URBAN CHINA

TOWARD EFFICIENT, INCLUSIVE, AND SUSTAINABLE URBANIZATION

The World Bank

Development Research Center of the State Council, The People's Republic of China

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DRC
国务院发展研究中心
Development Research Center of the State Council

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1 2 3 4 17 16 15 14

ISBN (paper): 978-1-4648-0206-5
ISBN (electronic): 978-1-4648-0386-4
DOI: 10.1596/978-1-4648-0206-5

Cover design: Critical Stages

Library of Congress Cataloging-in-Publication Data has been applied for.

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Foreword

Today, more than half of the world's population lives in cities, and by 2030 that will rise to an estimated 60 percent. Nearly all of this growth is happening in developing countries, where as many as 66 million people migrate to urban areas each year. Urbanization has historically served as an essential engine for economic development: No country has reached high-income status without undergoing a successful urbanization process.

China's urbanization over the last three decades has been unprecedented in scale: 260 million migrants have moved to cities from rural areas, supporting the country's rapid economic growth and development progress. Despite the enormity of this transition, China has avoided some of the ills often associated with urbanization, particularly large-scale urban poverty and unemployment. But strains have begun to emerge in the form of rising inequality, environmental degradation, and the quickening depletion of natural resources.

Chinese leadership understands these challenges. Premier Li Keqiang has placed urbanization as one of the government's top priorities. In November 2012, he asked the World Bank Group to partner with China in conducting a joint study on the country's urbanization challenges. Earlier that year, the Bank Group and China's Development Research Center of the State Council produced a groundbreaking study entitled *China 2030: Building a Modern, Harmonious, and Creative Society*, which laid out the key, long-term challenges facing the Chinese economy. The urbanization study aimed to build on this successful collaboration and help China tackle another key development challenge: forging a new model of urbanization.

To this end, China's Ministry of Finance, the Development Research Center of the State Council, and the World Bank Group established a joint work team to address several overarching questions related to China's urbanization process, such as: How can a new model of urbanization become an engine for higher-quality economic growth? How can more efficient urbanization support China's future economic transformation? How can more inclusive urbanization promote integration and cohesion? How can more sustainable urbanization help slow environmental deterioration, achieve more efficient use of resources, and advance food security objectives? How can reforms to the land, *hukou*, fiscal, and financial systems reinforce China's new vision of urbanization?

To answer these questions, the team held a series of workshops; prepared numerous studies, cases, and background papers; and developed common ideas based on a deep understanding of the challenges and opportunities of urbanization in China and around the world. This report, *Urban China:*

Toward Efficient, Inclusive, and Sustainable Urbanization, represents the results of that work. The report takes as its point of departure the conviction that China's urbanization can become more efficient, inclusive, and sustainable. However, it stresses that achieving this vision will require strong support from both government and the markets for policy reforms in a number of areas.

The report proposes six main areas for reform: first, amending land management institutions to foster more efficient land use, denser cities, modernized agriculture, and more equitable wealth distribution; second, adjusting the *hukou* system to increase labor mobility and provide urban migrant workers with equal access to a common standard of public services; third, placing urban finances on a more sustainable footing, while fostering financial discipline among local governments; fourth, improving urban planning to enhance connectivity and encourage scale and agglomeration economies; fifth, reducing environmental pressures through more efficient resource management; and sixth, improving governance at the local level.

The report also provides recommendations on the timing and sequencing of reforms. It stresses the need to first implement reforms related to land, fiscal, and public service systems. Doing so will facilitate China's transition to higher-quality economic growth.

The team prepared interim reports that were shared with China's top policy makers as inputs to policy discussions on urbanization during 2013, providing an important basis for the formulation of China's new model of urbanization.

Going forward, we hope the final report will provide the insight to help central and local authorities navigate China's ongoing transition to an urban-based society. More broadly, we hope this work will provide a useful contribution to global knowledge on urbanization, and help other countries better manage their urbanization challenges.

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Acknowledgments

This research was organized jointly by China's Ministry of Finance (MOF), the Development Research Center of the State Council (DRC), and the World Bank Group. President Jim Yong Kim of the World Bank Group, Minister Jiwei Lou of MOF, and Minister Wei Li of DRC provided valuable guidance and strong support throughout. Guiding this research was a Chinese internal steering committee comprising Minister Wei Li of DRC, Minister Jiwei Lou of MOF, Vice Ministers Baoan Wang and Yaobin Shi of MOF, Vice Ministers Shijin Liu and Jun Han of DRC, former Minister Xuren Xie of MOF, former assistant Minister Xiaosong Zheng of MOF, plus a World Bank Group internal steering committee comprising Sri Mulyani Indrawati, Jin-Yong Cai, Axel van Trotsenburg, Kaushik Basu, Rachel Kyte, Keith Hansen, Otaviano Canuto, Janamitra Devan, Jaime Saavedra, Ana Revenga, Zoubida Allaoua, and Klaus Tilmes.

Under the overall leadership of Minister Wei Li of DRC and Managing Director Sri Mulyani Indrawati of the World Bank, the report was prepared by a joint team from the three organizations, led by DRC Vice Minister Shijin Liu, DRC Vice Minister Jun Han, World Bank Country Director for China, Mongolia, and the Republic of Korea, Klaus Rohland, and World Bank Chief Economist for the East Asia and Pacific region, Bert Hofman. Within the World Bank, Chorching Goh was the technical task team leader.

The overview report was prepared by a joint team comprising Chorching Goh, Jun Han, Yupeng He, Bert Hofman, Yongzhi Hou, Peilin Liu, Shijin Liu, Klaus Rohland, Mara Warwick, and Xian Zhuo, with support from Shusong Ba, Changsheng Chen, Sen Gong, Sanlin Jin, Shouying Liu, Yunzhong Liu, Jinzhao Wang, and Yida Wang (DRC and MOF), and Uwe Deichmann, Gailius Draugelis, Elena Glinskaya, Somik Lall, Mark Lundell, Paul Procee, Ulrich Schmitt, Karlis Smits, and Min Zhao (World Bank). The overview report benefited from inputs provided by Anass Afilal, Richard Auty, Roy Bahl, David Bulman, Wei Cai, Shaohua Chen, Zhao Chen, Basab Dasgupta, Yongheng Deng, Wanli Fang, Bruce Fitzgerald, Li Gan, Ming Lu, Yanyun Joyce Man, Baoyun Qiao, Shonali Sen, James G. Wen, and Colin Lixin Xu.

The joint DRC and World Bank team benefited from commentary and review provided by Arup Banerji, Benu Bidani, Milan Brahmbhatt, Fang Cai, Rugui Chen, Khoo Teng Chye, Yuanzhu Ding, Chuangling Fang, Martin Feldstein, Zangchun Gan, Peiyong Gao, Chaolin Gu, Jiankun He, Richard Herd, Andrew Hilton, Biliang Hu, Cunzhi Hu, Jikun Huang, Xiaohu Huang, Yukon Huang, Kang Jia, Xiangzhi Kong, Qiang Li, Mai Lu,

Chaping Mu, Stefano Negri, Vikram Nehru, Pengfei Ni, Baoxing Qiu, Yulong Shi, Ming Su, Zhonghua Sun, Woo Wing Thye, Jun Wang, Yiming Wang, Debbie Wetzel, Guang Xia, Lin Xu, Xianping Xu, Kaizhong Yang, Yulong Ye, Xiangquan Zeng, Liu Zhi, Qiren Zhou, and Deci Zou. The overview team gratefully acknowledged the helpful suggestions from the peer reviewers Marianne Fay, Abha Joshi-Ghani, Indermit Gill, and Jesko Hentschel, as well as the support and guidance from John Roome, Sudhir Shetty, Tunc Uyanik, and Xiaoqing Yu.

The seven supporting reports were prepared under the overall guidance of Jun Han, Bert Hofman, Shijin Liu, and Klaus Rohland.

Supporting Report 1 "Urbanization and Economic Growth" was prepared by a joint team led by Changsheng Chen (DRC) and Karlis Smits (World Bank). The team included Bingde Duan, Jianwu He, Yu Jiang, Ting Shao, Wei Xu, Zhaoyuan Xu, and Xian Zhuo (DRC), and David Bulman, Chorching Goh, and Bingjie Hu (World Bank). The report benefited from inputs provided by Yong Hwan Cha, Shaohua Chen, Tianming Chen, Li Gan, Jingyi Jiang, Edward Leman, Binglie Luo, and Jian Zhang.

Supporting Report 2 "Planning and Connecting Cities for Greater Diversity and Livability" was prepared by a joint team led by Yunzhong Liu (DRC), Somik Lall, and Paul Procee (World Bank). The team included Jianwu He, Bin Huang, Shen Jia, Zongmin Lan, Jiabin Lin, Rufei Liu, Yong Liu, Xiong Niu, Zhiyan Sun, Hui Wang, and Xiaowei Xuan (DRC), and Edward Leman, Joanna Masic, Gerald Paul Ollivier, Serge Salat, and Andrew Salzberg, (World Bank). The report benefited from inputs provided by Anass Afilal, Zoubida Allaoua, Mats Andersson, Mesky Brhane, Wei Cai, Basab Dasgupta, Chandra Deuskar, Emiliano Duch, Marianne Fay, Wanli Fang, Ellen Hamilton,Vernon Henderson, Abhas Kumar Jha, Ying Jin, Fan Li, Stefano Negri, Ira Peppercorn, Binyam Reja, Fatima Shah, Pablo Vaggione, Sameh Wahba, Runze Yu, Rufei Zhang, and Pengjun Zhao. The team benefited from suggestions from Changchun Feng, Chaolin Gu, Feng Li, Jian Lin, Bin Lv, Baoxing Qiu, and Deci Zou. In addition, data support and other inputs were provided by Sheng Luo, Tingting Shi, Tingting Xie, Chaoyi Xu, Min Zhang, and Fanfan Zhao.

Supporting Report 3 "Inclusive Urbanization and Rural-Urban Integration" was prepared by a joint team led by Sen Gong (DRC) and Elena Glinskaya (World Bank). The team included Liejun Wang, Xiongjun Wang, and Bingzi Zhang (DRC), and John Giles, Gerard Martin La Forgia, Xiaoyan Liang, Philip O'Keefe, Shonali Sen, Dewen Wang, (World Bank), and Christine Wong (University of Melbourne). The report benefited from inputs provided by Jehan Arulpragasam, Luis Benveniste, Meskerem Brhane, Xiangming Chen, Maitreyi Das, Mark Charles Dorfman, Mary Gallagher, Qingyue Meng, Toomas Palu, Albert Park, Jin Song, Minna Hahn Tong, Xiaoxia Wang, Liping Xiao, Xiaoqing Yu, Chenggang Zhang, and Shuo Zhang.

Supporting Report 4 "China's Urbanization and Land: A Framework for Reform" was prepared by Shouying Liu (DRC) and Ulrich Schmitt (World Bank). The report benefited from inputs provided by Andrew Hilton, Xueping Hou, Ruixian Hu, Xiaohu Huang, Lixing Li, Ping Li, Yihao Li, Shenmin Liu, Paul Munroe-Faure, Xiazhen Shao, Ran Tao, Xiaoqin Wang, Xiaohui Wu, and Chongfa Yuan.

Supporting Report 5 "China's Urbanization and Food Security" was prepared by a joint team led by Sanlin Jin (DRC) and Ulrich Schmitt (World Bank). The team included Kym Anderson, Emiko Fukase, Jikun Huang, Yan Liu, Willam Martin, Scott Rozelle, and Jun Yang. The team benefited from comments and suggestions from Jun Han, Yupeng He, Shouying Liu, and Xingqing Ye (DRC), as well as other supporting report authors. It also benefited from background papers provided by Junfei Bai, Xiangzheng Deng, Songqing Jin, Ji Ma, Huanguang Qiu, Laping Wu, Jinxia Wang, and Xiaobing Wang.

Supporting Report 6 "Financing Urbanization" was prepared by a joint team led by Shusong Ba (DRC), Yida Wang (MOF), and Min Zhao (World Bank). The team included

Mingge Lv, Hong Tang, Xianling Yang, and Zilong Zheng (DRC), Shuanyou Ma, Li Xu, and Yongzhen Yu (MOF), Hongye Fan, Catiana Garcia-Kilroy, Lili Liu, Ira Peppercorn, Juan Pradelli, Binyam Reja, Robert Taliercio, and Luan Zhao (World Bank). The report benefited from inputs from Roy Bahl, David Painter, Baoyun Qiao, Anwar Shah, Lina Li, and Guangrong Ma. The team benefited from suggestions from Kang Jia, Jun Ma, Lin Xu, and Sudarshan Gooptu, Ming Su, Jun Wang, and other supporting report authors. Part of the proofreading of the translation work was provided by Jian Chen.

Supporting Report 7 "Green Urbanization" was prepared by a joint team led by Jinzhao Wang (DRC) and Uwe Deichmann and Gailius Draugelis (World Bank). The team included Jianpeng Chen, Jianwu He, Tao Hong, Weiming Li, Xiong Niu, Guang Shi, Zifeng Song, Haiqin Wang, Xu Wu, and Xiaowei Xuan (DRC), and Garo Batmanian, Liping Jiang, Todd Johnson, Xiaokai Li, Feng Liu, Jostein Nygard, Gerald Ollivier, Binyam Reja, Serge Salat, Christopher Sall, Robert Taylor, and Frank Van Woerden (World Bank). The report benefited from inputs provided by Dimitri De Boer, Xiangxin Guo, Genia Kostka, Zhi Li, Ximing Peng, Paul Procee, Wenjin Pu, Yu Qin, Li Qu, Shuai Ren, Yanqin Song, Xiaodong Wang, Yun Wu, Runze Yu, Yabei Zhang, Yu Zhang, and Xi Zhao. The team benefited from comments and suggestions from Fei Feng, Jiankun He, Xiulian Hu, Guang Xia, and other supporting report authors.

Invaluable support for the endeavor was provided by MOF Vice Ministers Yaobin Shi, Baoan Wang, Guangyao Zhu, Directors-General Wenhan Ou, Shaolin Yang, Jiayi Zou, Deputy Directors-General Zhongyong Hu, Yida Wang, and Yingming Yang, as well as the Chinese Executive Director to the World Bank, Shixin Chen.

Coordination teams led by Yongzhi Hou (DRC), Wenhan Ou and Jiayi Zou (MOF) and Mara Warwick (World Bank), and comprising Dongwei Wang, Hai Wang, Yida Wang, Yan Xie, Yingming Yang, and Licheng Yao (MOF), Hui Han, Yupeng He, Shen Jia, Qing Li, Peilin Liu, Hui Wang, and Xian Zhuo (DRC), Ying Fan, Li Li, Guangqin Luo, Yu Shang, Elaine Sun, and Hua Zhu (World Bank) provided strong support for the successful completion of the study. Tianshu Chen of the World Bank served as interpreter for the project and organized and coordinated the translation work. Yueyang Bao and Yuanjing Shang of the China Development Press and Weiling Zhang of DRC managed the coordination and production of the Chinese edition. The World Bank's Kathryn Funk, Li Li, Lasse Melgaard, and Mara Warwick managed the coordination and production of the English edition. The team is grateful to Susan Graham of the World Bank's Publishing and Knowledge Division for managing the editing and layout of the English version, as well as to Andres Meneses for the printing and file conversions. The International and Comprehensive Departments of MOF, the General Office and International Department of DRC, and the World Bank provided effective support in organizing all the conferences, discussion meetings, and international field study trips throughout this research.

This research also benefited enormously from comments and suggestions from Chinese ministries and local governments, including The National Development and Reform Commission, Ministry of Education, Ministry of Public Security, Ministry of Human Resources and Social Security, Ministry of Land and Resources, Ministry of Environmental Protection, Ministry of Housing and Urban-Rural Development, and National Population and Family Planning Commission. Development Research Centers of Shanghai, Tianjin, Chongqing, Guangdong, Zhejiang, Inner Mongolia, Henan, Shaanxi, Hubei, Hunan, Yunnan, Shenzhen, Xi'an, and Zhengzhou provided case study reports, and Finance Bureaus of Liaoning, Henan, Sichuan, Chongqing, Hunan, Guangdong, Hainan, and Ningbo provided assistance in local field study trips. The joint research team is grateful for all their support.

Executive Summary

Over the past three decades, China's urbanization has supported high growth and rapid transformation of the economy, allowing people—among them some 260 million migrants—to move from agriculture to more productive activities. In the process, 500 million people were lifted out of poverty, and China managed unprecedented growth that averaged 10 percent a year for three consecutive decades. China's cities, with abundant labor, cheap land, good infrastructure, and competition among local governments to attract industry and investment, have created an environment that has been highly conducive to growth. Growing cities that have become increasingly connected with each other and with the rest of the world have added to productivity growth through agglomeration effects, and China's mega cities now have income levels comparable to some member countries of the Organisation for Economic Co-operation and Development (OECD).

China has avoided some of the common ills of urbanization, notably urban poverty, unemployment, and squalor. But strains are starting to show. China's growth has been increasingly driven by investment rather than productivity, and investment has become less effective in generating growth at the national as well as the city level. Urbanization has relied excessively on land conversion and land financing, which is causing inefficient urban sprawl and, on occasion, ghost towns and wasteful real estate development. Barriers to migration have kept China's urbanization rate too low, thus underutilizing people's potential and exacerbating urban-rural income inequality. Unequal access to public services between citizens with urban household registration *(hukou)* and those without, although diminishing, remains and is a barrier to mobility. At the same time, the large influx of migrants puts pressures on urban services, and urban citizens perceive an erosion of service quality. Rural-urban land conversion has been inequitable in the distribution of its gains, has added to wealth inequalities, and has fed social unrest among farmers whose land has been expropriated. Despite progress in environmental standards and policies, the cost of pollution to the nation's health is rising as China's population is increasingly concentrated in cities. And land-intensive urbanization has reduced the availability of farmland, is competing for scarce water resources, and is adding to pollution that affects the quality of farm produce and food production capacity.

China's leadership is well aware of these challenges and has called for a new model of urbanization to match China's evolving

development goals and meet the emerging challenges. A new model can support more efficient growth through better allocation of land, labor, and capital; be more inclusive and share benefits of urbanization more widely than in the past; and be environmentally sustainable and safeguard China's food security. China's urban landscape will continue to change: the largest cities will likely become larger and boost their role as gateways to the world and centers of a diverse economy, moving increasingly into services, knowledge, and innovation. Secondary cities within metropolitan areas are likely to attract more land-intensive manufacturing, benefiting from specialization and links to markets. China's large inland cities can compete with coastal cities if they are well connected to markets. Hinterland cities and rural towns would focus on activities with firm-level scale economies and on providing the public services that allow people to move to opportunities elsewhere. Better allocation of land, labor, and capital will accelerate the shift of industry to secondary cities, and as job opportunities open up in these areas, migration pressures in large cities are likely to moderate. As surplus labor diminishes with more rapid urbanization, the wage share in gross domestic product (GDP) will rise and urban-rural disparities will narrow. That would also promote consumption—increasingly driven by a growing middle class, whose demand will spur a more services-based urban economy. More inclusive growth and more equitable distribution of income will reinforce the shift toward consumption, because lower-income earners consume more of their income than higher-income earners.

A new model of urbanization requires a different role for government. Government should support rather than supplant market forces in shaping China's urban landscape, allowing China's cities to grow more organically and efficiently in response to market forces within the context of the government's strategic development plan. Government would need to rebalance its involvement from exercising administrative control to regulating the market-based allocation of people, land, and capital across China and the provision of public services to support these allocations. At the same time, a growing number of people will be exposed to environmental hazards, and government would need to increase its effectiveness in enforcing existing legislation while enhancing market pricing to reflect environmental externalities in market transactions. The reform strategy underpinning this new role would focus on four areas: better policies on land, including creation of the institutions in which more market pricing for land can take place; removal of obstacles to people's mobility, including reforms of the hukou system and provision of a minimum public services package across China; a fiscal and financial strategy that will make the new model of urbanization affordable; and a change in the incentives for local government officials to pursue the goals of the new urbanization model.

The main benefit of reforms will be higher-quality growth. The reforms proposed in this report—specifically regarding land, hukou, and fiscal system reforms, and a change in the incentives for local governments to attract investment—will make the allocation of land, capital, and labor more market based. That in turn will change the distribution of economic activities across China's urban landscape. Accelerating the shift of industrial activities to cities where land and labor are cheaper would provide a stronger economic basis for those cities, and therefore promote small and medium-size cities. At the same time, this shift in industrial activities would also reduce migration pressures for the largest cities that would increasingly specialize in high-value services and innovation and attract higher-skilled labor rather than a low-skilled industrial workforce.

Land reforms would improve the efficiency of rural and urban land use and increase the compensation rural residents receive from land conversion, thus improving the distribution of income and wealth. Land reforms will also likely lead to denser cities, which would reduce the energy intensity and car use in

cities, thus improving environmental sustainability. And reduced land use for urbanization would leave more land for environmental services and agricultural production.

Hukou reforms and supporting reforms in public services would increase the mobility of workers across China and added to their productivity and wages. It would also accelerate rural-urban migration, which combined with land reforms, would accelerate agricultural modernization and increase rural incomes, thereby reducing rural-urban income inequalities. More equal service delivery across China would expand the equality of opportunity for all China's citizens. Better access to housing finance for migrants would allow them to acquire urban property and benefit from capital gains, thus reducing growing wealth disparities.

Fiscal reforms would generate the revenues to finance a minimum package of services across China and reduce the need for land-based financing, while limiting the risk to the financial system resulting from unregulated borrowing by local governments. Fiscal and financial reforms would also exert more discipline on local governments, thereby reducing the wasteful development of ghost towns and empty industrial parks.

Six priorities for establishing a new urbanization model emerge from this study.

First, reforming land management and institutions. More efficient land use, denser cities, modernization of agriculture, and better income and wealth distribution between rural and urban areas all require more efficient and equitable utilization of land. A critical element of reforms is the current land system, which can be improved by better protecting land rights and optimizing the use of land resources in rural and urban areas. Land rights could be better protected by: (1) legalizing the central policy of "long term without change" for farmland leases and specifying the nature of the contractual rights to farmland, including the rights to occupy, use, profit from, transfer, mortgage, and bequest land; (2) improving land title registration by enforcing written land leases, establishing a register for land titles and land transactions. Over time, a unified land registration system based on unified rules, standards, and procedures applicable to all land should be established; (3) reforming collective ownership by codifying that collective assets belong to the collective's members, clarifying membership and qualifications for entering and terminating collective membership, and defining rights to collective assets, including the rights to occupy, use, profit, transfer, withdraw with compensation, mortgage, guarantee, and bequest an inheritance of those rights; and (4) defining "public interest" for which the government can exercise its eminent domain power, while unifying the principles and standards for rural and urban land expropriation.

Rural and urban land use could be further optimized by (1) allocating rural land in a more market-driven way. In line with land-use plans and regulations, government could clarify equal market entry of collective and state construction land, while the collective construction land that has already entered into the urban market needs to be classified accordingly and integrated into urban master plans and managed according to the law; (2) integrating urban villages into the formal urban development process and allowing the use of rural collective construction land in peri-urban areas for urban development within the framework of urban master plans; (3) shifting land use from industry toward services and residential use, increasing transparency in the secondary land-market transactions, and boosting the availability of land for low-income housing from vacant government land and consolidated urban village land; and (4) pricing of industrial land in line with competing uses to improve the use of this land and strengthen local government finances.

Second, reforming the hukou system to create a mobile and versatile labor force with equal access to a common standard of public services. To achieve this, the household registration system would need to move from an origin-based to a residence-based

system. The hukou system and residency system can operate in parallel. A residency registration would provide access to services such as education, health care, welfare, and affordable housing, whereas hukou could be maintained to provide land rights. As land reforms and pension reforms progress, this balance could be adjusted in the future. Central government needs to define the rules for establishing residency and a framework for extending access of new residents to urban services. Initially, local variations in levels of access and the timeframe in which new residents gain full access to services may be necessary, but standards for residency should be gradually unified across China. The first priority is to enable migrants and their families to better integrate into urban society and provide them with the social services they need—which would likely require a central fiscal subsidy to those cities that host a large share of migrants. In the medium term, reforms in social services and the public finance system could allow a nationwide common service standard, irrespective of location. Sustainability and portability of pension benefits are of particular importance and would require central administration over time. Further developing a fiscal system based on expenditure needs and revenue capacity would lay the foundation for equal access to a minimum level of public services across China.

Third, placing urban finances on a more sustainable footing while creating financial discipline for local governments. China's fiscal system has served the country well since the major reforms of 1994, but further reforms will be required to meet the public service demands from new urban residents and lower revenues from land financing as excessive land conversion is phased out and compensation standards improve. For local governments to make optimal choices when using scarce resources, reforms in the fiscal and financial systems should impose hard budget constraints on them. There are four priorities for reforms:

- *Improve the revenue base of local governments* by mainstreaming a property tax on housing—gradually phased in to allow people to adjust—to provide local governments with a stable, sustainable source of finance linked to land prices; charging higher prices for urban services such as water, energy, and transport to cover full costs and promote efficient use of resources; and increasing taxes and charges on motor vehicles to raise revenues and reduce congestion. China could also consider reassigning some consumption taxes to local government—possibly while maintaining central collection. Irrespective of the policy choice on local revenues, at the margin China's cities must be financed from local taxes so that local government decisions will be scrutinized by those that pay the taxes and benefit from public services.
- *Improve the intergovernmental grants system.* In 2013, China had some 200 different earmarked grant programs, each meeting separate objectives. Consolidating these in a limited number of sectoral block grants could make the system more effective in the short run. In the medium term, moving to a general grants system that considers revenue capacity and expenditure needs (including a measure for the number of residents) would ensure that money follows people and would enable local governments to provide a minimum level of public services for all citizens. Central government would also need to develop standards for the subprovincial fiscal system, where large fiscal inequalities remain.
- *Establish an explicit framework for local government borrowing.* Allowing local governments to borrow requires a well-defined central government framework, which should include rules that define which local governments can borrow, from whom they can borrow, and the conditions under which they can do so, and which, at least initially, puts limits on borrowing for individual municipalities and for local governments as a whole. The regulatory framework should also include a credible no-bailout commitment by the central government and clear rules of debt workout in case a local government becomes

overindebted. Nonviable local government financing vehicles (LGFVs) should be reabsorbed within the local administration, and overindebted governments and LGFVs restructured to regain financial viability.

- *Reform the financial sector to enhance fiscal discipline of local governments.* In other countries, market discipline alone has regularly failed to limit local borrowing, so China would need to regulate the bond market, banks, and shadow banks on equal footing to ensure local government discipline and competitive access to finance without undue risk to the financial system. For the local government bonds market to function well, local governments would have to abide by independent creditworthiness assessments and rules on disclosure of financial statements, requirements that are already common for banks and enterprises. In the short term, bank finance will remain important, however, and to ensure that local government borrowing does not risk banks' stability, legal and regulatory limitations already in place should be enforced. These include exposure limits, which cap a bank's loan exposure to a single client; concentration limits, which restrict a bank's exposure to a certain type of client, such as all local governments taken together; and insider lending limits, which limit lending to the owners or co-owners of the bank. After experiencing widespread subnational defaults, countries such as Brazil banned subnational ownership of financial institutions.

Fourth, reforming urban planning and design. Global experience shows that urbanization has led to a diversity of viable and livable cities, different in size, location, and population density, but well connected at the national level and clustered at the local and regional levels. Rather than prescribing city size, policies that create a level playing field can encourage scale and agglomeration economies across cities to emerge. China would benefit from replacing the current standards-driven master planning with more dynamic approaches based on sound economic strategies for cities. Within cities, flexible zoning that promotes smaller plots and greater mixed-land use would allow for denser and more efficient development. China could make better use of existing urban land by rezoning excess industrial land into commercial and residential land; raising floor area ratios (the ratio of a building's floor area to the land on which it sits); integrating urban villages into urban planning; and linking transport infrastructure with urban centers. Finally, promoting coordination among cities in metropolitan areas and city clusters would enhance agglomeration benefits and encourage better management of congestion and pollution.

