the desired impact on innovation and productivity.

Figure 1.9: R&D Expenditures as a Share of GDP versus GDP/Capita



Source: Goni and Maloney 2014.

²⁸ ITIF (2016), http://www2.itif.org/2016-contributors-and-detractors-executive-summary.pdf?_ga=1.166631801.675887579.1462288769.

²⁹ Chinese Academy of Science and Technology for Development (2016).

³⁰ Goni and Maloney (2012).

The government recognizes the importance of strengthening IPRs for promoting indigenous innovation.

Enforcement of IPRs will be critical to creating the incentives to invest in innovation activities. The Action Plan for Carrying Out National Strategy on Intellectual Property Rights (2014–20) specifies that China will “endeavor to build an intellectual property right power to provide powerful support for building an innovation-oriented country and a moderately prosperous society in all respects.” It sets a target of 14 patent applications per 10,000 persons by 2020. Chinese government has announced that China will step up enforcement of IPRs and increase the scale of punishment. In August 2014, the Chinese legislature approved a resolution to establish specialized intellectual property (IP) courts in Beijing, Shanghai, and Guangzhou. The establishment of the specialized IP courts is a step in the right direction, but more needs to be done to fundamentally address the issues surrounding IPRs, including strengthening of IPR enforcement. Complementary reforms could include developing more effective platforms for IP valuation and transactions and building the capacity of intermediaries such as technology transfer offices.

The innovation system in China focuses heavily on R&D to generate new innovation and technology, but the vast majority of firms have yet to absorb and adopt existing technology.

Most of the firms are far from the technology frontier, and therefore they may benefit the most by focusing on absorbing available technologies rather than creating new and innovative technologies. Hence, in China, large scope may exist for upgrading and strengthening existing low- and medium-technology industries, including through organizational and process innovations. A core underpinning capability of this upgrading is management quality. As industries move up the value chain, they will need to learn to compete on the basis of their intangible assets, such as information and communication technologies (ICTs), organizational structures, design, brand equity, education and training, and sophisticated management. Chinese firms may be exceptionally good with short-run targets, but appear to be relatively weak in the areas of long-run planning and human resource management that are necessary for innovation.³¹ Some have argued that, for East Asia’s New Industrialized Economies, the firms’ organizational capacity for acquiring and learning technology was more important than the conventional R&D.³² Indications suggest that a good 30 percent of the differences in TFP among countries can be explained by variations in the quality of management.³³

The government can continue to play a critical role in promoting innovation.

Public research institutes and grant financing can play a complementary role to private sector R&D, in particular by carrying out and supporting basic research. Because the focus is on quick returns, too much of the funding for R&D is devoted to development and too little to basic and upstream applied research. Whereas the United States allocates 18 percent of its R&D to basic research and the OECD average is 20 percent, until recently only 5 percent of China’s research funding was being used to build a base of scientific knowledge.³⁴ Project financing could be made more effective by strengthening the project selection process. Improving access to finance for innovation and increasing government procurement for innovative products could also promote investments in innovation. Public research institutes can be strengthened, including with respect to the commercialization of research and collaboration with industry. Fiscal policies (tax credits and subsidies) as well as other financial instruments such as vouchers and grants, technology extension and business advisory services, incubators/accelerators, public procurement, and relaxing of regulatory requirements can encourage greater private sector investments in innovation.

³¹ Maloney (2014).

³² Lee (1997); Kim (1997); Mathews (1996).

³³ Bloom, Sadun, and van Reenen (2016).

³⁴ Jefferson (2015).

Improving and enlarging the innovation talent pool is pivotal to appropriating gains from innovation.

China has many science and engineering (S&E) graduates and Ph.D.'s. The total number of S&E researchers exceeded 3.53 million in 2014, which is greater than in the United States and the European Union (EU) combined. China recognizes the importance of human resources for innovation and is devising various policies to nurture and attract talent. In addition to the previously launched 100 Talents, 1,000 Talents, and 10,000 Talents programs, the government aims to reform parts of the education system to nurture more innovative minds and support innovative research. Mass entrepreneurship is also seen as part of the solution to reduce the unemployment rate of new graduates. This could be complemented with reforms in the technical and vocational educational system.

The success of China's indigenous innovation agenda will ultimately depend on broader market-oriented reforms.

The "Decisions on Important Issues Concerning Comprehensive and Far Reaching Reform" issued at the Third Plenum of the 18th Central Committee of the Communist Party of China (November 2013) emphasized that markets will play a decisive role in allocating resources, which represents a significant departure from the previous model of government-led innovation. Private sector development and increased competition, reforms in factor markets, human capital deepening, and the effective harnessing of urban agglomeration economies to advance ideas and technologies are ways to stimulate markets that reward innovation. More targeted interventions could support commercialization of intellectual property by local high-technology industries as well as low- and medium-technology industries increasingly using indigenous innovation.

Economic and Social Costs of Industrial Restructuring

The government plans to restructure numerous industries in China, many of them with large shares of SOEs.

Many industries suffer from overcapacity, including coal, iron and steel, cement, glass, polysilicon, and wind power equipment. The planned industrial restructuring could lead to sizable labor redundancies, particularly in heavy industry and in China's northeastern provinces, which have a high share of heavy industry. At a press conference on February 29, 2016, the Ministry of Human Resources and Social Security (MOHRSS) indicated that redundant workers from coal, iron, and steel industries are expected to number 1.8 million between 2016 and 2017. A report from the China-EU Chamber of Commerce estimates that about 30 percent of workers from five industries (coal, iron and steel, cement, glass, and aluminum) could be laid off.³⁵ Although structural change has longer-term economic benefits, the extent of these benefits depends in part on how the process is managed and how well its attendant dislocations and adjustments are mitigated.

Large-scale job losses are not a new phenomenon in China or internationally.

In China in the late 1990s and early 2000s, many Chinese workers were affected by labor redundancies. Employment guarantees for employees of SOEs were removed, and these enterprises laid off tens of millions of workers, in particular in the northeastern provinces. According to official figures from a government white paper on China's employment situation and policies, about 28.2 million workers, or more than 15 percent of the urban labor force, were laid off between 1998 and 2003.³⁶ The sheer size of labor redundancies posed tremendous economic and social challenges.

³⁵ See the Chinese news report "China Plans to Lay Off 5–6 Million Workers from Zombie Enterprises," <http://finance.sina.com.cn/china/gncj/2016-03-01/doc-ifxpvysv5057206.shtml>.

³⁶ Information Office of the State Council of the People's Republic of China (2004), "China's Employment Situation and Policies," http://news.xinhuanet.com/zhengfu/2004-04/26/content_1440838.htm.

To address large-scale labor redundancies in the late 1990s and early 2000s, the government introduced the Xiagang (“to step down from one’s post”) early retirement and reemployment program. How the government managed the previous large-scale labor redundancies can be quite instructive. The Xiagang program involved significant provisioning of public funds and required SOEs to provide temporary income support and reemployment services for up to three years workers who had been made redundant. Xiagang workers were also promised other benefits, including health insurance and pension contributions. Some implementation challenges were faced,³⁷ but the program successfully helped many redundant workers. According to a government white paper, 28 million persons benefited from the program between 1998 and 2003, and more than 65 percent of beneficiaries found new jobs through the Xiagang program.

Layoffs can have dramatic and long-lasting effects on the employment, earnings, and income prospects of directly displaced workers and their families. Research from the United States and other countries shows that many workers made redundant can have long unemployment spells, and those finding work can suffer permanent earnings losses of up to 30 percent over at least 15 to 20 years. Effects on other variables, such as health and even mortality, also can be significant. Moreover, some types of workers, notably women, older workers, and the less-educated, are likely to suffer disproportionate costs from redundancies.

Large-scale redundancies tend to be geographically concentrated and therefore can have significant impacts on whole communities and local and regional economies. For example, the structural changes in Poland’s coal-mining industry and resulting labor redundancies led to the economic decline of entire communities that were left with few economic opportunities. It also led to various social problems, including crime, alcohol and substance abuse, health problems, and the abandonment of housing.

China can build on its past experience to systematically address the economic and social costs of industrial restructuring. This would also ensure public support for the planned restructuring of over-capacity industries in China. There are two main instruments to use to support workers affected by labor redundancies--temporary income support and active labor market programs. Temporary income support would include unemployment insurance and severance or other forms of termination payments. Active labor market programs offer services, programs, and incentives that facilitate and encourage reemployment among laid-off workers. The two types of instruments can be used in combination. As was the case in the early 2000s, sufficient public funds will need to be provisioned to adequately finance these programs. In addition, capacity building and technical assistance of the agencies involved may be needed. Finally, early retirement incentives are another often used instrument to mitigate the effects of labor redundancies, but one that is fraught with challenges.

Unlike the large-scale labor redundancies in the late 1990s and early 2000s, China can rely on its complementary social protection programs to help the families affected by labor redundancies. The social protection programs would allow affected families to continue to have access to health, education, and similar services and receive all entitled pension benefits. In China, the Xiagang program served as a catalyst for the creation of a modern social security system in China.³⁸ To complement the Xiagang program, the government introduced an unemployment insurance program and the urban dibao social assistance program. All three programs together were called the “three guarantee lines” that provide basic income support for unemployed

³⁷ Giles and others (2006a) document that the performance of the program was relatively poor in terms of benefit coverage, adequacy, and leakage.

³⁸ Chapter 2 discusses the social security system in greater depth.

workers and their families. Redundant workers could receive temporary income support for up to three years through the Xiagang program. Afterwards, they could claim unemployment insurance benefits for a maximum of two years in case they remained without a new job. Families with laid-off workers could apply for income support from the urban dibao program if they met the eligibility criteria. Hence, comprehensively assisting the families affected by labor redundancies would involve ensuring that they have access to these complementary programs, as well as their pension and health insurance.

National and local governments can work jointly in assisting communities affected by labor redundancies, and civil society organizations (CSOs) can be valuable partners as well. International experience indicates that most successful efforts to mitigate the effects of structural change and labor redundancies include direct dialogue between key stakeholders: the government, firms, labor unions, and community organizations. For instance, with regard to Poland's coal-mining industry, local governments were heavily involved in managing labor redundancies and were expected to play a key role in creating new employment opportunities for former miners. However, the success of this initiative was mixed because of limited local government capacity.

Sustainable Urbanization

Sustainable urbanization can be an important contributor to China's new growth model.³⁹ China's urbanization over the past three decades has been quite rapid and has facilitated the country's unprecedented economic transformation. China's cities have largely avoided the social ills of rapid urbanization such as widespread urban unemployment and poverty. But now China is embarking on a new model of urbanization with conditions that are vastly different from three decades ago. China is reaching a stage in its development in which efficient use of resources is becoming more important for growth than simply mobilizing resources.

Sustainable urbanization means a more efficient, inclusive, and environmentally sustainable urbanization in China. Efficient urbanization would remove barriers to making the best possible use of China's productive resources, including with regard to the use of capital and land and barriers to rural-urban migration. The barriers to migration also affect inclusive urbanization by denying equal access to jobs and services for rural migrants in cities. Sustainable urbanization means urbanization that can be supported by China's environment and natural resources, while providing an urban quality of life commensurate with the desires of China's people. Reforms that improve the urban environment, balance conflicting demand on land and water, and minimize the use of natural resources would contribute to sustainable urbanization.

Urban planning and urban design systems need to be reformed to accommodate the new economy and foster innovation. Chinese cities need to update their planning regulations in terms of how to build urban utilities to meet the spatial needs of the new economy. Flexible manufacturing and customized production often require small spaces at convenient, easily accessible locations. Most service sectors would favor a certain level of population density. The expansion of massive public transit network in Chinese cities, once combined with visionary land use plans, presents unprecedented opportunities to get the urban form right. Zoning regulations could reflect this ongoing trend and encourage compact and mixed-use urban development connected by effective and high-quality public transport, where residents have easy access to jobs, shops, schools, and other

³⁹ Sustainable urbanization in China is extensively discussed in World Bank and DRC.

public facilities in a walkable environment. Cities will need to significantly invest in advanced urban planning, progressive architecture, models for urban regeneration, and people-oriented design capacity skills. Specifically, new planning and design principles and techniques can be applied at multiple requirements and levels, from region and city to subdistrict and local community, to create livable, high-quality urban space neighborhoods that are necessary for the modern service economy. Proposed developments of key urban services such as transportation, environment, and public services need to be developed around the individual to foster innovation and add value to the economy. Strategic planning of physical infrastructure and public service is necessary to foster new types of business opportunities, for instance, shared mobility (including cars and bikes), shared office space, and the use of renewable energy vehicles (e.g., charging stations for electric cars).

As China's largest cities try to reorient their local economy to support high-end services and innovation, they will need to redevelop their land use to allow firms to benefit from economies of density and proximity (agglomeration economies). At the same time, secondary cities in their vicinity will need to make land available for industrial manufacturing to relocate. This transformation will require limiting the supply of industrial land at the city's periphery at low, subsidized prices, which reduces incentives for industry to relocate production to secondary cities in their vicinity. Instead, industrial land could be auctioned, as is the case with land for residential and commercial purposes. For cities where manufacturing industry can relocate, demand will increase for industrial land. As these cities run into land development quotas, a national trading market could enable high-growth cities to trade for urban land development rights with cities with more abundant land quotas. In fact, land quota exchanges between jurisdictions have been piloted in Chongqing and Chengdu and have delivered very positive outcomes. This mechanism would allow for a market-based determination of the location and intensity of new development and lead to more effective allocation of land resources toward the highest and best uses. Scaling up this practice can potentially unlock huge efficiency gains and contribute to economic growth.

Public-private-academic collaboration can help revitalize declining cities and districts. Such collaboration can be a key part of urban regeneration policies and plans, with participation of the private sector, academia, and communities. Cities can consider specific policies and instruments for expanding private sector participation, structuring effective administrative and legal frameworks for regeneration, and utilizing land readjustment methods. The public sector would focus its investments only on key catalytic investments in urban environment and public space improvements and provide support to human resource development and community participation.

Key Priorities

The key priorities identified in this chapter are the following:

- Manage the transition to a slower but more balanced and sustainable growth.
- Address the risks resulting from the rapid growth in credit and shadow banking.
- Promote investments in innovation activities, by strengthening IPRs, expanding basic research, and helping firms strengthen their managerial capacity.

- Level the playing field between SOEs and non-SOEs to enhance market competition and promote the private sector.
- Promote the decisive role of the market by reducing regulatory market constraints, particularly in the services sector.
- Address the costs of economic dislocations, such as layoffs from the restructuring of overcapacity industries, that may result from economic rebalancing and restructuring.

Chapter II

Sharing the Benefits of Growth

Introduction

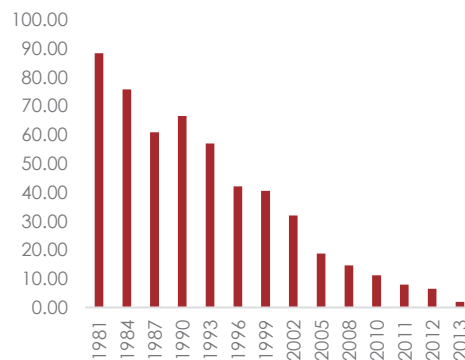
China has an unmatched record of poverty reduction over the past two and a half decades. Using the new international poverty line of US\$1.90 per day in 2011 PPP, the share of the population living in poverty fell from 88.3 percent in 1981 to 66.6 percent in 1990 and 1.9 percent in 2013, while the absolute number of poor people fell from 877.8 million to 25.2 million (Figure 2.1). The number of Chinese poor who escaped poverty during the period accounted for nearly 70 percent of global extreme poverty reduction. Rapid economic growth has been central to China's poverty reduction performance, complemented by a wide range of antipoverty programs and a significant expansion of public services, including the formal establishment of a social assistance system. President Xi has clearly indicated that eliminating poverty is China's top priority. He stated that "to eradicate poverty, improve people's livelihood and realize common prosperity, is the essential requirement of socialism" and has pledged stronger policy support to lift the rural poor out of poverty under the current standard by 2020.⁴⁰

The World Bank forecasts that China is on its way to eliminating extreme poverty, but the population vulnerable to poverty in China will remain relatively large. China is expected to continue to make strong progress toward eliminating extreme poverty, despite the slowdown of economic growth. The World Bank projects extreme poverty, based on the international PPP US\$1.90 per day poverty line, to decline to 0.5 percent by 2018.⁴² This assumes a deceleration of annual GDP growth from 6.9 to 6.5 percent between 2015 and 2018.

Slower growth rates of up to a percentage point do not render significant differences in poverty forecasts. But despite the progress made in eliminating extreme poverty, the population vulnerable to poverty, as defined by the higher international poverty line of PPP US\$3.10, will remain relatively large. The higher poverty line characterizes those in moderate poverty and vulnerable to falling below the poverty line. According to this higher poverty line, China is projected to have a poverty rate of 3.9 percent or 54.6 million people by 2018.

The government aims to eliminate extreme poverty by 2020, but many poor remain who are dispersed and may be harder to reach. Despite the substantial reduction in poverty, China still has the fourth largest

Figure 2.1: China's Poverty Head Count Ratio⁴¹ (International PPP US\$1.90 Per Day Poverty Line)



Sources: China NBS household surveys and staff calculations.

⁴⁰ See President Xi's speech at the Global Poverty Reduction and Development Forum in Beijing: http://www.chinadaily.com.cn/china/2015-10/16/content_22204202.htm.

⁴¹ The 2013 household survey in China is the first integrated nationwide household survey, which means it is not fully comparable with the previous household surveys, in which rural and urban areas were sampled separately. In addition, for the first time the 2013 national household survey included imputed rents in the income and consumption aggregates.

⁴² World Bank (2016).

population of the poor after India, Nigeria, and the Democratic Republic of Congo, because of the size of its total population. The remaining rural poor may be more dispersed in more remote and inaccessible areas, and hence they may be harder to reach. Poverty in urban areas is not well understood because of the lack of official indicators. Concerns remain about rural migrant workers in urban areas, who lack an urban resident status and have limited access to basic social services, employment opportunities, and housing. Given the remaining challenges to addressing rural poverty, a comprehensive poverty reduction program with effective targeting of the poor will be critical. Consequently, in 2014 China began to set up a database (files) for the rural poor to improve the targeting of poverty reduction programs. The poverty alleviation database helps the government identify the location and composition of China's remaining poor, as well as different aspects of their poverty and vulnerabilities. However, recent empirical research indicates that room may exist to improve the database and strengthen its linkages with the rural dibao beneficiary registry.⁴³

Although China succeeded in reducing poverty at an unprecedented scale, challenges to addressing inequality remain. Many successes have been achieved in promoting shared prosperity over the past three decades. Income growth of the bottom 40 percent has been relatively robust, heavy investments in agriculture helped improve livelihoods in rural areas, and access to education and health services has expanded. However, the country has also experienced growing inequality, driven by a disparity in access to quality public services, although this has started to decline in recent years. Geography may explain much of the inequality in China. The opportunities for developing human capital, staying healthy, and having a reliable safety net vary greatly, depending on whether a person lives in a rural or urban area, whether they are in coastal or inland provinces, and, for those in urban areas, whether they are a migrant or a local resident. Not only is inequality a problem in and of itself, it may also undermine China's ongoing transition to a more balanced and sustainable growth.

Unprecedented Poverty Reduction and the Remaining Challenges

The dramatic decline in poverty in China is evident across many alternative approaches to measuring poverty, independent of national or international poverty lines, whether in terms of income or consumption, or in terms of the absolute number, incidence, depth, and severity of poverty. According to official estimates based on the national poverty line of RMB 2,300 per year for rural areas (constant year 2010 prices), the number of rural poor declined to 43.35 million in 2016, accounting for 4.5 percent of the rural population. Based on the new international poverty line of US\$1.90 per day in 2011 PPP, the share of the poor in the population fell from 88.3 percent in 1981 to 1.9 percent in 2013, while the absolute number of poor fell from 877.8 million to 25.11 million.⁴⁴ Most of the remaining poor in China are likely to be rural inhabitants, because it is estimated that the incidence of poverty fell from 59.4 to 0.4 percent in 2012 in urban areas, while it fell from 95.6 percent to 3.4 percent (2013) in rural areas.⁴⁵

⁴³ Li (2015).

⁴⁴ World Bank estimates differ from official estimates because of methodological reasons. Because of lack of access to individual data from the household surveys, the World Bank estimates of poverty in China are based on grouped distributions, which are often not as precise as direct estimates based on the full distribution of household income and consumption aggregates. In addition, the official poverty line (at RMB 2,300 for year 2010) is higher than the global poverty line of 2011 PPP spatially adjusted for urban/rural price differences (around RMB 1,990 for the same year). Second, the official estimates refer to a rural population that includes some migrants, whereas the World Bank estimates refer to urban and rural population based on distribution by localities. Third, for 2013, World Bank estimates use new survey data that include home ownership imputations in total consumption.

⁴⁵ Urban poverty started to receive attention in the mid-1990s. With the reforms of SOEs, and urban employment and social protection systems, a massive number of urban workers were laid off. Unemployment pushed millions of urban families into poverty. To support urban reforms, the urban dibao program was formally introduced in 1999 as a formal social safety net to provide income support and alleviate poverty in urban China. In 2013, urban dibao programs cover around 11.0 million beneficiaries, 1.5 percent of the total urban population.

Progress has also been substantial in term of broader human development indicators. Broad-based improvements have been made in nutritional status, educational attainment, longevity, health outcomes, and other indicators of well-being.⁴⁶ China achieved a significant decline in mortality and an unprecedented increase in life expectancy.⁴⁷ As a result, a child born in China today can expect to live more than 30 years longer than his or her forebears half a century ago. It took rich countries twice that span of time to achieve the same gains.⁴⁸ China has reached all the Millennium Development Goals (MDGs), making a major contribution to the achievement of the MDGs globally. Thanks to China, the first MDG target, to halve the proportion of people in the world whose income is less than US\$1.25 a day, was achieved five years ahead of schedule.

China's success in reducing poverty may be largely attributable to strong economic growth and economic reforms.⁴⁹ The dramatic decline in rural poverty began in 1978 with the initiation of the ongoing reform process, including the introduction of the Household Responsibility System in agriculture in 1978 and township and village enterprises in rural areas, which, up to the mid-1990s, grew rapidly to absorb a large share of the rural labor force. The opening up of the economy to global trade and investments resulted in rapid growth of the urban economy, which absorbed a large number of migrant workers from rural areas beginning in the late 1990s.⁵⁰ From 1981 to 2012, the poverty head count index (measured by US\$1.90 per day in 2011 PPP) fell annually by 0.97 percentage points for each percentage point increase in GDP per capita.

The reduction in poverty in China has not been uniform over time or across regions. Several studies indicate that a faster reduction in poverty occurred in the early 1980s, when most productivity gains stemming from the household responsibility system were reaped, and agricultural procurement prices were raised, thus lowering an implicit tax on farmers.⁵¹ In the 2000s, poverty reduction continued but at a slower pace.⁵² Significant differences have also been seen in poverty reduction across regions. According to the NBS's "China Rural Poverty Monitoring Report 2016," in 2015 the poverty rate was 1.8 percent in eastern China, 6.2 percent in central China, and 10 percent in western China. The speed of poverty alleviation also varied across provinces.

Because of the size of the country's population, China still has a large number of the poor despite a relatively low poverty head count. With 25.2 million poor (2013) based on US\$1.90 per day in 2011 PPP, China accounts for approximately 3.3 percent of the world's poor. Only India, Nigeria, and the Democratic Republic of Congo (with approximately 210, 80, and 50 million each) have larger populations of the poor.⁵³ The remaining poor may be more dispersed, in regions with poor transportation and a fragile ecology, such as remote, mountainous, and rocky areas. Some analysis indicates that the remaining poverty is highly concentrated in mountainous areas in central and western China and among ethnic minorities and other disadvantaged groups, including people with disabilities, the elderly, and children. Other studies point out that China's

⁴⁶ See, for instance, Labar and Bresson (2011), report a decline in multidimensional poverty, a measure that includes income, health, and education, in both urban and rural areas between 1991 and 2004.

⁴⁷ Yang and others (2008), Caldwell (1986).

⁴⁸ Deaton (2013).

⁴⁹ Wang, Li, and Ren (2004) conclude that China's poverty reduction was mainly achieved through rapid economic growth during 1979–2003.

⁵⁰ World Bank and Development Research Center of the State Council, the People's Republic of China (2014).

⁵¹ World Bank (2009).

⁵² Li and Sicular (2014). They report, citing other studies, that the reduction in agricultural taxes in 2006 had a positive impact on poverty decline. On the other hand, the dibao in rural areas and the State Council poverty reduction plans implemented in the decade had a limited impact upon poverty.

⁵³ Data from World Bank (2016), *Poverty and Shared Prosperity 2016: Taking on Inequality* (Washington, DC: World Bank), Figure 2.7, p. 41.

remaining poverty is widespread across the country. For example, the World Bank's 2009 China poverty assessment concludes that more than half the poor now reside outside the villages designated as poor by the government. However, more updated analysis is needed regarding the location and composition of China's remaining poor, as well as the different aspects of their vulnerabilities, which would help policy makers design targeted poverty reduction policies.

Improving our understanding of urban poverty will be critical, in particular regarding the migrant population. Urban poverty is relatively unknown because of the lack of official indicators.⁵⁴ Official estimates of poverty concern only rural poverty since no urban poverty line is defined by the government and therefore no official numbers are available on urban poverty. Studies of urban poverty using representative data are limited, and they fail to reach consensus because of differences in the data sources and definitions of the poverty line. Since the fourth quarter of 2012, China's NBS has been conducting integrated surveys of urban and rural households. This new integrated survey will yield unified definition of consumption and income aggregates and potentially new official poverty estimates in urban as well as rural areas. This will be critical for understanding urban poverty, particularly among rural-to-urban migrants who tend to earn a low wage, live in poor housing conditions, and have unequal access to public services and social security.⁵⁵

Chronic poverty, that is, households that remain in poverty for several years, is likely to have declined with the fall of total poverty. However, estimates of the share of chronic poverty within total poverty widely vary, indicating the need for a better understanding of the sources of chronic poverty and how to eradicate it. Debate is ongoing about how to measure chronic poverty and whether poverty in China is mostly transient or chronic. Estimates of chronic poverty range from around 35 percent of the poor up to around 90 percent.⁵⁶ Disparities in the magnitude of chronic poverty stem from methodological differences. Some studies see education, nonagricultural employment, and access to social security as the means to exiting chronic poverty, while others find that agricultural activities and out-migration of family members are key variables associated with transitions out of poverty.⁵⁷ These different results indicate that in different times and circumstances, different channels help escape poverty. For some, agricultural growth and migration to manufacturing towns drove poverty reduction, whereas for others it was education and access to social services that helped the poor escape poverty.