Fifth, managing environmental pressures. China already has an impressive set of environmental laws, regulations, and standards, and many technical solutions to address pollution and increase resource use efficiency have been piloted and some mainstreamed for many years. Improvements will therefore come with a strengthening of the institutions, incentives, and instruments that enable effective enforcement across sectors and at an appropriate geographic scale. An intergovernmental transfer mechanism to compensate for environmental compensation could be considered. Management of water and air quality, the latter especially in large urban clusters, would be most effectively conducted at a regional scale. An improved data collection system with wider information dissemination would promote monitoring and compliance and allow greater public participation in holding polluters to account. The legal system could be better leveraged to complement government enforcement by expanding and formalizing current experiments with environmental courts. Furthermore, 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 create a greener urban environment.

Sixth, improving governance at the local level. The performance evaluation system of local officials could be adjusted to give greater weight to variables that will drive

a more efficient, inclusive, and sustainable urbanization. Local governments' incentives to attract industries would need to be moderated by national rules to ensure that local actions promote national goals. Improving local government financial management and transparency could contribute to more efficient and sustainable urbanization through the introduction of a medium-term expenditure framework, comprehensive budgets that include all government fiscal funds, and disclosure of full financial accounts including a local government balance sheet. Establishment of a chief financial officer for each local government would ensure clear accountability for financial management and local borrowing. Finally, new governance structures for metropolitan areas could realize agglomeration benefits and manage externalities. Many administrative models exist in other countries and could be tested in China. They range from loose organization, with objectives restricted to one sector or fully integrated across all local government planning and services to more formal arrangements, such as the Kreis in Germany or the metropolitan area councils in a variety of countries.

Timing, sequencing, and monitoring. The policy agenda proposed in this report is a comprehensive one, and authorities will need to set priorities. Perhaps the most urgent is the land agenda: once cities have expanded in an inefficient way, it is hard to reverse. While government prepares for stronger property rights for farmers, it may wish to tighten land conversion and make more efficient use of existing urban land. Second, government would need to focus on local borrowing of all kinds, first and foremost to assess whether the situation requires urgent action, as has already been done through the recently completed audit of local debt by the National Audit Office. Rules for debt resolution will have to be issued and applied, especially regarding instituting a system of property taxation, a source of stable revenue. Formal access to borrowing will have to wait until a full regulatory framework is in place, and preferably after local government revenue sources have been strengthened. A decision on a temporary fiscal subsidy for integrating migrants would accelerate the implementation of a residency system and could be made early on. Finally, market-based conversion from rural to urban land is likely to require more experimentation before it can be mainstreamed nationwide. Other systemic changes in the policy areas discussed could come later, but presenting a comprehensive plan for implementing the agenda and establishing a monitoring mechanism for follow-up would lend credibility to the urbanization agenda.

Abbreviations

ACFTU	All-China Federation of Trade Unions
AEZ	Agro-Ecological Zone
AQM	air quality management
AOTU	Autorité Organizatrice de Transport Urban (France)
BAAQMD	Bay Area Air Quality Management District (California)
BRICS	Brazil, Russian Federation, India, China, and South Africa
BEEC	building energy efficiency code
BEEL	Building Energy Efficiency Labeling
BEST	Benchmarking and Energy Saving Tool
CAPEX	capital expenditure
CAPSiM	China Agricultural Policy Simulation Model
CASBEE	Comprehensive Assessment System for Building Environmental Efficiency (Japan)
CASS	Chinese Academy of Social Sciences
CBD	central business district
CCAP	Center for Chinese Agricultural Policy
CDB	China Development Bank
CE	cereal equivalent
CEPAC	certificate of additional development potential
CET	compulsory education transfer
CFO	chief financial officer
CHC	community health center
CHIP	Chinese Household Income Project
CNAAQS	China's National Ambient Air Quality Standards
CO_2	carbon dioxide
COD	chemical oxygen demand
CPC	Communist Party of China
CULS	China Urban Labor Survey
CWSM	China Water Simulation Model
DRC	Development Research Center (China)
ECDE	early childhood development and education
EIA	environmental impact assessment
ELITE	Eco and Low-Carbon Indicator Tool for Evaluating (Citie)
EMMA	Electronic Municipal Market Access (system)

ENGO	environmental nongovernmental organization
EnMS	energy management systems
EPB	environmental protection bureau
ERI	Energy Research Institute
ESCO	energy service company
ESMAP	Energy Services Management Assistance Program
ET	evapotranspiration
ETS	emission trading system
EU	European Union
EV	electrical vehicle
FAO	Food and Agriculture Organization of the United Nations
FAR	floor area ratio
FDI	foreign direct investment
FIRE	finance, insurance, and real estate
FIT	feed-in tariff
FOB	free-on-board
FSI	Floor Space Index
G-20	Group of 20
GB	general obligation bond
GBES	Green Building Evaluation Standard
GCTF	Green Codes Task Force
GDP	gross domestic product
GGBP	Green, Greater Buildings Plan
GNI	gross national income
GONGO	government organized nongovernmental organization
GVIO	gross value of industrial output
HB	hybrid bond
HPF	housing provident fund
HR	human resource
HSR	high-speed railway
IB-NET	International Benchmarking Network for Water and Sanitation Utilities
ICCT	International Council of Clean Transportation
ICOR	incremental capital-output ratio
ID	identification
ILO	International Labour Organization
ISIC	International Standard Industrial Classification (system)
IT	information technology
LCL	Labor Contract Law (2008)
LEAP	Long-range Energy Alternative Planning (System)
LEED-ND	Leadership in Energy and Environment Design for Neighborhood Development
LGFV	local government financing vehicle
LPG	liquefied propane gas
MAC	marginal carbon dioxide abatement cost
MACTool	Marginal Abatement Cost Tool
MEP	Ministry of the Environment
MIT	Massachusetts Institute of Technology
MOE	Ministry of Education (China)
MOHRSS	Ministry of Human Resources and Social Security (China)
MOHURD	Ministry of Housing and Urban-Rural Development (China)
MSRB	Municipal Securities Rulemaking Board (United States)
Mtce	million tons of coal equivalent
MTEF	medium-term expenditure framework
MTR	Mass Transit Railway (Hong Kong SAR, China)
NCD	noncommunicable disease
NCRMS	New Cooperative Rural Medical Scheme (China)

NDC	notional defined contribution
NDRC	National Development and Reform Commission
NGO	nongovernmental organization
NH_3	ammonia
NO_x	mono-nitrogen oxides
NQF	national qualifications framework
O_3	ozone
OECD	Organisation for Economic Co-operation and Development
OEI	Open Environmental Information
OM	operation and maintenance
OMEX	operation and maintenance expenditure
OOP	out-of-pocket (expenditure)
PES	payments for ecological or environmental services
PFM	public financial management
PM	particulate matter
PPP	public-private partnership
PPP	purchasing power parity
PRPD	performance rating and public disclosure
PSU	public service unit
PV	photovoltaic
R&D	research and development
RAM	Rapid Adjustment Model
RB	revenue bond
REAP	Rotterdam Energy Approach and Planning
RESCO	renewable energy service company
RMB	renminbi
RPS	Resident Pension Schemes (China)
RSL	rural surplus labor
RSP	resident social pension
SAR	special administrative region
SEC	Securities and Exchange Commission (United States)
SENCE	Servicio Nacional de Capitación y Empleo (Chile)
SEZ	special economic zone
SO_2	sulfur dioxide
SO_x	sulfur oxides
SOE	state-owned enterprise
SPM	suspended particulate matter
SPV	special purpose vehicle
SUEEP	Sustainable Energy and Emissions Planning
TC280	National Petroleum Products and Lubricants Standardization Committee (China)
TEOS	Two Exemptions and One Subsidy (program)
TFP	total factor productivity
TM/ETM	Thematic Mapper/Enhanced Thematic Mapper
TOD	transit-oriented development
TRACE	Tool for Rapid Asssessment of City Energy
TVEs	town and village enterprises
TVET	technical and vocational education and training
TWh	terawatt hour
UDIC	urban development investment corporation
UEBMI	Urban Employee Basic Medical Insurance (China)
UMCT	urban maintenance and construction tax
URBMI	Urban Resident Basic Medical Insurance (China)
UWP	Urban Worker Pension (China)
UWS	urban workers scheme
VAT	value added tax
VOC	volatile organic compound
WAT	wage adjustment transfer
WHO	World Health Organization
WTO	World Trade Organization

Part I

Overview

Introduction

Over the past three decades, China has experienced record growth that has lifted 500 million people out of poverty. Growth was triggered by reforms and opening up, which caused a rapid transformation of the economy that allowed people to move out of agriculture to more productive activities. Rapid economic development was facilitated by urbanization that created a supportive environment for growth with abundant labor, cheap land, and good infrastructure. Local officials keen to attract industry and investment and to create employment played an important role in this transformation. Despite the speed of urbanization, China avoided some of the common ills of urbanization, notably urban unemployment, urban poverty, and squalor. In 1978, less than 20 percent of China's population lived in cities; now the share is more than half. On the basis of the country's per capita income, China's urbanization is projected to reach about 70 percent—some 1 billion people—by 2030. How China will manage the next wave of urbanization will be an important determinant of the country's success in meeting its evolving development objectives.

China is now an upper-middle-income country, well positioned to become a high-income country. China's leadership has recognized that achieving this goal requires a new growth model that is more balanced, is based on productivity increases and innovations, is more equitable in the distribution of the benefits of growth, and produces more sustainable environmental outcomes. These objectives are well reflected in the 12th Five-Year Plan. Urbanization has an important role to play: urban areas, if well managed, provide efficient factor markets that support continued transformation and productivity increases through agglomeration effects, allow innovation and new ideas to emerge, spur domestic demand from a rising middle class, give the services sector space to grow, and save energy, land, and natural resources. Such efficient, inclusive, and sustainable urbanization would contribute to China's development goals.

Efficient urbanization makes the best possible use of China's productive resources—its people, land, and capital. Higher efficiency—or productivity—would increase the welfare of China's people; more growth would be achieved with the same work effort, land use, and capital accumulation. Reforms could increase efficiency by removing barriers that prevent optimal use of China's productive resources.

Inclusive urbanization provides all people access to equal opportunity to benefit from urbanization—to use their labor where they are most productive, to accumulate assets and savings, and to use public services of similar quality across China. Reforms could promote inclusion by integrating rural migrants in cities, providing them and their families with social services comparable to those of urban *hokou* holders, while ensuring that rural areas are not left behind in terms of public service access and quality.

Sustainable urbanization means urbanization that can be supported by China's environment (land, air, water) 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.

This overview report analyzes how China can make its urbanization more efficient, inclusive, and sustainable. In the first section, "Achievements and Emerging Challenges," chapters 1 through 4, analyze China's achievements in urbanization and the challenges it faces in achieving efficient, inclusive, and sustainable urbanization. In the second section, "The Reform

Agenda," a comprehensive reform agenda is proposed. Chapter 5 lays out the vision for urban China in 2030 and the reform package that will be needed to achieve it. It also describes the urban landscape in 2030 under the reform scenario. Chapters 6 through 10 provide a detailed set of recommendations in the key areas of reform. Finally, chapter 11 proposes the sequencing and timing of reforms. This report is complemented by seven supporting reports—Urbanization and Economic Growth; Planning and Connecting Cities for Greater Diversity and Livability; Inclusive Urbanization and Rural-Urban Integration; China's Urbanization and Land: A Framework for Reform; China's Urbanization and Food Security; Financing Urbanization; and Green Urbanization—that further deepen the analysis and expand on the policy recommendations.

Achievements and Emerging Challenges

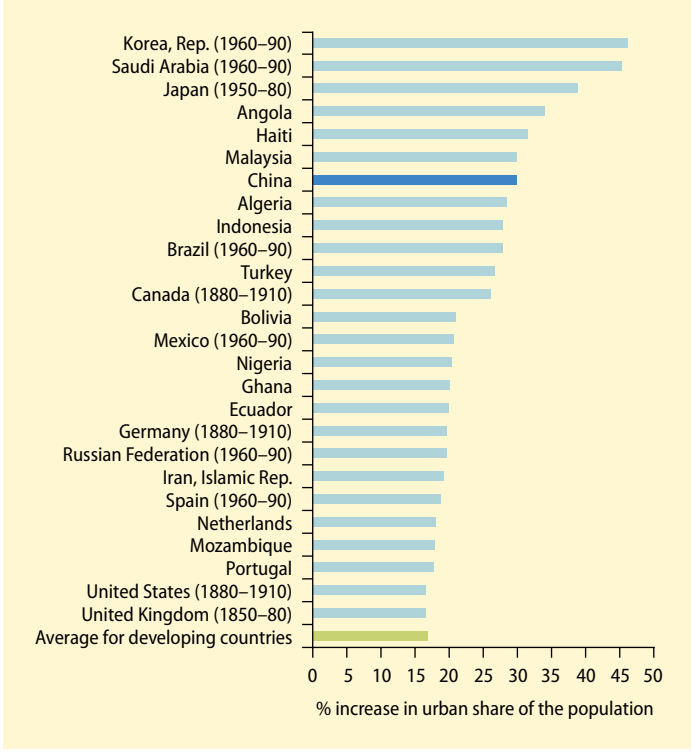
Chapter 1 China's Urbanization Achievements

China's urbanization over the past three decades has been rapid. China's urban population rose from less than 20 percent of the total in 1978 to 52 percent in 2012, an increase of more than 500 million people. Although China's urbanization is without precedent in absolute numbers, the increase in its urbanization rate has not been exceptional when compared to other countries (figure O.1). In fact, China's change in urbanization rate has been lower than that of countries such as Japan and the Republic of Korea at comparable stages of development, but higher than that of the United States and the United Kingdom in the past. Moreover, despite rapid urbanization, the share of the population that is urban remains below that expected at China's current per capita income. Most important, China's urbanization remains incomplete: some 260 million residents of urban areas, known as migrants, lack urban hukou, the urban registration that regulates access to urban public services and social security.

Over the past decade, China's cities have gained an additional 100 million urban residents, and the annual growth rate of the urban population reached almost 4 percent, five times that of the total population. Some 40 percent of the new urban residents became urban because a nearby city expanded to encompass the rural area in which they were living, while a similar share moved to the cities to seek work.[1] Population growth in the largest cities has been especially rapid, despite government policies intended to encourage migration to small and medium cities.

Rapid urbanization has facilitated an unprecedented economic transformation in the past 30 years, which catalyzed China's brisk GDP growth and pulled more than 500 million people out of poverty, many of whom participated in China's massive rural-urban migration, moving from the countryside to the cities and from agriculture into jobs in industry and services. China's average

FIGURE O.1 China's rapid urbanization from an international perspective[a]



Source: World Bank staff calculations based on *World Development Indicators* and Bairoch and Goertz (1986).
Note: It should be noted that the urbanization rates on which this figure is based are not fully comparable, as definitions of urban areas differ from country to country.
a. The time period for all countries is 1978–2012, unless otherwise noted.

GDP growth rate over the past three decades reached nearly 10 percent, and urban areas that provided cheap land, abundant labor from migrants, and expanding infrastructure catalyzed this rapid growth. Demand from a growing world economy, into which China increasingly integrated, outpaced domestic demand, while investment in manufacturing and infrastructure transformed China's economic geography.

A key driver of China's success was the decentralization of decision making to local governments, which started in 1980. This decentralization encouraged local experimentation and competition for resources between cities and motivated local initiatives through a performance system that rewarded local leaders' success against national development goals. In the transformation process, employment in manufacturing and services grew during the same period from less than 30 percent of the labor force to more than 60 percent. Reallocation of labor to manufacturing and services—sectors that rapidly increased their productivity—accounted for almost a fifth of China's GDP growth. Reallocation of capital and labor to the more efficient nonstate sectors further boosted the productivity of China's economy.

China's cities have largely avoided the social ills of rapid urbanization such as widespread urban unemployment and poverty. Many countries have urbanized in the course of development, but some have seen their cities expand without much growth, and in such cases, urbanization has been accompanied by rising unemployment, slums, congestion, and squalor. China has avoided these problems, in part by regulating the flow of people to its cities, but more so by creating the conditions for rapid growth in income and employment. Mobile migrant labor that was temporarily employed either moved back to the rural areas or on to the next job, thus containing open urban unemployment.

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. In the future, the services sector—rather than industry—is going to play a larger role in growth, and domestic demand is likely to grow faster than external demand. China's cities today are much larger and far better connected to the rest of the world and to one another because of the massive investment in infrastructure. This is a strong basis for continued growth, because it allows agglomeration effects and specialization to be the drivers of future growth. It is also a motivator for improved policies that build on these conditions.

Chapter 2 Efficiency

Rapid urbanization has facilitated an unprecedented economic transformation in China over the past 30 years. However, China's existing growth model is running out of steam because of its inefficient use of capital, labor, and land. These inefficiencies result from administrative obstacles to labor mobility and from incentives that have caused local governments to become overly reliant on capital accumulation and land conversion. For China's urbanization to be more efficient, its factors of production need to be used more productively, and city agglomeration and specialization need to be exploited. These actions will accelerate urbanization, make it more conducive to growth, and indirectly contribute to higher consumption.

Urbanization and agglomeration

Urbanization is generally associated with higher income and productivity levels. International experience suggests that, done well, urbanization can be an important driver of productivity increases and growth because urban areas offer positive agglomeration effects, including larger, more efficient labor markets, lower transaction costs, and easier knowledge spillovers. Agglomeration effects can also occur in smaller cities with sufficient specialization and transport linkages to larger urban areas. In the absence of sound public policy, however, those agglomeration effects may be easily outweighed by congestion costs—pollution, traffic congestion, and higher costs of living.

In member countries of the Organisation for Economic Co-operation and Development (OECD), regions with a higher share of urban population are generally linked to a per capita GDP higher than the national average; a 3.5–8 percent increase in total factor productivity can be expected for every doubling of the size of a city-region. A recent survey concludes that such phenomena are not limited to OECD countries,[2] and indeed agglomeration economies apply equally strongly in developing countries. Estimates for China suggest a 10 percent increase in productivity for every doubling of city size.

Market forces are already starting to "right-size" China's cities for economic efficiency as China's rapid growth and migration have made urban economic systems more efficient through higher concentration of production. Furthermore, experience from Japan, Korea, and the United States, suggests that China's large cities will move from their current concentration of industry toward a higher concentration of services and that in the future the innovation and service economy will be even more concentrated than the industrial one has been. Indeed, concentration of services is already taking place across China's large cities. For example, between 2000 and 2010, finance, insurance, and real estate services grew almost 2 percentage points more in metropolitan than in nonmetropolitan cities. But these tradable services are still much less concentrated than global norms would suggest.

A key feature of China's urbanization has been the rapid growth and concentration of economic activity in large cities with high access to international markets. Cities with a population of 2.5 million or more generate 95 percent of China's urban exports. The combined economies of Beijing, Guangzhou, Shanghai, Shenzhen, and Tianjin amounted to $1 trillion in 2010—comparable in size to Korea's economy. Incomes in these cities have climbed swiftly as well: between 2000 and 2010, per capita GDP rose from RMB 35,000 to RMB 82,000 in Shenzhen and from RMB 32,000 to RMB 66,000 in Shanghai. Rising prosperity in large cities has attracted millions of people from the countryside. Between 2000 and 2005, migration from other provinces boosted population numbers by 6.6 percent annually in Beijing and by 9.1 percent in Shanghai. Economic concentration is still substantially lower than in the United States, where the largest 10 metropolitan areas account for about 38 percent of GDP, compared with only half as much in China.

On the policy implications of agglomeration effects, the international literature

is careful to emphasize that policy should not favor any city. In fact, policies that are "spatially neutral" seem preferable.[3] Governments should create a level playing field among cities to encourage firms and individuals to locate where they are most productive. The existence of agglomeration economies on their own does not imply favoring big cities,[4] and because density has downsides, the benefits must be weighed against the costs.

Agglomeration effects will become more important for China as the economy shifts increasingly to services. In China's richer cities, services will become more important as a share of GDP. Agglomeration effects play an even more important role in services than in industry. In the United Kingdom, financial and insurance services are 35 times more concentrated than manufacturing is (and information and communications 7 times more concentrated).[5] Close proximity also stimulates the growth of other specialized services such as legal, software, data processing, advertising, and management consulting firms. Urban density allows frequent face-to-face contact among employees, entrepreneurs, and financiers—contact that in turn promotes innovation and productivity.[6]

As services become concentrated in cities, industry will spread out—from a few big cities to a larger number of small ones. For example, as service employment grew in U.S. metropolitan areas during 1972–2000, industry moved to the suburbs 20–70 kilometers away.[7] Aiding this decentralization were transport infrastructure investments, which made trade cheaper. Similarly, after Korea made massive investments in transport and communications infrastructure in the early 1980s, industry decentralized from the three largest cities to smaller cities and the hinterlands.[8]

Inefficient capital use

China's growth has become increasingly reliant on capital accumulation in recent years, especially after the global financial crisis to which China responded with an investment-driven economic stimulus. China's investment rate is now more than 45 percent of GDP, constitutes almost half of demand, and over the past decade accounted for 80 percent of growth. At the same time, the growth dividends from reallocating factors of production across sectors—and across ownership forms—have declined considerably. Further, the share of growth that can be attributed to productivity growth not associated with factor reallocation declined from 2.5 percent of GDP in 1991–2000 to just 0.3 percent in 2001–10 (figure O.2).

Other Asian economies that grew rapidly in the past—Japan, Korea, Singapore, and Taiwan, China—all relied on high investment over an extended period of time to reach high income, and China's capital stock per capita still remains significantly lower than in advanced economies, so much capital still needs to be accumulated. But continued capital accumulation will contribute less and less to growth as the ratio of capital to labor rises. China's investment rate, at over 45 percent of GDP, is also exceptionally high. Moreover, the efficiency with which China is accumulating capital is declining. China's incremental capital-output ratio (ICOR), an indicator of how much investment is needed for each additional unit of growth, deteriorated from an average of 3.6 in 1991–2011 to 4.7 in 2009–11, in the aftermath of the global financial crisis. That is considerably higher than in Japan, Korea, and Taiwan, China in their high growth years (table O.1), although comparable to other large emerging economies after the global financial crisis, a period during which most economies experienced a deterioration of their investment efficiency. If China's investment efficiency (as measured by ICOR) had stayed constant from 2000 to 2012, the same growth rate could have been achieved in 2012 with over 20 percent less investment.

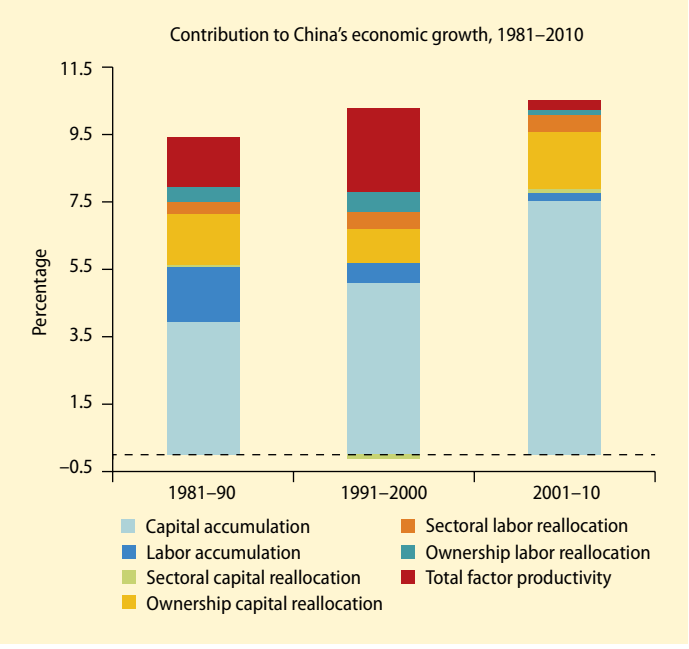
At the city level, investment efficiency has also declined. The ICORs have increased consistently across all city size categories in China, although returns on capital remain higher in the larger cities than in smaller ones. International experience suggests that capital use is efficient when ICORs are around 3, meaning that cities would need capital formation of around 30 percent of GDP to achieve 10 percent growth. Actual capital investments in China's cities have

been at twice that level.[9] Across cities, capital is used least efficiently in smaller cities and inefficiencies are increasing over time. ICORs across city types have risen from the 2–3 range in 1995–2001 to well over 4 in 2009–11; cities with fewer than 500,000 people had average ICORs above 5.5 over the latter period.[10] On the ground, this inefficiency is tangible: in some instances, government-led developments of "new towns" have turned into wasteful "ghost towns" unlinked from market demand, while in others the excessive infrastructure developed cannot be maintained from limited budget resources.

Two main reasons explain this overuse of capital at the city level. Local governments eager to attract investments have provided subsidies in the form of inexpensive land, subsidized utilities, and tax reductions. Also, China's financial sector has provided inexpensive credit for those who have access—in part because deposit rates are controlled and in recent years because the economic stimulus led to a rapid expansion of credit.

Local government debt has become a key issue. To attract investment and jobs, local governments have heavily invested in infrastructure. Despite strict limits on local government borrowing in the Budget Law, local governments have used urban development and infrastructure corporations (UDICs) and local government financing vehicles (LGFVs) to raise financing for infrastructure development. According to the 2013 audit by the National Audit Office, at end-June 2013, local governments' direct debt amounted to RMB 10.89 trillion, local government guarantees RMB 2.67 trillion, and other local government contingent debt RMB 4.34 trillion. If only explicit debt is taken into account, China's general government debt-to-GDP ratio at the end of 2012 was 36.7 percent, very modest by comparison with OECD countries. If all contingent debts are included, the debt-to-GDP ratio would be 53.5 percent, still modest by international comparison, more so if one considers that China's government also owns considerable assets, such as state-owned enterprises. While the level of debt stock is manageable, the growth of local government debts, at a yearly rate of around 20 percent in 2010–13, is a major concern, and some subnational governments may be

FIGURE O.2 Productive gains from reallocating labor and capital are almost exhausted



Source: Based on research by David Bulman and Aart Kraay for this study.

TABLE O.1 Returns on capital are declining over time: China compared with Japan, Korea, and Taiwan, China

	Gross fixed capital formation (percentage of GDP)	Average annual GDP growth (%)	Incremental capital-output ratio
China (1991–2011)	36.7	10.4	3.6
China (2009–11)	45.4	9.6	4.7
China 2012	46.1	7.8	5.4
Japan (1961–70)	32.6	10.2	3.2
Korea, Rep. (1981–90)	29.6	9.2	3.2
Taiwan, China (1981–90)	21.9	8.0	2.7

Source: Urbanization study team based on CEIC Data (n.d.).

overindebted. In addition to the risk to the financial system, the opaque manner in which local governments borrow de facto is likely to raise the cost of borrowing because of the ambiguous status of debt and uncertainty about whether local governments would back their financing vehicles. Land has played an important role as collateral for borrowing by UDICs and LGFVs, thus linking the health of local finances to land prices and real estate development.

Incomplete migration

Despite China's impressive urbanization and migration record, the country is still less urbanized than expected at its level of income. Moreover, while 38 percent of China's labor force still works in agriculture, rapidly rising migrant wages in cities and shortages of low-skilled labor suggest that fewer people than before—and fewer than warranted on economic grounds—choose to leave the countryside to move to the city. International experience suggests that when workers are able to move freely across cities and sectors in search of better opportunities, wages and productivity should converge across localities. Data for prefecture-level cities in China in 2010 show that differences between marginal productivity and real wages persist and are greatest in midsize cities, suggesting that labor mobility is less than optimal.

Migrant workers are an increasingly important part of the labor force, becoming better educated, older, and keen to stay in the city in which they work.[11] Migrant workers made up more than one-third of the labor force in 2012. Two-thirds of China's migrant workers live in the eastern provinces and two-thirds of these originate from the same province. City-to-city migration is gaining in importance: it made up almost 14 percent of the total in 1990, but more than 22 percent in 2010. The majority of migrant workers are male, and on average they are better educated than the general rural labor force. Wages for migrants are rising rapidly, and the wage differential between migrant workers and their urban counterparts for similar work performed has fallen over time. The average migrant worker stays in the city for only seven to nine years, and only 20 percent of migrants have brought their families, although more than 50 percent would like to settle in urban areas.

While there are demographic and other reasons that explain a slowdown in migration, the key reasons are administrative: the hukou system and its link to entitlement of public services in the city and right to land in rural areas; lack of portability of social security; and insufficient low-income housing. In an economic sense, these administrative barriers work like an expensive tax on migration; based on current productivity differences between agriculture and urban occupations in industry or services, every 1 percent more migration from rural to urban areas would yield 1.2 percent more GDP.[12] At the current level of mechanization, agricultural surplus labor is estimated to be 105 million people,[13] and this could increase as China's agricultural modernization accelerates. If China's migration rates had matched those of Korea's in the past, China's economy would be nearly 25 percent larger today.[14]

Inefficient land use

Urbanization has used land inefficiently. Rural land requisition and conversion for industrial use has been particularly inefficient because it has been largely driven by administrative decisions rather than market demand. The incentives for local government to expand the city rather than develop existing underused urban land are strong: requisition of rural land and sale for commercial and residential purposes yield a large windfall gain for the city finances. In contrast, requisition of urban land is more expensive and cumbersome, because urban residents and enterprises have stronger property rights. Furthermore, national regulations that protect farmland from conversion have the unintended consequence of fragmenting the urban periphery because available land for conversion is often not adjacent to the core city.

The territorial expansion of cities has far outpaced population growth—according to some estimates, average population density in China's cities has dropped by more than 25 percent in the last decade.[15] In 2000, China's

urban land was about 99,000 square kilometers, or 1 percent of China's surface area; by 2010, it had increased to 127,000 square kilometers, an average growth of 2.5 percent a year. China is not alone in this trend toward less dense cities—many OECD countries have experienced similar drops in density in the past 50 years, driven by suburbanization, increased mobility, and growing demand for urban space. But many cities in OECD countries are now aiming to turn this trend around. There are good reasons for doing so: agglomeration effects are larger in denser cities; providing services and infrastructure to a more compact population costs less; and less of the land that is crucial to support agricultural production and environmental sustainability is lost.

Within China's cities, land allocation is biased toward industry. Unlike commercial and residential land, industrial land is rarely auctioned and is usually directly allocated or sold at heavily subsidized prices, on average only 10 percent of commercial land prices. As a result, despite the abundance of urban land, land for residential development and the services sector is limited and expensive, resulting in surging housing prices and an underdeveloped services sector.

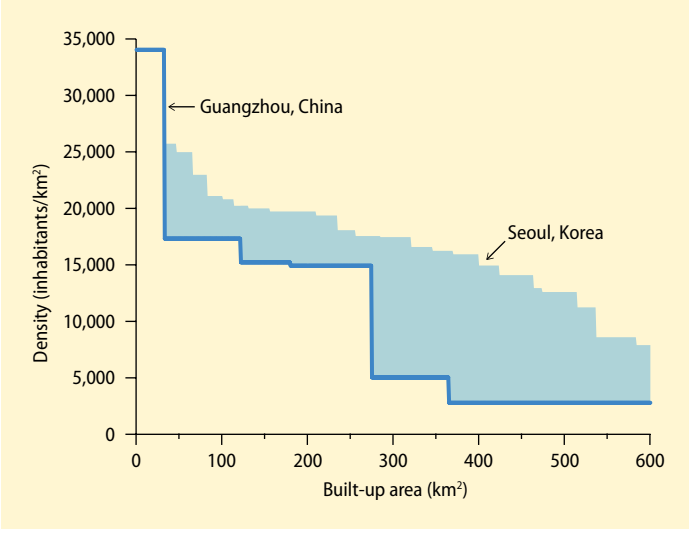
The current regulatory approach to city land use contributes to inefficient urban development. Overly strict limits on floor area ratios (FARs, the ratio of the floor area of a building to the area of the land the building sits on) in central urban areas also lead cities to accommodate new demand by expanding outward. Moreover, planning controls are regulated at the superblock level, rather than the small building plot level, and any petition for land use or density changes—which are rarely given, barring exceptional circumstances—occur at the original lot level. While the law provides options for developers to transfer, mortgage, and lease land use rights to individual citizens and organizations, conventional land subdivision and sale, as practiced in many countries around the world, is not possible in China.

In rural areas, land remains underused. China's rural land remains fragmented,[16] with the average farm size, at 0.6 hectares, now smaller than at the start of reforms. Moreover, more than 60 percent of plots are less than 0.1 hectares.[17] The 2003 Rural Contracting Law allows subleases of farmland, but despite increases in land transfers in recent years, farmland consolidation has remained slow, in part because property rights remain unclear. International evidence suggests that stronger property rights bring significant increases in agricultural investment and productivity through mechanization and increases in rural plot size. For instance, in the decade after Taiwan, China, privatized rural land in the 1950s, annual rice yields rose 60 percent and farm incomes increased 150 percent.

In Vietnam, new laws passed in 1993 increased both efficiency and equity by establishing the right to inherit, transfer, sell, lease, or mortgage land, while extending the duration of land use rights from 20 to 50 years. Rental market participation quadrupled in the five years following reform, and land sale transactions increased sevenfold. These changes unambiguously boosted productivity, helping Vietnam transform itself from a net rice importer to the world's second-largest rice exporter.[18] Similarly, in the United States—where the number of farms has declined since 1900 by 63 percent, but the average farm size has risen by 67 percent—the period of most rapid transition (1950–90) saw even faster productivity growth in agriculture than in manufacturing.

Existing urban land can accommodate a great deal of future urbanization. Some of China's larger cities, including Beijing and Shanghai, have already started to redensify in the past decade—with population densities up by 50 percent in the core of Beijing. However, there is considerable scope for further densification: if Guangzhou had the same density as Seoul, Korea, it could accommodate 4.2 million additional inhabitants on its existing land, while Shenzhen could accommodate an additional 5.3 million inhabitants (figure O.3). China currently uses more than a quarter of its urban land for industrial purposes, even in some of its largest cities—a stark contrast with Seoul, which uses 7 percent and with Hong Kong SAR, China, which uses 5 percent. As China grows richer, conversion of industrial land into commercial

FIGURE O.3 Guangzhou could accommodate 4.2 million more people with Seoul's density profile



Source: Salat 2013.
Note: The dark blue line indicates the potential for redensification in the densest 600 km² of Guangzhou.

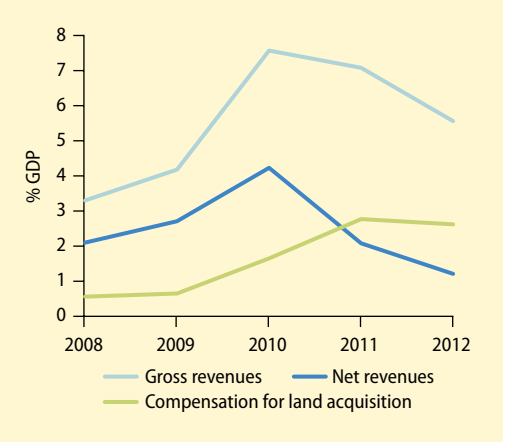
and residential land could provide the main land resource for cities—and provide a new source of revenues for local governments. In addition, development of urban villages and redevelopment of existing urban space at higher FARs can all contribute to densification without further expansion of urban land.

Land pricing will play an important role in the densification of cities. For China's 35 largest cities, rapid increases in urban land prices correlated with greater increases in density; that is, low land prices lead to urban sprawl.[19] In recent years, the intensity of land development in coastal cities has increased—by more than 40 percent in Guangzhou and Shenzen. Those cities recognized the unsustainability of reliance on rural land for urban expansion. They implemented institutional innovations to encourage greater use of existing urban land, which has led to less sprawl and more efficient land use. National reforms along these lines would improve land use throughout the country.

Land sales revenues have been fluctuating and declining drastically in some years. At their peak in 2010, gross revenues totaled 7.5 percent of GDP; however, net of compensation and the cost of land preparation, land revenues are more modest and have declined from 4.2 percent of GDP in 2010 to 1.2 percent in 2012 (figure O.4). Compensation for land taking, including cost for land requisition, resettlement, and demolition explains part of the decline: from barely 0.5 percent of GDP in 2008, or 15 percent of gross revenues, these payments grew to 2.6 percent of GDP in 2012, or almost half of gross revenues. Further, some land revenues are earmarked for specific spending categories, including agricultural infrastructure and water conservancy, compulsory education, and social housing, thus reducing the use of land revenues for urban construction purposes.

China's urbanization has led to large gains in efficiency through reallocation of labor from rural to urban activities, and agglomeration effects have increased the productivity of China's cities. At the same time, China's growth could use capital, labor, and land more efficiently. Removing barriers to migration, reducing the incentives for local government to convert rural into urban land, and making financial sector reforms that instill more discipline on local governments and investors alike are key directions for reform.

FIGURE O.4 Gross land revenues are large, but net revenues are declining



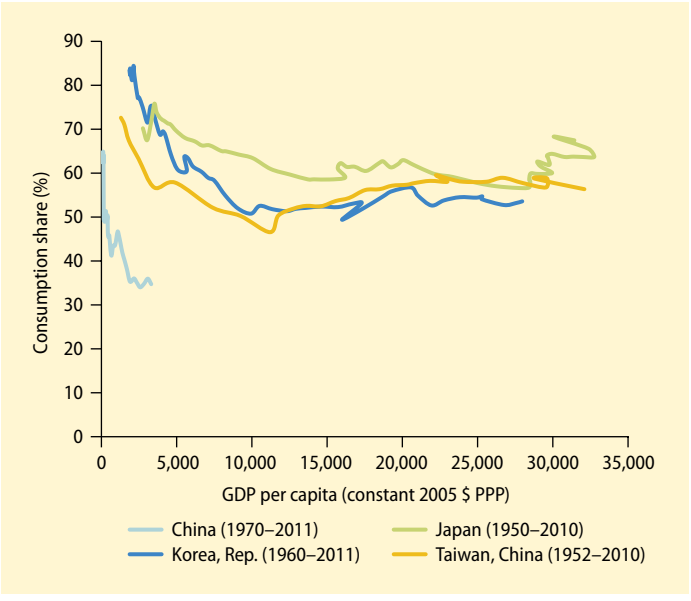
Sources: MOF data (annual budget reports); China Ministry of Land and Resources; CEIC Data; World Bank and DRC staff estimates.

Urbanization and domestic demand

Can urbanization help rebalance demand? This is a key question for China, which seeks a more balanced pattern of demand, including a shift from external to domestic demand and from investment to consumption, because the existing model, while highly effective in the past, may not be a sustainable growth strategy going forward. The global environment has changed: labor costs are rising, and exports can no longer be counted on to drive demand growth. Although consumer demand in China has been growing rapidly by international standards, it has continued to lag behind China's phenomenal growth. At some 35 percent of GDP, the trend has been downward on the back of a dwindling wage share in the economy and rising household savings (figure O.5).

Several factors can explain the low consumption share in GDP. First, statistics may underestimate the share of consumption in GDP. In particular, the share of housing services may be underestimated because the imputed rent depends on the value of housing, which in urban areas has increased rapidly. Further, the consumption of other services may also be underestimated, because this sector has grown rapidly in the past decade. Second, the share of labor remuneration in GDP has fallen precipitously in recent decades, declining by 7 percentage points of GDP over 2000–09. In part, this drop can be explained by the shift of labor from agriculture to industry and services: in agriculture, labor remuneration accounts for some 90 percent of value added, whereas in industry and services, it is about half that.[20] As more people move out of agriculture, the share of labor in GDP declines, even though people increase their wages by moving. Third, household savings rates increased—accounting for 4 percentage points of the decline of consumption as a share of GDP over 2000–09. While the increase in the savings rate is associated with urbanization, the driving factor is income: savings increase because people save more as income increases, and people who move to cities earn more than those in rural areas.

FIGURE O.5 Consumption share and GDP per capita, select East Asian countries

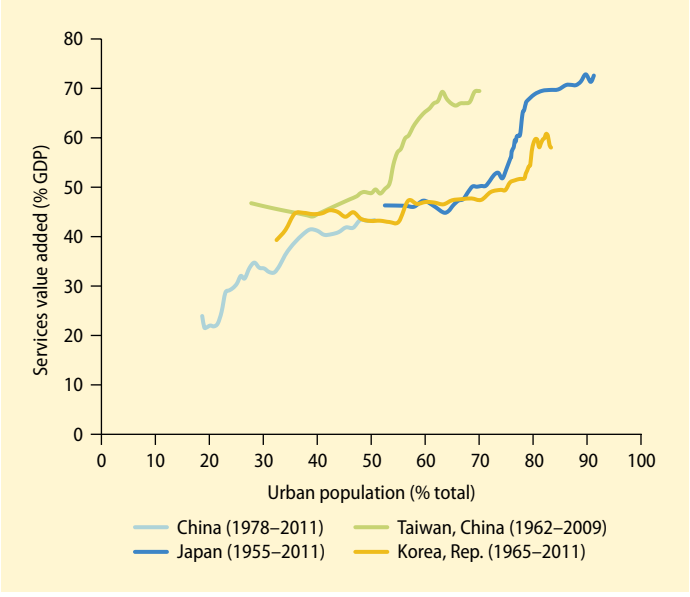


Sources: World Bank *World Development Indicators* and authors' calculations.

The low share of consumption in the economy is reflected in the size of China's services sector, which remains relatively underdeveloped by international standards—47.8 percent of GDP in 2011—although it is similar to levels Japan, Korea, and Taiwan, China experienced when their urbanization rates were around 50 percent (figure O.6).

Urbanization can be an indirect driver of consumption growth. China's consumption has been growing rapidly in the past 30 years, averaging about 8 percent a year, but it has still lagged behind China's record growth, and as a result, consumption as a share of GDP has declined. The largest driver behind a rise in China's consumption rate is likely to be the share of household income in GDP. This share declined from 68.5 percent in 1990 to 60.4 percent in 2011, while over the same period the wage share in the economy declined even more rapidly to 47 percent in 2011—accounting for most of the decline in consumption as a share of GDP. One reason for this decline is the move of labor from agriculture, with a high share of labor in value-added industry, which is more capital

FIGURE O.6 Services and urbanization in East Asia



Sources: Data from World Bank *World Development Indicators*; Council for Economic Planning and Development (Taiwan), various years; Statistics Bureau of the Japan Ministry of Internal Affairs and Communications, various years.

intensive. The other is the abundance of surplus labor that kept wage pressures low.

Because the labor share in services is higher than in industry, a shift of production is likely to increase the wage share in the economy. In addition, continued urbanization is likely to exhaust surplus labor in the coming decade, which in turn will accelerate wage increases that will drive up consumption. Real wage increases have already been brisk in recent years, especially for skilled labor but also increasingly for the unskilled labor usually provided by migrants. Accelerating urbanization by removing obstacles to migration could bring forward the point where wage increases start to outpace GDP growth. At that stage, China's consumption share in the economy is likely to increase. In other economies that experienced rapid development in the past (Japan, Korea, and Taiwan, China), the consumption share in the economy bottomed out at per capita incomes between $10,000 and $15,000, an income level China will reach this decade if it maintains relatively rapid growth.[21] Changing consumption patterns of migrants in China's cities are unlikely to directly drive increases in consumption. Although migrants consume far less as a share of their income than urban residents in the location they work, the overall savings rate for migrants and their families back home hardly differs from those with urban hukou at similar levels of income. Thus, extending urban hukou rights to migrants by itself would not increase consumption. Savings rates rise rapidly with income: the richest 10 percent of the population has a savings rate above 60 percent, whereas the poorest 10 percent saves very little.[22] Part of the drop in consumption as a share of income reflects the higher incomes China's people enjoy now. At the same time, this finding would imply that more inclusive growth that benefits the lower-income strata—whether migrant or not—could increase the consumption share of GDP. Accelerating rural-urban migration would benefit those lower-income earners, and they will consume more. As a share of their increased income, they would still consume less, and thus national consumption as a share of GDP is not likely to rise.

As China's cities expand rapidly, urban investment demand has been high. Investment in infrastructure has topped 10 percent of GDP in the past decade, while urban construction has been peaking at 3.5 percent of GDP in 2008–12. Urban construction investment per additional citizen rose sharply in the past three decades—from RMB 294 per additional urban resident in 1980 to RMB 64,000 in 2007—in part driven by the rising costs of land and labor.[23] Arguably, rapid growth in infrastructure investment is unsustainable and will moderate in the future for three reasons: more efficient, denser cities that are shifting into services will require less additional investment in infrastructure; much of the necessary basic infrastructure has been built already, and additions to the urban population will require less additional investment than in the past; and maintenance of infrastructure is taking an increasing share of local government budgets, which will become a constraint on additional capital investment.

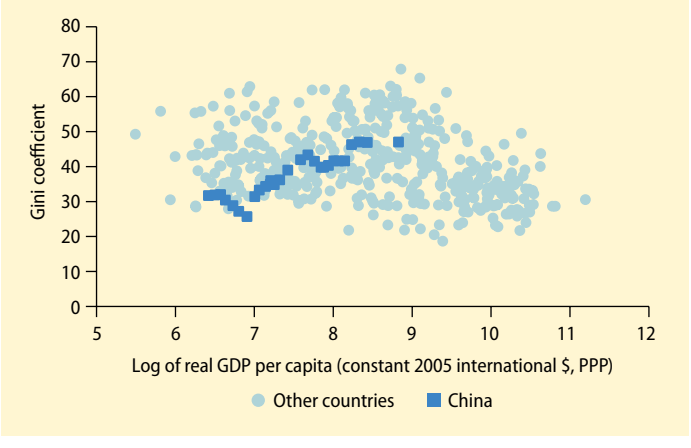
While demand for housing is likely to remain strong, urban real estate investment is already very high at 16 percent of GDP, up from 9 percent a decade ago. It is unlikely to

grow much further as a share of GDP: first, a projected urbanization rate of 70 percent by 2030 implies a slowdown in urbanization compared with the past 2 decades. Second, in recent years this investment has been driven by rapid credit growth that may not be sustainable. Finally, the stock of empty housing is growing, while the supply of low-income housing falls short of demand, despite the government's ambitious social housing investment of 2 percent of GDP per year. Thus, whereas the composition of real estate investment may change, it is unlikely to grow more rapidly than GDP in the coming years.

Chapter 3 Inclusion

China has achieved a remarkable transformation with the movement of over 260 million migrants from rural to urban areas. These individuals have left their agricultural jobs to seize the opportunities offered by urbanization and to take up more productive and higher paying jobs in cities. Through this process, China has managed to sustain high wage growth and even higher productivity growth and to reduce poverty on an unprecedented scale. At the same time, China's spatial and rural-urban inequality has grown, and social tensions have emerged as a result of the rapid conversion of rural land at below-market value and the incomplete integration of migrants into China's cities. Barriers to labor mobility remain, largely because social security and other benefits are not portable: those who migrate are often forced to leave their families behind in rural areas where access to quality services such as education and health may be limited. Social policy reforms in the household registration system, public finance, service delivery, and labor market institutions will be needed to reduce these social challenges and make China's urbanization more inclusive.

FIGURE O.7 China's rising inequality



Source: World Bank staff calculations; Milanovic 2013.
Note: PPP = purchasing power parity.

China's growing inequality and social tensions

China's rapid urbanization has been accompanied by growing income and wealth inequality. China's Gini coefficient, a measure of inequality, stands at 0.47 according to official data, while unofficial estimates put this number even higher. Although not exceptional by international standards (figure O.7), inequality has risen rapidly in the past three decades and is high compared with other East Asian and OECD countries. Income inequalities have been rising in urban as well as rural areas, and the gap between urban and rural incomes is as high as it was at the start of reforms in 1978. Within urban areas, inequalities between migrant workers and the population with urban hukou remain. Even though migrant wages have been catching up and migrants are increasingly paid wages comparable to those of urban residents doing similar work, migrants often lack the skills and educational background for higher-wage jobs. Inequality from capital income is on the rise as well, and inequality in wealth among the urban population—much of it driven by house ownership—is also rising. As is usual in other countries, assets are even more concentrated than income, and in China this concentration is very high: the top 10 percent of households is estimated to own 85 percent of assets, whereas they earn 57 percent of total income.[24] This places China's wealth inequality near the top by international comparison.[25] For the median urban household, housing constitutes the main asset.

China's barriers to migration explain in part the persistence of regional and urban-rural wage gaps, and they indicate inefficiency in the use of labor. International experience suggests that increased mobility is likely to reduce spatial and rural-urban inequality. Consider the United States, where mobility has nearly eliminated interregional and rural-urban wage differences: rural-urban migration helped to equalize agricultural and non-agricultural wages, with a disproportionate

effect on poorer agricultural states.[26] The result was regional convergence, with the north-south labor-income ratio falling from 2.4 to 1.1, while the urbanization rate rose from 28 to 74 percent. Evidence from Korea also shows that free rural-urban migration reduced inequality. By 1994, three decades into reform, Korea's urban-rural wage gap had disappeared entirely—indicating that workers had migrated to their optimal locations.[27] In China, the interprovincial gap in wages continues to grow, but interprovincial migration nonetheless lags behind that of the United States, where wage differences among states are much lower.[28]

Social tensions in urban and rural areas are growing. The absorption of 260 million migrants into China's cities has not always been smooth, and urban hukou holders experience a crowding of public services and perceive a decline in service quality because of the rapid growth in urban population. Meanwhile, discontent among farmers who feel unfairly treated because of the low level of compensation they received for expropriated land is one of the main causes of social unrest in China, especially in peri-urban areas at the city fringe. From 1990 to 2010, local governments expropriated rural land at an estimated RMB 2 trillion below market value.[29] Assuming that this compensation would have generated returns similar to overall growth, farmers today would have more than RMB 5 trillion in household wealth—greatly lowering asset inequality and leading to greater consumption through a wealth effect.

Labor disputes nearly doubled between 2005 and 2012 and largely involved migrant workers. The three most common reasons for labor disputes are wages and compensation, social insurance, and contract terminations.[30] Labor disputes are becoming more complex, more difficult to resolve in a timely fashion, and more likely to have an impact on public opinion and social stability.

The dispute resolution system in China is organized to settle "rights" disputes but not "interest" disputes. Rights disputes involve statutory or contractual claims, while interest disputes are conflicts over interests (such as wages, work conditions, and work organization) that do not allege violations of minimum legal standards or contractual obligations. As Chinese workers' consciousness of protections under the labor markets has increased, so too has the number of interest disputes, but the institutional vacuum for resolving them may explain in part why collective work actions such as strikes and demonstrations have increased in recent years. While some demonstrations are clearly about legal violations (such as the failure to pay wages), many other demonstrations occur because workers wish to highlight disagreements and tensions with employers that are a normal part of industrial relations.

Higher demand has intensified competition for urban services, creating tensions between long-term urban residents and newcomers.[31] Therefore, keeping the quality of provision at a level acceptable to the long-term residents is important. At the same time, the delivery of social services in urban areas can build on the natural "technological advantages" of cities—economies of scale in service provision and increasing returns to scale. Urbanization also offers greater potential for agglomeration of service providers and thus potentially an enhanced choice for clients.

The evolution of the hukou system

Hukou reform has been undertaken gradually since the early 1980s in response to China's evolving economic and social transformation. Significantly, the mobility restriction function of hukou has largely been eliminated. In 2006, the State Council promulgated a milestone document that provided a comprehensive policy framework for the treatment of rural migrant workers in cities with respect to their entitlement to social services. This document explicitly linked access to services with the goal of facilitating integration of migrants into cities. Since then, as required by the central government, reforms have been explored and promoted at the local level.

Some provinces started pilots that adopted parallel residence permits and the provision of social services linked to these permits.

Several large cities and provinces, such as Chengdu, Chongqing, Guangdong, Jiangsu, Shanghai, Shenzhen, and Zhejiang, have adopted the residence permit system—some with strict limitations. In 2011, the State Council announced hukou reform as a key component of a coordinated set of urban and rural reforms and took several steps including issuing hukou system reform guidelines linked to a city's administrative level, requesting institutions to improve registration of temporary populations in the cities, and calling for a gradual rollout of the residence permit system.[32]

For migrants from outside municipal or provincial jurisdictions, local reforms have been the least complete in large cities, where most rural migrants are moving to, attracted by the higher returns to their labor. On the other hand, in small and medium cities, social services and social protection are less developed, which is one factor that explains the limited success of the policy aimed at attracting migrants to smaller cities. Reforms in the larger cities have generally been focused on selecting migrants with the desired characteristics and are oriented toward attracting high-skilled and wealthy individuals, thus significantly limiting the labor market impact of the reforms and reducing their equity benefits.[33] Migration restrictions continue in a variety of ways, for example, through entry barriers based on skills, investments, or income, or through quota rationing.

Reforming hukou to encourage mobility should be mindful of capacity constraints in urban public service delivery. These are already evident for the current migrant population but will increase once migrant families reunite and migration accelerates as access to urban services increases. The government is concerned that large additional demands on services may undermine service quality for existing urban residents, which could aggravate social tension. A second concern is that migration will be driven not by opportunities in the labor market but by access to services. China has large differences in the quality and quantity of public services between urban and rural areas. Internationally, there is not much evidence of such "benefit migration" in advanced economies,[34] but the differences in public services quality in those countries are not as large as in China. Evidence from China suggests that even for large cities such as Chengdu, relaxing limitations on access to services does not lead to an excessive influx of migrants seeking benefits. Even the advanced economies regulate access at the local level (box O.1).

Hukou reforms face financial constraints to some extent. In principle, money should follow people—that is, if a family migrated from a rural to an urban area, the money that financed their services in the rural area should be transferred to the city. Over time, the fiscal system and the service delivery system can adjust to accommodate the additional demand in urban areas. Centralizing some public services, notably social security, would help address part of the problem, but a temporary fiscal subsidy to urban areas to rapidly increase service delivery capacity may be needed in the short run to accelerate improvements in service delivery to migrants until the fiscal system has been adjusted (see chapter 7 and supporting report 6). The benefits from accelerated migration and the improved stock of human capital—which accrue nationwide—are worth that investment.

Access to urban social services

In the 2000s, the central government required local governments to include migrant children in the local education systems, accommodating them mainly in local public schools. This requirement 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. Yet migrant children still face difficulties enrolling in urban public schools—in Guangdong, for instance, some 50 percent of migrant children are not in public schools—and many attend migrant schools, which typically have poor teaching facilities, undeveloped curricula, insufficient funding, and less qualified teachers. Barriers that keep migrant children out of the mainstream education system include capacity constraints in urban schools, which were planned for the hukou population only; legal and regulatory barriers with high

BOX O.1 Residency rights in the European Union, the United States, the former Soviet Union, and Japan

Within the European Union (EU), a "right to reside" in another EU country beyond three months is linked to one's employment status. Workers and self-employed persons have the right to reside without any conditions but must have the proper documentation to prove their status, such as a certificate of employment or proof of self-employment. In the case of students or "economically inactive" persons (unemployed or retired, for example), the right to reside involves proving that they have comprehensive health insurance as well as "sufficient resources" to not become a burden on the host EU country's social assistance system during their residency. In addition, students are also required to be enrolled at an establishment for the principal purpose of following a course of study or vocational training. The "right to permanent residence" requires five years of continuous legal residence in the host EU country and, once acquired, is not subject to the conditions mentioned above. Some categories, notably workers or self-employed persons, receive more favorable treatment in this regard and may acquire this right before five years, under certain conditions. One can lose the right to permanent residency only through an absence of more than two consecutive years, although there are certain stipulated reasons for which such an absence is acceptable.

In the United States, state residency is required for a variety of rights, including the right to receive public services such as education and health, and eligibility to receive public assistance. Broadly speaking, there are two types of residency requirements: a "bona fide residency requirement," which simply requires that the person establish residence before demanding the services restricted to residents; and a "durational residency requirement," which obligates individuals to show that, in addition to being a bona fide resident of the state, they have resided there for a certain stipulated period of time. Attempts by states to make certain fundamental rights conditional upon residency have not remained unchallenged in court, however. Since the 1960s, the Supreme Court has struck down several attempts by states to impose residency requirements (particularly durational ones) on persons applying for welfare, public housing, and medical services, while upholding the state's ability to do so for the right to attend particular public schools and gain access to tuition waivers, among other programs. Residency is determined differently for different purposes and often varies by state.

In the former Soviet Union, the *propiska* residence permit system was adopted for economic, law enforcement, and other purposes, such as access to jobs, social benefits, housing and utility payments, taxes, conscription, medical care, and the like. Acquiring a propiska to move to a large city, especially Moscow, was extremely difficult for migrants. Following the dissolution of the Soviet Union, the propiska system was officially abolished for the citizens of the Russian Federation, but access to services remains challenging for the millions of migrants from former Soviet republics. Some of the former Soviet republics, such as Belarus and Kyrgyzstan, chose to keep their propiska systems, or at least a scaled down version of them, and these present the most complex challenge to entitlement reform.