Despite the significant fall in total extreme poverty, vulnerability to poverty remains significant. The concept of vulnerability refers to the probability of falling into poverty and is measured in different ways. One way is to count the number of people who are sufficiently close to the extreme poverty line and are hence likely to fall again into poverty were a shock, such as unemployment, sickness, or natural disaster, to occur. The upper bound for this group can be defined in different ways. If, for instance, one uses a threshold of US\$3.10 a day, then 125 million people would have been vulnerable to poverty in 2013.⁵⁸

⁵⁴ Using the US\$1.90 poverty line, at 2011 PPP, urban poverty is estimated to be 0.5 percent of the urban population in 2013 (World Bank staff estimates).

⁵⁵ UN-HABITAT (2014) and World Bank (2015).

⁵⁶ Wan and Zhang (2013) report that most of the poor (around 90 percent) are chronically poor, whereas You (2014) gauges that the chronically poor represent less than 60 percent of the poor, and Glauben and others (2011) find that less than 35 percent of the poor remain poor after five years. World Bank (2006), using data for years 2001–4, also finds that at least a third of the poor have been in poverty two or three years. For recent studies on the size of chronic poverty in China, see also You (2014); Wan and Zhang (2013); and Glauben and others (2012).

⁵⁷ For recent studies on what explains exits and entries into poverty see Imai and You (2014); Angelillo (2014); and Glauben and others (2012).

⁵⁸ Different methods have been proposed to define the upper bound of vulnerability to poverty (or the lower bound of being middle class, and hence nonvulnerable to poverty). See Lopez-Calva and Ortiz-Juarez (2014) and Dang and Lanjouw (2014). Application of these methods in some East Asia countries have render thresholds of US\$5.5 and US\$10, which would imply a much larger number of people vulnerable to poverty.

On average, vulnerable households derive nearly 65 percent of their income from agriculture, compared to 45 percent for nonvulnerable households, and they are more likely to come from communities that are heavily dependent on agriculture.⁵⁹ Nonvulnerable households derive a significantly greater share of their income from formal wage employment, which points to the importance of off-farm formal sector employment. Nonvulnerable households also have more household migrants and derive a higher share of their income from unearned sources, including remittances. These differences in household characteristics indicate that off-farm formal sector employment and remittances can be important in reducing household vulnerability to poverty.

Vulnerability to poverty are due to a variety of income shocks, including from natural disasters. Health shock is one of the major reasons for falling into poverty. According to the LGOP statistics, 42 percent of the rural households become poor because of illness (about 12 million rural households), because of the associated medical expenditures and loss of labor participation.⁶⁰ The former may indicate the need to strengthen health insurance. Unemployment shock is considered an important cause of urban household vulnerability. Among urban dibao beneficiaries, near 40 percent are the unemployed workers. The rural elderly are on average poorer, more likely to remain poor, and more vulnerable than the younger population, as well as substantially poorer than the urban elderly.⁶¹ This risk is expected to become more critical as the population in China rapidly ages.

Natural disaster risks pose one of the major vulnerabilities for China's poor. China is one of the countries most affected by natural hazards, particularly flooding and earthquakes, and the poor often live in high-risk areas. Hence, natural disasters disproportionately affect the poor and vulnerable, particularly women, children, the elderly, and people with disabilities. In rural areas, the poor live in the remote areas and areas that lack transport facilities and with fragile ecology, all of which affect their ability to deal with disaster events. In cities, rapid and unplanned urbanization drives disaster risk due to accumulation of people and assets in unsafe places, thus increasing the overall disaster risk of the urban poor.

Going forward, there is a need to improve our understanding of how households face and manage risks, to better protect them. Understanding such challenges, along with the chronic nature of poverty among the remaining extreme poor, will become a comparatively more important issue as poverty declines. A better understanding of risks, risk exposure, and the outcomes that are likely to be generated by shocks would allow for a more strategic and efficient approach to managing the risks and the associated tradeoffs. A more strategic approach requires differentiating those who are vulnerable to transitory poverty if exposed to adverse shocks from those who are structurally or chronically poor, many of whom may have been affected by shocks in the past and have limited long-term income-generating capacity. For the former, the focus would be on protecting households from shocks and assisting when shocks happen. For the latter, the focus could be on continuous support for mitigating poverty and creating opportunities for escaping poverty.

Sharing Prosperity with the Bottom 40 Percent

China's bottom 40 percent have shared in the country's rising prosperity through rapid per capita consumption growth, but their share of overall consumption has been falling before stabilizing in recent years. China's bottom 40 percent of the income distribution has experienced rapid per capita consumption

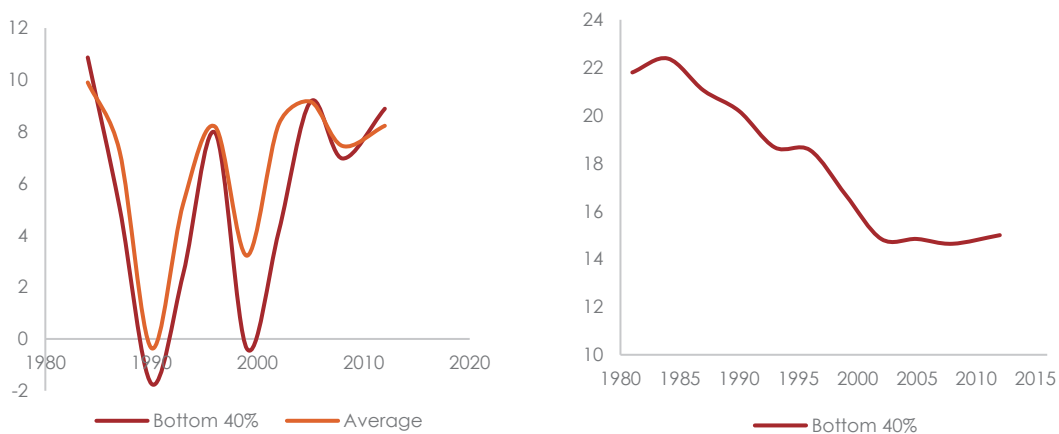
⁵⁹ Ward (2016). The analysis uses data from the China Health and Nutrition Survey.

⁶⁰ http://www.gov.cn/zhengce/2016-06/09/content_5080760.htm .

⁶¹ Cai and others (2012).

growth, indicating that they have shared in the country's rising prosperity. Real consumption per capita increased over eight times for the bottom 40 percent between 1981 and 2010, and per capita consumption annual growth averaged 7.6 percent during this period. The gap between the per capita consumption growth rate of the bottom 40 percent and the average growth rate widened in the first half of 2000s. However, since then the two have converged, and the consumption growth of the bottom 40 percent has kept pace with the average growth rate in recent years. But although the bottom 40 percent has enjoyed rapid per capita consumption growth, their share of total consumption declined for decades before stabilizing at around 14 to 15 percent since the 2000s (Figure 2.2).⁶²

Figure 2. 2: Average Per Capita Consumption Growth (Left) and Income Shares of the Bottom 40 Percent (Right)



Sources: China NBS household surveys and staff calculations.

The falling consumption share of the bottom 40 percent reflects inequality, which rapidly increased up to 2008, resulting in a relatively high level of inequality. Income inequality, as measured by the Gini coefficient estimated by the NBS, was low in the mid-1980s, less than 0.30, but rose rapidly to 0.49 in 2008–9. China's level of inequality is relatively high, but it is surpassed by several large developing countries, such as Brazil, Mexico, Nigeria, and South Africa (Figure 2.3). What distinguishes China is its comparatively rapid and sustained increases in income inequality from the 1980s to the mid-2000s.⁶³ The disparities across the whole population are mirrored by large divides between the richest and poorest citizens, with mean consumption in the richest decile more than 16 times that for the poorest decile in 2012, based on the most recent data available.

Since 2008, inequality in China has been steadily declining. The NBS estimates that the country's Gini coefficient has steadily declined since 2008, to 0.46 in 2015 (Figure 2.4). The recent decline in the coefficient occurred when the per capita consumption of the bottom 40 percent of the population grew relatively rapidly in recent years (Figure 2.2). This seems also consistent with indications of rising relative wages of migrants and studies that indicate that regional inequality peaked in the second half of 2000s. However, these trends remain to be confirmed by microdata.⁶⁴ Some researchers have hypothesized that the recent decline in inequality is related to a reduction of the skill premium because of expansion of tertiary level education and the introduction

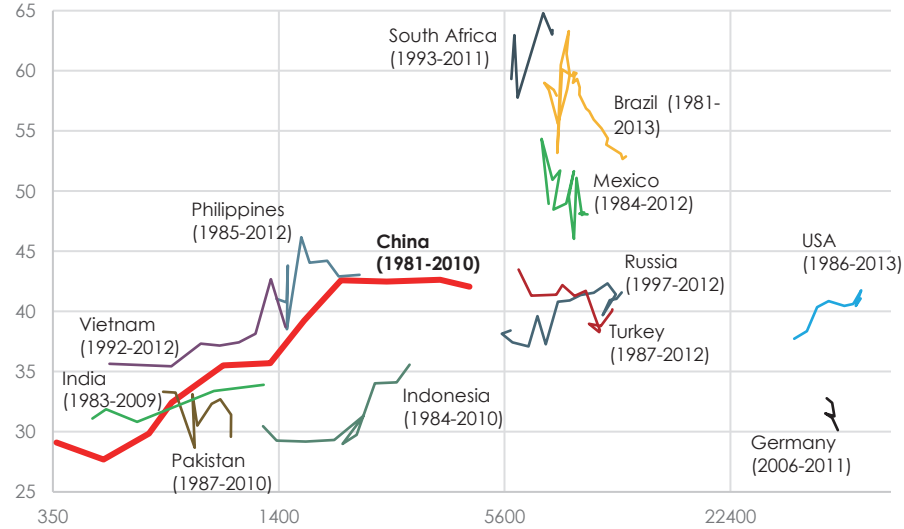
⁶² World Bank estimates, based on NBS's China Urban Household Surveys and China Rural Household Surveys.

⁶³ Knight (2014).

⁶⁴ Wang, Wan, and Yang (2014) and Wan (2013). The latter reported that regional inequality peaked in 2009 (see figure 3, p. 693).

of minimum wages as well as faster growth of incomes in rural areas due to expansion of economic and social development policies in rural areas. Household cash transfers have also grown to represent a larger share of incomes in rural areas,⁶⁵ but average wages and transfers in rural areas are still significantly lower than in urban areas.

Figure 2. 3: Gini Coefficients versus GDP Per Capita (Constant 2010 US\$)



Source: World Development Indicators

East Asian countries that successfully developed to achieve high-income levels had low and decreasing inequality. East Asian countries that achieved high-income status, such as the Japan and the Republic of Korea, experienced lower and declining inequality, in terms of the income share of the bottom 40 percent, at China’s level of income during their periods of rapid growth. By contrast, Asian countries that were less successful in achieving high-income status, such as Malaysia, experienced rising inequality (Figure 2.5). This pattern appears to hold globally as well.⁶⁶

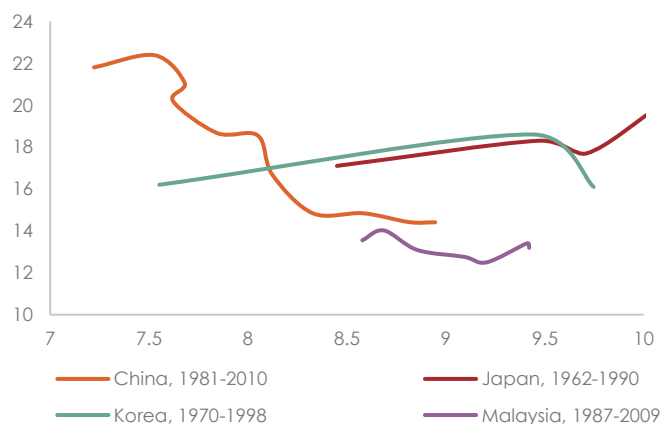
Figure 2. 4: China’s Gini Coefficients



Source: China NBS.

⁶⁵ China NBS (2014), tables 6-5 and 6-12.

⁶⁶ Bulman, Eden, and Nguyen (2014).

Figure 2. 5: Bottom 40 Percent Income Shares versus log GDP Per Capita

Sources: Povcal; WDI; China NBS household surveys and staff calculations.

As is typical in most countries, wealth inequality is likely to be more serious than income inequality in China, but China may be comparable to and or less extreme than other similar East Asian countries. Wealth inequality is likely to be more serious than income inequality in China given the comparatively more rapid increase of urban housing prices. For the median urban household, housing constitutes the main asset. Academic researchers estimate that housing accounts for around 60 percent of household wealth and explains a large share of the wealth disparity among households.⁶⁷ Wealth disparity is likely to be more serious than income inequality given the semi-privatization of urban housing and the continued non-transferability of rural land. Although housing wealth increased rapidly for all homeowners between 2002 and 2007, the 15 to 20 percent annual rate of increase for urban households was significantly higher than the 7 percent annual increase of rural households. As a result, the urban-rural wealth gap has likely widened more significantly than the income gap.⁶⁸ However, there are indications that wealth inequality in China is comparable to and may in fact be less extreme than other similar East Asian countries.⁶⁹ In general, more analysis is needed using more recent data.

Spatial Disparity and Institutional Constraints to Migration

Inequality in China reflects significant spatial disparities. Several studies indicate that inequality between urban and rural areas represents the largest share of total inequality.⁷⁰ In addition to urban-rural disparity, disparities across provinces remain high, and inequality is increasingly a within-rural and within-urban phenomenon. China's richest province is more than three times richer than its poorest province in terms of average GDP per capita.⁷¹ The within-urban gap reflects bias against rural-urban migrants. Migrants are more likely to work in the informal sector and have limited social assistance and protection. Although nearly 90 percent of permanent urban residents owned housing in the mid-2000s, fewer migrants owned housing. A challenge for policy makers is the lack of information on migrant workers because the national surveys do not accurately measure the migrant population, making such inequality hard to measure.

⁶⁷ Li and Zhao (2011); Zhao and Ding (2008).

⁶⁸ Sato, Sicular, and Yue (2012). The authors of the paper on wealth inequality due to growing housing values explain the limitations of the data they use (CHIPs for years 2002 and 2007) as well as the care they take in making sensible estimates.

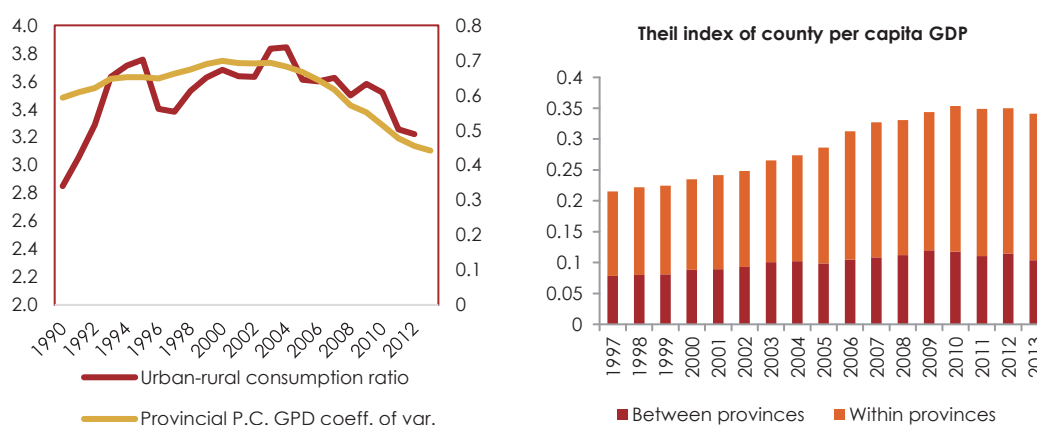
⁶⁹ World Bank (forthcoming).

⁷⁰ See, among others, Kanbur and Zhang (2005), Knight (2014), and Wang, Wan, and Yang.

⁷¹ These data are for 2013, from the China Data Online database run out of the University of Michigan. The richest

China's spatial disparity has been declining in recent years, consistent with the recent decline in the country's overall inequality. The ratio of urban to rural average disposable income peaked at 4.10 in 2007. The estimated ratio decreases to 2.91 after adjusting for spatial differences in prices. The ratio has been steadily declining since 2007 and, in accordance with the urban-rural household survey of the NBS, it is estimated to be currently 2.72 (2015). The interprovincial variation in per capita GDP began to decline since the early 2000s, subsequently followed by a decline in the urban-rural consumption ratios starting in the mid-2000s. The intercounty inequality, as measured by the cross-county Theil index, began to decline in 2010 (Figure 2.6). This is consistent with recent data that show a very clear pattern of convergence in the poverty rates at the provincial and regional level. For the period 2010–14, the poorer provinces experienced faster poverty reduction. Still, more than half of the nation's rural poor reside in the western region, although the region represents only 27 percent of the total population (Figure 2.7).⁷²

Figure 2.6: Urban-Rural and Interprovincial Disparity (Left); Inter- and Intra-provincial Disparity (Theil Index of County Per Capita GDP; Right)



Sources: China Data Online; World Bank staff calculations.

Spatial disparity in China reflects both market-driven economic developments and institutional factors.

Recent studies suggest that trade liberalization and the resulting expansion of manufacturing have been important contributors to regional inequality.⁷³ A large share of regional inequality has been associated with the growth of high value-added industries, such as electronics and telecommunications. Proximity to ports and mass consumption centers is a key determinant of industry locational decisions because of logistics costs and general efficiency considerations, and thus also to income differences between coastal and inner parts of China. However, institutional factors have also been major drivers of inequality in the country. Under the decentralized fiscal system, large disparities can be seen in local government spending and therefore in the provision of public services. The institutional barriers to rural-to-urban migration have also contributed to the disparity in urban areas, between urban residents and migrants.

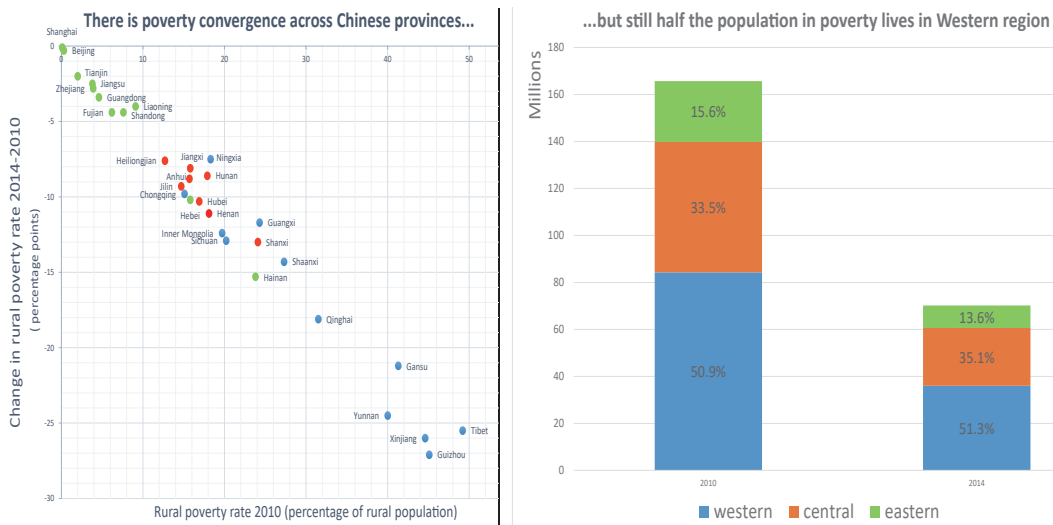
Current revenue and expenditure mismatches at the local level result in disparities in welfare expenditure and social service provision. Regional disparity in government spending substantially increased up to the mid-2000s and has since remained relatively high. Intergovernmental transfers are progressive, resulting in

⁷² Province and regional data comes from NBS China (2015).

⁷³ See Jalil (2012) and Li and Coxhead (2011). For a discussion on the impact of trade liberalization upon wage inequality see Han, Liu, and Zhang (2012).

lower expenditure inequality than revenue inequality, but they are not sufficiently progressive to compensate for the inherent inequality of a system that relies heavily on local governments for local expenditures.⁷⁴ Continuing to plug the expanding holes in regional fiscal inequality through intergovernmental transfers requires more explicit attention to the roles and responsibilities of each level of government. Service delivery, especially in the social sectors, has been delegated to local authorities but often without providing adequate revenue authority. An increase in rules-based general revenue transfers from central to local governments, based on mandatory minimum standards for public service delivery, could help mitigate this source of inequality.

Figure 2. 7: Poverty Convergence (Left) and Regional Distribution of the Poor (Right)



Source: China NBS, 2015

China has been reforming the hukou system to address institutional barriers to rural-to-urban migration. Migrant workers account for more than one-third of the overall urban labor force, and urban areas may potentially expand by another 250 million rural migrants by 2030. The hukou household registration system in China determines citizens' residency status and therefore access to public services. By creating a dualism of urban labor markets and social protection systems between urban residents and migrants, the hukou system contributes to inequality in urban areas.⁷⁵ Migrant workers are systematically more likely to enter informal employment; more than 60 percent of migrant workers work in the informal sector, and their movement to the formal sector is limited. Because the informal sector is often associated with lower productivity, the hukou system means migrants are more likely to be in low-paying, low-productivity jobs. Recognizing the need for reforms, in 2014, the State Council promulgated National New Urbanization Plan (2014–20), which proposes that China will make efforts to provide full urban hukou rights to 100 million of the rural migrant population and other permanent population groups in urban areas by 2020. Many challenges remain, including how local governments would expand and finance public services for the migrants.

Coverage of health insurance and pension among migrant workers is relatively limited, creating disparity between urban residents and migrants. Despite the government's policy of open enrollment, coverage of

⁷⁴ Dollar and Hofman (2006).

⁷⁵ See Urban China (2014), Xue, Gao, and Guo (2014), and Zhua and Luo (2010).

urban medical insurance schemes is low among migrants. Although migrant workers can in principle enroll in Urban Resident Basic Medical Insurance (URBMI), in some cities URBMI does not cover informal workers or migrants. Migrants with permanent employee contracts are eligible for coverage under the Urban Employee Basic Medical Insurance (UEBMI), but the benefit package is relatively shallow and reimbursement rates are low.⁷⁶ Pension coverage among migrants is relatively low because of the high contribution rates, low rates of return on individual accounts, the multiplicity of urban pension schemes that create “entitlement segmentation” in the labor market, and the lack of full transferability of social insurance rights across cities. In 2009 the State Council initiated measures supporting the transfer of pension rights and benefits across provinces for the urban worker pension scheme to improve transferability, but the implementation of these measures needs to be further improved.

Expanding the supply of affordable housing in urban areas can facilitate rural-urban migration. According to the UN MDG Report 2013, the proportion of urban population living in locations with substandard housing in China fell from 39 percent to 29 percent. However, during that period the urban population also increased, and as a result the total population living in substandard housing increased.⁷⁷ Upgrading the urban environment in locations with substandard housing and increasing the supply of affordable urban housing would facilitate greater rural-urban migration.

Redistributive Fiscal (Tax and Transfers) Policies⁷⁸

Redistributive fiscal (tax and transfer) policy is one of the main tools available to governments to reduce inequality, but it appears to be relatively underutilized in China. One measure of the redistributive effect of fiscal policy is a comparison of the market Gini coefficient (estimated using pre-tax, pre-transfer market incomes) and the net Gini coefficient (calculated from household post-tax, post-transfer disposable incomes). The existing academic research finds evidence that China’s average estimated redistribution (i.e., the difference between the market and the net Gini coefficient) is relatively low compared with other developing countries, which indicates that the redistributive effect of fiscal (tax and transfer) policy is comparatively modest in China.⁷⁹ Analysis using data from the Standardized World Income Inequality Database (SWIID)⁸⁰ shows similar results (Figure 2.8). Note, however, that these studies and analyses do not account for the redistributive impact of public expenditures in health, education, and other public services, as well as financing of infrastructure in poorer regions, which in China have been viewed as the key instruments for addressing poverty and inequality. Further research and policy attention to fiscal redistribution are needed given the limitations of existing studies.

Among BRICS, ⁸¹Brazil and South Africa have been comparatively more successful in using progressive direct taxes and social spending to address inequality. In South Africa, the personal income tax and payroll taxes are progressive and make up a relatively high share of GDP. This has allowed significant social spending from which the poor tend to benefit more. For example, in 2013–14, social spending (direct cash transfers, free basic services, and health and education spending) constituted more than half of the 33.2 percent of GDP total government spending. In Brazil, some direct transfer programs, such as Bolsa Família, are well targeted to the poor and are highly progressive.⁸² Brazil is also a relatively high spender on health and education, and, with

⁷⁶ World Bank (2011).

⁷⁷ United Nations figures for China’s urban population.

⁷⁸ Redistributive fiscal policies refer to income redistribution, not spatial redistribution.

⁷⁹ S. Cevik and Correa-Caro (2015); Li and Sicular (2014); Li and Yang (2009); Xu, Ma and Li (2013).

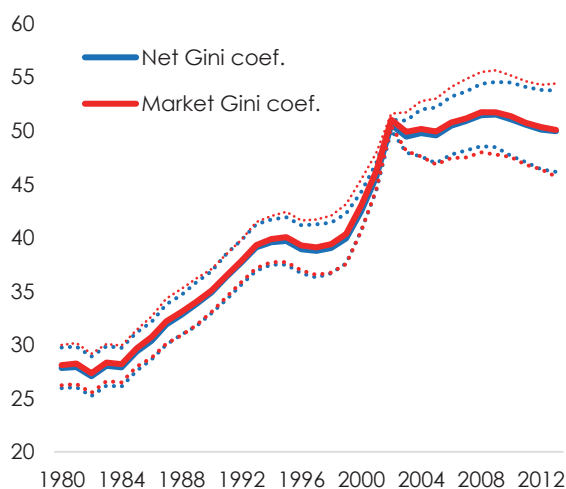
⁸⁰ Solt (2016). The SWIID data are based on a few actual Gini data points from Chinese sources and the rest are estimates.

⁸¹ BRICS refers to Brazil, Russia, India, China, South Africa.

⁸² Inchauste and others (2015).

the exception of tertiary education, this type of spending is also progressive.⁸³

Figure 2. 8: Redistributive Effect of Fiscal Policy



Sources: SWIIG and World Bank staff calculations.

Note: Dotted lines indicate 95% confidence interval.

Closing the Rural-Urban Gap by Strengthening Rural Agriculture

The growth of agricultural productivity has been an important driver of poverty reduction in China.⁸⁴

China improved rural livelihoods through heavy investments in agricultural research, increasing use of modern inputs and expanding basic infrastructure. Fiscal support and complementary policies for the rural economy have expanded since the turn of the century with the introduction of subsidies, incentive payments, discounts, and price support programs. These have resulted in the agricultural sector being a net recipient of fiscal revenue. Other notable policies to support rural China included the abolition of the agriculture tax in 2006 and substantially increased public funding and policy support for rural education and health services.

China has had one of the highest annual agricultural growth rates in the world since the 1980s, but more recently growth rates in agriculture have been declining. China has been able to achieve nearly 4.7 percent annual agricultural growth in the past 35 years (1981–2015). The contribution of productivity (TFP) growth increased to nearly 70 percent of total output growth in agriculture, indicating that investment in agricultural R&D and extension services may have had very favorable returns.⁸⁵ However, since the early 2000s agricultural output growth has increasingly come from the use of inputs, and furthermore inputs have had a declining impact on increasing outputs. In particular, China has one of the highest averages of fertilizer use in the world but relatively low fertilizer use efficiency. Agricultural yields in China still significantly lag the United States and EU, despite using significantly more fertilizer per hectare. This has contributed to declining agricultural growth rates.⁸⁶ Research in China indicates that fertilizer use could be cut by up to 30 percent without loss of production, which would result in significant improvements in efficiency. Small farm size and scattered plots

⁸³ Higgins and Pereira (2014).

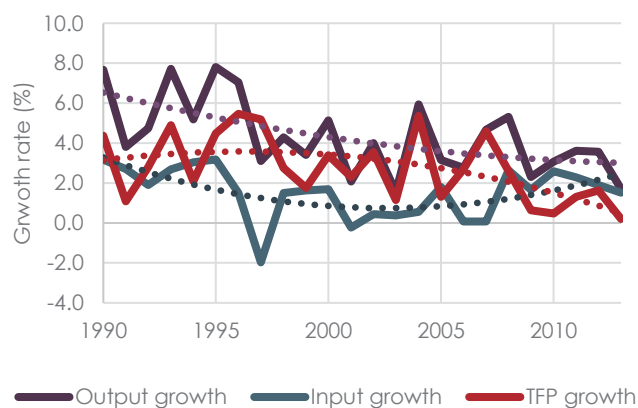
⁸⁴ Fan, Zhang, and Zhang (2004). For the period 1978–84, this productivity growth was mainly associated to institutional reforms, but investment in research extension, roads, and irrigation played a main role from 1985 onwards. Chen and Ravallion (2007), Montalvo and Ravallion (2010), also point to agricultural productivity growth.

⁸⁵ Mogues and others (2012).

⁸⁶ Based on USDA and FAO data, average fertilizer use in China is 365 kg/ha, compared to 148 kg/ha in the United States.

may be encouraging the overuse of fertilizers. Environmental factors such as climate change and soil and water degradation are also resulting in the falling efficiency and hence slowing output growth.

Figure 2. 9: Growth Rates in Agriculture



Sources: FAO, IFPRI.

Government support to the agriculture sector, including both direct and indirect support, has increased significantly since 2009, particularly in terms of market price support.⁸⁷ Such support programs have resulted in relatively high domestic prices in China compared to international prices. Most support goes to rice and wheat, while the government launched policy reforms in 2014–15 that reduced payments for maize purchases and storage. In addition, the government provided various payments to farmers, most of which were paid to farmers based on the arable land areas and were thus less distortive.

The government has recognized the need to reform the agriculture support programs toward more sustainable and greener agricultural development. The 2017 No. 1 Central Document calls for improving the structure in the industry, promoting “green” production, extending the sector’s industrial and value chain, boosting innovation, consolidating shared rural development, and enhancing rural reforms. The government is expected to increase funding for agriculture R&D and rural infrastructure development over the coming years, as well as improve the efficiency of the current public spending programs, by gradually replacing intervention by direct payments and reforming agricultural subsidy programs into a comprehensive single payment. These payments would be made per unit of land basis, decoupling them from production decisions. According to the No. 1 Central Document and National Agriculture Sustainable Development Plan (2015–30), the government is increasingly aiming to reorient its agricultural support programs to promote “green” agricultural development objectives by making them conditional on environmental-friendly cultivation practices, which could support development of more efficient and sustainable climate-smart agricultural production systems.

Land reforms will be critical to raising rural agricultural productivity through consolidation of agricultural land. Average Chinese farm holdings are 0.4 hectare, compared to 14.4 hectares in the EU and 176 hectares in the United States.⁸⁸ Since small farms generate only modest income, farmers have fewer incentives to adopt new technologies and management practices, and as a result the productivity growth in the agricultural

⁸⁷ The analysis of government support to the agriculture sector is based on WTO and OECD data. The WTO data on agriculture support to China are available only up to 2010, whereas the OECD data are available up to 2015. The data sets are based on different estimation methodology and coverage. The government has expressed strong reservations about the OECD’s methodology for estimating government support to the agriculture sector.

⁸⁸ See USDA and FAO.

sector tends to be lower. The government has recently taken important policy steps to enable land transferability, which would facilitate development of larger production units. The new land transfer policy promotes the “separation of three rights,” that is, the separation of farm households’ land user right (or land contract right) from village collective land ownership rights, and the separation of operational right for leased-in land from land user rights. These policy changes are expected to enable land consolidation, while protecting the legal rights of land owners, village contractors, and land operators. To strengthen legal land rights of village contractors and land operators, the government is also expected to accelerate the land registration process. These steps are expected to deepen rural ownership right reforms. Clarifying land ownership rights will help promote the establishment of standardized mechanisms for rural land transfer and dispute settlement, thereby facilitating the modernization of farm production systems and increasing rural labor productivity.⁸⁹ Together with the hukou reforms and consolidation of rural and urban social safety net programs, rural land reforms would help address rural-urban inequality by facilitating rural to urban migration.

Agricultural modernization also requires addressing nonfarm rural economy by strengthening the interfaces between rural areas, small towns and tertiary cities. It would need to consider strategies for increasing the economic vibrancy of rural towns and achieving more equal levels of public services between urban and rural areas to attract the more skilled and younger generation to agriculture. This requires improving the quality of public services and rural connectivity in rural areas and in small towns.

Agriculture in China is undergoing a transformation from an emphasis on quantity to greater quality, variety, safety, and improved environmental outcomes. The main drivers of this transformation are urbanization and resulting demographic and shifting food consumption patterns as household incomes increase. Agricultural commercialization is expected to lead to more consolidation and specialization of agricultural production systems, which will be supported by advances in ICT and e-commerce platforms that would connect farmers more directly to market operators and consumers. Farmers will use to a greater degree specialized services to accomplish technical tasks. This will open opportunities for the growth of specialized rural service providers, which are expected to make an important contribution to productivity growth in agriculture. Some examples include outsourcing services in farm mechanization, agroproduce, logistics, market information, animal health services, and transport services. Business advisory services and services for environmental and food safety for emerging commercial farming operators are additional potential areas of growth in the rural nonfarm service sector.

Social Protection and Poverty Reduction Programs

China has made remarkable progress in putting in place the core elements of a social protection system. Since the 1990s, China has introduced an array of social protection programs at a speed that is unprecedented internationally. Among other reforms, these include pension and health insurance programs for urban and rural populations; unemployment, sickness, workplace injury, and maternity insurance for urban formal sector workers; and the dibao program, a means-tested national social assistance scheme that now covers around 60 million people.⁹⁰ This is a feat that took decades to achieve in OECD countries, and one that many middle-income countries have not realized.

⁸⁹ Despite massive off-farm migration, rural population growth has meant that cultivated land per agricultural laborer has remained fairly constant, increasing only from 0.35 hectares in 1978 to 0.41 in 2008.

⁹⁰ World Bank and Development Research Center (2013).

The dibao program has become a “backbone” welfare program that ensures access to other entitlements for the poor and near-poor, such as medical assistance, schooling support, and housing and utility subsidies. Historically, China saw serious issues of poor targeting and leakage in dibao programs. In recent years, policy measures have been introduced to improve their efficiency and effectiveness. In addition to targeting, the main challenges to the dibao program are: (a) low dibao thresholds (benefits); (b) addressing vulnerable households just above the dibao eligibility thresholds; (c) significant variations in access and benefits of dibao programs across different localities; and (d) lack of coherence across social assistance and social insurance schemes (see Box 2.1 for details).

Improving the consolidation, harmonization, and coherence of the social protection system would promote inclusive urbanization and integrated rural-urban development. Overall, China is more advanced than many other middle-income countries in terms of integrating social safety net policies, programs, and administrative systems. Further consolidation of social safety nets and especially the dibao program can provide opportunities to improve program design and interlinkages. Such consolidation would require improved coordination across social assistance programs to avoid disparities between the poor and the near-poor; standardization of social assistance programs across space; better coordination between social assistance, social insurance programs, and labor market programs; and strengthened linkages between social assistance programs and the remaining area-based antipoverty programs. China has considered extending urban social assistance programs to cover rural migrant workers and their families if they meet certain conditions and requirements. Over time, and in parallel with hukou reform and further labor market integration, there could be greater convergence of rural and urban dibao programs, with the gap between rural and urban thresholds within prefectures and provinces narrowing.

Developing a fiscally sustainable pension system with wider coverage will be one of China’s most pressing social challenges over the coming decades. Pension reform has made remarkable progress in China. Until very recently, China had pension coverage well below that expected of a country with its per capita income. In recent years the situation has changed considerably. With the rapid expansion of the rural and urban resident pension schemes, the overall pension coverage has increased dramatically and now reaches more than 80 percent of the labor force.⁹¹ However, the unfinished agenda is large. Coverage among rural, migrant, and urban informal sector workers needs to be expanded. Coordination between different pension subsystems needs to be strengthened to address gaps in protection and facilitate labor mobility. Rapid aging, unsustainably low official retirement ages, substantial legacy costs from previously underfunded pension entitlements, and low returns on pension funds will result in the accumulation of fiscal risks in the absence of further reforms.

The poverty reduction programs that currently target poor areas have been supplemented by programs targeting poor households. Traditionally, the government’s approach to poverty alleviation emphasized the targeting of poor areas. However, the 2011 Development-Oriented Poverty Reduction Outline and the poverty household database (registry) introduced in 2014 signaled a shift in emphasis from poor areas to poor people. Greater focus on household-oriented approaches to poverty reduction raises the importance of household-targeting mechanisms, which would ensure that poverty alleviation programs, such as voluntary resettlement, rural enterprise development, microcredit, and labor training programs, directly benefit the poor.

⁹¹ With the roll-out of rural and urban resident pension schemes, there are now four types of pension schemes in China: an urban worker pension scheme, rural and urban resident pension schemes, and a pension scheme for employees of public service units and civil servants.

Box 2.1: The Dibao Program

Historically, the dibao thresholds have been relatively low. In the 12th Five Year Plan, the Chinese government set the goal of increasing the dibao thresholds with an annual growth rate of more than 10 percent. Such increases could be complemented by efforts to strengthen mechanisms to check eligibility for social assistance, improve the efficiency and effectiveness of targeting, and reduce the gap of threshold levels across regions and between rural and urban areas. In terms of policy implementation, measures such as standardization of business processes, staff capacity building, strengthening management and information systems, and monitoring and evaluation are crucial to improving the effectiveness of social assistance programs.

The significant increases in dibao eligibility thresholds in recent years raise some concerns regarding coverage and incentives. Eligible households have their incomes topped up to the dibao threshold and also receive noncash benefits, including exemptions or reductions on education fees, subsidized health insurance, public housing, and utilities. Increased dibao thresholds can strengthen disincentive for beneficiaries to graduate from the social assistance programs, due to the loss of benefits. In addition, dibao beneficiaries could be better off than the near-poor just above the dibao eligibility thresholds. To address this equity issue, the Chinese government has gradually extended some social assistance programs to cover the near-poor families. But although the dibao thresholds have increased, the number of dibao beneficiaries has been declining since 2012, which may be because of the introduction of a cross-checking and verification mechanism.

The key challenge is to develop a more systematic approach to determination of dibao eligibility thresholds, coverage, and benefit levels across different counties and lower levels. Both the methods of determining dibao thresholds and the benefit levels themselves vary enormously, reflecting the highly decentralized nature of implementation. Although some diversity in threshold levels is appropriate, a more consistent method for determining them would be desirable. The decentralization of poverty reduction programs also opens up new opportunities to experiment and pilot innovative measures, such as social accountability mechanisms, outsourcing of service delivery, and participation of beneficiaries in local government decision making.

Issues of coherence across social assistance and social insurance schemes will require closer attention. One example is the consistency of coverage and treatment of elderly people across programs. Currently, basic pension income is ignored in the dibao eligibility determination, but in the longer run it may be necessary to look more closely at the rationale for the current approach, particularly as the pension system expands. Given the changing profile of the urban poor, coordination between social assistance programs and labor market programs such as skills training and development will be necessary to help the poor improve their employability.

Public spending on social safety net programs has increased but is relatively low by international standards. Public spending on the core social safety net programs (including dibao, medical assistance, and tekun assistance)⁹² amounted to RMB 219.4 billion, 0.32 percent of GDP in 2015.⁹³ This is relatively low by international standards of public spending on social safety net programs, which averages 1.8 percent for upper-middle-income countries.⁹⁴ The social safety net programs in those countries cover cash transfer

⁹² Tekun assistance refers to provision of destitute support to rural wubao and urban “three-no” (no income sources, no working ability, and no legal supporters) people.

⁹³ Ministry of Civil Affairs (2015), 2015 Statistical Bulletin of Social Service Development, <http://www.mca.gov.cn/article/sj/tjgb/201607/20160700001136.shtml>; National Bureau of Statistics (2015), 2015 Statistical Bulletin of National Economy and Social Development, http://www.stats.gov.cn/tjsj/zxfb/201602/t20160229_1323991.html; Puguang Gong (2016), “Current Situation and Task of China’s Social Assistance Development,” speech made at the training workshop of senior management organized by the Ministry of Civil Affairs.

⁹⁴ The estimate for upper-middle-income countries is the proportions between 2008 and 2012 from those countries due to the data availability. The social safety net programs in those countries cover cash transfer programs and public works, but not include subsidies to pension and health insurance programs. See Gentilini, Honorati, and Yemtsov (2014).

programs and public works, but exclude subsidies to pension and health insurance programs. Given the comparatively low spending on social safety net programs, programs such as the dibao program, which has become a “backbone” welfare program, may need to be strengthened to meet the basic needs of the poor and low-income families. Increasing public spending on social assistance programs may require clarifying the financing responsibilities between central and local governments. Some countries set the minimum thresholds at the national level, and local governments have the flexibility to top up those thresholds based on local resources. Such examples may be useful for China in defining financing responsibilities and strengthening legislation for its social assistance system.

Monitoring and evaluation of social assistance programs need to improve. In particular, monitoring and evaluation vary between rural and urban areas and across areas. Some key rural social assistance programs are not adequately understood and have not been sufficiently evaluated. Better knowledge of the overall rural social protection system is also essential to understanding the current context in which the core rural poverty reduction programs operate.⁹⁵

Education for the Poor

China has made impressive achievements in improving access to education. China has made significant progress toward universalization of basic education and is on its way to universalizing secondary education. By 2015, the net enrollment rate in primary schools had reached 99.9 percent, and the gross enrollment ratio in junior secondary schools stood at 104 percent. Increasing numbers of students across China are attending secondary school. China has relatively high coverage of early childhood development programs for its income level. According to the government, gross attendance rate for preschool increased from 50.9 percent in 2009 to 75 percent in 2015, five years ahead of the target under the government’s Education Plan to achieve 70 percent admission rate by 2020. The abolition of compulsory education fees in rural China in 2007 helped improve educational opportunities for all.⁹⁶ There is evidence that between 2002 and 2007 the importance of household income and other household characteristics in explaining high school attainment declined in terms of magnitude and statistical significance. It is likely this decline is due to the reduction in out-of-pocket costs of schooling as a result of education reform policies.⁹⁷

Despite impressive achievements in access to education, educational disparities remain between rural and urban areas and between richer and poorer localities. A study conducted in China shows that rural children from low-income families are behind in preprimary enrollment. Access to preprimary services in rural areas is relatively low, with the length of attendance significantly below cities and towns. China’s investment in early childhood education (ECE) reached 0.38 percent of overall GDP (2016), which is 7.2 percent of total education spending compared with 45.3 percent allocated to the compulsory education sector. The education expenditures indicated in the public fiscal budgets also varied across provinces. Preprimary attendance in urban areas reached nearly 100 percent in 2015, whereas it was 60 percent in rural areas (including county and township areas).⁹⁸ Although public funding is relatively limited, private investment for ECE is active, accounting for 53 percent of total educational funds in 2015. A more effective coordination mechanism between public and private funding could help address the shortcomings in the existing system.

⁹⁵ See also recent studies on China’s poverty reduction programs: Li (2014); Wu and Ramesh (2014). Both find a small, but positive, impact of these programs on poverty reduction.

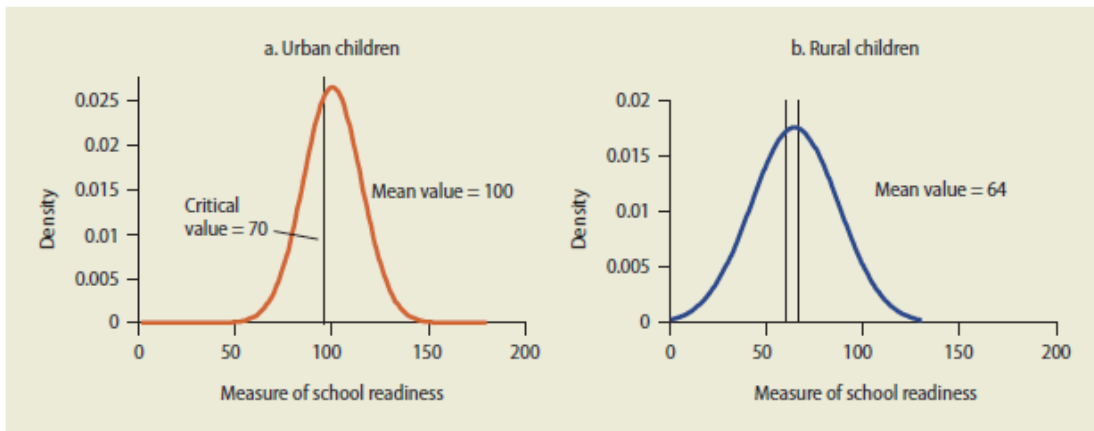
⁹⁶ This was one in a series of steps by the central government to ensure the provision of basic education services for all children. See, for example, State Council, 2005 “Notice on Further Improving the Rural Educational Expenditure Assurance Mechanism”

⁹⁷ Yang, Sicular, and Lai (2014).

⁹⁸ For recent studies on education and poverty traps see Zhang (2014).

The early educational (preprimary school) deficit of rural and migrant children puts them at a disadvantage in terms of later school performance. In 2015, around 75 percent of Chinese children attended preprimary school.⁹⁹ Among those enrolled in preprimary school, the length of attendance for rural and migrant children is lower than their urban peers. Large differences in educational inputs, such as the pupil-to-teacher ratio, most likely indicate that rural and urban areas also have significant differences in the quality of preprimary education. This could explain the large urban and rural differences in the educational readiness of four- and five-year-olds in China (Figure 2.10). International evidence shows that early educational deficits are very difficult to overcome in terms of later school performance.

Figure 2. 10: Distribution of Educational Readiness Test Scores for Four- and Five-Year-Old's in China



Sources: Data in (a): Ou (2007); data in (b): Rozelle (2011) for Gansu, Henan, and Shaanxi provinces.

Rural children exhibit lower progression to the academic stream of upper secondary schools. The overall enrollment rate for upper secondary school has increased from 79.2 percent in 2009 to 87.0 percent in 2015. However, much of the increase has been due to the expansion in vocational education, and the enrollment gap for academic senior high schools remains between urban and rural students. Students in rural areas are much more likely to enter the vocational track of upper secondary school and less likely to choose academic stream, compared to students in urban areas. In addition, graduates of vocational upper secondary schools are able to apply to and attend academic universities. Rural children have incentives to choose vocational schools because of lower school fees. Some have claimed that the vocational track is chosen because of perceptions of greater job prospects, but more analysis is needed to assess such claims.

The hukou system is under reform to reduce disparities in access to education for rural migrant families. In the 2000s, the central government required local governments to include migrant children in the local education systems, accommodating them in local public schools. In 2008, the central government required inclusion of children living with rural migrant workers into local education planning. This represents a dramatic change in the official policy on the rights of migrant children. The implementation of the policy was supported by fiscal resources from both central and local governments. According to government statistics, in 2015 the proportion of children living with rural migrant workers admitted to public schools reached 84.4 percent, indicating improvements. Yet migrant children still face difficulties enrolling in urban public schools.

⁹⁹ http://www.moe.edu.cn/srcsite/A03/s180/moe_633/201607/t20160706_270976.html.

In recent years, the government has also launched a series of policies to improve equity in education. The government has established a fund guarantee system targeting rural compulsory education, focusing on guaranteeing rural compulsory education, raising the guarantee level of public funds for rural compulsory education, and improving the teaching conditions for rural compulsory education. In 2006 the state established a program-specific fund guarantee mechanism, aiming to gradually incorporate rural compulsory education into the public fiscal guarantee. Between 2007 and 2014, the benchmark allocation for public funding was raised six times. The required funds are shared by central and local governments, with the proportion set at 6:4 and 8:2 in the central and western regions. Except for the municipalities directly administered under the central government, the shares of the eastern regions are determined in accordance with provinces' financial resources. In the spring of 2016, the central government unified the benchmark allocation for per student spending at the compulsory education stage, and equalized the share contributed toward per student spending at the compulsory stage by central and local governments in the eastern region. Beginning in 2010, the central government launched an initiative to improve school conditions in both rural and urban locations.

China's gross enrollment rate for tertiary education reached 42.7 percent in 2016, and the government has implemented plans to enhance equal access to tertiary education. Despite the expansion in enrollment, China's ratio of a college-educated labor force is still relatively low compared with OECD countries, constraining the average quality of China's labor force. As more students are able to attend universities, equal access to quality tertiary education remains a challenge.¹⁰⁰ Since 2012, special plans have been implemented to enhance equal access to tertiary education. In 2015, 75,000 students were enrolled through these plans. Through the "Collaborative Admission Plan for Supporting the Central and Western Regions," efforts have been made to arrange dedicated college matriculation quotas for universities in the eastern region to admit students from provinces in the central and western regions. This plan admitted 900,000 students during the 12th Five Year Plan period, and in 2015 the gap between the national average and the provinces with the lowest admission rate was reduced to under 5 percentage points from 15.3 percentage points in 2010. Continuous efforts are needed to address the remaining inequity gap at the higher education level.

With expanded enrollment, better governance reforms are needed to improve educational outcomes at the higher education level. In recent years the autonomy of the higher education institutions has increased with respect to curriculum development, faculty recruitment, and international exchanges. However, the universities are still not sufficiently autonomous in their administration and management and lack the corresponding monitoring and evaluation systems to support greater autonomy.

The government envisions an increased share of applied skills development at the tertiary level to ensure that graduate skills meet the needs of a dynamic labor market. The government recently announced a plan to convert about 1,000 universities into applied technical and vocational colleges. Global evidence suggests that a diversified tertiary education system with a balanced configuration of different types of tertiary education (research, liberal arts, applied colleges, and private and public options), with appropriate governance, quality assurance, and financing frameworks, tend to be more responsive not only to the labor market, but also to students' learning needs.

Over the years, technical and vocational education and training (TVET) has become a more attractive

¹⁰⁰ Inequality in higher education is a common finding in the literature on higher education in China, for example, Heckman and Yi (2012). However, more recent developments will need to be analyzed.

alternative because of increased affordability resulting from government investments. Since 2010, the average rate of increase of government investment in the TVET sector has been over 10.1 percent (2010–15).¹⁰¹ Disadvantaged students can now attend secondary TVET institutions free of tuition and fees. At the tertiary level, financial aid and scholarships support more than 30 percent of all enrolled students, most of whom are from disadvantaged backgrounds.¹⁰² With increased financial support from the government, rural students have accounted for a larger share of students in recent years.

Despite an increased access for skills development, quality and relevance are still concerns. The overall training quality has been impeded by outdated standards, ineffective teaching, and insufficient facility for hands-on practice. Funding allocation, which is currently mainly on a per student spending basis, needs to be more directly linked to learning outcomes such as employment rates and salary of graduates. Coordination needs to be improved in streamlining and reducing the fragmentation in TVET governance, as well as strengthening partnership with industries. Pathways for skills acquisition need to be diversified to provide more options for students to pursue either academic or technical interests.