In Japan, there are two distinct systems of registries to manage citizen information: the Basic Resident Registry (or *Jūminhyō)* and the Family Registry (or *Koseki*). The *Jūminhyō* is essentially a registry listing current address, basic sociodemographic information (name, address, date of birth, gender, head of household, nationality/region from where they came, status of residency, and the like), together with information related to social benefits and insurance including national health insurance, medical insurance for the elderly over age 75, long-term care insurance, national pension plan, child allowance, and rice distribution. The *Koseki*, in contrast, is the formal record of a family's (instead of an individual) history.[a] Unlike the *Jūminhyō*, a *Koseki* is not normally used to verify information or required to get government services. It is similar to the registration systems in other East Asian countries influenced by the ancient Chinese system of government, including China (*hukou*), Vietnam (*Hộkhẩu*), and the Democratic People's Republic of Korea (*hoju/hojeok/hojok*).

The *Jūminhyō* is the basis for the issuance of basic resident registration cards (*jūmin kihon daichō kaado)* by municipalities, and Japanese law requires every citizen to report his or her current address (and any changes therein)[b] to the local authorities, who compile the information for tax, census, and various other purposes. More important, *Jūminhyō* is required to access various social services including

(Box continues next page)

BOX O.1 (continued)

registering children at a local school district or starting or renewing national health insurance membership. It basically serves as a proof of residence where required, such as for opening a bank account or to apply for government permits. *Jūminhyō* registration is also required to officially register a name seal, which functions as one's official signature.

Since 2002, *Jūminhyō* information is available electronically through the Basic Resident Register Network, run by a government-backed provider in Tokyo (the Local Authorities Systems Development Center). The Juki Net is the electronic registration system currently used by more than 1,700 local governments in Japan and has greatly helped to simplify moving-in/out procedures, obtain a residence registry card, and eliminate the need to attach a copy of the resident's record in various administrative procedures. It also helps residents acquire an "electronic certificate" that can be used to authenticate themselves in electronic applications on the Internet. Since December 2008, it has also eliminated the need for pensioners to annually confirm benefits eligibility,[c] since the Basic Resident Registration Network System reports directly to the Japan Pension Service on behalf of the pensioner.

a. Japanese law requires all Japanese households to report births, acknowledgments of paternity, adoptions, disruptions of adoptions, deaths, marriages, and divorces of Japanese citizens to their local authority, which compiles such records encompassing all Japanese citizens within their jurisdiction. Marriages, adoptions, and acknowledgments of paternity become legally effective only when such events are recorded in the *Koseki*. Any changes to this information have to be sealed by an official registrar. The *Koseki* simultaneously fills the function of birth certificates, death certificates, marriage licenses, and the census in other countries as well as serving as proof of Japanese citizenship.
b. All Japanese residents are required to obtain a move-out notice/certificate from the municipality where they move from before submitting a move-in notice/certificate to the municipality where they are moving. This helps facilitate the smooth provision of public services including national health insurance and child allowance and also prevents overlap of collections of taxes and insurance premiums.
c. The Japan Pension Service requires annual reporting in the pensioner's birth month to confirm eligibility status and to continue receiving pension payments, failing which pay outs are suspended.

transaction costs because of the documentation required for enrollment; high school fees; and the policy requiring students to take the university and high school entrance examination in their province of origin.

The disparities in education in urban areas are also evident among local children from different social strata. This can be seen in the differential enrollment rates between higher-quality "key" schools and regular schools, and in indicators such as average class size and transition rates. The increased importance of family connections and "placement fees" to get children into elite urban public schools risks reinforcing existing social disparities. In urban cities such as Beijing and Shanghai, key elementary and junior high schools generally use exams to select their students.

For urban health insurance schemes, the government has a policy of open enrollment, but employers have few incentives to enroll migrants because it raises their costs. The majority of migrants are enrolled in the New Rural Cooperative Medical Scheme (NRCMS), which charges lower premiums. Yet migrants cannot conveniently take advantage of NRCMS benefits when they access health services in urban areas, because the benefits are not portable. Enrollees would first have to pay for care in urban facilities and then seek reimbursement from the NRCMS upon visiting their county of residence, usually during long holidays.[35] Few can afford to wait many months for reimbursement.

Policies to increase access to health services need to be matched with measures to control costs—for the sake of all urban residents, not only migrants. Between 2007 and 2010, real annual growth in health spending averaged about 15 percent compared with annual GDP growth of approximately 8 percent. Health is also consuming a growing share of public spending as government

expands insurance systems and invests in health services to improve access and reduce out-of-pocket spending.

Pension coverage has dramatically expanded over the past five years, but the inclusion of migrant, self-employed, and informal sector workers remains a challenge. Further systemic reforms are required to ensure portability, decent benefits, and financial sustainability of the system. Starting with rural areas in late 2009, and with urban areas in July 2011, China began rolling out a nationwide voluntary pension scheme for urban and rural residents with a combination of individual accounts and basic pensions. The "rural resident pension scheme" and the "urban resident pension scheme" are innovative efforts to encourage participation through public subsidies. Although migrants cannot participate in local urban resident pensions, they can contribute to the urban or rural resident pension scheme in the town where they have local hukou, and in this way ensure provision for their old age. The policy framework and fiscal subsidy policy of the urban and rural resident pension schemes are well aligned with each other, and it is anticipated that the two schemes will be merged shortly.

In 2012, 229.8 million people contributed to urban employee pension schemes, while the rural system covered about 460 million people by the end of that year. The number of migrants who participated in the urban employee pension scheme increased from 14.2 million (or 10.8 percent of urban migrants) in 2006, to 45.6 million (or 27.8 percent) in 2012, but the coverage rate remained less than half that of urban workers. Several factors explain the low participation rate of rural migrant workers in the urban worker pension scheme. These include lack of enforcement of the Social Insurance Law of 2011 and the Labor Contract Law of 2009, which require employers to treat urban and migrant workers equally; high tax and social contribution rates that are close to the OECD average, and even exceed it if housing fund contributions are included; and the lack of implementation of the State Council's decision of 2009 to secure portability of social insurance rights.

Urban dibao, introduced in 1997 to support the reform of state-owned enterprises by providing income assistance for laid-off workers and their families, has evolved into a backbone of the social safety net in China. Dibao is a noncontributory cash transfer program that aims to ensure a minimum living standard for eligible households. Rural dibao was rolled out nationwide in 2007. By 2012, urban and rural dibao covered 23.4 million urban beneficiaries and 53.4 rural beneficiaries, accounting for 3.0 percent of urban and 8.3 percent of rural population, respectively. In addition to the dibao, several other programs provide poor and low-income families with assistance, such as exemptions or reductions on education fees, subsidies for health insurance, and subsidized utilities that provide temporary cash and in-kind support. In 2012, 20.8 million urban and 59.7 million rural individuals received these subsidies. The rural wubao and urban Three-No are assistance programs that provide income and in-kind support to those who have "no capacity to work, no source of income, and no legal dependents, or whose legal dependent has no capability to provide support" in rural and urban areas, respectively. Most social assistance programs in China target only households with local hukou—urban or rural—and migrants and their families are excluded from the urban programs.

Access to housing

Urban hukou households in China have a very high rate of homeownership by international standards. About 84 percent of families in the cities live in homes they own, primarily the result of government policies in the 1990s that allowed occupants of work-unit housing to purchase homes at heavily discounted prices.[36] In contrast, only 10 percent of migrants own their urban residence, and affordability, rather than residency status, now constitutes the strongest barrier to accessing quality housing. Across urban areas, prices doubled between 1999 and 2010—in some cities like Shanghai and Beijing, they increased more than fivefold—making the Chinese housing market unaffordable for many.[37] Studies show that in

BOX O.2 Social Housing

Since 2007, China has implemented an ambitious social housing program for rural and urban residents. The program includes 7 categories and 12 varieties of social housing, including low-cost rental housing, assisted home ownership, public rental housing, and shelter improvements. By 2012, these programs had addressed housing needs of 31 million urban households, or 12.5 percent of total urban households, while over 5 million urban households benefited from rental subsidies. Fiscal support for social housing has rapidly increased, from RMB 10 billion in 2007 to RMB 380 billion in 2012. Earmarked grants from the central government for social housing rose from RMB 7 billion to RMB 235 billion over the same period. In addition, tax reductions and exemptions were granted. The financial sector financing of such programs also grew rapidly: by 2012, bank loans had reached RMB 571 billion; enterprise bonds had raised RMB 226 billion; and loans from public housing funds amounted to RMB 49 billion. Since 2010, land use plans for social housing projects have been listed separately in the annual residential land supply plan and given priority. Between 2010 and 2012, land supply for social housing projects across the country increased from 11,000 hectares to 38,000 hectares.

Despite these achievements, many challenges remain. The 12th Five-Year Plan targets 35 million units of social housing, bringing total coverage to 20 percent of households, which is higher than in most developed countries. Land availability financing, effective targeting of public subsidies, and operating and maintenance of housing units are among the key challenges that China faces in meeting its goals. Aside from improving the functioning of the housing market more generally, introducing a property tax on housing to better utilize existing housing stock, and encouraging industries to move to more affordable locations in secondary cities, lessons from international experience suggest that China can introduce specific policies to promote social housing.

Increasing flexibility for municipalities in achieving their social housing construction goals. Rather than mandating a specific number of a particular type of unit, broad goals could be set for each municipality, which could then be required to develop a specific plan on how to achieve these targets. The plan should be done on the basis of careful analysis of housing demand (such as demographic and socioeconomic conditions) and supply (such as types of housing available for different income groups, at what cost). The overall plan would include a market study, a market plan, a financial plan, an analysis of job growth and infrastructure needs, and a long-term management plan including contingencies. The findings of the analysis should determine the housing needs of a locality and enable local governments to define the nature, scope, and policy interventions required to effectively align housing demand and supply.

Improving availability of land for social housing. Promoting mixed-use developments can increase the availability of social housing throughout a municipality. Planning for housing should bring together many stakeholders including those involved in planning for local economic development, transportation, urban space, and infrastructure services. "Inclusionary zoning" policies, an instrument used in many U.S. municipalities and in European countries, can be applied to require developers to set aside 10–30 percent of the developments for affordable housing. Rezoning industrial land for housing would increase the availability of land in many cities and bring down prices, as discussed elsewhere in this report. Improving the inventory of public land and identifying underused parcels could expand the availability of land for social housing development. Including "urban villages" in the city and zoning them for low-income housing is another option, while better connecting existing social housing in remote locations would improve their usefulness and occupation.

Improving targeting of social housing subsidies. Focusing subsidies on low-income households that are unable to access housing without public assistance can be done by establishing clearly defined eligibility criteria on the basis of housing demand analysis using refined socioeconomic and demographic data. Expanding social housing eligibility to migrants through criteria of the residency system, as recommended in this report, would improve targeting for low-income households, because migrants usually are at the lower end of the income distribution. Examples of subsidies to households include capital grants toward home purchase (such as assistance for a down payment) or rental vouchers. Successful international examples include a rental assistance program to low-income households under the Section 8 program in the United States, which provides housing vouchers or direct payments to private landlords.

(Box continues next page)

BOX O.2 (continued)

Given China's social housing demand, shifting subsidies from ownership to renting may be appropriate in many locations. Regulations to ensure exit from low-income housing when households are no longer eligible also is needed to ensure a steady supply of low-income housing over time.

Diversifying the supply and management of low-income housing developments by encouraging entry of specialized firms and nonprofit organizations. Specialized firms can bring competition and innovation to serve the low-income segment. Private developers elsewhere have managed to specialize in the social housing sector by bringing down the cost of construction through innovative construction methods. Xerbia in India and GEO SAB de CV in Mexico are good examples. Smaller plots and more fine-grained zoning, as discussed elsewhere in this report, would lower the barrier to entry for firms. In Europe, specialized nonprofit organizations, including cooperatives in continental Europe and housing councils in the United Kingdom, were instrumental in expanding and managing the low-income housing stock—often with government support to ensure their access to finance and membership fees to provide an equity buffer. International good practice calls for government departments to promote specialized entities that manage the housing stock, rather than trying to manage it themselves.

Lowering the cost of low-income housing. Regulatory requirements impose high standards on housing development. Relaxing these would bring down the cost of affordable housing. When Bangkok was urbanizing, it allowed developers to adjust building density levels and unit sizes, making housing relatively affordable even in central locations. Improving business processes such as the issuance of permits can shorten the time required to complete a building project and thereby reduce costs. Germany offers an example of an efficient and streamlined permitting process that allows developers to build housing fairly quickly.

Controlling contingent liabilities in housing finance. Many local governments finance their low-income housing through local government financing vehicles (LGFVs), some of which are overindebted because of rapid expansion. Ensuring proper management of these financing vehicles, clear accounting for assets and liabilities, and strict control on the extent of local government guarantees on LGFV debt should prevent local government exposure to debt distress arising from low-income housing.

several large cities such as Guangzhou and Shanghai, long-term urban residents and migrants have similar access to housing,[38] suggesting that hukou type matters less than income.

Formal and informal rental markets provide an important source of housing, and their importance is likely to grow as mobility increases. The bulk of low-income housing is provided outside formally established government programs through collective housing (such as dormitories provided by employers), or private rental units in "urban villages" or on the urban fringe. In Shanghai, only 5.5 percent of migrant households can afford to purchase commercial housing and some 80 percent are renters, while the rest live mainly in employer-provided dormitories.[39] An informal residential market of so-called "small-property-rights" housing has grown rapidly, without legal protection and at odds with government policy. This is a manifestation of market forces with distortionary administrative measures. Urban villages offer affordable housing as well as significant income to members of the village collective, many of whom are dispossessed farmers. At the same time, since urban villages are not incorporated into urban master plans, city administrators have little incentive to extend urban infrastructure and public services to urban village areas.

Expanding mortgage and housing rental markets through government insurance and support could expand homeownership. China's overall mortgage lending has grown rapidly—consumer credit in China has grown from 1.5 percent of total renminbi (RMB) lending in 1999 to 13.3 percent in June 2013[40]—but poor households, and particularly migrants, lack access to this credit. Private and public finance could help to make housing more affordable across China. In the United States, the establishment of the Federal Housing Administration created the

conditions for a postwar housing boom that saw homeownership rise from 44 percent of households in 1940 to 62 percent in 1960.

Providing services to those who stay behind

In China, services in urban areas are easier to access and are of better quality than in rural areas. Notwithstanding the actions needed in urban areas, there will continue to be a need to provide quality rural services for those who remain in rural areas; otherwise rural dwellers will move to the cities to access the better social services there, rather than to pursue more productive economic opportunities.[41]

Needs, resources, goals, and social values differ widely throughout China. All residents of a city should be given equal services, but residents of different cities and rural areas may be given different services, and it will be important for the government to build on existing policies to address this issue. In rural education, for example, responding to demographic trends and outmigration, the Ministry of Education launched an aggressive School Merger Policy in 1999.[42] According to the policy, education officials closed down small, remote schools and focused their attention on improving the teaching and facilities in larger, centralized schools. Boarding schools became important providers of education services in response to the increase in commuting time among rural children. The emphasis in rural schools now is on continuing the improvement in recruitment and retention of qualified teachers.

In rural health, the focus is on the primary care system, which is institutionally and financially fragmented and needs strengthening. The system has a host of often uncoordinated actors, including family planning agencies, maternal child health programs, township health centers for primary and secondary care, village doctors, public health agencies, and others. Funding sources for primary care are also varied and include earmarked vertical program budgets, health insurance, central and local budgets, and user fees. Coordinating these programs and improving the quality of the workforce and their incentives is key, while access to secondary and tertiary medical facilities, when needed, should be facilitated by portable health insurance policies.

Chapter 4 Sustainability

China's impressive economic and social gains have come at the price of significant environmental degradation and increased resource use. The current urbanization path is not efficient because pollution imposes rising direct and indirect economic costs that are often not reflected in market transactions. Urban sprawl is leading to, for instance, greater energy use for transport and higher costs for energy and water supply infrastructure than in denser cities. Current trends are also not socially inclusive because—while pollution and resource scarcity affect all citizens—the poor are usually most heavily affected and least able to cope. Some also fear that the increased demand from a growing urban population for water and land could undermine China's food security and lead to unacceptably high imports of key products, which could in turn drive up global prices.

China's environmental performance is of global importance. China is now the largest emitter of greenhouse gases in the world, and in the decade up to 2010, growth in greenhouse gas emissions has accelerated (table O.2). That was a result mainly of a slowdown in the reduction of energy intensity in the economy, which fell by a remarkable 6 percent a year on average from 1980 to 2000, a rate that slowed to 2 percent in 2000–10. Beijing, Shanghai, and Tianjin have estimated per capita emissions comparable to large European and some North American cities.[43]

In recent decades China has invested heavily in infrastructure to support environmental management and has made considerable progress in reducing pollution and improving the energy efficiency of its economy. Rapid economic growth has continued to outpace China's ability to control pollution from existing and emerging sources, however, and more needs to be done. Moreover, there is an urgent need to prepare the groundwork for future urbanization to be conducted more sustainably than in the past. How China's cities develop in the future—either as compact dense cities or as large sprawling metropolises—will determine the magnitude of their carbon footprint and their exposure to pollution. Decisions made today will affect China's cities and the quality of life of its urban residents for generations to come. As China reaches upper-middle- and high-income status, citizens will increasingly demand and expect a clean environment and livable cities, and proactive action is urgently needed. Toward these ends, China should consider environmental sustainability as a policy goal with the same weight as economic efficiency and social inclusion.

Raising the profile—and the effectiveness—of environmentally sustainable policies in China's future urbanization requires that China's green governance match its green ambitions. China has introduced a comprehensive set of environmental laws and regulations, but these have not brought the expected improvements in environmental quality because incentives to enforce environmental policies and complete complementary sector reforms have been lacking. Moreover, sustainability needs to be tackled at the scale in which pollution impacts are felt, which for many resources, such as air, means crossing traditional administrative boundaries and finding regional solutions.

The cost of pollution in China's cities

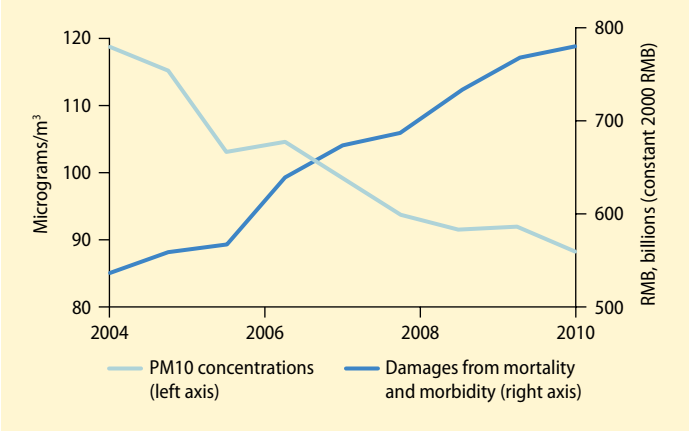
As China prepares for the next wave of urbanization, addressing environmental and resource constraints will become increasingly more urgent because much of China's pollution is concentrated in its cities, and as China's urban population grows, a greater

TABLE O.2 China's carbon emissions and drivers of growth
Average annual percentage change

	1980–2000	2001–10
Carbon emissions	4.8	10.1
GDP growth	10.1	10.8
Energy-to-GDP intensity	–5.9	–2.1
Carbon-to-energy intensity	1.2	1.5

Source: World Bank World Development Indicators database.

FIGURE O.8 Air pollution declined over time . . . but the costs of air pollution have been rising. Particulate matter pollution and estimated health damages in urban China, 2004–10



Source: Renmin University, n.d. based on China Environmental Yearbooks and World Bank estimates.
Note: PM_{10} = fine suspended particulates less than 10 microns in diameter, population weighted city averages.

number of its citizens are exposed to pollution that threatens their health and well-being. The economic and social costs of this exposure are already severe and rising.

Estimates of mortality from air pollution in China are significant. Although average annual concentrations of particulate matter (PM_{10}) fell 25 percent between 2004 and 2010 (figure O.8), mortality rates have been increasing, in large part because 200 million more people now live in cities compared with a decade ago. High mortality levels and other health damages have high economic costs, estimated to range from $100 billion to more than $300 billion a year. Moreover, the evidence from other countries suggests there may be a long-term impact for the country because small children and infants are severely affected by air pollution, which leads not only to higher rates of infant mortality, but also birth defects and impaired cognitive functions.[44]

Energy production is a key source of air pollution in China's cities owing to China's dependence on coal, which has remained at around 70 percent of total energy supply in the last decade. Cities host coal-reliant industries, which make up a large share of China's economic structure. Coal use has remained largely stable or even increased in some cities. Total emissions grew in this period, although concerted efforts have been made to control particulate matter and sulfur oxides.

Water pollution, increasingly from livestock and poultry operations and other nonpoint agricultural sources resulting from extensive use of pesticides and chemical fertilizers, domestic sewage, and industrial point sources, contributes to China's rising digestive cancer rates (Ebenstein 2012). The Ministry of Environmental Protection (MEP) reported that 57 percent of the groundwater in 198 cities in 2012 was rated "bad" or "extremely bad," while more than 30 percent of the country's major rivers were found to be "polluted" or "seriously polluted," making their waters unfit for drinking or direct human contact.[45] Municipal and industrial solid waste generation increased from about 1.2 billion to 2.6 billion tons between 2003 and 2010.

Urbanization strains China's resources

Since 1978, total energy use in China increased 6 times to fuel an economy that increased 18 times and an urban population that more than doubled in size.[46] Moreover, the rate with which energy use increased was unprecedented and difficult to predict. By 2005, China had already reached energy consumption levels projected only six years earlier for 2020.[47] Despite significant efforts, total carbon emissions continue to rise. Although subsidies have been reduced in the energy sector, some cross subsidies favoring residential consumers continue to discourage end-use efficiency. While these trends are alarming, there are some positive notes as well. China's economy has become more energy efficient, with energy intensity falling by an average of 4.7 percent a year.

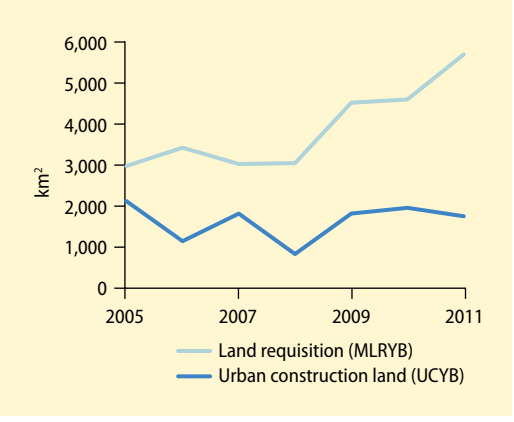
With 20 percent of the world's population but only 7 percent of its freshwater, water scarcity and quality are major problems for sustainable urban development in China—if not the most pressing. Nationwide, the gap between urban water demand and supply is 6 billion cubic meters a year. Some 420 cities have insufficient water supplies; 110 of these are facing severe water shortages.[48] The problem is most urgent in the north, where

two-thirds of the cities reportedly face water shortages. Water pollution has exacerbated water scarcity, intensifying competition for water resources. The response has been to increase supply by digging deeper wells and building reservoirs or diversion infrastructure, steps that create an array of ecological risks from the loss of river flows, and that are no more than stopgap measures in the face of ever-growing demand. Low tariffs for urban water supply and wastewater reduce the incentives for demand savings and limit the financial sustainability of service provision. Only about 44 percent of urban water utilities generated positive net margins, and only 10 percent of better performing utilities generated net margins above 10 percent.[49]

China's urbanization has consumed significant land resources as urban boundaries are continuously shifted outward and territorial jurisdictions of cities are expanded, primarily through the expropriation of surrounding rural land and its integration into urban areas. Between 2001 and 2011, the amount of land in China classified as urban construction land increased by 17,600 square kilometers, reaching a total area of 41,805 square kilometers in 2011, an increase of 58 percent over the decade (figure O.9). About 90 percent of the demand for urban construction land was met through the expropriation of rural land, while only 10 percent was supplied from the existing stock of undeveloped urban construction land.

Moreover, only considering land classified as urban construction land gives a narrow view of the impact of urbanization on land resources, because the total rural land requisition and conversion into state-owned urban land has been significantly higher. From 2005 to 2011, a total of 27,200 square kilometers of rural land was requisitioned and converted to state ownership. That is, until 2008, roughly 3,000 square kilometers a year were requisitioned. From 2008 onward, annual rural land requisition increased sharply to around 4,460 square kilometers. Much of the new urban land was requisitioned from farmers at low levels of compensation, often not more than 15–20 percent of the prices the converted land fetched on the market. Rural land conversion potentially has implications for China's food security (box O.3). As a result

FIGURE O.9 Land requisition is outpacing urban land use



Sources: China Ministry of Land and Resources Yearbook; China Ministry of Housing and Rural-Urban Development.

of these conversions, the availability of agricultural land is now close to the 1.8 million mu (120 million hectares), the "red line" that is considered to be the minimum necessary to ensure food security. If urbanization continues to follow current trends, an additional 34,000 square kilometers—an area about the size of the Netherlands—would be required to accommodate the growth of cities in the next decade. If this were to come from agricultural land, the net result would be a drop in the availability of agricultural land below the "red line." A slowdown in land conversion is necessary: cities should become denser rather than larger, and greater density is also desirable for reasons of efficiency. Moreover, rural construction land is still abundant and, with more rapid migration to cities, could become the main source of new urban land.

Urban sprawl—with the rapid growth of low-density areas at the urban periphery—has led to congestion of transport arteries and contributed to pollution. Moreover, it has increased resource use and carbon emissions in three ways: longer commutes and more private motorized trips have increased urban transport fuel consumption; larger living space per person has led to higher per capita energy use for home heating, cooling, and power consumption; and infrastructure has been used less intensively than it would be in dense urban cores, lowering economies of scale and increasing the capital, operating,

BOX O.3 Feeding China's cities

China's urbanization is likely to strongly affect two important aspects of food security: the aggregate availability of domestically produced food, and the access of vulnerable individuals and households to food. Most urban households rely on food purchases; therefore, low-income households that spend a large share of their incomes on food can be vulnerable to increases in the availability and prices of staple foods.

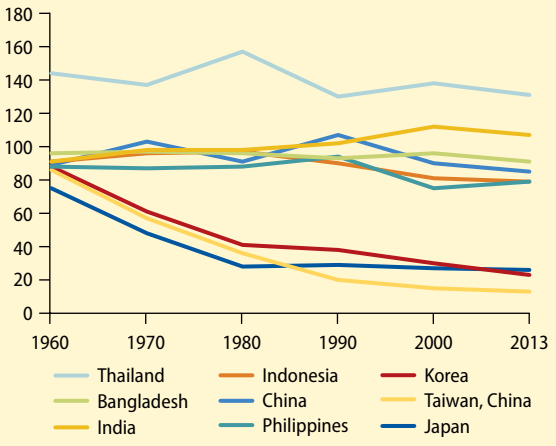
Achieving domestic self-sufficiency in major food grains has been one of China's strategic policy priorities, and as a result, China has had limited dependence on global food markets to date. China's agricultural sector has performed well, shifting from relatively low-value to higher-value agriculture products, largely consistent with resource endowments and comparative advantage. Grain yields have increased continuously since 2003; however, annual yield growth is diminishing. In 2012, grain output reached a record yield of 590 million tons. Per capita grain production reached 425 kilograms, above the 400 kilogram grain security line.

As China becomes more urbanized, it is likely that it will become more dependent over time on imports of (especially land-intensive) farm products, in particular as the comparative advantage of labor-intensive farming of grains diminishes. International comparisons reveal striking differences between countries in the extent to which food imports as a share of total consumption have evolved. Most lower-income countries have maintained close to 100 percent self-sufficiency (when rice, wheat, maize, and soybeans are considered together), but the ratio has declined sharply in the higher-income East Asian economies despite protectionist policies (figure BO.3.1).

The structural changes that are occurring in China—demographic changes in which rising wage rates in nonfarm employment are drawing labor from agriculture, changes in diets and consumption patterns, emergence of environmental supply constraints (land, water), transformation of rural factor markets, transformation of food supply chain, market and distribution systems, and agricultural technology and farm scale changes—will impact China's food production and food availability. Currently, China's food production is limited by water scarcity and, to a lesser extent, the availability of land; however, a new constraint—labor—is now on the horizon.