Health Services for the Poor

Health outcomes of the Chinese people have improved significantly in the past decades. Chinese people are living longer and healthier lives. Total life expectancy reached 76.3 in 2015, according to the latest NBS data. The infant mortality rate has dropped from 50.2 in 1991 to 8.1 per thousand infants in 2015. From 2000 to 2015, the maternal mortality rate of China decreased from 53 per 100,000 to 20.1 per 100,000. The supply of hospital beds has also increased rapidly, from 2.27 million to 5.33 million between 2003 and 2015.¹⁰³ Significant progress has been made on a variety of public health issues. For example, the prevalence of hepatitis B in children under five years of age has been reduced from 9 percent in 1992 to less than 1 percent in recent years through the successful application of vaccination programs.¹⁰⁴

The use of health services has increased dramatically, but rural-urban disparity in health care services remains. The rural-urban gap in health outcomes remains large, but the gap has been declining in recent years.¹⁰⁵ Primary health care facilities in poor rural areas have difficulties recruiting and retaining qualified health professionals. In 2014 there were 9.7 health workers, 3.54 medical practitioners and physician’s assistants, and 4.3 registered nurses for every 1,000 urban residents; whereas in rural areas, there were only 3.77 health workers, 1.51 medical practitioners and physician’s assistants, and 1.31 registered nurses for every 1,000 residents. More than two-thirds of all physicians practice in urban areas, which account for a little over half of the country’s total population. Spatial inequalities in health and nutrition outcomes over the last few years have been driven by resource disparity, lack of incentives to provide cost-effective services (primary and secondary prevention), high levels of out-of-pocket spending, an incomplete nutritional transition, and the challenge of addressing the epidemiological transition to noncommunicable diseases in poor areas of the country.

Rising health expenditures in China, due to a hospital-centric and fragmented health system, raise concerns about future affordability, particularly for the poor. Assuming that the existing service provision

¹⁰¹ http://www.moe.gov.cn/jyb_xwfb/xw_fbh/moe_2069/xwfbh_2015n/xwfb_151202/151202_sfcl/201512/t20151202_222297.html.

¹⁰² http://www.moe.gov.cn/jyb_xwfb/xw_fbh/moe_2069/xwfbh_2015n/xwfb_151202/151202_sfcl/201512/t20151202_222293.html.

¹⁰³ China Health Statistical Yearbooks (2004–16).

¹⁰⁴ WHO (2014).

¹⁰⁵ China Health Statistics Yearbook 2016 (p. 215) and “Report on Cardiovascular Diseases in China 2016” by the National Center for Cardiovascular Diseases. See also Liu and others (2015: 1159).

mode remains unchanged, Chinese health fees are expected to rise at an annual rate of 9.4 percent from 2015 to 2020 while the GDP is expected to increase annually by 6.5 percent over the same period, of which hospitalization expenditure accounts for 60 percent.¹⁰⁶ It is critical to ensure that greater spending on health care results in improved outcomes. China's current service delivery system is hospital-centric and fragmented, contributing to higher costs. A large portion of the growth in expenditures was driven by the proliferations of large tertiary hospitals in urban centers and overutilization of drugs, medical technologies, and high-profit margin procedures, which entail a cost not only to the health system but also to patients.¹⁰⁷ China today has more hospital beds per 1,000 people than Canada, Spain, the United Kingdom, and the United States. Inadequate emphasis on quality and shortages of qualified medical and health workers at the primary care level incentivize patients to bypass cost-effective lower levels of care. The hospital's role and linkages with lower-level providers may need to be redefined within a tiered delivery system. Ideally, primary care should be the first point of contact for patients for most of their health care needs. The current rural primary care system is both institutionally and financially fragmented, with numerous, often uncoordinated bodies, including family planning agencies, maternal child health programs, township health centers for primary and secondary care, village doctors, and public health agencies.

China has significantly expanded its health insurance system, and the next challenge is to reduce the system's disparity and fragmentation. China has expanded the coverage of social health insurance through the New Rural Cooperative Medical Scheme (NRCMS), Urban Employee Basic Medical Insurance (UEBMI), Urban Resident Basic Medical Insurance (URBMI), and commercial insurance, reaching more than 95 percent of the population. One positive consequence of the expansion of health insurance coverage is the reduction in the disparity of health service use, especially for hospital services. However, health insurance is managed at the county and district levels and remains relatively fragmented. Effective reimbursement rates vary across counties and districts because of differences in deductibles, copayments, and ceilings. These rates in turn are a function of disparities in the levels of contributions and local government subsidies. Besides the equity concerns associated with these disparities, overall risk is higher because of the small size of these insurance pools. Migrants face additional challenges in accessing health care, and there is overlap in registration in the rural and urban programs.¹⁰⁸

A more robust health insurance system would help protect the poor from high health care costs. The social health insurance system covers more than 1.2 billion individuals through different insurance schemes.¹⁰⁹ Although insurance coverage for the poor and rural populations has been expanded, out-of-pocket spending remains relatively high, which increases the likelihood of families becoming poor because of health care costs.¹¹⁰ The coverage of rural health insurance has expanded to include the bulk of the rural population, but the share of out-of-pocket spending remains relatively significant. A non-negligible portion of rural residents, particularly among the poor elderly, refuse outpatient services and inpatient care when they fall ill because they cannot afford the services.¹¹¹ The government is trying to tackle the issue through a recent policy that commits to reimbursing medical expenditures that are deemed catastrophic, defined as exceeding a specific threshold of

¹⁰⁶ Study commissioned by the World Bank Group and carried out together with researchers from China.

¹⁰⁷ The number of hospital beds increased twofold between 1980 and 2000 (from 1.19 million to 2.17 million), and doubled again in just 13 years (to 4.58 million in 2013).

¹⁰⁸ Zheng (2012).

¹⁰⁹ In rural areas, citizens are covered by the New Rural Cooperative Medical Scheme (NRCMS), while urban citizens are protected by either the Urban Resident Basic Medical Insurance (URBMI) or the Urban Employee Basic Medical Insurance (UEBMI), which finance formal sector employees. The lack of integration and uniformity of the separate health insurance schemes with varying levels of reimbursement result in inequity in health financing.

¹¹⁰ Zhang and Liu (2014).

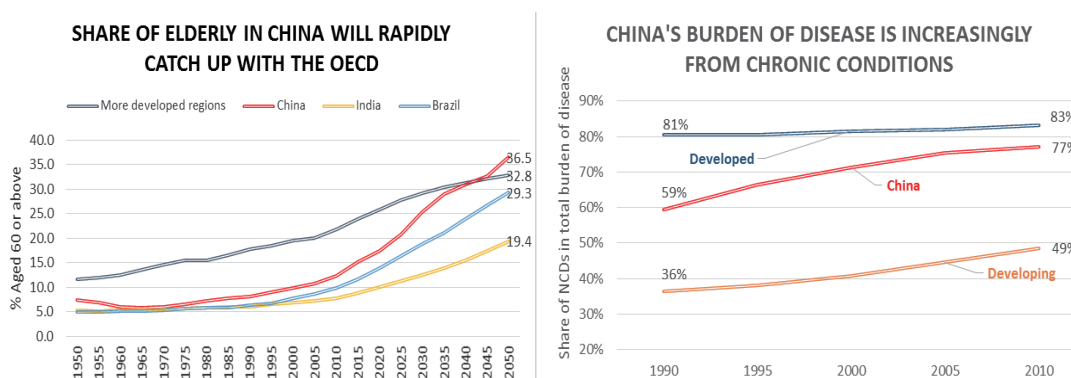
¹¹¹ Long and others (2013); Feng, Lou and Yu (2015).

the household's disposable income. However, this is a stopgap measure, and structural changes are needed to address the root causes of the problem.

The aging of the population is increasing the population's vulnerability to poverty. Low fertility and declining mortality and rising life expectancy are translating into a rapidly aging society (Figure 2.11). In 2016 230.86 million people were above the age of 60, representing 16 percent of the total population, and both numbers are projected to increase. This can have significant implications for poverty because the elderly are less capable of earning income. Demand will continue to rapidly grow for a range of aged care services that traditional family-based arrangements may not be able to meet. The government has set up elderly care subsidy systems in 20 provinces for the elderly with economic difficulties. The government has also provided for the poorest elderly people through the Destitute Support programs, but these programs cover just over 5 million people (in 2011).

Noncommunicable diseases (NCDs) are responsible for 77 percent of the loss of healthy life and for 85 percent of all deaths, giving China a profile similar to OECD countries. In comparison, a mere quarter century ago, injuries, communicable diseases, and newborn, nutritional, and maternal conditions accounted for 41 percent of the burden of disease in China, a profile little different from that of the average developing country today (Figure 2.11). Cardiovascular diseases and cancers alone account for more than two-thirds of China's total mortality.¹¹² The growth of chronic illnesses in China are due to high-risk behaviors such as smoking, poor diets, sedentary lifestyles, and alcohol consumption, as well as environmental factors such as air pollution.¹¹³ An alarming 49 percent of Chinese men are daily smokers, a proportion more than twice the OECD average. The incidence of NCDs is particularly high among the elderly.

Figure 2. 11: Rapidly Aging Population and Growing Burden of Noncommunicable Diseases



Sources: United Nations, Department of Economic and Social Affairs, Population Division (2015). Institute for Health Metrics and Evaluation (2010).

The 13th Five-Year Plan of Health Care Reform has clearly stated that “China will deepen the reform of the medical and health systems, promote the interaction of medical services, health insurance and pharmaceutical supply, implement the tiered delivery system and establish primary care and modern health

¹¹² WHO (2014).

¹¹³ Yang and others (2008); Batis and others (2014); Ng and others (2014); Gordon-Larsen, Wang, and Popkin (2014).

care systems that cover both urban and rural areas.” Reforms would aim to optimize the layout of medical institutions and the interaction and complementarity of higher and lower levels of institutions, and improve medical services at the grassroots level, and in rural areas and areas of higher needs, including by allocating greater medical resources, developing distance medical services and electronic medical records, supporting general practitioners and family doctors, and strengthening medical service capacity. China also aims to encourage social forces to develop the health service industry, promote the equal treatment of nonprofit private hospitals and public hospitals, strengthen supervision and control of medical quality, improve mechanisms for dispute resolution, and build harmonious relations between doctors and patients.

Improving the Targeting and Evaluation of Poverty Programs

Better targeting and improved analysis of poverty programs require comprehensive and timely data.

The problems of imputed rents, differential cost-of-living, migration, and changes in rural-urban definition of counties need to be fully clarified to produce time-consistent and transparent indicators of levels and trends of inequality and shared prosperity. Migrant workers are a major issue; they are a significant component of the labor market, but most studies acknowledge that migrants are inadequately reported in regular surveys, and therefore inequality may be underestimated.¹¹⁴ Better survey and administrative data could help analyze issues related to top earners' incomes and wealth distribution. Further efforts are needed to produce and facilitate access to these data for research to shed light on remaining questions about inequality in China.

Initiatives are ongoing to produce more and better data for policy analysis. In 2014 the State Council Leading Group Office of Poverty Alleviation and Development began establishing databases (archives) of the rural poor. It established a national poverty-alleviation system and started recording basic information of rural poor populations and the reasons for poverty, critical information for targeted poverty alleviation. The Ministry of Civil Affairs has established a cross-checking mechanism by exchanging data among relevant agencies to improve dibao targeting. The integration of urban and rural areas in NBS household surveys since 2013 is another positive development. Similarly, several universities and public sector entities have produced a series of surveys that have supported a growing literature on poverty and inequality in China.¹¹⁵ This literature has highlighted questions regarding poverty trends and levels that are worth exploring further.¹¹⁶

Urban poverty is a particularly critical knowledge gap. Currently little consensus is seen on an appropriate urban poverty line and there is considerable debate on the extent of urban poverty.¹¹⁷ The fact that prices and consumption baskets differ between urban and rural areas, as well as the presence of a growing migrant population, call for a deeper analysis of urban poverty.¹¹⁸ How urban poverty should be defined, the situation of urban migrants, and the impact of interventions in urban areas such as dibao and social pensions all warrant particular attention.

¹¹⁴ Jin and others (2014).

¹¹⁵ For a review of data sources for poverty analysis in China see Gustafsson, Li, and Sato (2014).

¹¹⁶ See Zhang and others (2014). The authors compare four of these surveys and indicate that three of them (Chinese General Social Survey, China Family Panel Studies, and China Household Finance Survey) show much higher poverty and inequality rates than the Chinese Household Income Project, the survey whose poverty estimates are closer to NBS official data.

¹¹⁷ Oxford (2014) summarizes some of the literature on urban poverty in China, including several research reports that argue that urban poverty is more prevalent than suggested by the World Bank and other observers.

¹¹⁸ A discussion on the difficulties in defining an appropriate poverty line and some poverty rate estimates for urban areas is in World Bank (2009), pp. 69–77. Using twice the World Bank line, this study estimates urban poverty rates around 3 percent (using per capita income). A study by Appleton, Song, and Xia (2010), uses very high poverty lines (RMB 3,600 per year, at 2002 prices) to study poverty in urban areas. Using the US\$1.90 poverty line, at 2011 PPP, urban poverty is estimated to be 0.5 percent of the urban population in 2013 (WB staff estimates).

Impact evaluation of China's poverty reduction strategy and program is still relatively limited.^{119 120} The major poverty reduction programs, rural dibao, basic education and health, pensions, and labor market (training) programs all deserve a careful analysis of their impacts. Undertaking convincing and rigorous poverty diagnostics is always a costly, time-consuming, and technically challenging endeavor, but the payoff in the form of greater specificity and efficiency of poverty programs can be significant.

Key Priorities

The key priorities identified in this chapter are the following:

- Strengthen targeting and coordination of poverty programs, to address the remaining poor (“the last mile”).
- Strengthen poverty-related statistics and concepts, to more clearly identify the remaining poor, and improve access to and exchange and coordination of poverty-related data.
- Reduce the disparity in access to and quality of public services (water supply, pollution control, education, and health), including by making the intergovernmental fiscal systems (transfers) more progressive.
- Raise income and productivity in rural areas, in particular by reforming rural land administration to increase rural households' assets, access to finance, and mobility.
- Reduce barriers to migration by reforming the hukou system to reduce the bias against migrants in urban areas.
- Address challenges associated with aging, including by expanding programs to address the elderly poor.

¹¹⁹ A good example of the relevance of timely impact evaluation is by Gao, Yang, and Li (in press). The study confirms a slight impact of dibao on poverty head count (approximately a 1 percentage point reduction among beneficiaries) in urban areas, but with severe leakages (more than 50 percent) and poor targeting (more than 70 percent) using CHIP data for 2002 and 2007.

¹²⁰ For instance, the “2011 Outline” maintains a strong focus on the geographic targeting of the ethnic minority communities in mountainous areas and other disadvantaged groups of absolute poor. Consequently, it is necessary to carefully assess the severity of poverty and other key characteristics of these most vulnerable communities on an urgent basis.

Annex

**Table 2A.1: Evaluation of Poverty in China, 1981–2012:
Poverty Line Using US\$1.90 Per Day in 2011 PPP**

Year	Head Count (%)	Number of Poor	Poverty Gap (%)	Squared Poverty Gap
1981	88.32	877.8	43.19	24.76
1984	75.75	785.4	29.4	14.48
1987	60.84	659.5	21.73	10.41
1990	66.58	755.8	24.37	11.46
1993	57	671.7	20.57	9.63
1996	42.05	512.0	13.04	5.45
1999	40.54	507.9	13.23	5.76
2002	31.95	409.1	10.23	4.37
2005	18.75	244.4	4.94	1.85
2008	14.65	194.1	3.87	1.46
2010	11.18	149.6	2.66	0.92
2011	7.9	106.2	1.76	0.61
2012	6.47	87.4	1.37	0.46
2013	1.85	25.2		

Source: PovcalNet; Shaohua Chen prepared data for this study.

Note: The 2013 household survey in China is the first integrated nationwide household survey.

This means that it is not comparable with the previous household surveys, in which rural and urban areas were sampled separately.

In addition, the most significant change in the 2013 national household survey relative to previous household surveys was the inclusion of imputed housing rents into income and consumption aggregates for the first time. In 2012–13, China's poverty rate based on a US\$1.90-a-day poverty line (in 2011PPP) declined by about 4 percentage points, of which half, about 2 percentage points, can be traced to changes in the survey methodology. From World Bank (2016), p. 48.

Table 2A.2: Evaluation of Poverty Population in China, by National Line

	1978 Poverty Standard		2008 Poverty Standard		2010 Poverty Standard	
	Number of Poor (10,000)	Incidence of Poverty (%)	Number of Poor (10,000)	Incidence of Poverty (%)	Number of Poor (10,000)	Incidence of Poverty
1978	25,000	30.7			77,039	97.5%
1980	22,000	26.8			76,542	96.2
1981	15,200	18.5				
1982	14,500	17.5				
1983	13,500	16.2				
1984	12,800	15.1				
1985	12,500	14.8			66,101	78.3
1986	13,100	15.5				
1987	12,200	14.3				
1988	9,600	11.1				
1989	10,200	11.6				
1990	8,500	9.4			65,849	73.5
1991	9,400	10.4				
1992	8,000	8.8				
1994	7,000	7.7				
1995	6,540	7.1			55,463	60.5
1997	4,962	5.4				
1998	4,210	4.6				
1999	3,412	3.7				
2000	3,209	3.5	9,422	10.2	46,224	49.8
2001	2,927	3.2	9,029	9.8		
2002	2,820	3.0	8,645	9.2		
2003	2,900	3.1	8,517	9.1		
2004	2,610	2.8	7,587	8.1		
2005	2,365	2.5	6,432	6.8	28,662	30.2
2006	2,148	2.3	5,698	6.0		
2007	1,479	1.6	4,320	4.6		
2008			4,007	4.2		
2009			3,597	3.8		
2010			2,688	2.8	16,567	17.2
2011					12,238	12.7
2012					9,899	10.2
2013					8,249	8.5
2014					7,017	7.2
2015					5,575	5.7
2016						

Source: China NBS, China Rural Poverty Monitoring Report 2015.

Table 2A.3: Evaluation of Poverty Head Count Ratio in China, National and by Urban and Rural Areas: Percentage of Population That Consume Less than US\$1.90 Per Day in 2011 PPP

	National	Rural	Urban
1981	88.32	95.59	59.43
1984	75.75	85.21	42.60
1985	—	83.62	#N/A
1987	60.84	72.55	24.27
1990	66.58	78.95	32.16
1992	—	60.64	9.01
1993	57.00	71.83	20.86
1994	—	52.50	9.46
1995	—	46.55	6.84
1996	42.05	55.26	13.85
1997	—	33.35	5.91
1998	—	31.10	12.25
1999	40.54	56.38	10.96
2002	31.95	48.80	4.95
2005	18.75	30.63	2.69
2008	14.76	26.25	1.33
2010	11.18	21.30	0.74
2011	7.9	15.44	0.54
2012	6.47	12.98	0.42
2013	1.85	3.38	0.51

Source: PovcalNet, Shaohua Chen prepared data for this study.

Note: See note to Table 2A.1. — = not available.

**Table 2A.4: Evaluation of Poverty Population around the World:
Poverty Line Using US\$1.90 Per Day in 2011 PPP (millions)**

Regions	1981	1990	2002	2011	2012
East Asia and Pacific	1,142.5	995.5	552.7	173.1	137.2
China	877.8	755.8	409.1	106.2	87.4
Europe and Central Asia	—	8.8	29.2	11.4	10.1
Latin America and the Caribbean	87.7	78.2	70.5	35.3	33.7
Middle East and North Africa	—	13.5	—	—	—
South Asia	537.7	574.6	583.0	361.7	309.2
Sub-Saharan Africa	—	287.6	399.0	393.6	388.8
Total	1,997.3	1,958.6	1,645.1	983.3	896.7
Total less China	1,119.5	1,202.8	1,236	877.1	809.3

Source: PovcalNet, Shaohua Chen prepared data for this study.

Note: — = not available.

Table 2A.5: Evaluation of Poverty Head Count in Rural Areas, by Region

		2000	2005	2015
Rural impoverished population (millions)	National	9,422	6,432	5,575
	Eastern	962	545	653
	Middle	2,729	2,081	2,007
	Western	5,731	3,805	2,914
Poor incidence (%)	National	10.2	6.8	5.7
	Eastern	2.9	1.6	1.8
	Middle	8.8	6.6	6.2
	Western	20.6	13.3	10
Share of rural poor (%)	National	100.0	100.0	100
	Eastern	10.2	8.5	11.7
	Middle	29.0	32.3	36.0
	Western	60.8	59.2	52.3

Source: China Rural Poverty Monitoring Report 2015.

Chapter III

Governance and Institutions for Development

Introduction

Reforms of the government administrative system were critical for the transition from a planned to a market economy. The reforms forged a new consensus on economic development as an essential objective of the Chinese Communist Party (CPC) and the state. The reforms broadened Party membership, introduced age and term limits, and established a more consensus-based collective decision-making process. In particular, the reforms decentralized the fiscal systems so that central and local governments shared revenues and empowered local government officials to promote local economic growth. This was enabled by reforms of the government personnel (cadre) management system that incentivized local economic performance and served as the critical linkage in the decentralized central-local fiscal system. Hence, the central government retained control over personnel decisions through a centralized political governance system, whereas the subnational governments managed most of the economy, and enjoyed fairly broad autonomy within their jurisdiction, but were subject to the authority of the central government. As China enters a new phase of development aiming to be balanced, inclusive, and sustainable, and policy objectives are no longer exclusively aligned with growth, tradeoffs between various policy objectives will emerge. This will make the continued transformation and adaptation of governance and institutions both more critical and challenging.

The government of China has emphasized the centrality of governance reforms. The Third Plenary Session of the 18th CPC Central Committee held in November 2013 stated that modernizing the state governance system and strengthening the state's governing capacity will be the overarching goal of reforms. It laid out ambitious reforms that aim to establish a more rule-based order and limit the discretion of government officials. The government has already taken major steps in this direction, including the new 2014 Budget Law, which represents a major milestone that will help make subnational debt and spending more transparent. In undertaking governance reforms, China can build on the current strengths of its governance system, which have helped achieve exceptional growth.

China's unique governance system exemplifies key messages from the published World Development Report on Governance and the Law (Box 3.1). China has built well-functioning institutions, in unique and context-tailored forms, through a long process of institutional evolution. China's cadre management system is a good example. Drawing on a long legacy of high state capacity, China has refined its cadre management system to shape the core of a high-performing bureaucracy by integrating features of party loyalty with professionalization of the civil service in a unique way. This has been critical to unlocking growth, promoting results through competition among local governments and anticorruption policies designed to prevent abuse of office.¹²¹ The cadre management system has built strong upward accountability and has provided incentives through promotion and rewards to bureaucrats and local officials in return for their attainment of growth and job creation targets. This system differs significantly from the typical Western governance model and has allowed China to find a unique way of "discovering" growth-enhancing policies through local experiments.

¹²¹ See Hofman and Wu (2009), http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2010/12/07/000333038_20101207234630/Rendered/PDF/577490NWP0Box353767B01PUBLIC10gcwp050web.pdf.

¹²²The cadre management system and the broader political systems in China have facilitated vigorous contestability of policy ideas, which promoted policy effectiveness.

Confronting the challenges faced by today’s China requires adapting its governance and institutions to a more complex and open economy and society. The aim would be to enhance the transparency, accountability, and responsiveness of the government to the public’s demands. This would require an integrated and transparent budgetary decision-making and reporting process to adequately inform the public of the use of public resources and a government that interacts with nongovernment actors in designing and implementing policies and regulations. Such a governance system would be based on a strengthened rule of law and a commitment to eradicating corruption. Because in China local government plays an important role in economic development, strengthening local governance will be critical. An improved governance system would facilitate the development of a private sector focused on long-term innovation and improve citizens’ perception of security and improved welfare.

Box 3.1: Governance for More Effective Policies—A New Development Approach

The 2017 World Development Report (WDR) on Governance and the Law proposes a new analytical framework to advance our understanding of how governance can be improved to promote more effective development policies. The framework proposed in the WDR 2017 has important implications for revisiting traditional development approaches.

Traditionally, the approach to governance tended to emphasize the centrality of three principles in promoting development outcomes: the forms of laws and public policies, the capacity to implement them, and the impersonal application of the rules. These principles have shaped the conventional solutions of the problem of policy failure in developing countries: first, invest in “good” laws and policies; second, build organizational and technical capacity to implement them; and third, strengthen the “rule of law.”

WDR 2017 proposes three new principles:

- “Think of function, not only form.” It is not only about the form of the institutions that countries have, but how effectively those institutions perform their functions that matter for development.
- “Think of power, not only capacity.” Although capacity building matters, investing in the capacity to implement policies may not promote better outcomes if underlying power structures thwart implementation.
- “Think of the role of law, not only the rule of law.” To close implementation gaps and achieve the rule of law, countries must first strengthen the role of law.
The WDR 2017 emphasizes a focus on creating conditions that prepare societies to adapt as the needs and demands of society change over time, for ensuring inclusive and sustainable development progress. It has come up with three key policy messages:
- Successful reforms are not about “best practice” or “best fit.” When designing policies, it is important to assess the key constraints to commitment, cooperation, and coordination that stand in the way of promoting development.
- Policy effectiveness can be improved by finding the best ways to strengthen incentives, enhance the contestability of the policy design and implementation process, and understand and reshape preferences and beliefs.
- Changes to promote more equitable development can be difficult to achieve, because groups who have less control over resources (such as those at the bottom of the income distribution) systematically have less bargaining power to influence decisions. However, change is possible if elites, citizens, and international actors work together to build pro-development reform coalitions.

Source: World Bank, Governance and the Law, WDR 2017.

¹²² Heilmann (2008).

A strengthened governance system would enhance the government's capacity to promote economic development and make better decisions in supporting the needs of the private sector. This would be facilitated by informing the public of the collection and use of public resources in delivering government services and of the government's financial situation, in terms of both assets and liabilities and for the short and long term. Governments discharge such responsibilities through communications and statements from the leadership as well as through financial reporting.

Strengthening Local Government Management of Public Resources

Governance reforms in China must emphasize local governments given their critical role in China's economic development. The central-regional relationship has always been a critical issue when considering China's governance. China's subnational governments are accountable for delivery of most essential public goods and services, while receiving only 55 percent of budgetary revenues.¹²³ The government carried out significant investments in infrastructure over the past decades, at around 10 percent of GDP annually, with a large share carried out by local governments. Accordingly, local governments play a major role in shaping the environment of firms and citizens.¹²⁴ However, local governments vary greatly in their quality and capacity for managing public resources.

The new Budget Law of 2014 is a major milestone toward improving local governments' budget transparency, accountability, and comprehensiveness. In August 2014 the People's Congress of China enacted a revised Budget Law.¹²⁵ It embodies a comprehensive approach for strengthening budgetary institutions at the subnational level in China by reining in extensive off-budgetary activities, granting local governments the right to borrow explicitly within limits, establishing debt quota management and budget management systems for local governments, and building and improving risk evaluation and monitoring. To cope with the legacy debt problems, local governments may apply for issuance of local governmental bonds to substitute for existing local governmental debts. The new Budget Law lays the foundation for maintaining fiscal sustainability in the medium to long term and aims to impose a hard budget constraint on local governments.

Managing the transition to the new Budget Law is at the core of the transition to the New Normal. Implementation of the budget reforms would need to minimize the potential adverse growth shocks that may result from the strengthening of fiscal discipline. It would require bringing the large volumes of existing off-budget debt onto the budget, and managing the potential tradeoffs involved in the transition, between enforcing fiscal discipline and maintaining economic growth. Realizing the benefits of the new Budget Law will depend on tackling many implementation and capacity-building challenges as well as clear and sustained political commitment to fiscal sustainability. Local governments have been innovative in exploring new sources to finance public infrastructure investments, such as PPPs, urban infrastructure funds and public-benefit SOEs. Local governments need to improve their capacity and institutions for monitoring and assessing financial opportunities and risks, as well as build up a comprehensive institutional and policy framework for maintaining the sustainability of public finances. Given that building local capacity may take time, sustaining political commitment to the reforms will be critical. This would include in particular providing clear signals to local authorities on the importance of fiscal transparency and sustainability, because the high political priority given

¹²³ MOF (2015).

¹²⁴ Jean Oi's (1999: 99) "Local state corporatism," for example, highlights that local governments in China act like developmental states, using a "combination of inducements and administrative constraints characteristic of a state corporatist system" to both encourage and control the private sector.

¹²⁵ Supportive regulations were issued by the State Council (Directives 43 and 45) in September 2014.

to growth and public investments created incentives that have been associated with significant off-budget public sector borrowing at the subnational level. Such incentives need to be complemented with a greater emphasis on fiscal transparency and sustainability.

Local government budgeting and planning systems are fragmented and require a more medium-term approach. China has separate social and economic planning and budgeting systems, which lack clear linkages. Local governments have three major plans for urban development: (a) a five-year plan for social and economic development; (b) a city master plan; and (c) a land use plan. Different government divisions are responsible for each of these three plans, each serving different purposes. A disconnect between physical plans and budgeting process remains despite efforts at integration.¹²⁶ In addition, a multiannual approach to capital budgeting is often lacking. This is critical because capital investment plans have implications well beyond annual budgets, particularly regarding financing commitments and operations and maintenance (O&M) costs.

Bringing a more medium-to long-term perspective to budget and planning process is particularly important in China given the massive investments in infrastructure over the past decade. The huge investments in infrastructure will need to be adequately operated and maintained as well as rehabilitated or replaced as they depreciate. An important tool to capture and obtain a timely view of future maintenance and capital costs related to infrastructure is the medium-term fiscal framework. Comprehensive fixed asset values, depreciation, and maintenance costs, combined with more rational fixed asset registers, provide the asset information needed to properly manage infrastructure investments, but systematic and coherent information on assets is lacking in China.

China is promoting public private partnerships (PPPs) for the provision of infrastructure and public service. PPPs can be used to mobilize private financing and expertise, thereby addressing the resource constraint of the government. The government recognizes the need to ensure fiscal sustainability and transparency of PPP projects, including by adequately identifying and incorporating the associated explicit and contingent liabilities in the related government budget and debt sustainability analysis. The government also recognizes the importance of adequate management and oversight of PPP projects throughout the life cycle of the projects, starting with the selection of projects through project preparation, implementation, and operation.

China plans to introduce accrual accounting for the government, which will help clarify the true scale of government liabilities. More systematic debt recording under accrual accounting would provide more systematic debt amortization costs for medium-term forecasts, including contingent liabilities. Accrual accounting would also account for unfunded pension and long-term social security benefits liabilities. Legacy pension liabilities are significant in China, and international experience has shown that such pension and social security liabilities can dwarf even debt issues. Thus, it may be critical to perform an actuarial valuation of the unfunded liabilities arising from pension, social security, and other long-term social support programs, so that policy makers and citizens are aware of the true cost of these programs. Although there may be many benefits, introducing accrual accounting is a highly complex and challenging task requiring close coordination among multiple stakeholders.

¹²⁶ Local governments in China have been making efforts to establish connections within planning system as well as between planning and budgeting systems. Since 2002, city planning authorities in China are required to develop near-term construction plan based on the 20-Year City Master Plan, in accordance with the time horizon of FYPs. Nevertheless, a divide remains: In China, subnational public investment programs are managed by the Development and Reform Commission, while the budget is managed by the Department of Finance. Project-by-project plans have their own finance schemes that are often disjoint from the budget. This can be associated with weak overall control on public investment spending.

Some provinces have piloted a Medium-Term Capital Budgeting Framework, which starts to address some of the shortcomings identified for local government budgeting and planning. Hunan province adopted a preliminary Medium-Term Capital Budgeting Framework, which enables a comprehensive assessment of government investment financing and debt sustainability. The medium-term rolling plans underpin an annual review of the remaining spending required to complete ongoing projects and their anticipated O&M needs, as well as the fiscal space that is available for committing to new projects. The Medium-Term Capital Budgeting framework could eventually become the building block for a full medium-term fiscal framework. It is also in line with a statement of the CPC Central Committee and State Council of July 5, 2016, “Opinions on Deepening Reform of Investment and Financing,” which requires full disclosure of public investments and compilation of a three-year rolling investment plan, linked to a medium-term fiscal plan.

Reforms of the Cadre Management System

Reforms of the government personnel management were at the core of economic reforms that started several decades ago. The wholesale changes that introduced economic performance as the main basis for the evaluation of government officials were critical to the economic reforms. Local economic performance became the most important criterion for evaluating local officials, and competition among regional officials became an integral part of the cadre management system. The readiness of the central government to reward and punish local officials based on their economic performance, including for promotion decisions, motivated local officials to promote their local economy and growth.¹²⁷ The reforms also created incentives for local experimentation and reforms. Major reforms, such as the land reforms in the late 1970s that decollectivized the farms to Household Responsibility Systems, and the introduction of Special Economic Zones to attract FDI and develop export-oriented industries, were initiated and experimented with by subnational governments. Rotations and cross-regional transfers were employed to enhance the effectiveness of the personnel control system, which also facilitated the diffusion of successful regional reform experiments.

Improving the cadre evaluation system is a key part of the CPC’s ambitious reform program. The Third Plenum of the 18th Central Committee of the CPC issued, in November 2013, the “Decisions of the Central Committee of the Communist Party of China on Some Major Issues Concerning Comprehensively Deepening Reforms,” which outlined an ambitious reform program through 2020. A critical component of the reforms is to improve the cadre evaluation system to strengthen incentives to encourage local leaders to pursue sustainability goals more forcefully and support more efficient, inclusive, and sustainable growth. In line with the ongoing economic transformation and restructuring, government personnel incentives to promote manufacturing and generate land revenues will need to be complemented by incentives to promote services, mobilize new revenue sources, and pursue environmental and social objectives. More diversified objectives would potentially allow for increased emphasis on indicators such as resource depletion, environment damage, industrial overcapacity, science and technology innovation, and debt management, as well as social objectives such as employment, household income, social safeguards, and people’s health. Such objectives would require a longer time horizon to allow for adequate assessment of performance.

Implementing national environmental policies and objectives would in particular benefit from reforms

¹²⁷ Li and Zhou (2005) found that the likelihood of promotion of provincial leaders increases with their economic performance.

of the cadre management system. Local government officials often do not see sufficient benefits or penalties for environmental performance. Sufficient incentives for local governments to improve environmental outcomes and for firms to reduce resource consumption and avoid pollution are critical for aligning national environmental goals with local implementation. In this regard, the government has sought to allocate greater weight to environmental quality achievements in the promotion criteria of the government's performance assessment system to incentivize local officials to implement environmental protection objectives. The relatively short tenure of local cadres also reduces their incentive to invest in environmental projects whose benefits may be apparent only after some years. Hence, extending their tenure would promote longer-term thinking.

With an expanded set of objectives, managing the potential tradeoffs and interlinkages in the cadre management system becomes more challenging. Targets associated with strengthened fiscal and debt management or environmental targets that may require restructuring existing local polluting industries could result in lower economic growth, at least in the short term. Without adequately accounting for the tradeoffs, local officials may continue to prioritize economic growth above the other objective as the perceived least risky strategy.

Enhancing Transparency to Strengthen Accountability

A major governance challenge is achieving an appropriate balance between local government autonomy and accountability. The challenges of ensuring central control over local agents are long-standing and proverbial: "Heaven is high and the emperor is far away" and "The center has measures, and those below have countermeasures."¹²⁸ Too much centralized top-down control, and it could stifle the local government autonomy necessary for the local experimentation that has worked so well for China. But local autonomy without sufficient accountability can also cause problems. Local officials need to be close to businesses to ensure that policies respond to the constraints and opportunities that firms face. Such closeness risks collusion and rent seeking and may serve to protect the vested interests of well-connected but unproductive firms rather than fuel innovation in competitive industries.¹²⁹

Bottom-up accountability mechanisms such as citizen participation can strengthen local accountability without unduly sacrificing autonomy, but they are relatively underutilized in China. Bottom-up accountability mechanisms already exist in China but could be more systematically utilized, thereby exposing local governments to greater public scrutiny. Existing mechanisms include the gathering of colleagues and "the masses"¹³⁰ at "democratic appraisal meetings" (minzhupingyi) to evaluate the Party secretary and township head. Petitioning, or the practice of submitting letters of complaint to higher levels (shangfanggaozhuang), is also both a criterion in evaluation of local leaders and a channel of information that facilitates monitoring by higher levels.¹³¹ Citizen complaints take on special importance in evaluation since they support the priority objective of upholding social order and, the government's concern with maintaining stability. Numerous local experiments have explored innovative ways of more systematically accounting for citizens' perceptions in cadre evaluations. For example, Hangzhou City adopted a performance evaluation system in which 50 percent of the weight is given to citizen perception measures.¹³² Emerging experiments with elections for village and

¹²⁸ Wang (2013: 416).

¹²⁹ Rodrik (2008).

¹³⁰ The term "masses" (qunzhong) refers to representatives of the level immediately below the unit undergoing evaluation. In the case of the township leading cadres, it is the village leaders and the township-run enterprise managers.

¹³¹ One study reports that 80 percent of the reports of cadre misconduct and financial irregularities came from letters of complaint sent by the public (Bernstein and Lü 2000).

¹³² Yanhong (2011).

urban residents' committees as well as village leaders and party branch secretaries point to the promise of citizen engagement. Building on these precedents, encouraging citizen participation can help ensure targeting services to the poor.

The key to strengthening bottom-up, as well as top-down, accountability is to improve government information disclosures. Particularly important in China's case is fiscal transparency. China has improved its fiscal transparency in recent years. The government's budget proposal and the subsequent enacted budget are now published, whereas previously they were produced for internal use only. Despite such progress, China could consider further transparency-related improvements to strengthen accountability for public service delivery. Although official websites such as that of the Ministry of Finance provide some fiscal information, more detailed data could be made available, including on specific programs and ministries. Long-term spending forecasts, such as through a medium-term expenditure framework, would facilitate the analysis of budget-policy linkages. China could publish more of the core budget documents, such as pre-budget statements, executive budget proposals, midyear reviews, and citizens budgets, in a timely manner. Finally, interpreting subnational public sector data is complicated by the fact that the finances of local government and local government financing vehicles often remained intertwined in complicated ways, although the government has been moving to address this problem through the budget reforms. The in-year and end-year budget reports could provide more comprehensive information, and timely publication of midyear reviews would facilitate assessments of budget implementation and necessary midyear corrections. Innovations are emerging in China, for example, the district of Minhang in Shanghai has piloted performance-linked budgeting and is pursuing transparency through the internet. Beijing, Sichuan, Shandong, Jiangsu, and Qinghai provinces have published their departmental (or project) performance evaluation reports along with the provincial budget.¹³³ However, overall the level of fiscal transparency varies greatly across jurisdictions, and public information about debt and liabilities, and actual government performance is relatively uneven and limited in most jurisdictions.

Publishing more details of local government spending and performance data would strengthen bottom-up accountability by exposing local governments to public scrutiny. It would also encourage local governments to improve the quality and timeliness of the information and thereby improve the credibility of the information. Such reforms would be at the core of modernization of governance in China. They would require a change in the political and bureaucratic culture, moving away from practices of confidentiality toward more open communication both within the government and with the public. On October 27, 2016, a decree on "Operating Procedure of Local Budgets and Final Statement Disclosure" was published. The new regulation sets forth the principles, basic requirements, departmental responsibilities, timeline, public contents, and disclosure methods of local budgets and a final statement, with the aim to promote budget transparency and facilitate citizens' access to budgetary information. The successful implementation of the transparency policy relies heavily on the cooperation of local governments, because of the high degree of fiscal decentralization in the country. Governments around the world are establishing initiatives and agencies charged with making information available to the public. China could draw from such international good practices on mechanisms and tools that support transparency efforts and public outreach for the effective dissemination of budgetary and financial information.

¹³³ <http://www.shmh.gov.cn/>

The Environmental Performance Rating and Public Disclosure (PRPD) program is an example of the government leveraging public pressure to enhance local accountability and inducing performance. The incorporation of environmental measures in the cadre evaluation system was successful in increasing investments in pollution control, strengthening control of wastewater treatment facilities, and closing outdated power plants and industries. However, environmental targets may also provoke problems of goal displacement, in which targets may be met through undesirable or even illegal actions, and data manipulation and falsification.¹³⁴ Recognizing the limitation of relying exclusively on the cadre management system to achieve environmental targets, local governments introduced the PRPD program, which publicly discloses pollution and emissions metrics, thereby leveraging public pressure to hold local officials and companies accountable. Not only are ratings of firms' environmental performance published, but in addition citizens are encouraged to provide feedback through various channels, including through social media platforms. Evidence from an early PRPD pilot in Jiangsu Province illustrates the promise of such approaches. In 10 years since the launch of the program in 2001, the number of firms with publicly disclosed ratings increased more than twentyfold, compliance reached high levels (more than 90 percent are today rated positively), and research suggests that the PRPD program in Jiangsu has significantly reduced pollution.¹³⁵ More could be done to expand such programs and to widen more channels, for example, for nongovernmental organizations (NGOs) and the courts, for leveraging public participation to strengthen the government's accountability.¹³⁶

Systematic monitoring and evaluation have also been a relatively underutilized tool for strengthening government transparency and accountability. Whereas the cadre evaluation system has been long used, systematic use of evaluations of the performance of specific expenditure programs has only gradually developed over the last decade. The National Audit Office, for example, has gained significant influence over the past 15 years and publishes its annual reports, but its audits have so far been mostly limited to financial compliance and have not covered economic assessments, performance, or value-for-money audits.¹³⁷ The Budget Appraisal and Evaluation Center was established at the Ministry of Finance to conduct performance evaluations of major central finance spending programs. The development of a systematic set of evaluation standards and methods remains in its infancy. Strengthened M&E systems would generate timely and accurate information on policy implementation that can inform policy makers' funding allocation and policy decisions. This would help hold local governments and service providers accountable for using public resources efficiently and effectively.

Producing Regulations That Meet the Needs of the Economy

China suffers from high costs of regulations due to various factors that reflect the need for a systemic review of regulatory management. Some sectors are underregulated, whereas others are overregulated. Laws and regulations may be inefficient and outdated. Implementation and enforcement of regulations could be strengthened. Excessive discretion may be accorded to public officials in interpreting and implementing regulations. Addressing these issues would help China improve incentives for trade, investments, and innovation.

¹³⁴ Wang (2013).

¹³⁵ Complementing increased market and stakeholder pressures, the provincial government has tied the performance ratings to access to bank loans and to the environmental insurance responsibility premium.

¹³⁶ The revised Environmental Protection Law, which went into effect January 2015, makes it possible for NGOs to sue polluters in the public interest. However, the law imposes restrictions on which NGOs qualify to bring forward cases. Currently, only about 10 percent of registered environmental NGOs in China meet these qualifications. Prior to the revised law, relatively few public environmental complaints were pursued through courts. The hope is that this reform will lead to an improvement, if only a slight one.

¹³⁷ Wong (2012). Also, at the subnational level, the NAO's role remained much more constrained.

Improving how the government identifies and implements high-quality regulations, through strengthened “regulatory governance,” would support a transition to a more market-oriented regulatory environment. Regulatory governance is about putting in place tools and processes to help governments produce and implement high-quality regulations that are effective in achieving their objectives while minimizing distortionary incentives and the burdens they put on businesses and citizens. Good regulatory governance emphasizes the need for regulatory interventions to be predictable, evidence-based, and transparent. These goals are typically achieved by putting in place tools and processes for systematically assessing the impact of regulation before it is adopted, engaging stakeholders in developing policy proposals, publicly publishing regulatory plans and proposals, and establishing channels through which stakeholders can provide feedback once regulation is in place.

The excessive discretion accorded to public officials in interpreting and implementing regulations has led to rent seeking and capture by vested interests. The government has recognized the need to build a business-friendly environment while keeping regulators from being captured by vested interests. The risk is that staff of regulatory agencies can protect vested interests of well-connected but unproductive firms, rather than fuel innovation in competitive industries, including by overlooking environmental and safety infringements. To address such problems, the government has moved toward establishing more autonomous regulators and has undertaken ambitious administrative simplification reforms to minimize personal interactions between businesses and officials. Further reforms could focus on improving and modernizing methods and approaches to regulatory enforcement, in particular inspections.

Ensuring the sustainability of regulatory reforms requires addressing the underlying incentives. Simplification of business registration and licensing procedures and deregulation more broadly is an important part of good regulatory reform strategy. However, there is a growing recognition that narrowly focused one-off reforms are not enough to significantly and sustainably address more fundamental regulatory constraints such as poorly designed and executed regulations, mushrooming of new regulations, and poor enforcement. One-off regulatory reforms may cut costs and procedures, but early gains are often reversed if responsible institutions and stakeholders’ incentives are not changed. Incentives can be changed by exposing policy makers to feedback from the public and systematic evaluations to demonstrate the impact of regulations.

Applying quality assurance instruments such as “Regulatory Impact Assessments” could help further strengthen regulatory governance in China. China has made progress in strengthening regulatory governance through public consultations and use of technology. China scores relatively well on public consultation on regulatory proposals. Public hearings on laws and regulations take place, and the government invites comments on draft laws and many regulations. Some consultation processes attract considerable attention. For example, more than 80,000 people submitted more than 237,000 comments on the draft amendment to the Law on Individual Income Tax in 2011. However, it remains unclear whether the comments have had much impact. China lacks a systematic process for conducting Regulatory Impact Assessments (RIAs). RIAs are considered one of the key regulatory tools available to governments to ensure that the most effective and efficient regulatory options are chosen. It requires rigorously examining potential impacts that would arise from a regulatory proposal. Establishing a systematic process for RIAs would strengthen China’s regulatory governance.

Multilevel regulatory governance creates both challenges and opportunities for China. China has had significant regulatory powers delegated to provinces and regions, and moreover a March 2015 update of the Law on Legislation gave approximately 250 cities expanded authority to issue local laws and regulations in policy domains such as urban development and environmental protection. As a result, strengthening regulatory coordination between levels of government has become even more critical. Lack of effective multilevel regulatory coordination often leads to inconsistencies and overlaps in regulatory frameworks, which increases uncertainty for business. The challenge is that strengthened regulatory coordination can inadvertently stifle the relatively successful tradition of local policy experimentation and regulatory governance innovation. Such local experimentations have allowed for the testing of regulations at local levels, which reduces the risks of large-scale regulatory failures. Establishing better diffusion mechanisms can enhance the benefits of local regulatory innovations by promoting the learning process.

Rule of Law and Corruption

The government plans to carry out rule-of-law reforms to reduce rent seeking and establish a more rule-based order, with less discretion for government officials. In October 2014, the Fourth Plenary Session of the 18th Party Congress of the CPC announced plans for rule-of-law reforms. The associated communiqué called for reforms to professionalize the judiciary, increase judiciary independence, improve fairness in the implementation and enforcement of rules, and enhance access to justice.¹³⁸ These judicial reforms were outlined in the Fourth Five-Year Judicial Reform Plan (2014–18). The proposed rule-of-law reforms make it clear that China would maintain a socialist rule of law with unique “Chinese characteristics.” In particular, this means that the government will lead the reforms and remain in overall control of the judiciary.

The rule-of-law reforms call for the introduction of various internal checks and balances within the prevailing system, at both the local and central levels. The government has proposed that agencies responsible for financial allocation, state-asset supervision, and government procurement should separate functions to prevent corruption, regularly rotate staff, and strengthen control over internal workflows. Agencies that impose fees or fines are to separate the imposition of the fees and fines from their collection.

The current round of judicial reforms aims to improve judicial independence and strengthen accountability, but implementation remains challenging given the complex and deep-rooted issues and the multiple stakeholders and their vested interests.¹³⁹ Many of the reforms require support and coordination of other agencies outside the judicial system. Greater public access to information about the reforms would help facilitate monitoring of the reforms and evaluation of their impact. Ultimately, how “judicial independence” is viewed and how it can be consistently improved will be critical to the success of the reforms and the development of law-based governance. The improvement of judicial independence will require not only de-localization, de-administratization, and de-politicization of the judicial system, but also strict judicial accountability, a credible career security guarantee, and a sound judge selection and legal career transfer system.

Among the reforms announced by the CPC, particularly promising was the proposal to set up cross-ad-

¹³⁸ “CPC Central Committee Decision concerning Some Major Questions in Comprehensively Promoting Governing the Country According to Law.”

¹³⁹ UNDP (various years).

ministrative regional courts (circuit courts). China started establishing circuit courts in January 2015. This could potentially help address collusion between local officials and local judiciary. It could, along with the proposal to develop a mechanism to keep records of officials who interfere in judicial cases, potentially limit local governments' influence in legal affairs and increase the independence of the local judiciary and allow it to more effectively be a check on the local government's exercise of power. The proposed regional courts could limit the possibilities for local officials to bypass rules and legislation and strengthen supervision over them.

Although corruption has been far from absent in China, anticorruption efforts have long been an important agenda for the Party and the government. The anticorruption campaigns in the 1980s and 1990s helped limit opportunistic behavior by insiders in abusing the government system. Since the 18th National Congress of the CPC, the CPC Central Committee has prioritized the fight against corruption. Numerous cases, including of officials at the highest levels, have been brought before the Party's disciplinary committee and the state procurator, which suggests a seriousness in fighting corruption. Within the Party, the CPC commissions for discipline inspection at all levels are specific organs for interparty supervision and perform the duties of accountability of supervision and discipline. Within the government, the supervisory units, supported by supervision departments in every agency, investigate allegations of corruption and impose penalties, whereas the state procurator was responsible for criminal investigations. In 2015, the discipline inspection and supervision units handled 534,000 issues and leads, filed 330,000 cases, and closed 317,000 cases; in addition, 336,000 people were given punishments under Party discipline and government discipline, and 14,000 people were suspected of committing crimes and transferred to the judicial units for handling.

Citizen oversight can potentially play a greater role in controlling corruption. Greater transparency and citizen engagement can help address corruption. As a result, the government has expanded channels for citizens' complaints. Four out of every five anticorruption investigations are initiated by whistleblowers, according to Chinese officials. Several corruption scandals were first exposed by the public on social media and later picked up and widely disseminated in the traditional media. To facilitate citizen monitoring of corruption, the government has launched several complaints channels. Citizens can report corruption complaints via written applications, personal visits, hotlines, or the Internet, either directly to one of the anticorruption agencies or through the local or national Xinfang complaint offices.¹⁴⁰ The Central Commission for Discipline Inspection (CCDI) accepts public tip-offs and suggestions for curbing corruption through an online complaints portal.¹⁴¹

The relative lack of government transparency could undermine citizens' ability to independently monitor officials' behaviors. Requiring officials to publicly disclose their income and assets can be an important dimension of transparency. In this regard, the Development Research Center of the State Council has put forth a policy proposal that would legally require officials to declare their assets. Another key dimension is transparency in public procurement, including public access to information on government contracts and fair opportunities for contractors and suppliers. Many countries are introducing ICT-based technologies, such as watchdog portals or "Open Roads," that enable citizens and firms to easily access and monitor public contracts. Emerging evidence suggests that such innovations can have a significant impact on value-for-money from public contracts and enable citizens to curb corruption.

¹⁴⁰ The Xinfang system is a network of complaints offices found across all levels of the Chinese government. It is supposed to function as a general complaints clearing house for any government wrongdoing, ranging from bureaucratic misdeeds to serious offences.

¹⁴¹ According to the CCDI, in the first month the website received an average of 460 reports a day.

Key Priorities

The key priorities identified in this chapter are the following:

- Strengthen local government fiscal sustainability through integrated management of medium-term budgeting, investment planning, and debt management, in line with the 2014 Budget Law.
- Expand the use of bottom-up accountability mechanisms, such as citizen participation, to enhance local public sector performance through greater public engagement and monitoring.
- Improve government transparency, particularly with regard to fiscal transparency, at both the central and local levels of government.
- Strengthen regulatory governance by systematically engaging the public and key stakeholders in developing regulations, and by using regulatory impact assessments to improve the quality of regulations.
- Continue to strengthen the rule of law through strengthening checks and balances, in particular for the judiciary, and expand channels for citizens to effectively monitor corruption.