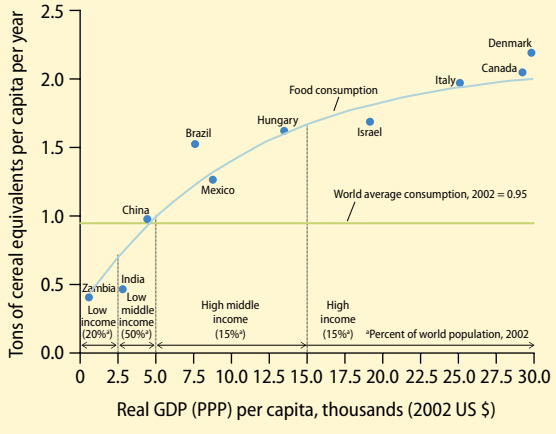
As China's urbanization increases, overall demand for food is likely to increase because the demand for higher-cost foods such as fruits, vegetables, and animal products rises much more rapidly with income growth than demand for basic food staples such as rice and wheat. These goods require much higher levels of intermediate and factor inputs than basic staples, particularly for livestock products given the inefficiencies of feed conversion. If

FIGURE BO.3.1 Self-sufficiency ratios for grain in Asian countries



Source: USDA 2013.
Note: This graph shows the total for rice, wheat, maize, and soybeans.

FIGURE BO.3.2 Food consumption in energy equivalents and income



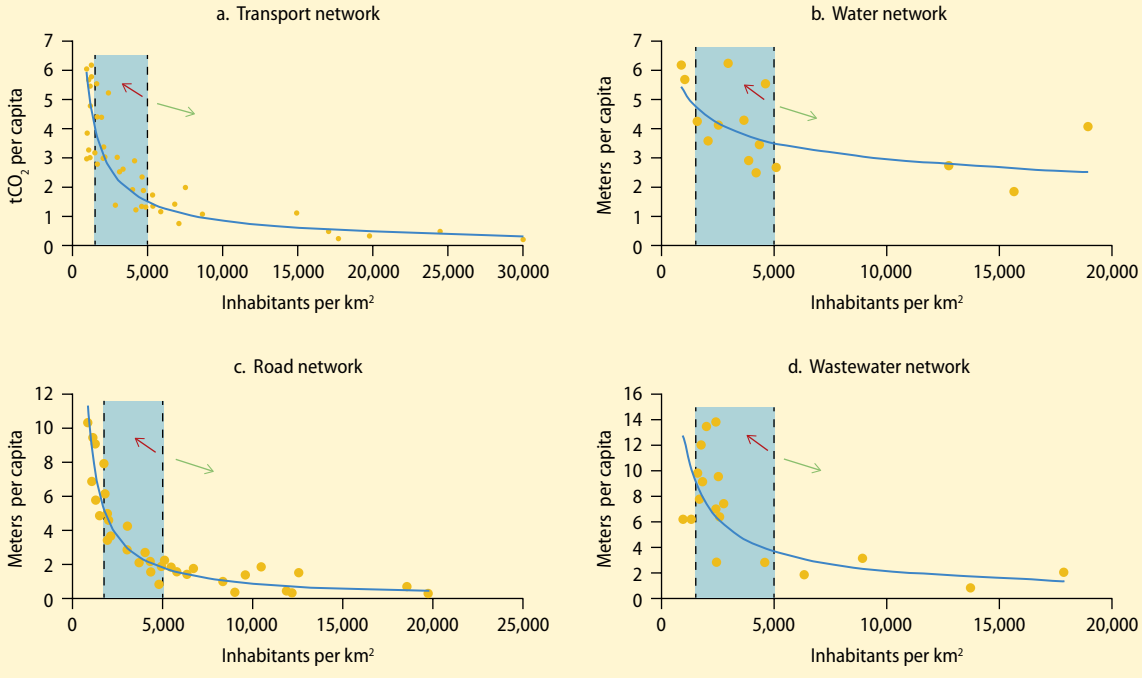
(Box continues next page)

BOX O.3 (continued)

all types of food are converted into a common basis using food conversion ratios that take into account the efficiency of conversion of grains into livestock products, the relationship between real incomes and food demand depicted in figure BO.3.2 emerges.

China's food consumption in cereal equivalents is currently about 20 percent above the world average level. More important, demand is likely to grow considerably as China reaches middle- and high-income status.

FIGURE O.10 Impact of urban density on carbon emissions for transport and infrastructures: road, water, and wastewater network lengths



Sources: Salat and Bourdic 2013; and Müller and others 2013.
Note: This graph represents a variety of cities in developing and developed countries.

and maintenance costs for infrastructure services (figure O.10).

The global context of China's urban sustainability

Practically all industrial countries have passed through a phase of excessive urban pollution. London's "great smog" event in 1952 may have killed more than 10,000 people over four December days. Smog levels in Los Angeles are down 70 percent from the 1970s, and high ozone advisory days dropped from 184 to close to zero. Tokyo's campaign for cleaner air centered on the visibility of Mount Fuji: the mountain could be seen on only 20 days a year in the 1960s compared with well over 130 days today. In all cases, it took a package of regulatory

measures implemented over decades to bring the situation under control.

Given the size of China's population and economy, its structure, and the speed of its development, the country's environmental problems are on a larger scale than those experienced by other countries. But being a late developer also has advantages. China can benefit from experience and technology from elsewhere and reduce pollution faster than was possible for earlier developers. Much of the research on air pollution sources, impacts, and abatement options was developed in North America and Europe over many decades and can be deployed more quickly and cheaply in China. Some of the benefits of technology and management are already apparent, and China has also produced indigenous solutions that can be shared with countries facing similar challenges.

Green urbanization in China is of global interest. Greenhouse gases increase the probability of global climate change. North America and Europe still exceed China's cumulative historical emissions, but, according to data from the International Energy Agency, China's per capita CO_2 emissions from fuel combustion are still rising and are likely to reach the European Union (EU) average by 2015.

In contrast to experience elsewhere, a large share of China's pollution came initially from the relocation of dirty industries that were being phased out in developed countries. One estimate suggests that exports account for about one-third of China's energy use and likely a similar share of air pollution.[50] In the future, by shifting toward a growth model more reliant on services and consumption, China will be able to pollute less on behalf of other countries. On the other hand, similar shifts in polluting industries also appear to be replicated within China between coastal and inland areas.[51]

Environmental regulations and governance

Recognizing that resource depletion and pollution have become costly barriers to further development, China's leaders have set ambitious targets for controlling both. The comprehensive set of targets, laws, and regulations has not brought the desired improvements in environmental quality because most environmental policy making has favored narrow technical and engineering solutions over institutional and economic approaches. The main causes of China's environmental problems are institutional rather than technical.

The considerable inertia in China's environmental management can be addressed through a strengthened accountability and incentives framework. As a first step, regulations with strong enforcement are needed. Currently, enforcement of China's environmental regulations is often weak because local cadres face inadequate incentives to put policies into effect and to complete complementary sector reforms. Even when the regulations are enforced, their implementation is often inflexible, causing unnecessary costs. Although, government spending on environmental management has been similar to that of OECD countries and has increased over time, spending should be about 0.5 percent of GDP more than current levels.[52]

In addition to strengthened enforcement, China needs to ensure that the pricing of energy, water, and other resources reflects the cost of their provision. Moreover, prices should include the indirect costs imposed on health, ecosystems, and the climate by the production of resources and by their use.

Improving urban sustainability requires a multisector and, in many cases, multijurisdictional approach, which is currently underdeveloped. Structural shifts in the economy toward cleaner sectors will help in the longer term. Greening sector policies require better coordinated national and local level decisions, often across several agencies. More comprehensive planning at the city level will support sector reforms. For instance, urban sprawl—which raises the cost of public service provision and locks in wasteful energy consumption—can be avoided through integrated urban land use, transport, and energy planning that reshapes urban form.

In larger urban clusters, air and water quality management strategies must operate at a regional scale to account for all relevant pollution sources and to identify cost-effective

regional abatement plans. Building regional institutions will take time but can be started with interjurisdictional mechanisms like the "joint decision-making conference" in the Hai River Basin. Such mechanisms have been used in China and have built up the trust needed to develop interjurisdictional solutions.

The channels for citizen involvement, including through environmental nongovernmental organizations (NGOs) and the legal system, are still inadequate, in part because of limited access to information on the performance of environmental management authorities and polluting activities of firms. Without green governance—a strengthened accountability and incentives framework—China will find it difficult to align its sector reforms with its green ambitions. The challenges are daunting but not insurmountable in the long term, and if addressed, can bring about cities that are not only great places to work but also great places to live.

The Reform Agenda

Chapter 5 A Strategy for Reform

China's leaders have called for a new model of urbanization that would support relatively high but more efficient growth, share the benefits of urbanization more widely, and be environmentally sustainable, while safeguarding China's food security.

A reform package

Achieving the new model of urbanization requires a comprehensive reform package centered around four priority areas—land, hukou, the fiscal system, and the incentive system for local governments—supported by the reform of social policies and service delivery, urban planning, and environmental management. In all of these areas, China has already made considerable progress, and at the local level many ongoing experiments deserve consideration for mainstreaming. China can also build on the experience of other countries that are rapidly urbanizing, or did so in the past, such as Britain and the United States in the nineteenth century, and Germany, Japan, and Korea more recently.

Land policies determine the density and spatial efficiency of cities, which in turn drive environmental sustainability and livability. Land policies also determine the extent to which farmers can share in the wealth unlocked by higher-value use of land, which could narrow urban-rural income and wealth disparities. More efficient use of land will require stronger property rights for farmers, higher compensation for land requisition, new mechanisms for converting rural land to urban uses, more flexible use of existing urban land through better planning and zoning, and urban land allocation that is driven by market prices.

Hukou reforms are needed to promote better use of labor through the removal of barriers to labor mobility—from rural to urban areas, but also from city to city. If people are to move to where they are most productive rather than to where they can receive better services, they should expect to receive similar public services wherever they are, while retaining their accumulated rights to social security. To achieve this, the hukou system would need to evolve into a residency system with increasingly unified rules for access to services. Over time, cities and rural areas alike should be in a position to deliver at least a minimum standard of public services to any resident, irrespective of their place of origin.

The fiscal system needs reform to accommodate the proposed changes in the land and hukou systems. Land has been a large source of government revenue in the recent decade—on average, some 5.5 percent of GDP in gross revenues and 2.5 percent after compensation and land sale preparation costs. More efficient urbanization will require governments to focus on better managing existing urban land rather than acquiring new urban land. As a result, a reduction in revenue from rural land conversion is expected. At the same time, demands on city finances will increase as local governments provide public services to migrants and their families. Fiscal reforms should therefore provide resources for municipalities to continue to grow, together with the discipline to grow efficiently.

A stronger local tax base and more regular and strictly regulated access to borrowing are critical. Rationalization of the distribution of expenditures over different levels of government—specifically, centralization of social security finances—would relieve local budgets of some spending obligations and enhance labor mobility. Over time, the intergovernmental fiscal system would have

to ensure that any local government—rural or urban—can provide the minimum standard of services that the central government seeks and the nation can afford. Local government borrowing, if properly regulated and monitored, should better match the payment for capital projects with the life of the infrastructure asset. The use of informal financing methods, such as local investment companies, should be reduced.

Changes in land, hukou, and fiscal policies would need to be underpinned by a change in the incentive structure for local government decision makers. The government personnel system that rewards local leaders' success based on national development goals already includes quality of life indicators in health, culture, education, and the environment, and important targets such as birth control and social stability, but the main focus has continued to be on the more easily measurable goal of annual GDP growth. Rebalancing the evaluation criteria toward social and environmental objectives that match the new model of urbanization will be necessary for success. Further, greater participation of China's citizens in the urbanization process would enhance accountability of local governments and ensure that policies will be more responsive to local needs, which would minimize social unrest. In some areas, China has a relatively mature system of citizen involvement; expanding this participatory approach across the spectrum of urban policies could be considered.

The main benefit of reforms will be higher-quality growth. The reforms proposed in this report—specifically land, hukou, and fiscal system reforms, and a change in the incentives for local governments to attract investment—will make the allocation of land, capital, and labor more market based. That in turn will change the distribution of economic activities across China's urban landscape. Accelerating the shift of industrial activities to secondary cities where land and labor are cheaper would provide a stronger economic basis for those cities and promote small and medium-size cities. At the same time, this shift in industrial activities would also reduce migration pressures on the largest cities, which would increasingly specialize in high-value services and innovation and attract higher-skilled labor rather than a low-skilled industrial workforce.

Land reforms would improve the efficiency of rural and urban land use and increase the compensation rural residents receive from land conversion, thus improving the distribution of income and wealth. Land reforms will also likely lead to denser cities, which would reduce the energy intensity and car use in cities, thus improving environmental sustainability. And reduced land use for urbanization would make more land available for environmental services and agricultural production.

Hukou reforms and reforms in public services would increase the mobility of workers across China and increase their productivity and wages. It would also accelerate rural-urban migration, which combined with land reforms, would accelerate agricultural modernization and increase rural incomes, thereby reducing rural-urban income inequalities. More equal public service delivery across China would increase equality of opportunity for all China's citizens. Better access to housing finance for migrants would allow them to acquire urban property and benefit from capital gains, thus reducing growing wealth disparities.

Fiscal reforms would generate the revenues to finance a minimum package of services across China and reduce the need for land-based financing, while limiting the risk to the financial system resulting from unregulated local government borrowing. Fiscal and financial reforms would also impose more discipline on local governments, thereby reducing the wasteful development of ghost towns and empty industrial parks.

A vision for China's new urban landscape in 2030

China's initial conditions for the next phase of urbanization are vastly different from three decades ago. China is now an upper middle-income country, the largest manufacturer and exporter in the world, and it

is on the cusp of a development stage in which efficient use of resources will be more important for growth than simply mobilizing resources. China's cities today are much larger than they were 30 years ago, with the largest rivaling the biggest agglomerations in the world—including London, New York, Seoul, and Tokyo. China's cities are now far better connected to the rest of the world and to other cities in China, due in part to a massive investment in infrastructure in the past two decades and to a long period of opening up, crowned by entry to the World Trade Organization (WTO) in 2001. These developments provide a strong basis for efficient urbanization, allowing agglomeration effects and specialization to contribute to productivity increases and growth.

As China implements the new model of urbanization, a different urban landscape will emerge. China will continue to urbanize rapidly, with urban residents accounting for almost 70 percent of the population by 2030 in a reform scenario, bringing the country's urbanization rate in line with expectations that are based on its level of income. That implies, however, that the speed of China's urbanization rate will slow in the next two decades, even though there may be an initial spurt in urban population soon after reforms are implemented, as migrant families are reunited in urban areas. Moreover, income growth will also likely slow in the next two decades (table O.3), but it will be slightly higher, and considerably more balanced, in a reform scenario compared with business as usual. The main drivers of more rapid growth under reforms will be the higher rate at which people move from rural to urban areas and among cities, and the higher productivity in more efficient cities.

As China's labor market tightens, consumption is likely to grow faster than investment because the share of labor in the economy will rise as wage growth outpaces productivity growth. This growing demand includes consumer demand from an expanding middle class—those that earn $10–$100 per capita a day (at 2005 internationally comparable prices). This group now makes up almost a quarter of China's population and more than 40 percent of its urban population—although its size still lags behind that in other countries at China's current level of GDP.[53] Labor scarcity in rural areas will catalyze land consolidation and the rapid dissemination of new production technologies. That will increase labor productivity, and wages in rural areas will thus rise more rapidly than in urban areas, thereby reducing urban-rural income disparities. With higher incomes, the services sector is likely to overtake manufacturing as the main driver of growth, constituting more than half of GDP by 2030. Urban areas will create the scale of demand for an increasingly diverse supply of services. The services sector's share in the economy will rise

TABLE O.3 China's urbanization scenarios

	2010	2030 baseline	2030 reforms
Urbanization rate (percent)	52	66	70
Share of labor force in agriculture (percent)	38	17.1	11.6
GDP (trillions of 2013 US$)	8.5		24.5
GDP (average annual growth past 5 years)	8.3	4.9	5.2
Total factor productivity[a] (average annual growth over past 5 years)	2.2	2.1	2.5
Consumption share of GDP (percent)	46.5	62.0	66.5
Investment share of GDP (percent)	48.8	35.5	30.9
Secondary industry share of GDP (percent)	48.8	37.2	33.7
Tertiary industry (services) share in the economy (percent)	41.8	58.5	60.6
Urban-rural income disparities (ratio)	3.8	3.3	2.6
Energy consumption per GDP (Tce/RMB 10,000)	1.41	0.73	0.64
Carbon dioxide emission per GDP (ton CO_2/RMB 10,000)	3.32	1.68	1.39

Source: Based on DRC CGE Model simulations.
Note: The industry structure is based on input-output tables, hence the structure is slightly different from one reported by the Statistical Yearbook. All data are from 2010, except for the third row (GDP), which is from 2013.
a. Including gains from reallocation of labor and capital across sectors and ownership forms.

because of higher demand for services and because productivity increases in services are likely to lag behind those in manufacturing, increasing their relative price.

Under the reform scenario, by 2030, China will display a more diverse landscape of cities because urbanization will not be uniform and will reflect the comparative advantage of individual cities. In China's most developed cities, the services sector—rather than industry—will play a larger role in growth, because cities are fertile ground for the development of more sophisticated, higher value-added services. The largest cities within urban agglomerations such as Beijing, Guangzhou, and Shanghai have grown rapidly in recent years, serving as gateways to international markets, and this trend is likely to be reinforced by reforms. These agglomerations will provide the urban diversity that encourages learning in universities and business districts and that connects people to the rest of the world.

Secondary cities that are part of metropolitan areas, especially those in coastal areas, will increasingly attract land-intensive manufacturing and will offer producers the benefits of specialization and low transport costs near the larger cities with their large markets and links to international markets. China's large inland cities, most of which are currently outside major development clusters, possess human capital and amenities that will serve as a foundation for economic development. Easier access to international markets and reduced freight costs will help these cities compete with coastal cities. Hinterland cities and rural towns will allow firms and farms to exploit plant-level scale economies by providing roads for moving inputs and outputs and schools for the families of workers. They would focus on public service delivery and preparing people for opportunities elsewhere.

Exactly how this new urban landscape will take shape is impossible to predict with certainty, but if international experience is any guide, China's largest coastal cities will continue to grow more rapidly than the average of all China's cities, while the population share of small cities will likely decline. Cities of any size that are part of the main agglomerations are likely to thrive, along with those connected to these agglomerations. Cities along China's main transport corridors will be particularly well positioned to take advantage of efficiency gains through specialization. International experience as well as China's own past suggests that public policy that fights these trends—which are driven by the choices of individuals and firms—is unlikely to succeed. Or, if such policies did succeed, it would be at the expense of efficiency and income growth.

China can afford its new urbanization model

China can afford a more efficient, inclusive, and sustainable urbanization. Simulations from a detailed model developed for this study suggest that the overall costs of urbanization will gradually decline as a share of GDP.[54] These simulations assume that the costs of delivering infrastructure and social services to migrants at urban standards is additional—in other words, that spending in rural areas (where the migrants originate) does not decline as a share of GDP (table O.4). The total annual costs of all urban public services, infrastructure, and social housing would average 6.1 percent of GDP in 2013–30, with a peak of 7.3 percent in the early period (2013–17) due to migrant integration and the government's ambitious social housing program. On past trends, nearly three-quarters of this cost would be paid by the government through infrastructure development corporations and finance vehicles. Model simulations suggest that these costs are affordable for the government because additional revenues from a property tax or alternative sources of revenues will be able to cover the spending needs on aggregate without increasing total government debt to GDP.

In the reform scenario, denser cities require less investment in infrastructure—notably in roads. Lost revenues from rural-urban land conversion would be more than compensated by the introduction of a property tax on urban residential property and the appreciation of existing urban land values. Significant

TABLE O.4 Urbanization costs and fiscal space: Baseline and reform scenarios
% GDP

	Baseline scenario				Reform scenario		
	2008–12	2013–17	2018–30	2013–30	2013–17	2018–30	2013–30
Urbanization costs (CAPEX and OM)	**8.6**	**7.3**	**5.6**	**6.1**	**6.8**	**4.9**	**5.4**
Infrastructure investment	**3.5**	**2.7**	**2.5**	**2.5**	**2.1**	**1.7**	**1.8**
Roads	1.9	1.4	1.2	1.3	0.9	0.7	0.7
Subways	0.5	0.6	0.6	0.6	0.6	0.6	0.6
Draining	0.1	0.1	0.1	0.1	0.1	0.0	0.0
Sewage	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Landscaping	0.4	0.3	0.2	0.2	0.2	0.1	0.1
Garbage treatment	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Water	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Heating	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Social services	**5.1**	**4.6**	**3.1**	**3.6**	**4.8**	**3.2**	**3.6**
Social housing	2.0	1.4	0.5	0.7	1.4	0.5	0.7
Education (includes labor costs)	3.1	3.2	2.6	2.8	3.3	2.7	2.8
Health	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Central and local governments							
Fiscal space	**33.3**	**31.8**	**30.4**	**30.8**	**29.8**	**29.9**	**29.9**
Fiscal revenues	25.0	26.5	25.9	26.0	26.7	26.7	26.7
Net borrowings	8.3	5.3	4.5	4.7	3.1	3.3	3.2
Total expenditure	**31.9**	**31.1**	**29.6**	**30.0**	**30.5**	**28.3**	28.9
Recurrent primary expenditures	23.6	23.6	23.3	23.4	23.6	23.2	23.3
Capital expenditures	6.0	4.7	3.4	3.8	4.3	3.0	3.4
Interests	2.3	2.9	2.9	2.9	2.6	2.1	2.2

Source: World Bank/DRC/MOF projections done for this study.
Note: CAPEX = capital expenditures; OM = operations and maintenance.

reforms in the fiscal system will be needed to change the incentives for local government, adjust the local tax base and intergovernmental fiscal system, and provide local governments with regulated access to borrowing. The reform scenario assumes that there will be reforms in land policies and in local government borrowing, and not the abolition of all land revenues and borrowing. Without any local borrowing or land revenues, the fiscal space would not be sufficient to cover spending for urbanization.

Chapter 6 Reforming China's Land Management

The context of the reforms

Land lies at the heart of China's urbanization challenges and is the highest priority for reform. To improve the efficiency of China's future urbanization, land management reform would lead to more efficient and denser cities, contain urban sprawl, and reduce the environmental impacts of urbanization. Strengthening property rights on rural land and clarifying collective ownership arrangements would also increase the compensation that accrues to farmers in land transactions, thus making urbanization more inclusive. Better use of urban land would reduce the need for land conversion and unlock new sources of revenues for cities. Reform needs to guarantee the long-term supply of land and financing for urbanization, based on transparent and voluntary market transactions and taxation. Land reform should be closely coordinated with hukou, social services, and fiscal reforms.

China has significantly modernized its land tenure framework over the past decades, although the long-standing dual tenure system of collectively owned rural land and state-owned urban land has remained unchanged. Whereas property rights on both urban and rural land have been strengthened, rural citizens still remain at a significant disadvantage because of remaining ambiguities about land ownership and property rights of the state, rural collectives, and individual farmers, and how these stakeholders interact in the process of urbanization, especially during the monopolistic conversion of rural land by local governments. Within cities, government-led allocation and land management have led to underutilization of land and a bias toward industrial land at the expense of residential and commercial land.

Reforms should aim for a more modern approach to land management in both rural and urban areas. The priorities for achieving this are clarifying, titling, and registering rural land rights; introducing new arrangements for the transfer of collective land for urban construction purposes and rural land expropriation; developing mechanisms for better benefit sharing of land value; integrating urban-rural land use planning and land allocation and the redevelopment of "urban villages"; and modernizing urban planning and land management.

The decisions of the 3rd Plenary of the 18th Congress of China's Communist Party of November 2013 provide a framework for land reforms. The framework includes fostering a unified rural-urban construction land market, clarifying and enhancing rural land rights, and setting up new institutional arrangements for land in rural and urban areas. Reforms provide an opportunity to build on past achievements, harmonize the regulatory framework for urban and rural land, and modernize the land system to support more efficient and inclusive economic growth and urbanization.

In implementing a more market-driven approach, aside from the responsibility of planning, zoning, and registering the transactions, government should closely supervise experiments in this direction to ensure that the stronger property rights on rural land are respected and that corruption in transactions is avoided. Consultation, publicity, and transparency can also provide protection against abuse.

Strengthening property rights

The tenure of rural land rights needs to be lengthened and automatic renewal legalized. Farmers' 30-year farmland rights remain subject to significant uncertainties in the form of involuntary transactions for agricultural and nonagriculture purposes, compulsory takings, and uncertainty over whether farmland rights can be extended upon expiration of the second 30-year term. Under China's Property Law, farmland rights may be extended when they expire. But this extension provision is weaker than the parallel provision on urban land, which allows the automatic renewal upon expiration of the current term. The different treatment of the length of tenure rights

for rural and urban land conflicts with the effort to improve the long-term tenure security in rural areas.

The 3rd Plenary Session of the 17th Central Committee (2008) stated that rights to farmland should be for "long term without change." The 3rd Plenary Session of the 18th Central Committee (2013) reiterated and confirmed the policy direction of strengthening farmers' property rights to land. The "long term without change" would have to be defined and clarified in the law through revisions to the Land Management Law, Property Law, and Rural Land Contracting Law. Equally important is to specify the nature of the contractual rights to farmland, including defining the right to occupy, profit, transfer, mortgage, and bequeath the land. Finally, explicit provision should prevent the reallocations of farmland within the tenure period through the collective entity.

Property rights of farmers need to be better documented through enforcement of written land leases, establishment of a register of land titles, and a system for recording land transactions. This documentation would enable enforcement of use and contract rights, help to resolve land-related disputes, and identify those whose lands are affected by land requisition. In addition, a reliable and complete inventory of land parcels would provide a foundation for monitoring land tenure security, land use planning, land allocation and conversion, taxation, and land market development. After several years of piloting various approaches in some localities, Document No. 1, 2013, now calls for a program to document and register farmers' land rights throughout the country.

A land registration system based on unified rules, standards, and procedures in the land rights registration process should be developed over time. Along with the establishment of the land registry, unified land classification standards need to be developed and applied to all types of land. Following international best practice, the currently scattered administrative responsibilities for rights and property registration for different types of land should be consolidated into one. Additional considerations should be given to how to move from the current cumbersome system of registering all land plots of a household on one single document toward a system where individual plots are registered separately. A registration and documentation system based on land parcels would simplify and facilitate future land transfers. Legal reform should also explicitly require registering both husband and wife as household representatives to improve gender equity in future land registration.

Reform of collective ownership of collective assets needs to complement the reform of property rights to farmland. Collective ownership has become ambiguous since the introduction of the Household Responsibility System in 1978 and subsequent policy changes strengthening household land rights. Collective ownership is often incorrectly perceived as ownership by the collective administrative entity. The Property Law has sought to clarify this relationship and authorizes the collective administrative entity, such as the administrative village, natural village, or villager group, to exercise ownership rights on behalf of the collective members. Nevertheless, collective entities retain control over farmland contracting, exercise power to take a farmer's land, and often manage collective assets, including land and nonland assets, to generate profit for the collective entity rather than for collective members.

Legal reform should clarify that all collective assets belong to the members of the collective business organization and not to the collective administrative entity itself. Where collective property is converted into shares, those shares should be distributed to the members. Reforms should further seek to reduce intervention by the collective administrative entity in the operation of collective business organizations and to strengthen transparency in the distribution of profits made by the collective business organization.

Membership and qualifications for becoming a collective member, and procedures for terminating collective membership, need to be further clarified in the law. Because the legal criteria under which a person becomes a member of the collective are unclear, approval or disapproval of a membership application is currently subject to the collective's discretion. One approach to clarifying

collective membership and to protect ownership rights of collective members would be to define a cutoff date after which a rural citizen moving into a community is no longer eligible to become a collective member or owner of collective assets. Such arrangements would prevent the dilution of collective assets under conditions of demographic change.

The member rights associated with collective property should also be clarified. Rights to collective assets include the rights to occupy, use, profit, transfer, mortgage, guarantee, and bequeath. The transfer (sale) of shares to collective property would allow members to leave the collective permanently. Clarification of issues around the inheritance of shares to collective assets is also needed. In some localities, women who marry into households, and children born after 1978, cannot inherit shares, and therefore cannot receive dividends when the shareholding member of the household dies. This issue may become increasingly critical as shareholding members pass away or move their residential registration outside the collective. Their shares would eventually go back to the collective instead of being retained within the household.