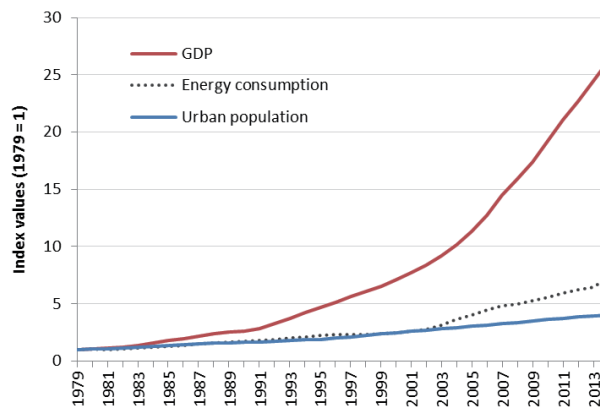
Chapter IV

Green Growth for Sustainability

Introduction

China faces a range of environmental and climate change challenges unique in both their scale and complexity. From 1979 to 2014, energy consumption increased sevenfold to fuel an economy that increased 25-fold and an urban population that quadrupled (Figure 4.1). Pollution has become an all-encompassing challenge and stands out as one of the largest, most immediate, acute threats to sustained growth and prosperity in the country today. Pollution has a sizable impact on health, natural resource, and ecosystem degradation, and causes direct losses to agriculture and industry.¹⁴² China will need to address a range of longer-term risks, such as rising exposure to natural disasters, climate change, and the irreversible loss of natural ecosystems, which will become more serious and more intractable without a transition to a path of greener growth. China's contribution to greenhouse gas (GHG) emissions has become substantial because of the growth in energy demand and the relatively high share of coal in the current energy structure.

Figure 4.1: Index of Energy Consumption, GDP, and Urban Population, 1979-2014



Sources: GDP and urban population data from NBS, <http://data.stats.gov.cn/>; energy consumption data from NBS (2013, 2014, and 2015).

The poor are likely to be more exposed to the health risks of pollution. China's poor are more likely to live and work in polluted environments and are less able to avoid exposure or self-protect. In cities, migrants are more likely to work in industries such as construction, where they often work longer hours and spend more time outdoors, elevating their exposure to ambient air pollution.¹⁴³ In rural areas, lower access to piped water has been linked to higher rates of digestive cancers. This is due to drinking surface water contaminated by upstream discharges of wastewater from industries and cities.¹⁴⁴ Access to modern forms of energy is also much lower in rural areas, making indoor air pollution a leading health risk. Internationally, a strong and growing base of empirical evidence supports the link between pollution and poverty.¹⁴⁵ The literature on household air pollution and clean drinking water, for example, shows that reducing exposure to pollution greatly helps to

¹⁴² The World Bank and Institute for Health Metrics and Evaluation (2016).

¹⁴³ Ibid.

¹⁴⁴ Ebenstein (2012); Zhao Xiaoli and others (2014).

¹⁴⁵ A new global flagship study by the World Bank on the hidden dimensions of poverty and the environment will provide an in-depth discussion of the connection between pollution and poverty.

¹⁴⁶ Duflo and others (2008).

alleviate poverty.¹⁴⁶

The scale and complexity of China’s environmental problems require a new approach to growth policy, based on “green growth.” “Green growth” can be defined as maximizing economic growth and development while decoupling upward trends in resource use, carbon emissions, and environmental degradation. Because of the creation of new markets, technological innovation, and realizing economy-wide efficiencies, green growth can be a new source of growth. It would rely on a broad mix of policy instruments, including fiscal and tax incentives, pricing, green financing, information disclosure, promotion of green technology, environmental standards, and greater public participation.

Investment needs for “greening” growth are significant, but so is the expected rate of return. The government estimates that the country will need up to US\$350 billion annually of green financing through 2030. According to World Bank estimates,¹⁴⁷ China already spends annually approximately 1.2 percent of GDP, or approximately US\$130 billion in 2015, on environmental protection each year, mostly on industrial pollution. By spending 0.5 to 1 percent more of GDP each year, putting it on par with high-income European countries, China could reduce environmental degradation and resource depletion by 6 percent of GNI by 2030, a significant net return.¹⁴⁸

China recognizes the need to transition to an environmentally sustainable growth model. The 13th Five Year Plan (FYP) for 2016–20 reflects a shift in China’s growth model to promote environmental sustainability. It includes dual binding targets (total quantity and intensity) for key environmental parameters such as energy consumption, carbon, main pollutant discharge, air quality, water resource consumption, construction land, and forest coverage. It would achieve these targets through strengthened protection of the environment; optimization of spatial structures; coordination of spatial plans based on thematic functional zones; establishment of a low-carbon, clean, safe, efficient, and modern energy system; improved resource utilization; improved management of multiple pollutants; and establishment of an ecological corridor and biodiversity protection network. Key measures include strengthening enforcement authorities, building environmental administrative capacity, and boosting incentives for polluters to comply with environmental regulations and support adoption of cleaner technologies.

Reducing pollution is a high priority for the government. In 2013 the government introduced the Air Pollution Prevention and Control Action Plan. In recent years, the government has issued new regulations to control pollution from electric power, steel and cement, and other industries; promoted clean energy and intensified the emission standards for motor vehicles; and strengthened control over bulk coal and dust pollution. According to government statistics, the average PM10 concentration of 338 municipalities and prefecture-level cities nationwide declined by 15.5 percent from 2013 to 2016. Among these cities, the 74 cities that implemented new air quality standards saw their average concentration of PM2.5 reduced by 22 micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$), or 30.6 percent compared with 2013.

China can leverage private markets to boost green innovation and reduce environmental costs and waste. The country’s past administrative approaches emphasized end-of-pipe pollution control, but such

¹⁴⁷ World Bank estimates based on MEP (2010), Eurostat (2010), Eurostat database; Ministry of Finance (2009), State Forestry Administration (2009), and Wang and others (2010).

¹⁴⁸ China 2030 (2013), pages 233 and 237.

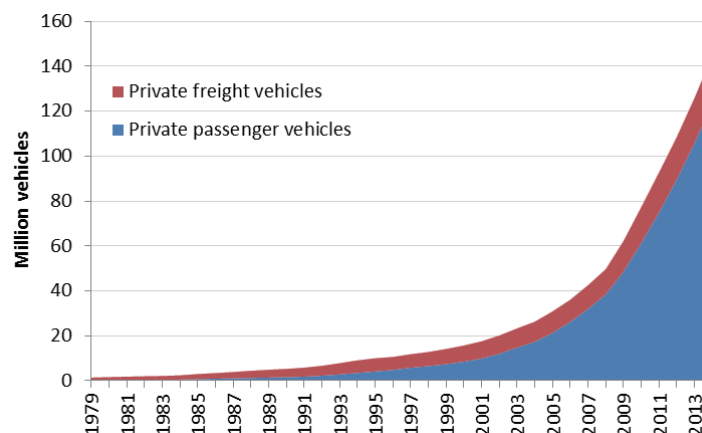
measures could not sufficiently support source prevention and pollution control. Administrative measures have played important roles, but market mechanisms have been relatively underutilized in reducing pollution. Environmental policy instruments could be rebalanced toward more market-based tools, such as pricing, that more fully reflect environmental externalities and taxes and trading systems for carbon, air and water pollution, and energy use. Finally, the government recognizes that to fill the sizable financing gap for “greening” growth, public funds will need to be used to leverage private sector investments, such as through PPPs, green bonds, and other instruments.

The Threat of Air Pollution

Pollution is among the leading health risks in China. In accordance with the Institute for Health Metrics and Evaluation, pollution is the fourth most important contributor to death and disability in China, after dietary risks, high blood pressure, and tobacco smoke (2015).¹⁴⁹ With more people moving to large urban centers, exposure to air pollution has been increasing, and therefore so has the associated health risk. To address this challenge, the government of China has prioritized addressing air pollution and has set air quality improvement targets supported by comprehensive multisector and multiyear air pollution prevention and control plans.¹⁵⁰

Coal burning has been one of the most important contributors to ambient PM_{2.5}. It is responsible for 40 percent of population-weighted PM_{2.5} in China, according to a Tsinghua University and Health Effects Institute study. Industrial sources, from both coal and noncoal emissions, were the largest sectoral contributor to PM_{2.5} in China, in particular the iron and steel and cement industries.¹⁵¹ Various analyses show that to achieve the national PM_{2.5} standard of an annual average of 35 $\mu\text{g}/\text{m}^3$ and transition to a low-carbon growth path, China will need to reduce its annual coal use from 4 billion tons to around 3 to 3.5 billion tons by 2030. The social and political costs of restructuring heavy, polluting sectors present a major challenge to producing deeper reductions in pollution from industry over the long term. This is particularly challenging in industrial areas that have already begun to eliminate outdated capacity and are experiencing slowing growth.

Figure 4.2: Growth of China’s Private Vehicle Fleet, 1979–2014



Source: NBS, <http://data.stats.gov.cn/>.

¹⁴⁹ Institute for Health Metrics and Evaluation (<http://www.healthdata.org/china>). See also World Bank and Institute for Health Metrics and Evaluation (2016).

¹⁵⁰ World Bank and Institute for Health Metrics and Evaluation (2016).

¹⁵¹ China Council for International Cooperation on Environment and Development (CCICED) (2014), “Performance Evaluation on the Action Plan for Air Pollution Prevention and Control and Regional Coordination Mechanism,” CCICED 2014 Annual General Meeting, December 1–3.

Agriculture is an important source of air pollution, in the form of NH₃ emissions from fertilizer use and livestock. The Ministry of Agriculture has set a target of halting further increases in fertilizer and pesticide consumption by 2020. Technical solutions for the inappropriate application of fertilizers have been identified and piloted. The next steps would be to scale up the implementation of the solutions, which will have to take into account pressures to maximize grain yields and existing fertilizer subsidies. For pollution from livestock farms, the high application rates of livestock and poultry manure are the key issue. As demand for animal products has rocketed, permits and inspections of feed operations will also need to be scaled up.¹⁵²

In the transport sector, efforts to reduce air pollution from vehicle emissions have been hampered by capacity constraints and organizational fragmentation. China has been undergoing rapid motorization (Figure 4.2), and as a result, emissions from road transport are rising, particularly in cities such as Beijing where vehicles account for 56 percent of NO_x and 22 percent of PM_{2.5} emissions.¹⁵³ The regional movement of air pollutants has added to the complexity of the problem. In recognition of the challenges, the government is in the process of strengthening capacity for standards setting and enforcement as well as the enforcement powers of environmental authorities, tightening fuel quality standards, and promoting innovation in the heavy-duty vehicle segment of the domestic auto industry. To address the fragmentation of the planning and management of the urban transport system, the government aims to establish a comprehensive transportation system. Several efforts have been made to manage vehicle emissions, including through vehicle registration and usage control, improved fuel quality and upgrading of emission standards, and obsoleting of “yellow label” vehicles with heavy emissions and old cars. However, such measures might need to be complemented by a pricing policy for the use of private cars in the long run.

Public transportation has expanded, but the share of urban commuting remains relatively low. In response to the rapid motorization and worsening levels of congestion, local governments rapidly expanded the urban public transport infrastructure in the past decade. However, the speed of China’s economic development, and therefore the demand for private cars, outpaced the expansion of public transport. As a result, public transport’s share of commuting in major cities is still low, at about 30 percent compared with more than 60 percent in some major cities such as London, Tokyo, and Seoul. Major constraints to scaling up public transportation remain, including insufficient attention to the quality of public transportation services, which lowers demand, and poor urban planning, which results in sprawl-type land use patterns that are not suitable for providing effective public transport services.

Household use of solid fuels is an important source of indoor air pollution. According to the Ministry of Environmental Protection (MEP), in 2012 roughly 590 million people in China still rely on biofuels or coal for cooking, and 470 million burn solid fuels to heat their homes,¹⁵⁴ with the vast majority living in the countryside.

China’s Sizable Impact on Climate Change

China is the world’s largest emitter of global greenhouse gas (GHG) emissions. Although its average per capita emissions is comparable to EU countries, China’s annual GHG emissions is estimated to be the largest in

¹⁵² Zhang and Crooks (2012).

¹⁵³ Guan and Liu (2013).

¹⁵⁴ MEP (March 14, 2014), “MEP Publishes Results of Research on Population Environmental Exposure Modeling”, http://www.mep.gov.cn/gkml/hbb/qt/201403/t20140314_269210.htm.

¹⁵⁵ World Bank Open Data, <http://data.worldbank.org/indicator/EN.ATM.CO2E.KT?view=map>.

the world due to the size of the economy (2013).¹⁵⁵ More than 80 percent of China's GHG emissions come from the coal power and industrial sectors. The main drivers for high GHG emissions are substantial growth in energy demand, which accounts for 70 percent of total energy consumption, and the high share of coal use in heavy industry such as iron, steel and cement. China has the world's largest coal industry and the second largest power industry. Primary energy demand doubled in the first two decades of China's economic reforms but took only one decade to double again from 2001 to 2010. China also produces half of the world's iron, steel, and cement.

Climate change further increases pressure on China's environment.¹⁵⁶ Climate change will contribute to continued increase of annual mean surface temperature in China. It has caused a drop in agricultural (wheat and corn) production in China and led to more frequent floods and droughts. The coastal sea level has been rising, the severity of storm-induced disasters is increasing in China's coastal zones, and coastal erosion is worsening. In the water-starved north, environmental forecasting shows that surface runoff is projected to decrease because of climate change. In the heavily populated delta regions, rising seas will threaten cities that are already sinking because of the overuse of groundwater and the weight of construction.¹⁵⁷ Climate change will also exacerbate existing pressures from human activities on natural ecosystems.¹⁵⁸ Disappearing permafrost has caused slope failure, soil erosion, and other physical changes in the landscape, leading to increased desertification and adding to the effects of overgrazing.

China's Nationally Determined Contribution (NDC)¹⁵⁹ targets a cut in its CO2 emissions per unit of GDP by 60 to 65 percent from 2005 level by 2030. To achieve this target, China aims to increase non-fossil fuel sources in primary energy consumption to about 20 percent by 2030 and increase its forest carbon stock volume by around 4.5 billion cubic meters from 2005 levels. The new carbon intensity target builds on China's existing target to reduce intensity by 40 to 45 percent by 2020, and it is roughly consistent with scenarios showing China's CO2 emissions peaking by around 2030. China's NDC forest carbon goal is ambitious. The country increased its forested area by 21 million hectares from 2005 to 2014. To achieve its NDC forest carbon goal, China will have to further increase forested area by about 70 million hectares, almost three times the size of the United Kingdom.

China's NDC indicates that it is serious about moving toward a comprehensive framework for addressing GHG emissions and continuing to build on significant gains already achieved. China's NDC outlines a wide range of policies and measures that it intends to use to achieve its stated climate change mitigation and adaptation goals. Although perhaps more measurable targets and the trajectory of GHGs could have been identified to allow for better monitoring, in general the NDC indicates China's seriousness about moving toward a comprehensive framework for addressing GHG emissions. Some of the proposed actions include¹⁶⁰ scaling up emissions trading and improving emissions accounting systems; controlling coal and implementing targets to increase wind and solar capacity, as well as the share of natural gas; controlling emissions from key industrial sectors such as iron, steel, and chemicals; promoting development of less emissions-intensive sectors like the service industry; and addressing emissions from buildings and transport, which are gaining in importance as China moves to bring industrial emissions under control.

¹⁵⁶ "Second National Communication on Climate Change of The People's Republic of China."

¹⁵⁷ Sall (2013).

¹⁵⁸ Fischlin and others (2007); NARCC (2011).

¹⁵⁹ People's Republic of China (2015), Enhanced Actions on Climate Change: China's Intended Nationally Determined Contributions.

¹⁶⁰ World Resource Institute.

Greening Energy and Industry

China's plans to reduce its reliance on coal will be critical to addressing the country's pollution challenges as well as to reduce global GHG emissions. China accounts for around half of total global coal consumption. Its coal consumption declined for the first time in 2015.¹⁶¹ China's NDC includes increasing the share of non-fossil fuels in primary energy consumption to around 20 percent by 2030, and lowering coal consumption of electricity generation of newly built coal-fired power plants to around 300 grams coal equivalent per kilowatt-hour. It will also be critical to reduce consumption of coal by industries, which consumes as much coal as the energy sector.

Energy prices have risen considerably over the past two decades, although prices still do not fully internalize the environmental and health costs of fossil fuels. Retail energy prices in China have risen considerably over the past two decades. Most end-user prices paid by industry, the largest end-user of energy, are at or above international market levels. Electricity prices compare relatively well to long-term marginal supply costs, though some distortions remain in the form of cross-subsidies to residential consumers, and the government has allowed oil prices to fluctuate more closely with overseas markets. China has also imposed resource taxes on oil, natural gas, and coal, but it is unlikely that the tax on coal sufficiently accounts for the full public health costs from the impact of air pollution.

The growth of renewable energy in China has been unprecedented, and it can continue to grow through further reforms in power tariff structure and dispatch rules. The 2005 Renewable Energy Law, one of the first in the developing world, set a solid foundation for developing renewable energy to meet an increasing demand for electricity. The government adopted feed-in tariffs for wind and biomass power and more recently solar photovoltaic technology, and it set up several schemes to compensate renewable energy generators for the incremental costs between renewable energy and fossil fuels. China has the world's largest installed wind power capacity, and more than half of the world's solar water heaters, and is home to the world's leading solar and wind manufacturers. NBS reported that in 2014 coal consumption fell 3 percent even while its total energy consumption grew, because of a 11.2 percent share from non-fossil energy. However, further growth of renewable energy to achieve the government's 13th FYP targets is facing major impediments, as 15 to 20 percent of wind generation is wasted by severe curtailments. The recent issuance of State Council Decree No 9 is a clear sign that the government intends to revive power sector reform, where further adjustments in power tariff structures and dispatch rules could result in deeper cuts in coal consumption for power generation and reduce curtailment of renewable energy. The power sector reform process could also more fully address the specific characteristics of renewable technologies to address intermittence issues.

Structural reforms and operational improvements would help further curb pollution. In the coal sector, strengthening technical and economic regulations could further reduce the use of low-quality unwashed coal. In the hydrocarbon (oil and gas) subsector, operational efficiency of incumbent firms could be enhanced by exposing them to greater competition through increased market entry by private operators, starting from the nonstrategic downstream segments of the business. In particular, greater competition could accelerate development of the gas subsector and thereby increase gas supply, which in turn would help reduce the use of the more

¹⁶¹ China Energy Statistics Yearbook, 2015.

polluting solid fuels by households in urban areas.

China has made significant gains in energy efficiency. China reduced energy intensity by about 70 percent over the past 30 years, a remarkable achievement that helped decouple energy consumption growth from economic growth. Based on data from the Sustainable Energy for All (SE4ALL) Global Tracking Network, China accounted for more than half (54.9 percent) of global energy savings from 1990 to 2010. These savings equaled the amount of energy China consumed in the same period. The impressive achievement in reducing energy intensity was because of strong government commitment, with national targets for energy intensity reduction managed through the cadre evaluation program.

China's industrial sector has made unprecedented progress over the past decades in reducing the amount of energy used per unit of value added, but continues to lag behind the energy productivity of high-income countries. The challenge is that industries lack sufficient incentives and financing to invest in energy efficiency, while local governments lack the capacity to adequately implement energy efficiency regulations. With regard to incentives, investments in energy cost savings rarely appear to be a top priority for industries. Access to financing can also be difficult because commercial banks appear reluctant to accept future cash flows from energy savings as security, and therefore innovative financial solutions may be needed. Finally, local governments are faced with significant capacity constraints in implementing industrial energy efficiency programs, particularly given the large increases in the direct responsibility of city governments for supervising industrial energy use.

Water and Soil Pollution

Water pollution in China is a serious problem, particularly given the acute scarcity of water. Though surface water quality has improved over the past decade, pollution remains a serious problem. The problem of groundwater pollution is becoming prominent, greatly affecting agricultural production and residential water use. In 2014, nearly 37 percent of water sampled in the country's major river basins was unfit for human contact and about 16 percent unfit for use (Figure 4.3).¹⁶² Groundwater is an important source of drinking water in some cities and in rural and periurban areas not served by a centralized water supply. In 2014, more than 61.5 percent of monitored groundwater sites were of poor quality, with 16.1 percent of sites showing "extremely poor" quality.¹⁶³ However, groundwater quality monitoring data are based on a very limited number of wells, and therefore the monitoring results may not be representative. The sources of water pollution mainly include industrial and agricultural pollution. Livestock and poultry operations are the main culprits in agriculture water pollution.

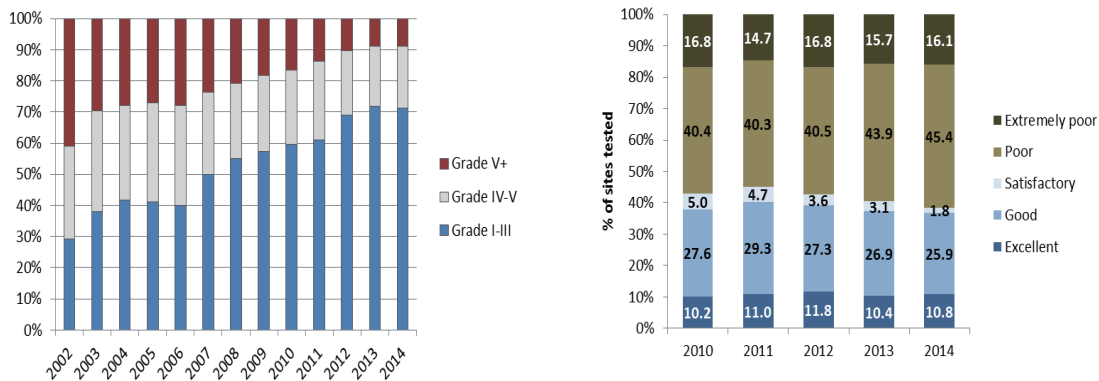
Progress has been made in wastewater treatment, but more needs to be done. Urban and industrial wastewater treatment has led to notable steady improvements in some aspects of water quality in China's major river basins since 2001. Urban wastewater treatment coverage has significantly increased over the years. At the end of the 12th Five-Year Plan, the urban wastewater treatment rate reached 85 percent, compared to 46 percent in 2004, and the wastewater treatment rate at the county level reached 70 percent. However, the wastewater treatment rate at the township level remains at only 25 percent. Collection and treatment of wastewater at the

¹⁶² MEP (2015).

¹⁶³ Ibid.

village level lag far behind. Lack of laws and regulations, construction and maintenance funds, applicable wastewater treatment technologies, and realistic effluent discharge standards as well as enforcement capacity remain the key challenges. The Ministry of Housing and Urban-Rural Development is currently promoting rural wastewater treatment work in select pilot counties, cities and districts, toward the goal of wastewater treatment rate for rural toilets of above 75 percent. Progress has also been made in terms of water management favoring minimization, reuse, recycling, and recovery. The Ministry of Agriculture together with provincial departments of agriculture has initiated programs to promote techniques for more efficient fertilizer use and safer pest management and reducing wastewater discharges from livestock farms, including by offering incentives to farmers.

Figure 4.3: Improving Surface Water Quality in China but Limited Progress in Groundwater Quality



Sources: MEP, State of the Environment (various years).

Soil contamination has emerged as a critical threat to health and the environment. Soil pollutants contaminate the food chain and pollute groundwater and surface waters. A joint nationwide survey by the MEP and Ministry of Land and Resources (MLR) found that 16 percent of sampled areas exceeded screening thresholds for pollutants. In particular, 35 percent of industrial legacy sites and 36 percent of highly polluting enterprise sites did not meet standards. About 19 percent of soil survey points in agricultural areas did not meet standards, posing a risk to food safety as well as the health of those who work in these areas. Although sources of soil pollution vary considerably between regions, wastewater irrigation stands out as one of the main problems. In a recent nationwide soil survey by the MEP and MLR, the majority of areas where wastewater is used for irrigation continued to exhibit signs of pollution. The State Council banned the use of sewage water for irrigation in 2013, and full implementation of the ban is still ongoing. Even with the ban, the country must still contend with the legacy of pollutants that have already accumulated in the soil over past decades.

Efforts to address soil contamination face many challenges. Policy challenges are mainly about establishing an effective compliance and enforcement framework and mechanisms for identifying and financing past soil contaminated areas. In May 2016, the State Council issued the Action Plan for Prevention and Control of Soil Pollution which aims to curb soil pollution and improve soil quality by 2020. According to the revised Environmental Protection Law, efforts will be stepped up in soil protection, including by establishing sound systems

for surveying, monitoring, assessing, and rehabilitating contaminated soil. The law on prevention and control of soil pollution is being modified and improved. Chinese rehabilitation technologies for soil and groundwater are relatively lacking, and therefore the government aims to intensify R&D in prevention and control of soil pollution. Although the central and local governments have allocated special funds for prevention and control of soil pollution, the gap in this regard remains significant. Information disclosure and public awareness of soil pollution need to be improved.

In recent years, China has put a greater emphasis on finding viable solutions to addressing contaminated soils. The State Council and relevant ministries have set out principles and developed several programs to finance remediation. These include “polluters pay,” attracting investors and developers in brownfield redevelopment, and providing significant funds to local governments for heavy metal pollution prevention and control. Various recent studies on financing options have been completed, and central and local governments have initiated several financing programs. Such interventions will need to develop a track record and be scaled up. One challenge is that China is facing high per unit costs for cleanups compared with international standards. Therefore, local governments will require approaches and tools for cost-effective site remediation, using risk-based remediation. Credible and robust estimates of the costs and benefits of remediation and the use of such estimates in the prioritization of sites for remediation will be critical.

Solid waste management is a significant challenge for local and national authorities. Economic growth and high level of urbanization have led to an increase in national municipal solid waste. The volumes of solid waste have increased rapidly in recent years to around 300 million tons in 2011, up from 190 million tons in 2004. Projections for total national waste volumes in 2030 are around 600 million tons per year. Given scarcity of land and government incentives for waste-to-energy schemes, many urban municipalities are increasingly resorting to incinerating solid waste instead of using landfills. However, financial and technical capacity constraints cause some plants to emit pollution above levels considered safe.

The main challenge for municipal waste management is to establish a sustainable financing model by ensuring that those who generate the waste pay for the collection and disposal services. The central government is making substantial investments in waste collection and disposal, and it has issued new important laws, such as the “Solid Waste Pollution Prevention and Control Law” and the “Circular Economy Promotion Law.” In 2014 the MEP issued a revised emission standard for household garbage incineration, which is in line with the international standards. More than 80 percent of cities have started to charge treatment fee, but normally those fees do not capture the full costs, with the remaining costs covered through general government spending.