Reforming the rural land expropriation system

Legally defined limits need to be placed on rural land taking by local governments for public purposes. Defining "public interest" for which the state can exercise its eminent domain power is a decision about balancing the legitimate but often competing policy goals and interests of various stakeholders. The reform of the rural land expropriation regime should follow the precedent of the Urban Takings Regulation of 2011, which defines public interest by listing all foreseeable categories of public interest. For rural land, defining public interest using the same procedure would remove the current legal dualism and inconsistency that weaken the rights of China's rural citizens. A meaningful definition of public interest, both for urban and for rural takings, should be included in the revised Land Management Law.

Land for public infrastructure development and social purposes could still be acquired through expropriation, but controls need to be put in place to ensure that the land acquired is not used for commercial purposes, and that the scale is much less than in the past. Complementary reform is needed to fine-tune the political incentives at the local government level to decouple performance evaluation and economic growth. For example, a current mayor would face fewer incentives to convert excess quantities of land and promote investment if revenue generated from such land conversion could only be invested several years later.

Compensation for rural land conversion for commercial (nonpublic interest) purposes should be increased up to the amount of the commercial value of the land, with deductions for the costs incurred by local governments for preparing the land for nonagricultural use. Under the current regime, compensation packages are capped at 30 times the land's average annual agricultural output value. This maximum is often insufficient for expropriated farmers to sustain their livelihoods. Here again, the reform of the rural expropriation regime could follow the principles of the Urban Takings Regulation (and rules applied in several provinces).

The protection of farmers' procedural rights during land expropriation should be embodied in the law. China's procedural laws for rural land expropriation are inadequate, but central policies on improving farmers' procedural rights and the Urban Takings Regulation provide guidance for developing relevant provisions on procedural rights, including the right to notice, right to participation, and right to appeal. Clear provisions for public hearings on land taking would increase transparency and limit the scope for abuse.

The government may consider introducing the experiences from Taiwan, China, where local governments have the option to rezone rural land for urban development and can allow commercial developers to conduct land transactions directly with rural property rights holders while ensuring urban land supply and financial balances. Transactions are subject to the provision of urban master plans and include transparent

public consultation. This practice has been instrumental in limiting excesses in development, while maintaining support from farmers who enjoy large increases in the value of their converted land (box O.4). International experience with land value capture could also inform this policy reform (see chapter 8, "Reforming Urban Finance"). This model may provide an applicable approach to balance the property interests of collectives and farmers in peri-urban areas with the need for the government to provide and finance public infrastructure. A new zone-taking law could permit urban development of a commercial nature, whereby farmers affected by the change in land use benefit in two ways: (1) they receive part of the now urban land and can benefit from its development; and (2) they would be protected by stronger legal and procedural safeguards in expropriation.

Developing rural construction land markets

Alternatives to the currently dominant method of land conversion by local governments are needed. A more market-driven approach to land conversion has several advantages, including a more efficient allocation of resources and reduced social tensions. Following strict government regulations, wasteful conversion of land would be avoided because conversion would take place only if a private developer considers conversion a profitable venture and the collective sees benefits in the transaction. The purchase and development would take place at a time and at a price supported by the market. Furthermore, social tensions and conflict with local government would be minimized, because the government would not be a party to the transaction, and the price would be set by the market. The market price would likely also be higher than the compensation usually offered in government-led conversions.

In line with plans and regulations of land use, collective organizations can use land for collective nonagricultural industrial and commercial activities, but under the current law, they cannot lease collective construction land to noncollective entities for commercial or industrial development. Furthermore, the rights to rural homestead land are limited: with strong emphasis on collective membership, farmers only have the right to occupy and use land, but not the right to profit from it. In reality, large amounts of collective construction land have also entered the urban market illegally, particularly in China's eastern coastal areas and large cities. Land market development and deepening in both urban and rural areas and the integration of rural and urban construction land markets will be essential to ensure land availability for urbanization, facilitate integrated rural and urban development, and gradually replace current practices of government-led land requisition and conversion toward more efficient market-based allocation of land.

There is growing consensus that collective rural construction land should be allowed to enter the urban market directly. Many localities, including Anhui, Chengdu, Chongqing, Guangdong, Jiangsu, and Zhejiang, have already experimented with innovative measures to let collective construction land be leased, transferred, or mortgaged. Because of current legal prohibitions, however, collective construction land cannot enter the urban land market formally, and such efforts remain at the level of piloting and experimenting. Building on the experiments, China could consider revisions to the Land Management Law and Property Rights Law to clarify the equal market entry of collective and state construction land. Eventually, regulations should clarify which land will be allowed to enter into the urban construction land market, in what ways, and how benefits could be shared. Collective construction land that has already entered the urban market in the past should be classified, integrated into urban master plans, and managed according to the law.

Rights to homestead land need to be strengthened and clarified. Homestead land is unique in China's rural land property rights system. According to the law, only collective members are entitled to homestead land with one plot per household. The law does not allow transferring or leasing of rural residential land. In reality, homestead land has been leased and transferred in many regions, and reforms need to take into account the law

BOX O.4 Expropriations in Taiwan, China

In 1953, the Land to the Tiller Act abolished the tenancy system in Taiwan, China, through compulsory local authorities' purchase of land from landlords and resale to the tenants. By 1956, the total area of owner-operator farming had increased from less than 50 percent of total farmland in 1948 to over 85 percent. The government protected private tenure following the land reform, through legal protection, a broad publicity campaign to improve farmers' awareness of laws and government policies, and a government-led annual survey to closely monitor the implementation of the land reform program. In the subsequent process of urbanization, authorities took measures to control the use of land for urban purposes and facilitate nonfarm development by farmers themselves.

Taiwan, China, takes a listing approach to define the circumstances under which private land can be expropriated. "General taking" refers to the expropriation for public interest. "Zone taking" refers to the expropriation and conversion of private farmland to nonfarm use for the development of new urban areas; renovation of old urban areas; conversion of farmland in planned urban zones into construction land or conversion of industrial areas into residential and commercial areas; development of nonurban land; rural development for improving rural public facilities and public health; and other uses in accordance with relevant laws. General and zone takings are subject to different procedural and compensation laws.

For general taking, until recently, the compensation standard was the tax assessment value of the agricultural land. Each year, the local land administration bureaus publish assessed values for farmland. This standard was replaced recently with a market value standard based on recent comparable agricultural land market transactions. The taking procedures are relatively simple and include a public hearing, public announcement of the taking decision for 30 days, written notification to the affected landowner, a 30-day filing period with the local land administration in case of dispute over compensation, appeal of the local decision to a land price review committee, and filing administrative litigation with a court.

Zone taking, in contrast, represents the de facto permission of the local authorities to take private property for commercial purposes with landowners being entitled to higher compensation and better procedural safeguards than at present. Landowners can claim a monetary compensation based on the market value of the land's agricultural use or, alternatively, take back 40–50 percent of the expropriated land as offset land. Such offset land is the previous farmland that has been converted into higher value urban construction land. The landowner may also select a compensation scheme in which one part of the compensation is paid in cash and one part with offset land.

Procedurally, the local authority is required to purchase land from landowners through negotiation before launching a zone-taking procedure. If negotiations fail, the local authority may resort to zone taking. Prior to taking, the local authority must conduct public hearings to explain compensation modalities to the affected landowners. Where landowners choose compensation in the form of offset land, these owners have first choice on the location of the offset land within a designated construction area. Landowners are also given the opportunity to negotiate the exact compensation ratio (between 40 and 50 percent) to be applied.

Under zone taking, the local authority is required to set aside a portion of the expropriated land for public facilities such as schools, roads, and public utility facilities. Although there is no legal requirement with respect to the ratio of such public facility land, in practice, 40–50 percent is for public use. After deducting 40–50 percent of land as offset land, 40–50 percent as public use land, the local authority receives 10–20 percent of the expropriated land for sale to developers. To prevent irrational urbanization, the law requires that new public facilities be financed through the sale of the land acquired through zone taking and prohibits the use of other local revenues to finance such development. The local authority therefore needs to rely on the proceeds from selling the 10–20 percent share of taken land to finance the construction of all public facilities within the zone. Expropriated land is first converted and registered as state owned upon the completion of zone taking. After offset land selection, such offset land will be reregistered as privately owned land. The remaining construction land sold to developers will also be registered as the developer-owned land. In the end, only the land used for public facilities remains state owned.

Source: DRC and World Bank staff research.

and the reality. Enhancing de-facto property rights to rural homestead land is important for promoting rural-urban factor mobility and construction land market integration.

Farmers' usufruct property rights to homestead land are defined under the law, but their entitlements are confined only to the "right to occupy" and the "right to use." The "right to profit" is not defined. As part of the reform, the definition of usufruct property rights to homestead land should be harmonized with the general usufruct property rights—that is, to extend it to the right to profit. At the same time, given the accelerated urbanization of the people, especially the conversion of farmers to urban residents, the membership identities of homestead land and the nontradable nature of such land have made effective land use more difficult, and farmers find it impossible to realize the value of their homestead properties. Government could select different types of regions to conduct reform pilots on the homestead land system, to explore fee-based access to and use of homestead land as well as the trading and transfer of homestead land, and break down the boundaries of homestead land members and village communities. The goal is to gradually move toward a system of property rights entitlements in return for the right to benefits payout. Land use regulation must be strengthened under such pilot programs. In addition, as the mortgage, guarantee, and transfer of farmers' homes and homestead land are important components of farmers' property rights to homestead land, a number of pilot regions should experiment with the mortgage, guarantee, and transfer of farmers' homes and their use/rights to homestead land, and to roll out such reforms when conditions are in place. Such an approach could help harmonize farmers' home property rights with urban rights to residential property. The inequality of these rights is a major contributor to China's rural and urban income disparities.

Innovation in land institutions in peri-urban areas

Integrating urban villages into the formal urban development process could increase land supply for urban development. Integration would also provide opportunities for boosting the availability of low-income housing and for allowing collective organizations and rural residents in peri-urban areas to economically benefit from urbanization, as construction land markets are allowed to develop based on stronger land rights. As discussed, revisions of the Land Management Law and other laws are needed, along with the formulation of implementation guidelines to allow rural collective organizations in peri-urban areas to develop collective construction land to developers for urban commercial and residential development within the framework of urban master plans. Through appropriate zoning, local governments could provide incentives to build low-income housing in those areas while avoiding resettlement and demolition costs under government land taking, since collective construction land remains under collective ownership.

Optimizing urban land use

China would benefit from replacing its current standards-driven urban planning system with a more dynamic system that would facilitate efficient land use and better coordination between planning and finance. Based on good international practice, the system would incorporate the following: strategic and long-term economic planning; coordination of sectoral plans and finance; consideration of the impact of proposed developments on key urban systems such as transportation, environment, public services; enhanced public and private participation; and performance monitoring. University urban planning schools, the urban planning profession, as well as key ministries would need to adopt the new system. Urban planning competitions could lead to more innovative plans that identify efficient land use patterns.

Land use in cities needs to become market based. The current bias toward industrial land and the subsidization of industrial land to attract industry risks locking China into its industrial past, creates barriers for the development of the services industry, and keeps housing prices high. Furthermore, local

government could reclaim land allocated to public entities, which covers large areas within cities, such as public spaces, and is often used inefficiently, and put part of that land into the market. How the value increases on such land should be clarified. Urban land zoning that is sensitive to demand and allocation of all land use titles by auction would in many cities lead to less land used for industry and more for commerce and housing. With rising land prices resulting from market-based allocation, land-intensive industry would move to secondary cities and rural areas, and redeveloped industrial land could be rezoned for mixed use. With the expiration of the first 40-year lease terms for industrial land, China's local governments have an opportunity to recycle inefficiently used industrial land. This land can be rezoned and rehabilitated and be made available for competitive auctioning for other than industrial purposes, thus meeting the needs for industrial upgrading and shifting land from industry to services and residential use.

Reforms in the urban land market also should introduce transparency in the secondary land market transactions. In urban areas, the government monopolizes the primary land market, whereas the market for follow-on transactions (that is, the secondary market) remains underdeveloped and opaque. Local governments generally lack the means to monitor transactions on the secondary land market. In particular, when land is converted for purposes with a higher value, the government would fail in most cases to benefit or capture the value from related land transactions. Regulations should require registration of all urban land transactions with local land registries. More complete registration would allow local governments to collect fees from transactions and to capture a share of the value increase in urban land.

Flexible zoning regulations would encourage more efficient development of urban areas and reduce the need for further land conversion (World Bank 2008) (box O.5). The floor area ratio (FAR), a measure of building density, would be better applied at the individual building plot rather than the superblock level, and a more streamlined process can be developed to allow for densification of existing plots based on market demands and priorities, creating incentives for development within existing built-up areas instead of the urban periphery. Moreover, the planning system can be reformed to allow developers to subdivide superblocks and sell individual plots, with specific FARs and zoning regulations, to third parties. This type of transaction, driven by rising land prices, is fundamental to incremental densification.

Smaller plots and mixed land use can be encouraged in new developments. Chinese cities should move from superblocks to smaller plots with finer grain connectivity. Typical urban blocks in developed countries measure 150 meters by 150 meters and have several plots; China, however uses a much larger scale (box O.6). Reducing the size of blocks would help create more vibrant urban land markets and favor competition from smaller developers. Smaller blocks are also essential to integrate neighborhoods for higher agglomeration economies and promote infill development.

Land use optimization and intensification is required at the building, neighborhood, and metropolitan scales. At the building and block scale, traditional medium-height (five to seven floors) perimeter blocks of about 100 meters a side offer the highest potential for densification, with gross FAR (including infrastructure) usually three times higher than towers-in-a-park superblocks of 400 meters a side. At the neighborhood scale, the density of urban fabric can be balanced by a fine mesh of streets irrigating the urban fabric and by a dense distribution of public parks and amenities. At the metropolitan scale, planners need to identify the areas where infill would increase the compactness and decrease the fragmentation of the urban area. Moreover, planners can give an efficient shape to metropolitan growth by concentrating densification actions along transportation corridors and discouraging leapfrog and edge sprawl (box O.7).

A property tax would help optimize land use. In supporting report 6, a property tax is proposed as part of the fiscal reform agenda to realign local government revenues with expenditures. An additional benefit of a property tax would be the creation of incentives

BOX O.5 Seoul becomes a global city by recalibrating regulations and market instruments

Home to more than 10 million people, producing one-quarter of national GDP on 1 percent of its land area, Seoul is the Republic of Korea's interlocutor with the global economy. The surrounding Seoul Metropolitan Area (SMA), consisting of 29 cities (including Seoul and Incheon) and four counties, contains half the nation's population and dominates the national economy, generating around half the national GDP on 12 percent of the country's area.

Over the past 70 years, however, a tension has arisen over how best to manage the SMA. Some, concerned that rapid SMA growth would lead to regional imbalances, argued that growth should be constrained with strict regulation. Others called for free-market initiatives to promote further development, allowing the country's strongest economic base to flourish.

In time, even the strongest regulations enacted to contain Seoul's growth have lost ground to local and global market forces. Quantitative measures included regulations to restrict development in certain areas, impose fines on buildings exceeding allowable parameters, limit allocations of land to industry, limit the industrial output allowed in the SMA, prohibit various classes of activities, and require national government approval for land development projects exceeding 1 million square meters. In the 1970s, a greenbelt strategy was employed to constrain Seoul's growth, while 14 cities were to be promoted across the country.

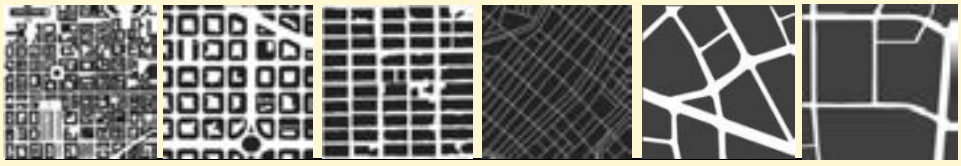
These controls were not successful. Investors and citizens led a rapid succession of new projects, including residential complexes, metropolitan highways, new towns, and a new international hub airport—bypassing the objective of limiting growth. Moreover, the controls hurt efficiency: over 200,000 factories in the SMA were unregistered, contributing to unmanaged urban development. And urban growth became fragmented, exacerbating congestion and environmental degradation.

As Korea sought to position Seoul as a 21st-century world city, the government relaxed quantity limits that restricted the location of new colleges, firms, industrial estates, and housing sites. It adopted price instruments, levying a development charge on new commercial buildings. By recalibrating city management through deregulation and market instruments, Korea is making Seoul's quest to become a global city more likely to succeed.

Source: Urbanization study team.

BOX O.6 The lack of connectivity and fine grain networks in Chinese urban development

The following pictures illustrate the size of blocks and impacts on connectivity of a series of cities in China, Europe, and Japan. The last two images on the right show the lack of connectivity and the increase of average distances between intersections in recent urban developments in China.



	Turin, Italy	Barcelona, Space	Paris, France	Ginza Tokyo, Japan	Pudong Shanghai, China	Towers North Beijing, China
Intersections per km²	152	103	133	211	17	14
Distance between intersections (m)	80	130	150	43	280	400

Source: Salat 2013.

BOX O.7 Comparing urban densities in two areas of Shanghai

Pudong is often considered a model of high-density urban development. The two figures below compare two districts—Pudong and Puxi—located on the opposite side of the Huangpu River. Despite the higher buildings in Pudong, the gross urban density is lower than in Puxi because of the large infrastructure (highways and parking space) and setbacks associated with large-scale buildings. The coverage ratio is only about 14 percent, and gross urban density is only 1.2.

800m × 800m squares

HongKou—Puxi
Low-rise housing,
Shanghai

Lujiazui—Pudong
Towers,
Shanghai

Building type		
Coverage ratio	53%	14%
Gross urban density	1.9	1.2

Source: Salat 2013.

for developing underdeveloped and vacant land and for increasing land transactions. In some countries, cities have opted for a split-rate property tax to provide the incentive of lower taxes for capital investment in building improvements, and tax away the speculative value of holding undeveloped property within the urban growth area, thus promoting infill and redevelopment. Experience in several communities in Pennsylvania indicates that a split-rate property tax can be an effective tool to stimulate central city revitalization. This form of tax also is implemented in Hong Kong SAR, China; Pittsburgh, United States; Sydney Australia, as well as cities in Denmark and Finland.

Coordinating land use planning with housing, infrastructure, and financing

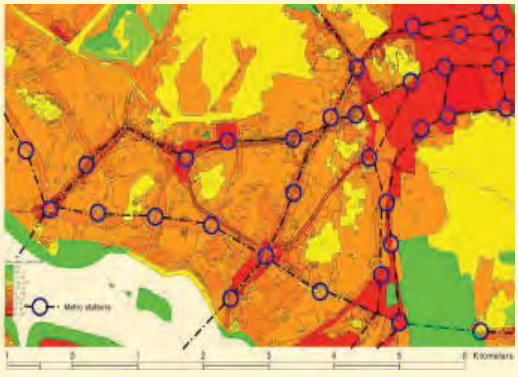
It is critical that land use be coordinated with infrastructure provision that meets current needs as well as projected future demand. Higher densities in cities can drive economic growth, but they also require additional infrastructure investments to ensure that the benefits from density are not overshadowed by congestion, environmental, or other costs. China has a unique historic opportunity to apply Transit Oriented Development (TOD) and to optimize and intensify land use on a large scale along major urban transport corridors. The urban rail network will reach 3,000 kilometers by 2015 and double that by 2020, with over RMB 4 trillion in cumulative investment. The high speed and express rail network is also expected to reach all major cities of more than 500,000 people by 2020.

Development can be focused along urban transport corridors. Along with public transit improvements, certain corridors could be assigned higher development intensities, and local governments could channel land conversion quotas to these areas by allowing the transfer of land conversion quotas from slower-growing areas outside the corridors. To foster more coordinated development around transport nodes, changes in zone ordinances should be simplified, allowing higher FARs, population density, and building heights around transit stations and specially designated boulevards and plots (box O.8). Land use regulations can encourage a mix of residential, commercial, and special

BOX O.8 Seoul's spatial strategy: Differentiation and higher densities around metro nodes

Seoul's spatial structure is compact (expansion is restricted by hills and by the northern border) and polycentric, with a large central business district (CBD) but many important subcenters. A gridlike metro system links the various subcenters and the CBD. The floor area ratio (FAR) in Seoul is linked to the location of metro stations and to the network of main streets:

- FAR of 10 in part of the CBD, 8 in the rest of the CBD and subcenters
- FAR of 0.5 to 4 in residential areas
- FARs are higher in areas around main metro nodes



Source: Bertaud 2004.

industrial uses (media and entertainment) and confer the right to adapt and reuse commercial buildings as housing, especially in boulevard and transit station areas. Government could provide developers with "additional" FARs to build affordable rental housing and to keep unit prices manageable and accessible to low-income households. Innovative land-value-capture mechanisms should be introduced to support the construction and operation of the necessary transport and other urban infrastructure.

Existing urban areas can be regenerated to provide affordable housing and minimize low-density development and sprawl. International experience suggests that suburban development generates economic benefits that peak in five to seven years. Regeneration of urban cores to provide affordable housing in established cities requires higher up-front costs because of the more complex civil works, upgrading of public spaces, and improvement of existing services required. Once revitalized, however, these urban cores become self-sustaining because they attract additional investments for a considerably longer period of time.

Incentives can be provided to ensure that needed housing is constructed at affordable prices. Zoning policies could require or create incentives for developers to include low-income housing in new large-scale housing and mixed-use developments. The share of low-income housing is usually around 10–20 percent of the housing stock in OECD countries. Developers and property owners could be allowed to increase densities and use additional FARs to provide low-income and affordable housing. In addition, the government could provide special subsidies for the construction of affordable housing units. Several countries have used "inclusionary" or "incentive" zoning successfully; for example, Fairfax County, Virginia, United States, approved a plan to rezone an area around a subway station to increase density

substantially, and it required the developer to devote at least 5 percent of the development to affordable housing. Affordable housing can be built on vacant, abandoned, and underdeveloped government land, including parking lots around public buildings; low density structures in areas zoned for high-density development; and land around railroads, airports, and oversized roads. The rehabilitation of existing and older buildings to minimum safety standards could also provide reasonable and affordable housing for low-income people.

Integrating urban village land into urban development could boost the availability of low-income housing. As the property rights on rural land are further clarified, an opportunity may emerge for rural collectives in peri-urban areas to develop or lease collective construction land for commercial and residential development within the framework of urban master plans. Such an approach, based on ongoing experiments, would allow collectives and their members with no farm income to receive income from urban land development.

Chapter 7 Reforming Hukou, Social Services, and Labor Market Institutions

China's urbanization faces two inequalities: a "new dualism" between local hukou and migrant populations, and the "old dualism" of urban and rural disparities. China can build a more inclusive and productive labor market, one that would help to increase the efficiency of urbanization and overcome both the new and old dualisms, by reforming the hukou system to reduce the barriers to mobility. More migration will reduce the labor surplus in the countryside more rapidly, which would increase rural wages relative to urban wages, thus reducing urban-rural inequalities. Better integration of migrants into urban areas will offer them access to better jobs and more opportunity to acquire property and thus to benefit from capital gains. Equalizing access to social services between migrants and local hukou holders in urban areas and, over time, across China will contribute to a more inclusive society.

Equalizing access to basic social services in urban areas requires the reform of the hukou system. Making social entitlements available to all workers and their families in their areas of residence would deepen the human capital base and promote a healthier workforce. It would improve intergenerational income mobility, reduce future inequalities, and alleviate social tensions.

The full benefits of a residence-based system will be realized at the national level and therefore a national, unified approach is needed. The fiscal system should allow for the financing of a basic package of social benefits across China while providing incentives for local governments to top up the package for all residents, if possible, and holding local authorities accountable for providing services to all residents. The fiscal implications of the basic package are likely to be significant, but reforms in health, education, social protection, and social housing, and cross-cutting reforms in accountability for service delivery, could contain costs and increase efficiency.

Reforming hukou

To create a mobile and versatile labor force with equal access to a common standard of public services, the household registration system would need to move from an origin-based to a residence-based system. The hukou system and residency system can operate in parallel, as similar systems do in Japan (see box O.3). A residency registration would provide access to location-specific services such as education, health care, welfare, and affordable housing, whereas hukou could be maintained to provide rights such as access to land profits. As land reforms and pension reforms progress, the rights derived from hukou could be adjusted. In March 2011, the State Council called for a gradual rollout of the residence permit system and requested that institutions take steps to improve registration of temporary populations in the cities.

The central government would define the principles and national framework for the residence-based system and provide guidelines for local governments to follow, including the system by which local governments would grant residency to people who live in a specific locality and the sequence of entitlements that accrue upon attaining a residence permit. In the short to medium term, it may not be practical to expect common eligibility criteria (such as the number of years of residence or of social insurance contributions), but the central government should set minimum guidelines for local governments to follow and create a time-bound pathway for extending access privileges.

Local governments can define the sequencing of access to privileges and the qualifying periods to move from one step of the entitlement sequence to the next. Already, many localities have implemented localized residence permit systems with different approaches and requirements, from more liberal ones in small cities, to strict point-based systems in Guangdong and Shanghai. In the

initial phases, it is unlikely that all social entitlements of current local residents could accrue to new residents immediately upon obtaining a residence permit, but for the very fundamental rights, requirements should be very simple and low. Cities should seek to reduce the current prioritization of those with higher socioeconomic status. With time, the scope and content of basic public services would have to be standardized based on national guidelines, and the conditions and requirements to obtain a local residence permit would converge. Such convergence would be supported by broader reforms in the fiscal and taxation systems, equalization of public services, and rural-urban integration.

An information technology platform developed according to national standards would facilitate implementation of the residence system and will be particularly important for the exchange of population data across jurisdictions. The platform would provide quantitative information for making fiscal allocations, as well as supply data for monitoring and evaluation.

Additional fiscal resources and a rebalancing of central and local financing responsibilities will be needed. Cities need to be subsidized for the increased costs of providing services to migrants through reallocation of provincial resources from rural areas. Because this reallocation is likely to be achieved only gradually, a transitional subsidy to cities to entice them to deliver social services would accelerate the integration of migrants. In the medium term, fiscal system reforms of both revenue and expenditure are needed to finance national minimum standards for social services across China, which should be carefully calibrated to fit fiscal capacity and would need to be phased in. Local authorities could provide a top-up for all residents in their jurisdiction if desired, and the private sector could also help create fiscal space through high-end medical services, private third-pillar pensions, and private schools.

Extending access to basic services to migrants within cities

The current package of social services provided to China's urban residents includes nine years of free compulsory education, access to basic public health care services, social security (medical and old-age pensions) for formal sector workers and residents, a social assistance program, and a welfare housing system. Extending access to this package for migrants under the current modality of service delivery will require additional annual resources in urban areas of between 1.22 percent (lower bound) and 4.53 percent (upper bound) of GDP. The main factors determining the costs are assumptions on how many migrant children would join the urban system and what part of the pension costs are covered. The lower bound covers all migrants and children currently in cities and the cash costs of integrating migrants in the urban pension system. The upper bound covers all left-behind children and total accrued costs for the urban pension system. A reasonable assumption would be that the lower-bound costs would be covered by a special grant from central government, whereas the costs beyond that would have to be absorbed by reallocation of resources through changes in the intergovernmental fiscal system.

The current policy on migrant children's right to universal compulsory education is already residence based, and migrant children attend public and private (minban) schools. Equalization options could include sending migrant children in public schools to private schools with a public subsidy to cover their fees. The annual cost is in the vicinity of 0.98 percent of GDP (for the migrant children currently in the cities) and 2.27 percent of GDP (for all migrant children, including the left-behind children).

Equalizing access to health services for migrants in the cities requires improving access to public health programs and basic medical care, as well as expanding the urban health insurance scheme through conversion of migrants' current eligibility in the voluntary and subsidized national rural scheme. The annual total cost would be about 0.15–0.16 percent of GDP, depending on the assumption about the cost increase.

Rural migrants could be incorporated into either the current urban worker pension system or the newly combined urban and rural residents' pension scheme. The annual total cost is in the vicinity of 0.03 percent of GDP

(accounting for the cash flow cost) and 1.95 percent of GDP (accounting for the accrued liability cost).

Migrant workers and their families should be eligible for social assistance (dibao) payments after they acquire residency rights and meet qualifying conditions. Currently, more than 70 percent of urban and rural dibao aggregate expenditures are financed by the central government, providing a financial basis for improved access to urban dibao and other assistance programs for migrants. Assuming the incidence of dibao receipt among migrants is similar to that of urban hukou residents, the annual cost of covering these additional families is about 0.04 percent of GDP.