Sustainable Management of Natural Resources

Water scarcity is a significant challenge for China. China has the sixth largest renewable freshwater resources globally. However, per capita water resources are only about 28 percent of the global average, making the country one of the most water-scarce nations in the world.¹⁶⁴ Water scarcity has already become a constraint to economic development, particularly in the north. Over the past 50 years, China has made remarkable progress

¹⁶⁴ World Bank (2013); Ministry of Water Resources (2016).

in developing infrastructure necessary to manage its water resources, including a significant expansion of hydraulic infrastructure. But despite these significant gains, management of water resources continues to be a challenge, in part because of rapid population growth and the associated increase in demand for water, rapid urbanization and industrialization, and a variable and increasingly uncertain climate.

The growing and competing demand for water resources and the multiple objective nature of the problem require significant coordination of policies and a new generation of institutional reforms. Water resource management concerns not just water but also food and energy security as well as environmental sustainability. The use of water for agriculture and power generation must take into account the impact on water scarcity as well as on China's ecosystems and flow of environmental services. Water management requires high-level coordination between government agencies. For example, the State Council promulgated the "Opinions of the State Council on Implementing the Strictest Water Resources Management System," and nine ministries and commissions including the Ministry of Water Resources and the National Development and Reform Commission jointly issued the "Notification Regarding Implementation Plan on Assessment of the Strictest Water Resources Management System during the Thirteenth-Five-Year Plan Period" in 2017. Water management would also require a new generation of institutional reforms that promote market mechanisms, such as the reform of the water price and water rights system, water sector innovations focused on improving water productivity, building a strong knowledge base and capacity as well as databases for water resources monitoring and control, and strengthening the legislative and regulatory framework to help enforce policies and regulations.

Forests provide a range of ecological services, and millions of the poor in remote mountainous areas are dependent on forest resources. Forest areas cover 21.7 percent of the country and provide significant ecological services, including protection against soil and water erosion, reduction of atmospheric pollution, and conservation of biological diversity. Forests represent a net carbon stocks equivalent of 8 percent of the country's total GHG emission.¹⁶⁵ The forest sector is a vital source of employment and income generation, supplying about 45 million employment opportunities to rural people annually. In addition, about 400 million farmers live on about 100 million hectares of village-owned forestland. Around 490 of the 592 national poverty counties are located in mountainous areas, suggesting that forest resource development and management are critical to poverty alleviation.¹⁶⁶ As indicated in its NDC, China plans to significantly increase its forestry area, increasing its volume of forest stock volume by 4.5 billion cubic meters from 2005 to 2030.

China has largely reversed the decline in forest cover, but total forest coverage remains relatively small, isolated, and of uneven quality. In the mid-1980s, the government began to adopt a series of forest sector policy reforms, including a logging ban and reforms in forest ownership that provided long-term forest management rights to households. As a result, the national forest cover nearly doubled from less than 115.3 million hectares in the 1980s to the current 207.7 million hectares. However, per capita forest area in China remains low, at about 0.15 hectares, significantly below the world average of 0.77 hectares. Large areas of forests are of poor quality and provide low levels of ecological and economic functions. An inadequate total quantity of forest resources, limited forest coverage, inadequate operations, and low forest quality affect ecological functions, such as prevention of soil erosion. China is aiming for a multifunctional, "near natural"

¹⁶⁵ SFA (2011).

¹⁶⁶ SFA (undated).

approach to sustainable forest management, which emphasizes the multidimensional (ecological, economic, social, and cultural) functions of forest ecological systems in water storage, soil conservation, adaptation to climate change, protection of biodiversity, and provision of wood. However, it has yet to fully mainstream principles of landscape conservation into land use planning, and address biodiversity at provincial and local levels that balances human needs with wildlife conservation.

China leads the world in fish production, and hence managing the environmental impact of the sector is critical. China's fisheries sector has grown at an impressive rate over the past two decades, virtually quadrupling production from 1990 to 2012, accounting for more than 1 percent of total GDP.¹⁶⁷ To further realize the potential of the sector, China would need to manage the significant environmental impacts of both the aquaculture and capture fisheries subsectors, and explicitly target the poor in plans to scale up production to meet growing domestic demand for fish. Environmental concerns include conversion of large areas of coastal habitat, degradation of land and water quality, and food safety and environmental sustainability.

Land degradation is a severe and growing problem. The existing water and soil erosion area of the country totals 2.9 million square kilometers, accounting for 30.7 percent of the total land area. The total area of Chinese desertification and stony desertification has reached around 20 percent of the aggregate land area. Most of the country's grasslands are located in arid and semiarid regions with fragile ecosystems. Most of the 592 counties identified in the China Rural Poverty Alleviation and Development Outline 2001–10 are in fragile ecological zones. As such, they suffer from ecological stress, including land degradation, soil erosion, drought, waterlogging, and natural disasters. In those areas, people depend on subsistence farming and are therefore impacted by limited land availability and are vulnerable to climate change

Reducing local governments' fiscal incentives to overdevelop land will be critical for promoting the efficient use of land. The incentive for local governments to sell land is strong, given the revenue-expenditure mismatch and the government's ability to requisition agricultural land for urban use. Requisitioning rural land and selling it for commercial and residential purposes have yielded large gains. During 2003–8, the government requisitioned 1.4 million hectares of agricultural land for urban use.¹⁶⁸

China is one of the world's most biologically diverse countries, yet it also has some urgent priorities for global species conservation. Ecological health is on the decline in China,¹⁶⁹ and the threat of species endangerment is increasing.¹⁷⁰ According to China Biodiversity Red List, 11 percent of wild higher order plants and 21 percent of vertebrate species are under threat in China. According to the results of the first survey of wild plant resources under state key protection, 5 percent of surveyed species and 55 wild plants are exposed to extinction risks at any time. Measures of ecosystem health and natural habitat show that the overall situation is worsening despite some limited improvements.

Land use change and habitat fragmentation, especially from agricultural and urban expansion, represent the chief threat to terrestrial biodiversity and ecosystems. Growing demand for animal products and extensive grazing has claimed additional land, with 90 percent of the country's grasslands now under some degree of degradation, impairing their ecological functioning and reducing average productivity. Other signifi-

¹⁶⁷ Hansen and others (2011).

¹⁶⁸ Wang, Tao, and Man (2010).

¹⁶⁹ According to the MEP, "China's environment continues to deteriorate, environmental conflicts are apparent, and pressures on the environment are growing" (MEP 2011[SOE]).

¹⁷⁰ MEP (2010) [SOE].

¹⁷¹ Liu and others (2005); CCICED (2010).

cant drivers of ecosystem change include pollution and the overuse of scarce water resources.¹⁷¹ Strong growth of China's aquaculture and fisheries sector has similarly led to the conversion of large areas of coastal habitat, degradation of land and water quality, and added concerns related to food safety and environmental sustainability.

China has set targets to preserve terrestrial biodiversity, but challenges remain in terms of institutions, legislation, capacity, and funding. At the state level, different elements of the ecological system are managed by different government departments, which raises challenges of coordination. One key example is nature reserves. To protect biodiversity, China has rapidly expanded nature reserves, which now cover close to 15 percent of the country. Nature reserves have played an important role in protecting the ecology and endangered species. However, the administrative bodies for some nature reserves have no direct jurisdiction over their land, water, and forest resources. In addition, they lack adequate levels of operational funding, and some municipality-level and county-level conservation areas lack clear division of boundaries and administrative bodies.

Natural Disasters

China is severely affected by natural disasters, and the risk is expected to rise with climate change. China is among countries with the highest total as well as per capita (per 100,000) number of people affected by natural disasters in the world.¹⁷² Between 2000 and 2014, weather-related disasters caused more than RMB 4.645 trillion (US\$749 billion) in damage. Strong evidence suggests that climate change is altering the profile of hazards.¹⁷³ For example, the observed frequency and severity of extremely heavy rain storms since the 1950s have significantly increased, and future climate scenarios suggest that interannual variability in rainfall may increase further, aggravating the risk of flooding.¹⁷⁴

Exposure to disasters is growing, especially in dense urban areas. China has a large urban population living in low-elevated coastal areas (Figure 4.4) and is home to two of the world's 10 most vulnerable cities: Guangzhou and Shanghai.¹⁷⁵ Both cities are fast growing metropolitan areas, with 12 million residents potentially exposed to floods.¹⁷⁶ Although China has managed to reduce flood deaths significantly over the past decade, earthquakes continue to contribute to high numbers of deaths, 67.5 percent of mortalities from natural disasters, and high earthquake-related deaths per 100,000 inhabitants. Chinese cities, such as Tianjin, Tangshan, Beijing, and Chengdu, are ranked among the world's cities with highest GDP at risk due to earthquakes.

The poor often live in high disaster risk areas, including remote and border areas, mountainous areas with high annual rainfall, and areas with high earthquake risks. The poor tend to lack assets and adequate access to financial resources and basic services, all of which amplify the impact of disasters. Housing is often of lower quality, services are more distant, and basic infrastructure may be lacking. In cities, poor disaster risk planning, lack of maintenance, and lack of knowledge about local risks by migrant workers increase overall disaster risk for the urban poor.

Given China's rapid urbanization, cities may be vulnerable to existing and future disaster risks. The government has made great efforts in improving flood disaster prevention capacity, strengthening infrastruc-

¹⁷² Based on cumulative deaths over 1994 to 2013: CRED (2015).

¹⁷³ IPCC (2012).

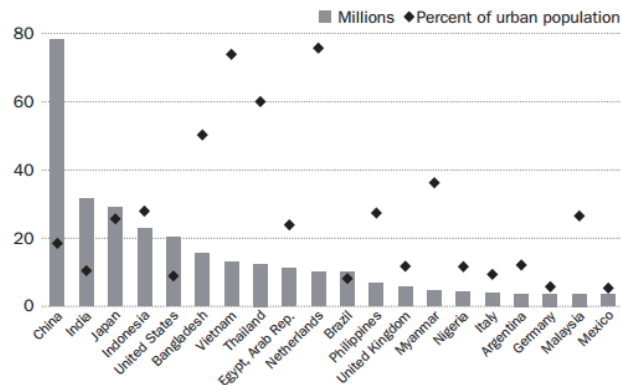
¹⁷⁴ Sall (2013).

¹⁷⁵ World Bank (2014).

¹⁷⁶ Swiss Re (2013).

ture, and improving and reinforcing reservoirs and dikes. However, there are still remaining challenges to the flood disaster relief system, including the strengthening and maintenance of drainage and flood control infrastructure. Flood protection infrastructure can be costly to build and maintain for local governments. Cities experiencing rapid urbanization are already struggling to keep pace with demand, especially for sewerage and waste disposal services, which are contributing factors in urban flooding. Because of fast urbanization and infrastructure concentration, the exposure of assets and people to earthquakes is increasing. Although in recent years China revised building code provisions and advanced risk assessment and mapping, the accumulated stock of vulnerable housing, facilities, and infrastructure will require seismic retrofitting to bring them up to higher seismic safety standards.

Figure 4.4. Countries with Highest Urban Populations Living in the Low-Elevation Coastal Zone



Source: CIESIN 2007.

Source: Cited in World Bank 2012a.

China could strengthen its capacity for disaster risk management, in particular with regard to planning and coordination and expanding its insurance markets. In 2016 the government announced the State Integrated Disaster Risk Reduction and Mitigation Strategy (2016–20) and set a target of maintaining direct economic losses from disasters to within 1.3 percent of GDP. China has several strengths in disaster risk management, in particular with regard to its multihazard early warning system. The Shanghai Meteorological Service is an example of global best practice in providing the capacity to alert, warn, and respond to a wide range of meteorological, hydrological, and environmental hazards. However, currently disaster risk management is focused excessively on emergency response to disasters. Risk information is insufficiently used in planning and horizontal activities, and the vertical coordination mechanism needs to be further strengthened. Considering the pace of urbanization, China is likely to become a region with comparatively high economic loss potential, which will likely result in increased demand in the insurance market.

Strengthening Governance and Institutions for the Environment

China has one of the most comprehensive sets of environmental laws and regulations in the world,¹⁷⁷ but monitoring and enforcing compliance have been challenging. The MEP has about 400 staff, about 2,000 in directly affiliated institutions, and 600 in regional offices. By comparison, the U.S. Environmental Protection

¹⁷⁷ Since 1970, China has enacted eight pollution control laws, 15 natural resources laws, more than 50 environmental protection administrative regulations, more than 200 departmental regulations and other regulatory documents, more than 1,300 national environmental standards, and more than 1,600 local environmental regulations, and has approved and signed 51 multilateral international environmental treaties.

Agency has 17,000 employees while serving a population that is a quarter of the size of China's. Technical capacity to monitor and enforce environmental regulations in local environmental protection bureaus (EPBs) is highly variable. In poorer parts of the country, budgetary resources tend to fall short of bureaus' expanding responsibilities at the local level. The revised Environmental Protection Law, amended in 2014, gives local EPBs more power to levy heavier fines against polluters, but enabling EPBs and other agencies to adequately carry out their responsibilities will require greater investments in institutional capacity.

Public participation in monitoring can help hold polluters accountable to environmental requirements, but their use remains relatively limited. The Environmental Protection Law, which was revised in 2014 and went into effect January 2015, makes it possible for NGOs to sue polluters in the public interest. However, the law imposes restrictions on which NGOs qualify to bring forward cases.¹⁷⁸ Currently, about 10 percent of registered environmental NGOs in China meet these qualifications. In addition, the number of public interest litigation cases is still relatively low.¹⁷⁹ To increase compliance with environmental laws and regulations, several local governments have enhanced information disclosure and found it to be an effective pollution control instrument. Many provinces and cities have established 24-hour hotlines that allow citizens to make environmental complaints directly. Citizens can also complain directly to local EPBs. Some local governments use social media for broader information distribution and feedback. Many examples are found of polluters being exposed by members of the public.¹⁸⁰

Air and water pollution travel across administrative boundaries, and therefore solutions require cooperation beyond the individual jurisdictions of local governments. Hence, regional institutions and regional coordination mechanisms are critical to overcoming coordination problems. The regional nature of air pollution in several parts of China requires that an approach be applied to city clusters, such as the Jing-Jin-Ji region. Similar institutional arrangements at the watershed scale would benefit the management of water resources, for controlling upstream sources of pollution and integrating environmental water needs in resource allocation planning. An integrated water and environmental management approach has been successfully tested in the Hai River basin and could be deployed on a larger scale in other basins.

At both the national and local levels, the governance of utilities is fragmented across multiple agencies. For instance, wastewater treatment fees are tacked on to water bills collected by water supply companies and water conservation offices. This has lowered collection rates for wastewater charges, particularly among industries with their own water supply.¹⁸¹ In the solid waste management sector, many townships and villages simply do not have institutional arrangements for waste management. In many rural areas, there is no collection at all; waste is burned in the open or left where it is dumped or littered.

Improving Environmental Information

Tackling China's acute environmental challenges is predicated on good data and understanding of the sources, impacts, and costs of pollution. This will require investing in the capacity of city and county offices to gather and publicly report accurate energy and water use statistics as well as data on industrial discharges. For more advanced locales, improving the collection of environment data will mean conducting detailed

¹⁷⁸ Article 58 of the revised Environmental Protection Law.

¹⁷⁹ Kong Lingyu, "After Years, Debate over Environmental Public Interest Law Suits Finally Resolved". January 7, 2015, <http://m.china.caixin.com/m/2015-01-07/100772094.html>.

¹⁸⁰ World Bank (2014).

¹⁸¹ World Bank and DRC (2014).

emissions inventories to identify specific sources and analyzing their contribution to monitored pollution levels. The MEP has issued draft technical guidelines for air emissions inventories, and 14 cities around the country have been selected to complete pilot inventories.¹⁸² The pilot inventory program could be complemented by ongoing support for different cities and regions to produce and publish technically rigorous and comparable air quality studies as part of their mandated air quality control plans. Parallel efforts will be needed to assess sources of water and soil pollution.

Lack of information and knowledge about specific sources, causes, and risks of pollution is probably greatest with soil contamination. The most recent national soil survey by the MEP and MLR provided a good overview of the extent of the problem, particularly for agricultural land, but the degree of pollution and health risks in specific locations is still relatively unknown. China has instituted a preliminary process for hazardous waste management system that includes monitoring of activities that generate, collect, store, transport, treat, and dispose of hazardous waste. More analysis is needed to assess the performance of the system and identify the required reforms and capacity building.

More than 350 cities are already monitoring and reporting PM2.5 in near-real time, setting a precedent for expanding the monitoring of other environmental risks. The monitoring is carried out through the China National Environmental Monitoring Center (CNEMC) platform. Remaining challenges include the establishment of monitoring networks for soil quality and soil contaminants such as wastewater irrigation, which continues to lag,¹⁸³ and the scaling up of the monitoring of municipal drinking water sources and the tracking system for hazardous materials.¹⁸⁴ Real-time data collection and accurate reporting of emissions is a precondition for many market-based policy instruments, including emissions trading. A work plan could be established to identify critical knowledge gaps that remain in the area of monitoring pollution and environmental health, such as the relationship between heavy metal pollution in soil and water and food safety and public health.¹⁸⁵

Key Priorities

The key priorities identified in this chapter are the following:

- Make fuller use of market mechanisms to reduce pollution and promote green growth and more efficient and sustainable use of natural resources.
- Strengthen resilience to climate change impacts, such as in agriculture, water, urban development, and large infrastructure.
- Reduce the use of fossil fuels, through continued promotion of energy efficiency, renewable energy, efficiency in the heavy industries, and green transportation.
- Strengthen the capacity of the MEP and regional institutions for monitoring, preventing, and controlling pollution.
- Strengthen the institutional arrangements, capacity, and financing for managing legacy contamination sites.
- Promote sustainable management and efficient utilization of natural resources, in particular with respect to the use of land and water resources.

¹⁸² MEP (2014) (inventory). The cities are Beijing, Tianjin, Shijiazhuang, Shenyang, Shanghai, Nanjing, Fuzhou, Jinan, Wuhan, Changsha, Guangzhou, Shenzhen, Chengdu, and Urumqi. The pollutants to be included are SO₂, NO_x, CO, VOCs, NH₃, PM₁₀ and PM_{2.5}. CO₂ emissions and other GHGs are not included. MEP (2015) (inventory notice).

¹⁸³ Wan and others (2015); Teng and others (2014).

¹⁸⁴ The State Council's 2013 work plan for soil protection calls for a soil quality monitoring network "to be basically established" by the end of 2015. See State Council (2013).

¹⁸⁵ Lu Yonglong and others (2015).

- Improve the collection, use, and public dissemination of environmental information.
- Strengthen disaster risk management.

Chapter V

Leveraging Global Trade and Investments

Introduction

Enhancing China's global integration is an important agenda for both China and the global economy.

China's level of production, consumption, imports, and exports carries vast global implications. Today China is a key integrating force in the global economy and a crucial link in the world's many production networks. In the "Report on the Work of the Government" presented at the Third Session of the 12th National People's Congress (March 5, 2015), Premier Li Keqiang established an agenda for greater global integration through: (a) more flexibility of the RMB, greater convertibility of the capital account, and increased use of the RMB globally; (b) transforming and upgrading China's foreign trade; (c) a more active and effective approach to making use of foreign capital; (d) speeding up the implementation of the "Go Global" strategy; (e) fostering a new environment in all-around opening up; and (f) promoting multilateral, bilateral, and regional opening up and cooperation.

Increasing integration and globalization present a major opportunity to address China's current challenges. Success stories, in particular from East Asia, offer valuable lessons. Japan in the 1960s–70s and the Republic of Korea in the 1980s–90s also faced challenges at similar levels of development as China today. Under the pressures of rising factor costs and a growing appetite for better technologies, these countries pushed for greater integration with the rest of the world and were able to efficiently utilize global resources to gain a competitive edge in international markets. As the world's largest trading nation, China is ideally situated to take advantage of a similar strategy. The country is deeply integrated with the global value chain and is becoming more influential and capable of creating greater value by integrating resources (labor, technology, energy, intermediate inputs) from different parts of the world. This was done for commodities and energy in past decades, and, more recently, China has been venturing into the world for market shares and technologies.

China has become the largest trading nation in the world, and domestic value added has steadily increased, but trade in services remains relatively modest. Since China's World Trade Organization (WTO) accession, trade liberalization has progressed significantly with reductions of tariffs and increasing integration into the global trade system. Growth in exports has been strong, while rising demand for industrial inputs and growing incomes have been accompanied by rapid growth in imports. The domestic value added of Chinese exports has steadily increased. Compared to the export of goods, the export of services remains a small part of total exports, and there are more restrictions on market access to the services sector. China can benefit from increased market access and lower nontariff measures in the service sector. A large open market with low nontariff measures will be attractive for high-income countries, and this will help China to join more trade agreements and become better integrated with the rest of the world. Reforms could prioritize opening access to less sensitive sectors, to both domestic market and international competitors.

During the past decade, China has become a major source of cross-border investments, but barriers to

such investments could be further lowered. According to the Ministry of Commerce, in 2015 China's overseas direct investment (ODI) reached all-time high of US\$147.4 billion from less than US\$40 billion in 2006. Its proportion in global flow rose to 8.7 percent in 2015 from 0.4 percent in 2002, ranking third highest in the world. China received US\$135.6 billion in foreign investment in 2015, indicating higher ODI than FDI and therefore a net capital outflow. A large proportion of foreign investments were in energy and metal, but in recent years a trend has been seen toward more investment in new sectors. An increasing amount of private capital is now responsible for cross-border investments. The government has also made progress on bilateral investment treaties (BITs) to facilitate Chinese ODI. Meanwhile restrictions on FDI in China have been gradually loosened over the years, including the 11 free trade zones established in Shanghai, Tianjin, and other cities since 2013. Going forward, fast tracking the administration surrounding Chinese investment abroad will give Chinese companies a more level playing field in the face of strong international competition. In parallel, efforts on investment treaties should continue to lower other countries' barriers to Chinese investments while developing mechanisms to facilitate and protect these investments. Reforms toward a more competitive financial sector with easier market access would provide Chinese companies the financing needed for ODIs.

In leveraging global trade and investments, China can seek mutually beneficial relations with the world.

The rapid growth of China's exports has been largely driven by its participation in the global production value chain; about one-third of its exports are processing trade—imports that are further processed and then exported—and foreign-invested enterprises accounted for 44 percent of exports, as well as 49 percent of imports (2015) in China.¹⁸⁶ Therefore, China is part of a broader success story in which enterprises from many countries and territories have benefited, directly or indirectly. Furthermore, China is now not only the world's second largest import market, it is also the fastest growing. Its strong demand for raw materials, advanced machinery, and consumer products has benefited developed and developing countries alike. Going forward, this mutual dependence between China and the world economy will only increase. China's large and growing middle class will become an even more important source of global demand, the country's industrial upgrading and expanding trade will lead to further specialization and increased efficiency in world markets, and its increasingly educated labor force will become a force for global innovation. It is now in the world's interest to see a growing and thriving China that will contribute a positive force in support of global economic recovery and sustainable global growth.

Trade

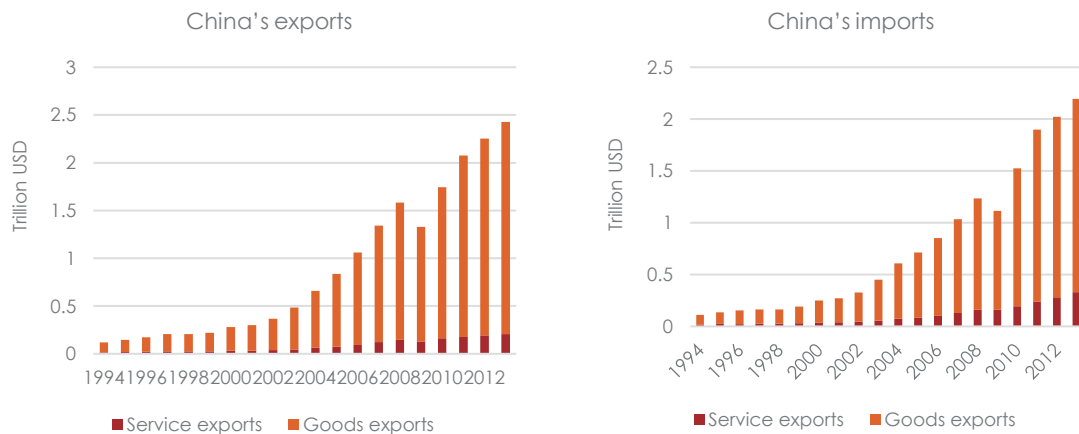
China's total exports in dollar terms rose by 17 percent per year over the past two decades, transforming the country into the world's largest exporter of goods and establishing the country's central role in global production networks (Figure 5.1). Exports of goods accounted for 91 percent of total exports in 2014, having experienced strong growth of 18 percent per year driven by manufacturing exports. Prior to 2001, Chinese exports were mostly from labor-intensive industries where China took advantage of lower labor costs. Since China's WTO accession, trade liberalization progressed significantly with reductions in tariffs, and China has been increasingly integrated into the global trade system.

The structure of China's goods exports has also become increasingly sophisticated, shifting toward more

¹⁸⁶ Ministry of Commerce of the People's Republic of China (2016).

capital-intensive manufacturing products. The transition from exports of textiles and apparel to exports of electronics, electrical goods, and machinery was largely completed by 2004 (Figure 5.2). Exports of machinery and electrical equipment rose from an average of 17 percent of total merchandise exports in 1992–96 to 42 percent of total exports in 2010–14. Policies aiding this transition to “high-tech” exports included the opening up to foreign direct investment, providing incentives for the processing trade, and the use of special economic zones. China’s exports are now the most diversified in terms of profiles of goods exports and in export destinations. After the financial crisis, goods exports remained resilient with 12 percent growth from 2010 to 2014.

Figure 5.1: Stellar Growth in Trade



Ministry of Commerce of the People's Republic of China (2016).