A policy that encourages a rental market for low-income housing would give migrants access to affordable housing. Homeownership is not fiscally possible, but neither is it economically desirable because renters, being more mobile, contribute to the efficiency of the labor market. Research has shown that economies with small rental sectors face higher migration costs and labor rigidity. Demand-side subsidies based on a means-tested targeting approach would address the housing needs of the lowest-income households. The annual total cost is around 0.02–0.11 percent of GDP, depending on eligibility assumptions.

Equalizing access to services across China

In China, services are easier to access and are of better quality in urban areas than in rural areas. Recognizing the importance of improving services in rural areas, the national government needs to establish a basic minimum package of services that would be offered to all citizens, with the fiscal system enabling every jurisdiction to meet this standard. This minimum standard of service would also reduce the incentive to migrate for the purpose of receiving better services rather than for better employment. This basic package should be complemented by clear quality standards for various services (national or provincial), which should focus on outcomes (such as graduation rates and test scores in basic education), but which could also specify per student public expenditure, percent of qualified teachers in each school, and other inputs. The fiscal system would have to accommodate minimum standards, which would require careful calibration so that China can afford them. It would also require a system of fiscal equalization that takes into account a locality's own revenue potential as well as expenditure needs based on the requirements for meeting the minimum standards (see chapter 8). Accountability systems should be in place to enforce these standards, and to achieve this, China could use three broad channels: government, citizen-based, and choice-based systems.

Fiscal resources should follow people. The fiscal system should be closely linked to the new modern residence system—once people have moved to a new location, registration would increase the population count used for fiscal allocations. Such a link would reduce the resistance of receiving cities to delivering services to new arrivals: in addition to a gain in the tax base, they would also receive larger transfers from the center to accommodate the delivery of the basic package. Beyond the basic package, provinces, cities, or towns may raise the standard for their jurisdiction, but they would be responsible for providing additional funding. Cities could decide to raise the standard because they are more affluent, because their residents demand different or better services and are willing to pay higher taxes, or because they wish to attract new residents. Experiments will reveal best practices, especially combined with the possibility for easier migration following hukou reform. Cities will have to seek an affordable balance that satisfies their residents and the needs of their local economy.

The urban health delivery system would need to be strengthened to cope with the expected increase in demand. This could be achieved by improving primary health services and coordination among health providers; integrating and ensuring portability of health insurance to allow citizens to choose the best treatment; strengthening health promotion and illness prevention in urban settings; and implementing effective cost containment and quality improvement measures. Provider payment reform, an effective cost containment measure and one important element of this reform, should replace

the dominant fee-for-service payment system with a combination of capitation-based and diagnosis-related group-based system, which internationally has a proven track record for containing the costs of inpatient care.

Narrowing the disparities in the quality of basic education and expanding access to senior secondary and early childhood education will be needed. Reform in financing would facilitate minimum standard setting for every level of education and ensure central transfers for equal access to and the quality of education for poor rural localities and disadvantaged children. Demand-side mechanisms that stimulate competition and allow higher levels of private provision can satisfy the selective needs of some parents. Teachers' incentives need to be realigned to improve the quality of instruction and strengthen school management to meet the needs of migrant students and parents, as well as the larger community whose children already attend public schools. Peer tutoring programs, computer-assisted learning tutoring programs, after-school support, tuition, and resource personnel targeted at migrant students and their families will further support the integration of migrant children.

Pension reforms are required to facilitate labor mobility, narrow gaps in pension benefits, and cope with population aging. In the short run, national guidelines could ease the transfer of pension rights and benefits between schemes and locations. In the long run, the urban worker pension scheme could be reformed through the introduction of a notional defined-contribution design while developing a financing strategy to resolve the legacy cost outside the reformed pension system. These reforms would lower the existing high contribution rates, provide stronger incentives for employers and employees to contribute, and realize the objective of a targeted replacement rate.

Migrant workers with labor contracts can be encouraged to join the reformed urban workers' pension scheme to reduce the government subsidies needed for the rural residents' pension scheme. To phase in reforms, pooling could proceed first at the provincial level and then be expanded to the national level, supported by an integrated national data management system underpinning the nationally pooled and integrated system. Finally, gradual reforms in retirement age and rules for raising pensions in compensation for price and welfare increases (indexation) would ensure the adequacy of pension benefits and the sustainability of the pension system over time.

Reforming dibao and other social assistance programs requires consolidation, standardization across space, and harmonization with antipoverty interventions in poor counties and other social programs. Currently, dibao thresholds vary across China, reflecting its highly decentralized implementation. Most high- and middle-income countries apply a unified formula for determining eligibility for national welfare programs, while maintaining some flexibility, including regional cost-of-living adjustments. China could gradually move toward a more systematic approach in determining eligibility thresholds from county (city) to prefecture, from prefecture to province, and finally to a nationwide setting.

Increased service delivery sophistication and ambitious equalization goals call for greater accountability for outcomes, cost-effectiveness, and transparency. Given the scale of China's challenge to increase accountability for better results in service delivery, it will be important to make progress through three broad channels: government, citizen-based, and choice or market-based. Compared to most countries, China has traditionally relied less on citizen and choice or market-based accountability channels in the social sectors. Even within government, mechanisms with significant potential for increasing accountability are underused. Government systems can promote better performance from service providers by linking budgetary transfers to the performance of subnational governments. Human resource management and compensation systems and facility-based management initiatives could also become more performance-based channels. Regulation, accreditation, and licensing systems for providers are increasingly important tools and are expected to be core elements of the modern and diversified system of social service provision in China. Citizen-based channels for enhancing

accountability could be strengthened by providing more public information on service delivery costs and performance (an area where China already has started program-specific transparency initiatives, for instance, the publication of the dibao list) and harnessing information efforts to generate citizen oversight and feedback on service delivery performance. Another channel for citizen involvement is more direct incorporation into management and oversight institutions. Choice and market-based channels to promote accountability will require greater reliance on demand-side financing of services where appropriate and greater public purchasing of social services.

Improving labor market institutions

Upgrading human capital of workers through on-the-job training and in learning institutions would increase geographic, occupational, and sectoral mobility and promote agglomeration effects. Promoting a more modular and competency-based technical and vocational education and training system and reforming the tertiary education system to focus on increasing the labor market relevance of higher education would bring positive returns. In addition, greater coordination of the technical and academic education streams would allow students to move between them with due credit for competencies acquired in either system.

Strengthening labor market institutions that facilitate efficient labor market transactions, balance wage and productivity growth, and mediate labor disputes would promote mobility. Reorienting the basic function of the minimum wage from a minimum-income guarantee to an instrument of collective bargaining—more common in OECD countries—would be an important step in this direction. Further, while income taxes are low for most of the population, by international standards, the total burden of taxes and social premiums is higher than in most OECD countries, and well above East Asian regional comparators. Parametric reforms in pension systems (extending the pension age, removing legacy costs from the pension system) offer potential for reduction in pension premiums, while shifting the burden to more broad-based revenue sources. Finally, with the passage and implementation of the Labor Contract Law, employment protection in China has become higher than the average rate of protection in OECD countries. The medium- and long-term impacts of enforcing this law should be carefully monitored, so that improvements and amendments can be made as needed.

Chapter 8 Reforming Urban Finance

The context of the reforms

Urban finance reform is the cornerstone for efficient, inclusive, and sustainable urbanization. Fiscal and financial reforms would need to be aligned with the changing role of the state and provide local governments with incentives to pursue evolving national goals. China faces the challenging task of eliminating disparities in service levels between urban residents and migrant workers and putting in place infrastructure and social services that can accommodate around 300 million new migrants in cities in the next two decades. Over time, the fiscal system needs to finance a minimum level of services across the country. With reforms, the fiscal benefits from urbanization and the scope for raising additional revenues will be adequate to accommodate the rising expenditure needs as well as a projected decline in revenues from land conversion as China's urbanization becomes more efficient.

Reforms are needed to address underlying problems rather than to simply fill the financing gap for public services and infrastructure spending. China's urbanization has revealed several weaknesses in the fiscal and financial systems that have contributed to making Chinese economic growth less efficient and less inclusive, including an overreliance on land financing, unregulated borrowing by local governments, fiscal distortions that skew the location decisions of enterprises and people, and a lack of discipline on local government spending decisions.

Accommodating the changing role of government will be the centerpiece of the urban finance reforms. A reformed system should more clearly separate the function of government as the provider of equitable and efficient public services from the investment and production functions of other government sectors. The fiscal system will need to support the movement of people and enterprises to the places where they are most productive rather than to where they get the best tax or land deal from local government. Public finances will need to accommodate the integration of migrants and their families in urban areas. Revenues from land conversion are likely to taper off, so new local revenue sources are needed to replace lost revenue in a manner that is neutral to the type of economic activity. Properly regulated access to borrowing will be needed to finance infrastructure investment. The financial sector will need to efficiently intermediate capital to meet local governments' needs for infrastructure finance, and at the same time impose financial discipline on local governments and avoid financial sector disruption. Finally, the private sector could play a larger role in financing and delivering infrastructure and other public services.

A comprehensive reform—rather than piecemeal changes to the system—is called for. Under the current financing system, it is difficult to separate reforms in tax and its administration, intergovernmental fiscal arrangements, land finance, urban infrastructure financing, and local debt management, and therefore it is necessary to consider how the various elements of the reform package fit together and the joint impact they may have on the economy. Some elements of the reform can be accomplished quickly, for example, by reassigning some expenditure responsibilities. Others should be phased—beginning in provincial cities and moving later to other cities. Yet others should be implemented in the longer run. In this way, the proposed comprehensive reform package could be introduced gradually.

Reforming government sources of revenue

The fiscal system is an important incentive mechanism—and the revenue base and transfer system should be reformed to provide local governments with the resources and incentives to provide public services to all residents, while increasingly taking on the role as enabler of urban development and growth rather than as active developer of land and urban expansion. Local government

incentives to attract investments and retain enterprises would need to be rebalanced to curtail inefficient tax competition and support for unviable enterprises. Reforming the tax structure and tax-sharing system is important in this respect, but so are rules that would regulate other sources of support—including cheap land, subsidized utilities, and tax reductions. One step could be to require local governments to publish information on the support they give to enterprises, possibly through an annex in the annual budget. Countries like Chile, India, and Korea publish annual reports on tax expenditures that reveal such support. The EU regulates the type of state support that a country is allowed to provide enterprises, limiting it to those activities that support EU-wide objectives such as regional development and research and development (box O.9).

A solid revenue base for local governments is important for efficiency and accountability. It is common in unitary states that subnational governments spend more than they raise themselves, not least because some taxes, like the value added tax (VAT),

BOX O.9 European Union rules on investment incentives

Government financial support for corporate facility investment and expansion continues to be common practice in most parts of the world. Economic development agencies in many parts of North America and Asia can provide an attractive incentives package for potential investors. Countries in the European Union (EU) are different: European agencies are constrained in their ability to provide incentives by rules set by the EU's European Commission. There are comparatively few tax incentives, because the European Commission considers "fiscal state aid" to be harmful and therefore prohibits it in most cases. Rules on state aid are covered under Article 107 of the Treaty on the Functioning of the European Union (TFEU), which lays down a general rule that the state may *not* aid or subsidize private parties in distortion of free competition, although it may approve exceptions for specific projects addressing natural disasters or regional development.

Measures that fall within the definition of state aid are unlawful unless provided under an exemption or notified. State aid is defined under Article 107(1) of the TFEU as the transfer of member state resources that creates a selective advantage for one or more business undertakings; that has the potential to distort trade in the relevant business market; and that affects trade between the member states. Where all of these criteria are met, state financial support is unlawful unless provided under a European Commission exemption. State aid rules are defined for specific areas, including research and development (R&D) and regional aid. In the aftermath of the global financial crisis, special temporary rules regulated state aid to financial institutions. EU rules apply to a wide range of instruments, including grants; low-interest loans or interest rebates; state guarantees; the purchase of a shareholding or an alternative provision of capital on favorable terms; exemptions or reductions in taxes, social security, or other compulsory charges; or the supply of land, goods, or services at favorable prices.

The European Commission's Directorate of Competition Policy sets ceilings called the "maximum aid intensity" for the level of incentives that can be provided. For regional aid, these ceilings are based on the average GDP in each region, which means that the less affluent areas of Europe have higher ceilings, unlike the more prosperous parts of Europe where the ceiling is often zero and no incentives are allowed. Subsidies are allowed in regions with an average per capita income less than 75 percent of the EU average. Subsidies up to 30 percent aid intensity apply in those regions; aid intensity can reach 50 percent in regions with per capita income of less than 45 percent of EU average. The ceilings can also differ based on the size of the company and the size of the project. The ceilings are expressed as a percentage of either a project's capital expenditure or the payroll of any new employment generated by a project in the first two years. For R&D, the variations in the allowed aid intensities are based on the size of the market failure in specific R&D activities. They range from 100 percent for fundamental research to 50 percent for industrial research to 25 percent for experimental development.

Source: European Commission 2013; Dressler 2013.

are better administered nationally. But this means that grants from the central government are needed for the subnational government to make ends meet. A better system would ensure that a considerable portion of local expenditures are financed by local taxes under the control of local government. This system would impose financial discipline on local governments because the imposition of local taxes could be directly linked to the appointed local leadership, thus increasing their accountability to residents of the locality they administer. Further, a tax on those who benefit from locally provided services would lead local governments to align the benefits and costs of public spending. Finally, local governments are best served by a tax base that is relatively stable, because they usually have more limited access to financing than the central government does and, unlike the central government, have no role in macroeconomic stabilization policies.

A property tax on housing would provide a stable source of local government revenue that is aligned with service delivery benefits. Property taxes are a mainstay of local governments in both developing and developed economies. A property tax can fulfill two important objectives in China: it can be both a quasi-user charge for urban services and a tax on wealth holdings in real property. Property taxes are never popular with constituents, but that is part of the rationale for those taxes: if local governments want to spend more, the burden is on them to argue their case to the taxpayers. Property taxes allow local government budgets to benefit from increased land values in their jurisdiction, thus rewarding good administration by local leaders. In addition, property taxes would encourage property owners to make the best possible use of their property—for instance by renting out apartments or developing unused or underused land, thus promoting better use of the housing stock and urban land. China should aim to make property taxes an important part of local government revenues. Even so, property taxes will not be able to fully replace current land revenues: in developing countries, property taxes usually raise less than 1 percent of GDP, and even this level will be reached only over time as administrative capacity increases. Further, transitional arrangements may be needed, which would limit revenues in the short run, including a grace period of two or three years that would allow people to adjust their holdings of real estate before the tax takes effect. The tax should be broadly based to achieve its revenue goals and incentives; the current experiments in Chongqing and Shanghai are too narrow to be of much consequence, and a national system of property taxes should be more ambitious in its goals. China is steadily moving toward legislation on property taxes while also improving the local taxation system and developing mainstream taxes for local governments. The share of property taxes will eventually increase and is expected to exceed 1 percent of GDP, as administrative capacity increases.

Other local revenue sources have considerable potential. Some cities such as Shanghai already auction car license plates, which limits car use to sustainable levels. Higher vehicle registration fees and excise taxes on fuels can be implemented with special arrangements for public transport to limit impact on public transport prices. Local income and sales taxes could be charged in the cities where jobs are located and consumption occurs.

Increasing the prices of urban services such as mass transit, solid waste collection, water, wastewater, power, and gas to full cost recovery levels would enhance service sustainability and raise revenues. Internationally, the use of charges for government services of a largely individual nature is common, and in high-income economies, those charges often cover full costs—that is, the costs of operating and maintaining the service, and a capital charge to pay for depreciation and profits. Excise taxes on fuels, electricity, and water could be imposed to include the environmental impact of their use. Lifeline pricing for the poor, who would pay less for a limited amount of service, could be used to meet the government's distributional objectives. And while full-cost pricing for mass transit is rarely achieved internationally, China could gradually increase pricing as the cost for individual private transport increases as a result of higher taxes and levies.

Alternative local revenue sources can yield considerable revenues. Revenue from the property tax in advanced economies generally ranges from 1 to 4 percent of GDP (more than 3 percent in the United States and more than 4 percent in the United Kingdom). Environmental taxation in OECD countries averages 6 percent of revenue (as high as 15 percent in Turkey) and nearly 2 percent of GDP (more than 4 percent in Denmark). Congestion charging could raise additional funds. After the introduction of Singapore's Electronic Road Pricing System in 1998, traffic levels decreased by 15 percent, and annual revenue exceeded $50 million. The 2008 revenue from London's congestion-charging system reached $435 million, or nearly 9 percent of the local transport authority's revenues. Property taxes and additional environmental taxation and pricing in China could raise significant additional revenue (2–5 percent of GDP annually, in line with OECD countries).

China's tax structure could be further improved to meet the government's objective on economic structure. One important step would be to replace the business tax on services with a VAT, a step that authorities have already initiated. This move would encourage the growth of a services industry, because the VAT on services can be deducted from the user's VAT tax obligations. It would also encourage enterprises to outsource services to more specialized enterprises, because there would no longer be a tax advantage for keeping services in-house. At the same time, the business tax is a major source of local government revenue, and lost revenues would need to be replaced, either through more local taxes such as the property tax, through a larger revenue share for local government, or through the grant system. In addition, scope and coverage of consumption taxes can be adjusted. Taxes on high-polluting industries and energy-intensive products as well as on some high-end consumer goods and services subject to a higher rate of tax could be further studied.

Reforming the revenue-sharing system

Achieving greater clarity in the division of functional responsibility among the various levels of government would improve efficiency, because reducing overlap could save costs and reduce unproductive coordination efforts. More broadly, clarity on expenditure assignment is required to ensure that resources are available at the level of government responsible for delivering a specific service. In China, local governments perform some functions that would be better administered by the central government, most important among them, pensions. Centralizing the administration of pensions would improve labor mobility, allow national standard setting, and address important problems related to risk pooling.

China's revenue-sharing system could be considerably improved by removing the incentive for local governments to hold on to inefficient enterprises for revenue reasons. The major shared taxes (VAT, corporate income tax, and personal income tax) are shared with the local governments based on the location of collection. This arrangement distorts the allocation of resources in two ways: it encourages local governments to keep enterprises that should move to new locations; and it disproportionately benefits large cities, because these are often the location of a firm's headquarters and frequently where the firm pays taxes. The distribution of revenue sharing among provinces could begin moving toward a formula-based system in which central transfers would be allocated among subnational governments according to objective measures of need rather than the location of tax collection. A start could be made by changing the way the VAT is shared with local governments, from one based on the location of the VAT collection to a system that recognizes the place of consumption. Countries with a shared VAT usually follow one of two practices: either they do not explicitly share the VAT with subnational governments, or they share the tax on an objective basis such as population (Germany) or consumption (Japan). The lost revenues in some of the higher-income provinces would be replaced by increased local taxes. Over time, a uniform sharing rate for all shared taxes could be introduced.

Even with enhanced local government revenues, transfers will be needed to fill the

gap between expenditure responsibilities and the local government's own and shared revenues. The transfer system should ensure the capacity of local governments and encourage them to deliver on national priorities. China's current transfer system has been increasingly effective: transfers have been growing rapidly, and have increasingly been allocated to poorer provinces, for purposes of national priorities. At the same time, with some 200 specific grants to local governments, the system is complex and expensive to administer and undermines local government accountability and autonomy. In contrast to specific grants, the general grant, which is intended to equalize revenue capacity among localities and ensure basic service delivery, accounts for a little less than half of total transfers. The current transfer system is also less responsive to changing circumstances, especially to the movement of people to a new locality, and the central government has therefore started to provide additional grants to local governments to deliver services to migrants. In the short run, China could consider consolidating many of the specific grants into a limited number of sectoral block grants that would need to be linked to the central government's broad objectives and be supported by a system of performance indicators and review.

In the medium term, China could distribute grants using a formula based on fiscal capacity and expenditure needs. Such systems are used in many OECD countries, with Australia managing a sophisticated system for determining expenditure needs. This system would fit China's objective to provide a minimum standard of public services across the country over time. Expenditure needs would be defined by the costs of the minimum standard, and converting the current tax sharing and grants system into a formula-based grants system would considerably alter the outcomes for individual local governments. Therefore, this change should be implemented gradually and aligned with the introduction of new local taxing powers. For example, local governments could be assigned a "target share" based on objective criteria of expenditure needs and revenue capacity, but they would receive this share only incrementally, starting from their current share in the grant pool.

Subprovincial finance would need to be reformed to ensure resources get to where they are needed. Adjustments in central-provincial fiscal relations alone do not ensure that adequate resources would be available to accommodate the budgetary impacts of urbanization. In fact, adjusting intraprovincial inequalities in fiscal resources will likely have greater impact than interprovincial disparities. Subprovincial revenue-sharing arrangements vary widely from province to province with little mandatory controls set in place by the central government—a feature that is usually observed in federal countries but not in unitary ones.

Reforming land finance

Revenues can be generated from existing urban land by introducing new means of capturing value from land development. Reallocation of land from industrial use to housing or commercial use promises higher revenues, given the shortage and higher prices of the latter two. Furthermore, betterment taxes can be imposed on those that see the value of their property rise because of infrastructure development. Also, auctioning the development rights for urban land, separate from the land lease, could raise revenues and accelerate urban renewal. Finally, a VAT on land, properly restructured, could capture some of the capital gains of land transactions in which local government is not directly engaged (box O.10).

Regulatory rules need to ensure that land financing can continuously play a role in financing urbanization and that fiscal risks are better managed. The first priority would be establishing uniform reporting requirements for subnational land ownership, land sales, contributions of land to public-private ventures, land transactions between different types of subnational institutions, and revenue generated by land sales. Second, the "golden rule" of public finance should be applied to subnational land financing—that is, land asset sale proceeds should be used only to finance investment. Third, borrowings backed by land collateral may require regulation to set minimum collateral or loan ratios and to prescribe land valuation principles. Fourth, transfer of surplus land to

BOX O.10 Land value capture

Value capture allows the government to capture at least part of the increase in land value resulting from land improvements, for instance infrastructure expansion. A prerequisite is that infrastructure must generate sufficient value to be captured. China has been successful in capturing increments in land value, but the key challenge is to set a rule to allow all people to share the development outcomes as well as the risks. The rule should be economically justifiable, incentive compatible, and acceptable to the public. A number of value-capture instruments and other financial mechanisms are being applied internationally (Smolka and Amborski 2007; Peterson 2008; Miller and Hale 2011). The most prevalent and effective of these include:

Property taxes: Annual imposition of taxes on the value of urban land and buildings. These taxes are among the main revenue sources for local governments around the globe.

Special assessment districts: New and special levies on properties that will benefit from the provision of new or upgraded infrastructure services (examples in the United States are 17 percent of the first phase of the Portland streetcar system; 50 percent of the capital costs of South Lake Union streetcar system in Seattle; and 28 percent of the cost of the new New York Avenue Metrorail station in Washington, DC).

Tax increment financing: This approach dedicates future tax increments within a certain defined district to finance debt issued to pay for a project, which theoretically will create the conditions for future gains (used primarily in U.S. cities).

Transit-oriented development or joint development: Given that transit infrastructure plays a critical role in the end value of development projects, the capture of profits from activities associated with real estate development in and around transit stations may allow a transit agency to deliver an operating ratio in excess of 100 percent (as in the case of Hong Kong SAR, China, MTRC). The approach that MTRC uses is described as the "Rail + Property model." Joint development, similarly, can be described as a real estate development project that involves coordination between multiple parties to develop sites near transit, usually on publicly owned land (examples are the Land Transport Authority and SMRT in Singapore, BART in the San Francisco Bay Area, and the Transport for London Crossrail project).

Developer charges or development impact fees: A one-time and up-front charge requiring developers to make cash or in-kind contributions to on- and off-site infrastructure in return for permission to develop or build on land. These may be stipulated through subdivision/development agreements via some norm or expectation, or they may be negotiated on an individual basis. The charges defray the cost of expanding and extending public services in a particular area. For example, in Broward County, Florida, the local government implemented a transit-oriented concurrency system.

other government units or enterprises, private developers, or public-private partnerships should be prohibited except on a fully disclosed contract basis.

Strengthening public financial management

Financial management needs to be improved and transparency increased. Formulating and implementing urban plans in a fiscally sound manner would benefit from a medium-term expenditure framework system, which could strengthen capital spending by facilitating multiyear funding programs and by incorporating maintenance and operating costs of investments into expenditure projections. Independent audits of subnational financial accounts, periodic public disclosures of key fiscal data, exposure of hidden liabilities and guarantees, and moving off-budget liabilities onto the budget would all increase fiscal transparency. Finally, establishing a chief financial officer (CFO) for local governments would centralize the accountability for local government finances in one office, clarify authority on financial management matters, and halt the decentralized and uncoordinated issuance of local government debt. Ideally, the CFO should come from the department that manages the public purse or from its supervisor's office (the mayor's office). The CFO's office would coordinate with the budget department, the treasury department, the investment administrator (Development

and Reform Commission), and other government agencies on the borrowing strategy and plan. A debt issuance plan and a budget plan would be submitted to the local People's Congress for approval and disclosed to the public. The central government would need to play a major role in enforcing compliance with the framework for local borrowing.

Promoting public-private partnerships

China has already developed a policy framework for procuring services from the private sector—a positive signal for private providers of public services. More can be done, however, to improve policies and incentives for the private provision of public services. China still has scope to tap into private investment in the construction of urban infrastructure and the delivery of urban services, and a policy and legal framework should be developed to fully capture the benefits of public-private partnerships (PPPs). Since 1990, China has had more than 1,000 PPP transactions in infrastructure (transport, water, energy) for a total value of US$166 billion;[55] yet Brazil and India have had much larger private investments in infrastructure during the same period—$325 billion and $273 billion, respectively. To simplify the project approval system and facilitate prudent decision making at the local level, PPP laws and regulations could be unified at the national level to provide uniform guidance about approval processes across sectors and regions and contractual dispute resolution. Governments should make policies and create the incentives for participation by the private sector and also develop a system for guiding and regulating the partnerships. Legal safeguards represented by effective application of the rule of law, regulatory oversight, and dispute resolution systems would encourage private participation.

China may shift the focus of PPP contracts from capital financing toward service provision by bundling investments for asset creation with operation and maintenance requirements over a long period of time (20 years, for example). PPPs for most types of urban infrastructure and service delivery will depend on local government payments over the lifetime of the contract. In these cases, local governments should be allowed to make multiyear financial commitments. Future financial contributions to PPPs need to be kept to a fiscally sustainable level, and the best way to do that is to ensure they are kept within the expected, future level of recurrent revenue.

Expanding PPPs will increase governments' contingent liabilities, and careful risk assessment and proper risk sharing is needed. The rules governing PPPs should ensure that officials in charge are given incentives and have information and the capability to take account of the costs and risks of contingent liabilities. PPP contract arrangements should clarify risk-sharing arrangements. To strengthen institutional capacity, special PPP units may be established at the local level, while risks arising from fiscal commitments should be managed independently. Local governments could introduce a competitive mechanism along with innovative modes of operation to promote openness, transparency, and efficiency. To open competition in the infrastructure sector, public utility agencies should be restructured with transparent financial cost reporting, subsidies received from the budget, and the quantity and quality of services.

Improving the policy framework for debt finance

Stable and sustainable debt finance remain critical for China's urbanization, as long-lived assets such as infrastructure can best be paid over time, because it is an efficient means to match payment for an asset with its lifespan. However, local government debt has triggered macroeconomic crises in other countries in the past, including Argentina, Brazil, and the Russian Federation. Therefore, allowing local governments to borrow requires a rigorous regulatory framework, which, together with financial markets, should discipline subnational borrowing to ensure sustainability. China's capital markets are still evolving; thus it is important to establish a framework to regulate subnational government borrowing, while promoting a

competitive and diversified subnational credit market.

China should impose fiscal rules and debt limits on borrowers so as to manage, ex ante, the risks of systemic defaults. Many countries allow local governments to borrow against general budget revenues or dedicated revenue streams (revenue bonds), either directly by the local government or through a special entity created to operate a service. A basic approach adopted by many countries is the "golden rule"—borrowing is allowed only for long-term public capital investments. Debt limits should be imposed on individual municipalities and collectively for all local governments. The threshold for debt indicators must take into account the total fiscal space available for the public sector, at national and subnational levels. Borrowings by entities that provide essential public services would also be subject to sector-specific limits with respect to debt service capacity. In addition, rigorous creditworthiness assessment by credit-rating agencies needs to be a precondition for local government access to the capital market. Among other things, this assessment would require full disclosure of independently audited public financial accounts, thereby strengthening the role of markets in fiscal monitoring and surveillance.