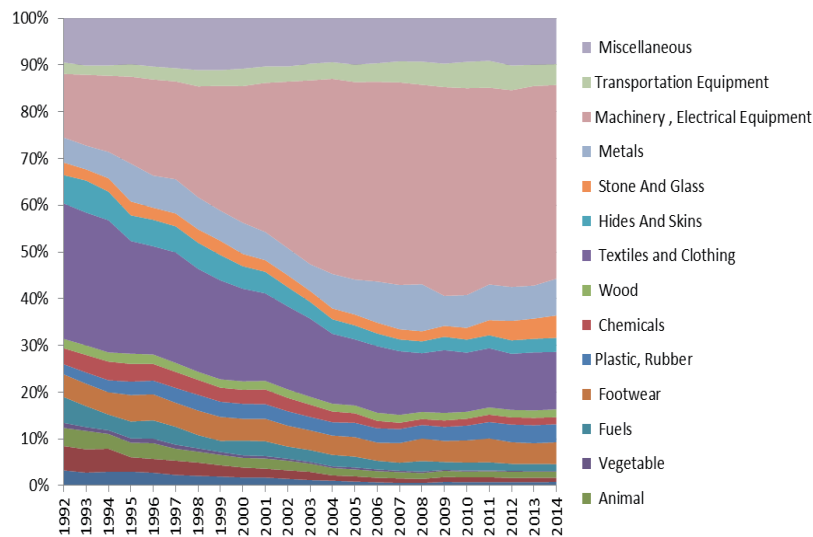
China has been steadily increasing its domestic value added in exports. China’s domestic value added of exports reached 68 percent (2011), according to the OECD TiVa database. China has been increasing its domestic value added in exports by gradually reducing the share of processing trade and strengthening its ability to generate domestic value added in manufacturing by deepening the production of intermediate inputs. For computer electrical and optical equipment, where foreign content was highest, the share of domestic value added in gross exports has increased from 26 percent in 1995 to 45 percent in 2011.

Imports increased significantly during the past two decades, mirroring exports growth. During this period, both goods and service imports expanded at a rate of about 17 percent a year. From 2010 to 2013, the growth of goods imports gradually slowed to 12 percent. Growth in imports has contributed significantly toward the balancing of the current account since 2008. Imports of natural resources made up a significant proportion of total imports, accounting for over 30 percent of total imports. In terms of service imports, nearly 80 percent were from travel and transport services in 2014, reflecting the rapid growth in Chinese tourists going abroad.

The increase in China’s share of world trade has been most pronounced in commodity markets. Its share in world imports of commodities grew from negligible levels in the 1980s to 10 percent in 2014. The surge in

commodity prices during the 2000s, the commodities “super cycle,” has been attributed to rising demand from China and other emerging markets for metals and energy, although less so for food commodities.¹⁸⁷ China now accounts for about half of global demand of metals, and about 20 percent of global demand for primary energy and edible oils, compared with around 10 percent in the early 1990s. Many of the goods that have experienced large increases in demand in China are the most income elastic, such as metals, primary energy, and edible oils. This rapid demand growth reflected the industry-led nature of China’s growth since 2000.¹⁸⁸ In contrast, the impact of China’s growth on global food commodity markets has been modest; China’s consumption of most agricultural commodities has grown broadly in line with global consumption since 2000. Since 2014, China’s efforts to improve air quality and slow growth have resulted in a marked slowdown in its energy, especially coal, demand growth.

Figure 5.2: Change in Export Composition



Chinese firms face the challenge of catching up with the multinationals that now dominate almost every segment of global supply chains. When China began implementing industrial policies in the 1980s intending to establish globally competitive and large indigenous firms, a new wave of globalization had swept the world characterized by an unprecedented period of mergers and acquisitions in the global business community. This not only created clusters but saw the large multinationals invest heavily in R&D. While more than 100 Chinese companies now make the Fortune Global 500 list, only a few operate globally. Chinese enterprises will need to become more globally competitive, including through technological upgrading, in a range of strategic industries, including financial services, telecommunication services and equipment, oil and gas, metals and mining, power generation and equipment, automobiles, and aerospace.

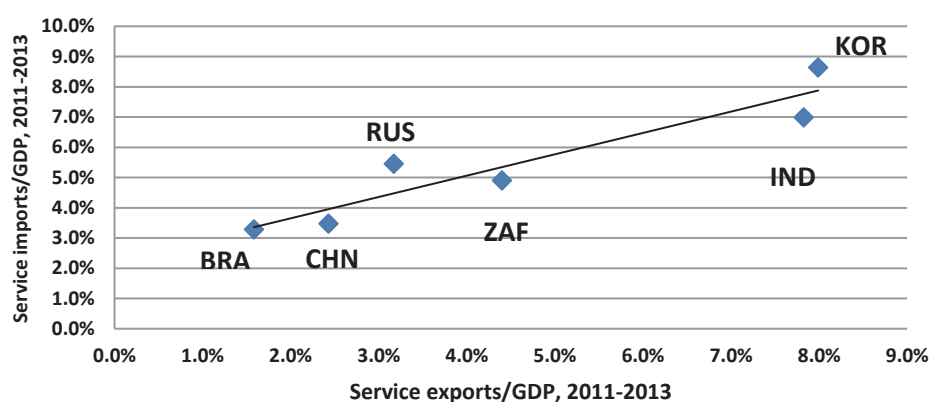
Service exports have experienced rapid growth, but they remain a relatively modest share of China’s total exports. Services refer to a wide range of disparate industries, including high-value-added services such as banking, finance, information technology, and research and development, and lower value-added services such as retail, hotels, restaurants, and transportation. China’s service exports grew by 14 percent per year over

¹⁸⁷ Global commodity prices underwent an exceptionally strong and sustained boom beginning in 2000. Unlike a typical price cycle, this boom has been characterized as a “super cycle” (the fourth in the past 150 years), i.e., a demand-driven surge in commodity prices lasting possibly decades rather than years (Baffes and others 2015). The boom has been attributed to strong growth in emerging markets. During 2002–12 emerging markets grew 6 percent per year, the highest rate in any 10-year period

the past two decades. From 2006 to 2010, the total volume of services trade from China increased from US\$192 billion to US\$362 billion, with an average annual growth rate as high as 17.3 percent.¹⁸⁹ Compared to goods exports, however, services remain a small part of total exports (9 percent as of 2014), and the growth rate has been slower. Travel and transport accounted for about 40 percent of total service exports. Exports of telecommunication and construction services have also grown rapidly. Promoting services in light of increasing wage costs and diminishing competitiveness in low-cost manufacturing has been a priority for Chinese policy makers.

The intended gains from trade in services have not materialized because of the concentration of exports in low-value-added services. Service exports from China are highly concentrated in labor-intensive sectors such as construction.¹⁹⁰ China's comparative advantage in services exports is concentrated in traditional and relatively slow-growing sectors such as construction, merchandising, other trade-related activities, transport, and freight insurance, but also includes some business and professional services. Exports of insurance services and technology, in the form of licenses, royalties, and franchise fees, are small relative to the size of the Chinese economy. Unlike the manufacturing sector, where the development of technology can be achieved by an acquisition of advanced machinery and equipment, the development of a competitive services sector requires greater knowledge transfers. High-quality services would support the development of advanced manufacturing.

Figure 5.3: Services Exports and Imports/GDP, China and Comparator Countries, 2011-13



over the past four decades. Consumption of industrial commodities, including metals and coal, tends to respond to economic activity, whereas consumption of food commodities (especially grains) is mainly associated with population growth. While China's share of the global population has remained broadly stable at 20 percent, its share of global economic activity has tripled from 5 percent in 2000 to 16 percent in 2014. As a result, its demand for highly income elastic commodities, such as primary energy and metals, has grown more rapidly than their demand for less income-elastic commodities, such as grains (World Bank 2015).

¹⁸⁸ Industry (infrastructure, manufacturing, and construction) accounted for almost half of China's growth during 2000–14. As a result, China's share of global industrial production increased fivefold during the past two decades.

¹⁸⁹ Ministry of Commerce and others (2011).

¹⁹⁰ Paper by Meng Wei (2015), "Comparative Study on China's Competitiveness in Services."

The government has prioritized reforms of the services sector, in particular by liberalizing trade in services. In 2011 China set a clear goal to increase the share of services value added in GDP by 4 percentage points in the 12th Five Year Plan (National People's Congress 2011). In early 2015, the government put forward the first comprehensive plan for the development of trade in services.¹⁹¹ The strategy envisions further liberalization of the services trade and reductions of taxes on service outsourcing industries. Opening up the services sector could improve its competitiveness and export potential. In particular, FDI in services can be a major driver to enhance service sector competitiveness. Currently, market entry for foreign investments in services is relatively restricted. The government could in particular target reforms to expand market access and lower nontariff measures in the high-value-added services sectors, which would have two positive impacts on the services trade. First, since market access is usually mutually determined in negotiations (BITs or trade agreements), opening up domestic markets could help China join trade agreements and become more integrated with the rest of the world. Such agreements will also open doors for China's service exports to other countries. Second, in the longer run, more openness in the services sectors can attract foreign investments from high-income countries and improve the competitiveness of the service sector and strengthen service exports.

Trade reforms and free trade agreements (FTAs) have played a key role in facilitating China's integration with global trade markets. China's accession to the WTO in 2001 marked a major milestone in the development of its economy. To date, China has signed 14 FTAs, covering 23 countries and regions. China's free trade partners include members of the Association of Southeast Asian Nations (ASEAN), Australia, Georgia, Chile, Costa Rica, Iceland, the Republic of Korea, New Zealand, Pakistan, Peru, Singapore, and Switzerland. China is conducting negotiation of multiple FTAs. In November 2014, during the unofficial leaders meeting of the Asia-Pacific Economic Cooperation (APEC) in Beijing, President Xi called for APEC members to advance the achievement of a Free Trade Area of the Asia-Pacific agreement, an idea that was first proposed by the APEC industrial and commercial circles more than a decade ago. China continues to pursue opportunities to promote regional and global agreements, including the Regional Comprehensive Economic Partnership. China has participated in the negotiations on the Information Technology Agreement and implemented tariff reduction plans for relevant goods, taken active part in the negotiation of the Environmental Goods Agreement and committed to the "three-win" (trade, environment, and development) goal, and is in the process of negotiating the General Agreement on Trade in Services. Finally, China intends to continue pursuing trade reforms and the "optimization" of the layout of free trade zones and acceleration of the establishment of a free trade zone network, including to support the "Belt and Road" initiative. Acceleration of the implementation of the pilot free trade zone strategy is an important part of a new round of opening up by China.

Foreign Investments

China has benefited from a surge in FDI, and in parallel domestic firms have learned to become more competitive. The WTO accession marked a turning point for FDI, as inflows into China grew from US\$2 billion in 1985 to US\$135.6 billion in 2015 when China became the world's second largest destination for FDI inflows. As of 2015, the accumulated foreign investment in China was estimated to be US\$1.64 trillion.¹⁹² FDI has provided new investment opportunities for foreign firms and raised the efficiency of global production networks. Over the past two decades, China's indigenous large enterprises have undertaken large-scale evolu-

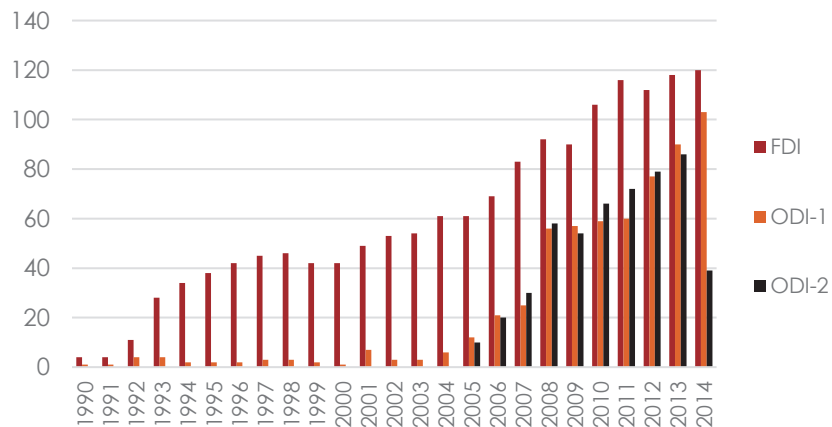
¹⁹¹ "Opinions on Promoting Accelerated Development of Service Outsourcing Industry," the State Council of the People's Republic of China, January 16, 2015; and "Opinions of the State Council on Accelerating the Development of Trade in Services," the State Council of the People's Republic of China, January 28, 2015.

¹⁹² Ministry of Commerce of the People's Republic of China (2016).

tionary institutional changes. They have grown rapidly, absorbed modern technology, and learned how to compete in the marketplace, and a large group of them have raised capital on international stock markets. The number of Chinese firms in the Fortune 500 increased from just three in the late 1990s to 106 in 2015.¹⁹³

China continues to experiment with reforms to encourage inward FDI. In the past two decades, FDI played a key role in allowing Chinese firms to catch up on technology and achieve rapid growth. Restrictions on FDI have been gradually loosened over the years. In 2013, the pilot free trade zone in Shanghai was established, which introduced a “negative list” of industries that are restricted or forbidden for foreign investments. In 2016 the foreign investment law was amended, which replaced the prior approval system with a negative list and registration (“filing”) system, essentially rolling out the previous reforms in Shanghai to the rest of the economy. In 2017 the government amended the Catalogue for the Guidance of Foreign Investment Industries, based on the experience of pilot free trade zones. The 2017 amendments further increased the openness of the service industry, manufacturing industry, and mining industry and introduced for the first time a “negative list” for foreign investments access, which applied to the entire country. Industries not included in the negative list would adopt a registration (“filing”) as opposed to an approval system for foreign-invested projects and enterprises, and restrictive measures on foreign investment would not be allowed. This is a significant step in opening up the economy to foreign-invested enterprises for investments in China. The “Notice of the State Council on Several Measures to Promote the Growth of Foreign Investment” (2017) also outlined measures to promote FDI, including through fiscal and tax incentives, promotion of “national (investment) development zones,” and programs to attract critical high-skilled foreign labor.

Figure 5.4: China’s Global Investment Trend by Different Sources



Sources: FDI: MOFCOM; ODI-1: MOFCOM; ODI-2: Heritage Foundation.

Note: Heritage Foundation data are by midyear 2014.

China still has huge potential to benefit from FDI, in particular with regard to advanced countries such as the United States. The share of inward direct investments from advanced countries has been increasing since the Global Financial Crisis. However, cross-investments between the United States and China, the two largest economies in the world, remain relatively low. Investments from the United States and other advanced

¹⁹³ http://www.chinadaily.com.cn/business/2015-07/24/content_21393276.htm.

countries in China could be promoted further by strengthening intellectual property rights, so that transnational corporations can fully benefit from their technology and brands, and by opening up more sectors to foreign investments, because many of the sectors that remain more restricted to direct investments are those important to transnational corporations. Furthermore, continuing to open up the Chinese market will help Chinese companies improve their competitiveness. Granting multinational financial companies more market access could provide the expertise and global networks Chinese firms seek from their investments overseas.

China is rapidly becoming a “global investor,” increasingly seeking opportunities in new regions and industries. China’s ODI overtook inward FDI in 2015, making the country a net capital exporter for the first time. This trend is expected to continue as Chinese companies seek overseas investment to generate business. Asia has traditionally been the main target for ODI, but investments in the Americas and Europe have increased in recent years.¹⁹⁴ The share of China’s stock of ODI in North America and Europe was estimated to be 12.4 percent (2015), but this may be an underestimation because the ODI statistics do not account for round-tripping and offshoring.¹⁹⁵ Recently more Chinese investments are directed toward developed countries for access to their technology, industrial experience, and global distribution networks.

Chinese companies appear to be investing in new sectors beyond natural resources. As of 2014, the proportion of mining sector investment in ODI was only 14 percent. In 2014 the top 10 outbound mergers as per deal value were in computers and electronics, mining, real estate, utilities, and energy. Available data seem to show that overseas mergers and acquisitions are increasingly done by privately owned enterprises, rather than SOEs. Further research is required based on the different legal status of enterprises and shareholding arrangements. Regional connectivity programs, such as the Belt and Road initiative, may lead to new ODI opportunities. Chinese investors are still building up their experience in ODI, with regard to assessing overseas markets, understanding local legal systems and cultures, developing ties with local communities, and formulating long-term strategies, which are all crucial factors for the success of ODIs.

Domestic banks have supported China’s rapidly increasing ODI, but less so for private companies and small and medium enterprise (SMEs). Since former President Jiang Zemin initiated China’s “Go Global” Strategy in 1996, domestic banks have responded to the strategy and financed Chinese companies’ global expansion. Notwithstanding the large amount of financing, more than half of firms reported that they rely on retained earnings to invest abroad.¹⁹⁶ In terms of the loan-to-ODI ratio, infrastructure stood out as the sector that received the most funding (75 percent). For ODI in manufacturing, 66 percent was financed, while Chinese companies investing overseas in real estate, the financial sectors, and agriculture received less state financing support. One difference between the Chinese ODI and previous waves of ODI from Japan and the Republic of Korea is that the state has not targeted ODI loans to fund “industry adjustment” or outsourcing of low-end manufacturing, such as in the textile industry. Out of the total value of ODI lending, 69 percent went to companies that already had access to foreign capital.¹⁹⁷ Private companies received a relatively small share of ODI lending, including large private companies such as Huawei and Geely, which already have access to finance. Recent deals of large private companies relied more on foreign rather than domestic financing.

¹⁹⁴ Ministry of Commerce of the People’s Republic of China, “Statistics on FDI in China 2016.” Identifying the final destination of China’s ODI from the relevant data is challenging, for example, because of outbound investment that goes through Hong Kong SAR, China.

¹⁹⁵ Garcia-Herrero, Xia, and Casanova (2015).

¹⁹⁶ Zhang (2013).

¹⁹⁷ Irwin and Gallagher (2014).

Box 5.1: Africa-China Trade and ODI¹⁹⁸

Trade between China and Africa and Chinese ODI in Africa are both increasing. China's trade with Africa has been growing since 1990, becoming the continent's largest trade partner country in 2009. Trade between China and Sub-Saharan Africa (SSA) reached a total value of US\$170 billion in 2013. China has become one of the major destinations for Africa's natural resource exports.

The rapidly increasing Chinese ODI in Africa helps contribute to the expansion of infrastructure in Africa. China's FDI stock in SSA reached US\$29.37 billion by the end of 2015, reflecting an annual growth rate of about 50 percent between 2004 and 2015 (MOFCOM 2003–15). China's infrastructure finance in Africa is best understood in the wider context of South-South cooperation and other forms of external finance. When compared with other non-OECD financiers, China is by far one of the largest suppliers of infrastructure finance. China's contribution is also significant compared with the equivalent financing flows from Overseas Development Assistance and Public Participation in Infrastructure, which amounted to an average annual \$6.4 and \$6.8 billion, respectively, over the same period. About half of the value of China's Africa infrastructure spending occurs in the power sector. Investments in other sectors such as manufacturing and agricultural sector have been relatively more modest. Examples of Chinese manufacturing companies that have invested in Africa include the Huajian shoe factory in Ethiopia and the Yuemei group in Nigeria.

China-Africa cooperation can potentially further increase, supported by multiple initiatives, summits, and ministerial meetings, including the triannual Forum on China-Africa Cooperation that brings together African and Chinese decision makers to deliberate on China-Africa trade and investment opportunities. In addition, the Investing in Africa Forum sponsored by China and the World Bank will play a pivotal role in strengthening the cooperation between China and Africa. Experience dictates that durable trade relationships between nations are ensured when both sides are winners.

More could be done to further lower administrative and financing barriers in China and continue BITs with other countries to allow the Chinese to invest abroad more easily. Fast tracking government administration of ODI would help provide Chinese companies a more level playing field in competitive international markets and help them take advantage of overseas business opportunities. Making further progress on BITs would also facilitate Chinese ODIs; China has signed BITs with about 130 countries. Negotiations on a China United States BIT and China-EU BIT have been ongoing but await resolution over various issues.

Global Connectivity and the Belt and Road Initiative

The Belt and Road Initiative (BRI) is China's ambitious plan to strengthen global connectivity. The BRI is the effort of the government to improve cross-border connectivity on a transcontinental scale. The initiative aims to strengthen infrastructure, trade, and investment links between China and 64 other countries that account collectively for 30 percent of global GDP and 62 percent of the population. BRI would consist primarily of the Silk Road Economic Belt and the New Maritime Silk Road. The Silk Road Economic Belt, or the "Belt," was announced by President Xi Jinping on September 7, 2013, during his visit to Kazakhstan. The New 21st Century Maritime Silk Road, or the "Road," was presented in a speech to Indonesia's parliament on Octo-

¹⁹⁸ Foster and others; Pigato and Tang (2015).

ber 3, 2013, during President Xi's state visit.¹⁹⁹ The "Belt" would link China to Central and South Asia and onward to Europe, while the "Road" would link China to the nations of Southeast Asia, the Gulf countries, North Africa, and on to Europe. Six additional economic corridors have been identified to link other countries to the Belt and Road.

At the Belt and Road Forum for International Cooperation in May 2017, China pledged to scale up its support for the BRI. China pledged to contribute an additional RMB 100 billion to the Silk Road Fund and establish special lending schemes of RMB 380 billion through the China Development Bank and the Export-Import Bank of China. China also pledged to contribute RMB 60 billion to developing countries and international organizations participating in the Belt and Road Initiative. This includes providing emergency food aid of RMB 2 billion to developing countries along the Belt and Road and contributing an additional US\$1 billion to the Assistance Fund for South-South Cooperation. China has signed a memorandum of understanding with the World Bank Group and five other multilateral development banks (ADB, AIIB, EIB, EBRD, and NDB) to collaborate on matters of common concern under the BRI and leverage additional financing. Along with China 27 countries have endorsed the Guiding Principles on Financing the Development of Belt and Road to build a long-term and sustainable financing system. In addition to financing, President Xi stressed support for science and technology personnel exchange, joint labs, collaboration between science and technology parks, and technology transfer. New institutions will be created to enhance collaboration and knowledge exchange, including the Belt and Road Finance and Economic Development Research Center, Belt and Road Construction Promotion Center, and Multilateral Development Finance Cooperation Center to be created with multilateral development banks, and the Capacity Building Center to be created with the International Monetary Fund.

The BRI is regarded as a priority for the Chinese government for both strategic and economic reasons. Its objectives will help relevant countries boost trade integration by lowering trade costs through better connectivity. The economic objectives are evident in its link to China's 13th Five Year Plan (2016–20), as confirmed most recently by the Fifth Plenum of the Communist Party. The initiative already has strong institutional and financial backing in China. Three agencies—the National Development Research Council and the Ministries of Foreign Affairs and Commerce—jointly issued a document in March 2015 regarding the BRI.²⁰⁰ The initiative also appears likely to garner considerable financial support. A New Silk Road Fund of US\$40 billion has already been set up to promote private investments along the Belt and Road.

The gains to the BRI countries can potentially be large. These gains would come from all three aspects of the BRI: improved infrastructure, greater trade, and higher cross-border investments. China already has trade links with most BRI countries. China accounts for about 14 percent of imports and 9 percent of exports of the 61 countries along the BRI for which data are available.²⁰¹ In 29 of these countries, China accounts for more than 10 percent of total trade, and in 13 of them, it accounts for more than 20 percent of total trade. In this context, the BRI can help spur growth if it liberalizes trade and investment regimes across participating countries in tandem with multilateral agreements and improves physical connective infrastructure. If well designed, BRI-based networks can lower trade costs for individual nations and increase their competitiveness and integration with regional and global value chains.

¹⁹⁹ Swaine (2015).

²⁰⁰ "Vision and Actions on Jointly Building Silk Road Economic Belt and 21st Century Maritime Silk Road" (2015/03/28), issued by the National Development and Reform Commission, Ministry of Foreign Affairs, and Ministry of Commerce of the People's Republic of China, with State Council authorization.

²⁰¹ El-Hifnawi, Reja, and Dolma (2015); World Bank (2015).

Physical connectivity is necessary but not sufficient to deepen economic integration, as complementary policy and regulatory reforms are also critical. The BRI will help to strengthen global connectivity by comprehensively addressing not just infrastructure investments but also policy coordination and trade facilitation. The gains from increased trade and cross-border investments and better infrastructure require supportive complementary policies and institutions. Specifically, the performance of the networks that result from these investments and their impacts on trade costs and competitiveness depend both on conditions “at the border,” such as customs procedures, as well as on requirements behind the border, such as regulations linked to nontariff measures. If restrictive, these can increase the cost, time, and uncertainty involved in using a trade route, thus substantially lowering the returns and economic benefits of investment in associated infrastructure. Similarly, the quality of governance and regulations will affect whether capital flows result in commensurate development gains. The efficient flow of goods trade also requires access to ancillary services. Such services as transport, insurance, financing, and telecommunications are all necessary for a supply chain to operate smoothly. The markets for these services are currently developed unevenly across the Belt and Road countries. Going forward, reforms need to focus on improving market access and national regulatory policies.

Ensuring good practice in design and implementation of the infrastructure projects along the BRI, such as with regard to governance and safeguards, would benefit both China and its international partners.

Large regional projects that channel significant funds provide an opportunity to apply international practice to a large proportion of outward investments. China needs to develop measures to promote the efficiency and quality of investments related to regional connectivity programs, while addressing any concerns and expectations of the international community. Ensuring efficient and effective project selection, design, and management will be critical. Collaboration with regional and international financial institutions on internationally accepted standards of financing, particularly with respect to governance and safeguards, may have additional benefits because the initiative covers some of the riskiest investment destinations in the world. Lessons could be learned from the experience of initiatives that aim to promote trade, investment, and regional connectivity such as the EU, the United States and Canada, Mercosur, the South African Customs Union, and ASEAN.

Key Priorities

The key priorities identified in this chapter are the following:

- Develop a sound strategy to promote the shift from low-value-added to high-value-added manufacturing.
- Liberalize trade in services, including by expanding market access for foreign investments.
- Lower administrative and financing barriers in China for ODI.
- Emphasize complementary policy and regulatory reforms to the physical infrastructure investments under the BRI.

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Chapter 5

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