An insolvency framework is required to make a no-bailout commitment by the central government credible and to set clear rules for debt workout if a local government becomes over-indebted. A sound framework should reduce the moral hazard of subnational defaults, discourage free riders, bind all local governments to pursue sustainable fiscal policies, and extend their short-term horizon to minimize the impact of unsustainable fiscal policy on future generations. Local government finance vehicles that finance and implement public infrastructure projects could be transformed into special-purpose entities, while pure financing vehicles can be dissolved once local governments have formal and open access to markets. These special-purpose entities should divest their commercial activities, in line with the direction of refocusing the government on essential public services, and be reformed to become transparent and financially stronger. They would follow international good practices on corporate governance and financial auditing and reporting. The fiscal relationship between the budget and the special-purpose entities should be disclosed to the public. Because their borrowings constitute contingent liabilities of local governments, regulations on the purpose, procedures, and limits of borrowing need to be developed. Finally, while an overall local government debt level of 25–30 percent of GDP is not excessive, various localities or local government financing vehicles have experienced debt service pressures and may need a debt workout under clear rules to be established.

Developing competitive and diversified funding sources for infrastructure financing will help lower financing costs. Aside from land revenue, China's infrastructure financing has been dominated by commercial and government policy banks—the shortcoming being the potential mismatch between the terms of commercial banks' liabilities and assets. In the short run, commercial and policy banks will continue to provide large amounts of financing to local governments and financially viable special-purpose "public service companies." In the medium term, the development of a local government bonds market is feasible and desirable. The regulatory and institutional frameworks for all sources of finance need to be harmonized to create a level playing field. This will discourage shadow banking, improve the quality of local government debt financing, support sound financial innovation, and ensure transparency, market-based price formation, and protect investors' rights across the whole spectrum of financial instruments. All these aspects would foster long-term debt market development and enhance financial system stability and the efficient channeling of savings into long-term financing for urban infrastructure on a sustainable basis.

A coherent set of securities regulations is required to develop a subnational bond market. Securities regulations and the institutional infrastructure for bond issuance and trading, such as regulation of credit-rating agencies, broker-dealers, underwriters, and auditors, are similar to those for sovereign and corporate bonds. China needs to build a reliable yield curve for the government bond

market, standardize the accounting rules for public sectors, and improve fiscal transparency. China has already experimented with local government bonds: the central government has issued bonds on behalf of some local governments, and six provinces and municipalities have issued bonds at their own discretion. Broadening the direct access of local governments to the local government bond market should proceed as rapidly as additional provinces and municipalities can obtain credit ratings to demonstrate their creditworthiness and to develop the technical capacity to manage and issue debt. Having the Ministry of Finance issue local government bonds on behalf of local governments could be phased out or substantially changed by establishing equal rules as those for direct municipal issuance (such as creditworthiness, transparency, credit rating, no implicit guarantee, and the like).

Bank lending to local governments should be regulated in a way that reinforces local government budget discipline and fiscal transparency. Commercial bank lending is normally bound by general prudential rules, which, if applied to local governments, would restrict local governments' opportunity to borrow. Such rules include exposure limits, which limit a bank's loan exposure to a single client; concentration limits, which limit a bank's exposure to a certain type of client such as all local governments taken together; and insider lending restrictions, which limit lending to the owners or co-owners of the bank. China has such rules in place, but the authorities would need to ensure effective enforcement. In addition to these norms, many countries have found innovative measures to reinforce discipline. For instance, after experiencing widespread subnational defaults, several countries including Brazil banned subnational ownership of financial institutions altogether. In China, direct local government ownership is limited, but influence is exercised through key personnel decisions in banks—a system that China needs to review to ensure independent decisions on lending to local governments. In Mexico, competitive lender selection and transaction ratings were required for large-scale long-term financing. Although these requirements are not mandatory, bank lending to nonrated subnational governments would need to have a high capital adequacy ratio.

Shadow banking would need to be regulated to limit the availability of easy money to local governments. In recent years, local government financing vehicles have increasingly relied on funding from shadow banking's wealth management products and trust fund loans. These vehicles enabled local governments to obtain off-budget financing, but their benefits as flexible financing vehicles started to be outweighed by the low level of transparency, the potential impact on contingent liabilities for local governments, and the risks to investors and ultimately the banks that manage much of the shadow banking. To regularize shadow banking, all asset management products should be subject to the same fundamental regulatory standards. Regulatory policy for all collective investment products should be coordinated among government agencies, including the China Banking Regulatory Commission, the China Securities Regulatory Commission, and the China Insurance Regulatory Commission. A plan for reforming the legal and regulatory framework of shadow banking would have to be formulated, including short-term amendments of regulations and long-term amendments of primary legislation. Investments in wealth management products, trust funds, or other collective investment schemes should not be protected by implicit guarantees.

The role of policy banks in the provision of long-term finance should be strengthened to complement the shortage of supply for long-term market-based financing. Policy banks within the legal and regulatory framework could play a positive role in supporting the use of long-term capital market instruments through the issuance of innovative financial instruments that would support the growth of fixed-income markets; provide guarantees for local government bonds; and purchase a limited portion of new local government bond issues, thus serving as a market maker by buying or selling bonds as needed by other investors.

Chapter 9 Promoting Greener Urbanization

The context of the reforms

A sustainable city is one where environmental objectives are placed on an equal footing with economic growth and social inclusion, and sector policies are aligned with these strategic objectives. More sustainable cities are also more efficient: incorporating the losses from environmental damage into economic decisions will lead to more efficient outcomes. Further, as China becomes more prosperous, its population will increasingly demand a clean and healthy living environment, and livability will become a key factor in the locational decisions of foreign investors. Managing environmental pressures is essential to realizing denser, more efficient cities in which agglomeration effects are fully captured. More sustainable cities are more equitable, as environmental damage is predominantly inflicted on the less affluent.

The most important task for achieving greener urbanization is to strengthen green governance—the institutions, incentives, and instruments that enable effective environmental management. Moreover, interjurisdictional approaches are needed because some challenges like air and water pollution transcend jurisdictional boundaries. Applying principles of green governance in sector policies would facilitate reforms, some difficult, that are needed to achieve resource-efficient cities with low pollution. Facilitated by land, fiscal, and social reforms, needed urban infrastructure reforms across urban planning, transport, energy, buildings, water, and solid waste range from the mundane—such as better landfill management—to the monumental: dramatically switching energy away from coal toward natural gas and renewable energy.

Strengthening green governance

Stronger incentives are needed to elevate green objectives to the level of economic growth and social goals for local government officials. Just as reduction in energy intensity has been a strict performance criterion for several years, greater weight can be given to other environmental criteria, including making them binding targets. Because conditions vary greatly across cities, benchmarks need to be locally appropriate, focusing on basic pollution reduction in cities dominated by heavy industries, and emphasizing broader quality-of-life issues in already greener cities. Inclusion of these targets in the system for evaluating local officials would reinforce their importance. Moreover, longer tenure for local officials would also encourage urban management that focuses on the longer term, within which results on green objectives can be achieved.

Greater authority and human resources are needed for environmental enforcement. China's environmental management institutions are often understaffed and lack sufficient authority vis-à-vis local governments responsible for development. To improve environmental enforcement, China could consider a system in which the Ministry of Environmental Protection (MEP) would be responsible for enforcing national laws and regulations and would exercise stronger oversight over local environmental protection bureaus (EPBs). At all levels, environmental management institutions would need greater authority and independence when dealing with other ministries, local governments, state-owned enterprises, and private companies. To avoid conflicts of interest, EPBs should be funded from the general budget, independent of the collection of pollution fees and fines.

Environmental policies currently favor regulatory measures and targets, but in the future sharper and more market-oriented instruments can be used, and the cost of natural resources and environmental services can be made explicit even if funded out of general revenue. Raising prices to cost-recovery rates is most urgent in water supply, sanitation, and waste management. Cross-subsidies in the energy sector, which mainly favor residential consumers and discourage end use efficiency, could be reduced to avoid benefit leakage to the nonpoor or replaced with

targeted support to protect the poor from price increases.[56] Pricing for private vehicle transport can increasingly cover social costs including climate change impacts. The choice of carbon-pricing instruments (such as carbon taxes versus a cap and trade system) will influence the established energy efficiency and renewable energy policy framework. Strong energy policy coordination is needed to ensure consistency. The outcome needs to give a credible signal to investors, producers, and consumers that there will be a long-term, stable policy of increasing the price on pollution and harmful use of natural resources.

More channels for public participation and involvement of the judiciary would allow citizens affected by environmental problems to help the government monitor, enforce, and shape environmental policies. While environmental enforcement agencies have limited resources in all countries, most rely on assistance from the public, especially through environmental NGOs, not only for monitoring and environmental impact assessment, but also policy development. Other countries also allow the use of public complaint mechanisms and legal proceedings to hold polluters to account. Expanding China's experiments with environmental courts could be an effective step forward, including allowing third parties to sue polluters. Overloading the judicial system can be avoided by strengthening other mechanisms of environmental dispute resolution (such as specialized panels or tribunals) and through adequate safeguards to avoid frivolous lawsuits. To facilitate citizen involvement, promising new efforts in disclosing environmental information could be expanded. Polluting facilities should be held responsible for accurately reporting harmful emissions, along the lines of the U.S. Toxic Release Inventory or the European Union's Pollutant Emission Register. Currently there are too many exceptions that restrict disclosure.

Energy analysis could be incorporated into different stages of urban planning to optimize energy use. Rather than focusing solely on building-level or sector-based improvements, piloting systematic analysis of demand and energy resources in a city, and also at the neighborhood level, can lead to management mechanisms that strengthen coordination and reduce the cost of energy investments and to policies to promote least-cost clean energy solutions. A number of planning and priority-setting tools, such as energy mapping and marginal abatement cost analysis for low-carbon cities, could help municipal governments apply low-carbon principles, even at the neighborhood scale.

Greening across jurisdictional boundaries

Air quality management is making progress but regional solutions are needed to address the most severely polluted airsheds. Air pollution management continues to be the responsibility of individual local administrations, without sound mechanisms for coordination across boundaries. Regional institutions, perhaps modeled on the Southern California Air Quality District or similar agencies in Europe, would be better suited to design and implement abatement policies. Such institutions should be given real authority (either regulatory or by allowing them to use the court system for enforcement), which may require provincial or national government leadership. In addition, China's state-of-the-art air quality management technical capacity in public and academic institutions could be better used to conduct not only policy analysis but also comprehensive impact evaluation and cost-benefit analysis where many abatement programs currently fall short. Large-scale pilots, such as in the Jing-Jin-Ji (Beijing–Tianjin–Hebei) region, could help develop institutional and technical approaches for better air quality management.

Water quality management will need to be strengthened to resolve tensions between urban and rural water demand, especially in China's water-scarce north. Regional pilots to develop watershed-level governance of water rights and pollution allowances using advanced water consumption monitoring approaches show promise. They could be improved by strengthening the authority of watershed management institutions, first by replicating successful river-basin level "joint conference" mechanisms that

have coordinated integrated environment and water management plans at local levels. Watershed authorities could facilitate greater use of ecosystems payments, under which downstream users compensate upstream farmers or industrial users to maintain water quality. Water rights trading, which has been used successfully in other water-scarce regions such as the western United States and Israel, could also be piloted. Both require interjurisdictional coordination of financial flows, appropriate financial controls, and oversight.

Greening sector policies

Providing sustainable urban transportation

Despite modernization of the vehicle fleet and massive transport investments, mitigating the sector's increasing contribution to air pollution and urban congestion is needed. Improving traffic demand management to reduce the growth in private car use and promote a shift to public and nonmotorized transport are two key priorities. Most important is to charge drivers the costs in full of using private vehicles, and that covers the environmental and social costs, which include road pricing or congestion charging, and registration and parking fees (such as higher fees for polluting vehicles). Fuel costs (higher than in the United States but lower than in the European Union) could be gradually increased.

Fee revenues can be invested in more efficient and convenient public transit to replace trips in private cars. Subsidies for public transit will likely still be required, but they are justified by the public health damages and congestion costs they avoid.[57] Urban land use planning and zoning that promotes transit-oriented development and nonmotorized transport (walking and biking) will encourage modal shifts. In China's existing and emerging metropolitan areas, transport—like air pollution—needs to be managed regionally. Metropolitan transit authorities that address coordination issues are common in many cities globally.

Emission reduction measures targeting the most polluting vehicles are needed. So-called "yellow-label" cars, which account for 13.4 percent of the total vehicle fleet, are responsible for 81.9 percent of particulate matter, 58.2 percent of nitrogen oxides (NO_x), 56.8 percent of hydrocarbons (HC), and 52.5 percent of carbon monoxides (CO) emitted. The phase-out of yellow-label cars should be accelerated using a market-based approach. The program to trade in old cars for new cars should be continued. The scope of subsidies to energy-efficient and green cars should be broadened. Collecting emission fees on vehicles and applying differential toll rates for roads, bridges, and highways should be studied and potentially made into policies. Consumers buying and producers manufacturing vehicles with stricter emission standards should be given incentives. Incentives for phasing out yellow-label cars should be implemented; for example, business operators that replace their yellow-label cars could receive rewards in lieu of subsidies. The supply of diesel and gasoline with lower sulfur levels should be increased. Institutions should be given greater authority to enforce emissions standards.

Cleaner energy

Globally, no other modern cities rely on coal for their energy needs as much as many Chinese cities do, and reducing its use should be the centerpiece of urban energy strategies. While shifting the economic structure to industries that are less energy intensive and more high value added and service oriented can help over the long term, reducing energy demand is a priority. The scaling up of cost-effective local clean energy production and importation of cleaner energy from outside city boundaries can be key elements of this strategy in the short and medium term. Cleaner natural gas can be a viable alternative to coal as production and imports continue to be scaled up. Conversion can be accelerated with more competition in upstream development and greater investment in transmission, distribution, and storage by introducing third-party access to the gas market, continuing pricing reforms, and introducing modern sector regulation. Given current gas supply constraints, it is important

to prioritize gas usage in the residential, heating, and commercial sectors where it will have the largest environmental and economic benefits. These three user types would require slightly less than 200 billion cubic meters by 2030 to achieve universal residential access and about 60 percent gas-based centralized heating supply, compared with total consumption of 130 billion cubic meters in 2011. Because the power sector and large-scale energy consumers will rely on coal for longer, strict enforcement of emissions control standards and efficiency improvements are needed.

In the longer term, China's cities need to increasingly rely on renewable energy sources. Supply will come from large-scale production outside city limits, which will require the removal of barriers related to pricing and grid access for commercial renewable energy producers. Over time, establishing efficient mechanisms for regulating, metering, and financing distributed power generation from renewable sources and natural gas distribution will promote their use. China's coal-reliant district heating sector contributes significantly to China's wintertime air pollution and requires urgent attention. In addition to switching to gas, the current area-based billing system for district heating services contradicts China's concerted energy conservation policies. Pricing and consumption-based billing reforms supported by national regulations that sharpen regulatory tools such as licensing and enforcement could facilitate improvements across China's northern provinces. Building retrofit programs, which are increasing in scale in China, could accommodate district heating sector reform by setting a mandatory deadline for the introduction of consumption-based billing after retrofitting or by considering building-level metering for buildings with reasonable energy performance.

Rebalancing markets and mandates to reduce energy use in industry

Improving energy efficiency in industry has been largely successful, but additional progress that is still urgently needed will become increasingly harder to achieve without rebalancing administrative measures with market-based approaches. As demand growth for heavy industrial goods slows, companies may find cost-reducing investments in energy efficiency more attractive. Raising energy-related taxes and defining a carbon-pricing strategy (by the 13th Five-Year Plan) would motivate enterprises to seize efficiency opportunities for their own business interests. Associated revenues could be recycled to provide stable, multiyear financing of energy efficiency programs. The energy savings agreement system has been effective and can be continued, but allowing enterprises to achieve targets either through their own improvement or by trading energy savings certificates from other companies would be more efficient. Third-party technical service providers for energy efficiency audits, new fixed asset energy assessments, and similar projects can be fostered as part of a greater energy efficiency services industry that would offer better financing and customized business models, including energy services performance contracting in enterprises. Cities must continue to be innovation drivers in energy efficiency policies and programs, encouraging the incubation of energy efficiency services through knowledge exchanges, local associations, promotion, and market development.

Serving the people in more efficient and cleaner buildings

The public sector should lead by example by addressing energy efficiency in the stock of public buildings. Procurement of energy savings performance contracting for public institutions would promote the market for energy efficient and green buildings and products, lowering costs over time. Monitoring, rating, and publicly disclosing building energy performance can be effective motivational tools. Energy performance targets for residential and commercial buildings should be set to define "low-energy building" standards. Time-bound targets would set clear expectations for performance improvement, encouraging innovation in the marketplace and guiding refinement of building energy efficiency codes and standards. In addition

to using stricter codes to set "the floor," successfully achieving advanced green building ambitions will require a larger effort in developing capacity across the supply chain (from design to materials to construction). Finally, to reduce the use of harmful building materials in China, improved monitoring and enforcement of standards are required, together with a labeling system possibly modeled after Germany's "Blue Angel" system.

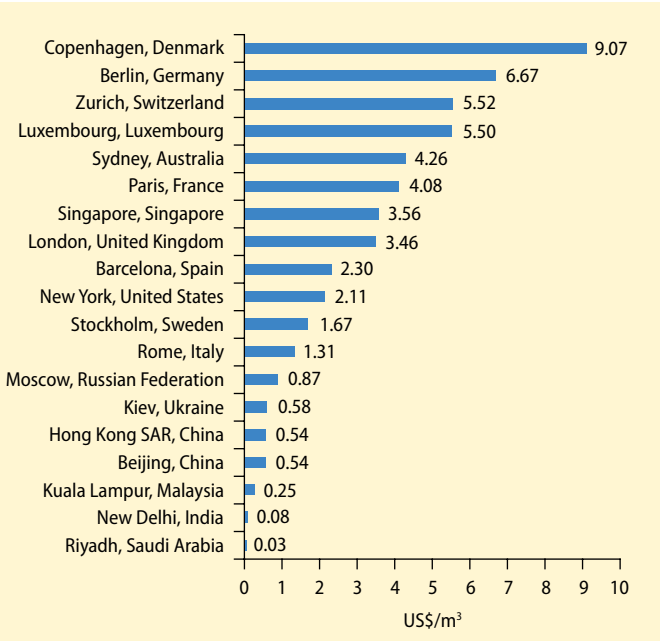
Integrating water supply and pollution management

Reducing urban water demand and strengthening the financial health of the water and sanitation sectors are two of the most important tasks for accommodating greater numbers of residents and businesses in cities with water quality and scarcity problems. China's water and wastewater tariffs are low by international comparison (figure O.11). Setting cost-recovering tariffs and completing water metering will encourage water-saving behavior and generate resources to sustainably fund water and wastewater management. Supportive tariff policies should be complemented with reform of the water utility governance. Integrating drainage and treatment services, piloting water boards in larger cities, and consolidating smaller utilities in nearby cities, possibly through concessions, are needed to achieve scale economies and improve management. While water treatment and wastewater standards are essential, one-size-fits-all regulations result in oversized infrastructure and raise compliance costs that some weaker cities find difficult to meet. A recent study of 655 utilities and local governments estimates that 85 percent of water treatment plants are seriously oversized and that the maximum daily water supply was less than 50 percent of production capacity of facilities.[58]

Getting the fundamentals right in solid waste management

Inadequate cost recovery hinders expansion and improvement of solid waste collection, recycling, and disposal systems. About RMB 200 billion nationally will be needed annually in the coming years, increasing to more than RMB 400 billion, to manage waste projections for 2030. Yet, waste service charges make up only about 10 percent of real costs, which is concerning for a sector with high marginal operating costs. Subsidies should (partially) be phased out over a period of five to ten years while payment mechanisms are introduced (that is, combined with other utility charges) to create incentives to reduce waste, recycle more, and operate systems more efficiently and effectively. Recycling in China is widespread but informal. Formalization could yield revenue to finance waste management but would threaten the livelihoods of low-income collectors of recyclable materials and thus requires careful calibration. With sector reforms to establish good fundamentals, product stewardship programs could be introduced so that manufacturers take responsibility for life-cycle waste generation including packaging materials and final disposal. This program could start with voluntary schemes leading to public-private cooperation, as in other countries.

FIGURE O.11 Water and wastewater tariffs



Source: GWI 2011.

Waste management facilities need to be integrated into land use planning, making greater use of environmental impact assessments and permitting as regulatory tools. For instance, contaminant hydrogeology needs to be considered in landfill site selection and design, but data are often lacking. Furthermore, testing, treatment, and disposal of fly ash from incinerators needs to be improved and unsanitary landfills rehabilitated to minimize long-term environmental hazards and enable a return of the land to productive uses. Operating waste management facilities can be challenging for smaller towns and cities. They can seek scale economies by cooperating with adjacent jurisdictions to develop more efficient and well-operated waste management facilities such as landfills or incinerators.

Strengthening the controls of chemicals and hazardous materials

Through legislation, China should implement declaration, hazard identification, and environmental risk assessment procedures for the production, storage, transportation, sales, use, and import and export of chemical substances and their goods and products. Hazardous and toxic chemical substances should be identified and labeled as hazardous, and their use should be discouraged, limited, or phased out, or they should be substituted by green alternatives. Other measures, such as process control, risk management, and contamination control should also be enforced to mitigate the risks associated with chemicals and to reduce the discharge of hazardous and toxic chemical substances into the environment.

Chapter 10 Ensuring Food Security

China has established a comprehensive food policy framework with minimum grain purchasing prices at the core, supported by temporary grain reserves, direct food subsidies, grain stock adjustments, and international trade. This framework, along with China's institutional reforms and productivity growth in the agricultural sector over the past decades, has been critical to China's food grain security. But these policies have not addressed problems related to distortions in grain prices, policy inefficiencies, obsolete grain circulation and reserve systems, and weak food safety nets, so that they need further improvement to meet the challenges of urbanization.

Setting China's food security objectives

Food self sufficiency may be desirable for a country with a population of 1.3 billion people, but in view of the structural changes in agricultural production and in food consumption that have taken place over the past decades, as well as the escalating environmental and resource constraints, China's current objective of food security in all food categories is neither feasible nor necessary. Instead, China should redefine its food security objectives based on the principles of efficiency, openness, and sustainability. Taking environmental capacity and resource constraints into account, China should strive to unlock the potential for increased grain production by improving productivity and market efficiency, thereby projecting a clear and transparent picture of China's needs for grain imports and exports. China should adjust its food security objective toward maintaining self-sufficiency in food grains while allowing for more imports of nonfood grains and other agricultural products. More emphasis should be placed on food quality and safety, agricultural sustainability, and protection policies for low-income groups. Stronger emphasis should also be placed on improving the environmental sustainability of China's domestic livestock sector through better protection and management of China's grassland resources. The fine tuning of China's food security objectives needs to be complemented by policy reforms, investments in agricultural water resources management, and rural land and labor market reforms.

Enhancing domestic grain production capacity

China has raised agricultural productivity successfully in the past. From 2004–11, total factor productivity grew at a rate of 2 percent annually for all major grain crops and at 3 percent annually for the major vegetable crops. If China is to increase domestic grain production capacity, ensuring continuous productivity growth in agriculture is a priority. Compared to many other countries, China's potential for increasing labor and land productivity is significant. The potential of productivity growth can be captured through promoting economies of scale in agriculture, primarily by increasing the scale of farming operations, and through continued investments in research and development.

The process through which labor and land productivity can grow and farmland can be consolidated needs to be carefully coordinated, and the pace of change carefully controlled. Specifically, the government's role will be (1) to improve policies that allow rural migrants to become urban citizens, thereby stimulating more permanent migration to urban areas, and (2) to create the conditions for consolidated agricultural operations and improved labor productivity in rural areas. The government will need to rationalize the rural land rights system, develop rural land markets, and create incentives for a market-based consolidation of farmland to allow modern medium- and large-scale entities, such as commercial grain producers, larger family farms, and specialized cooperatives to emerge.

Steady productivity growth in grain production requires continued technological

advancements in agriculture. The key drivers for technological progress are increased public spending on agricultural research and development, integrated programs to promote advanced yield-enhancement technologies, mechanization in grain production, capacity building of farm producers, adoption of modern biotechnology, and expedited breeding of new, improved crop varieties. Investments will also be needed for (1) transforming low- and medium-yield farmland into land of higher productivity, (2) the expansion or rehabilitation of irrigation infrastructure, (3) improving on-farm water use efficiency through better technology and with better water-pricing policies, and (4) the development of water users' associations that can help improve water use efficiency in irrigation areas.

Improving agricultural sustainability

Current practices of overfertilization need to be changed to reduce environmental costs and to ensure that agricultural resources and the environment are managed in more sustainable ways. Audits on heavy metal contamination in major grain-producing regions can provide the necessary baseline information, while environmental risk assessments can help identify key target regions for action. The classification of key regions according to function can be used to determine potential treatments based on the severity of contamination, and crop mixes can be adjusted accordingly. China should set sound, science-based criteria for tillage on land contaminated by heavy metals. For areas where contamination is severe and tillage should not continue in the future, ecological compensation schemes can be considered to support farmers' jobs and incomes. The progress that has been made on reverting farmland back to forests should be carefully managed in order to prevent the reclamation of already retired farmland. The scope of the slopeland conversion program should be further expanded to also include severely desertified areas. A special subsidy program for land quality protection should be implemented to support farmers who opt to leave their land fallow, readjust their land mix, or limit the use of pesticides and chemical fertilizers.

Enhancing international cooperation and trade

Following China's WTO accession, progressive and predictable import growth has been shown to create win-win results. For example, China's growth of soybean imports has driven global soybean production, particularly in the Americas, and promoted global trade. The benefits for China include meeting growing domestic demand and saving land and water resources. Building on these experiences, China could strengthen cooperation with major grain-producing nations by signing medium- and long-term grain trade agreements with such countries, and creating stable and diversified import avenues. China could also leverage its comparative advantages and expand agricultural development aid and investments in neighboring countries and in South America and Africa, and actively participate in global and regional food security governance. China should focus on agricultural technology transfer, and investments in processing, storage, transportation, and trade, ensuring socially responsible and sustainable investments. While such investments may not result immediately in more agricultural products flowing to China, they will increase other countries' grain production capacity and improve global grain supply, which in turn will improve the external environment of food security for China.

Reforming grain price formation mechanisms

China's grain price mechanism has resulted in market distortions and a heavy fiscal burden for the government, and it requires reform. China should allow grain prices to fluctuate freely during normal periods and secure a food supply for low-income groups through food subsidy programs. Only in times of natural disaster or external shocks should the government intervene and release

the state's emergency grain reserves. China's grain producer price should be replaced by a target price system. Moving away from direct government buying in the market to price subsidies linked to a target price (price benchmark) should be considered. This would separate price formation from government subsidies, the benefits of which would include gains to farmers and less market distortion. Such a policy has been adopted by many countries in their transition from price support to direct subsidies. While conducting price reform, China needs to quicken the pace of building a food safety net for vulnerable income groups. Food price inflation and benchmarks for social relief and benefits need to be better linked. For specifically vulnerable groups, such as households in extreme poverty, a direct food supply system should be established.

Improving the efficiency of grain producer subsidies

China's existing grain subsidy policy should be maintained to help stabilize farmer's income expectations. Subsidy levels should be adjusted regularly to counter the erosion of farmers' gains because of rising production costs. Current agricultural subsidies are still comfortably below the WTO-mandated caps, and there is room to grow further. But China's subsidy policy also needs reform to meet the new food security objectives. Subsidies should be better linked to yields of grain crops, and incremental subsidies should favor the main grain-producing regions and producers. China may also create a special subsidy program linked to environmental protection to create incentives for farmers to opt for retiring farmland or reducing output levels.

Reforming China's grain reserves and circulation system

The government should carefully distinguish between strategic grain reserves and grain buffer stocks. Strategic reserves are built primarily to withstand systemic grain supply shocks and such reserves should be modest. Buffer stocks would be used mainly to balance grain supply and demand between seasons and different regions and should be concentrated in major grain consumption regions, especially city clusters. The share of processed grains should be increased and the role of local governments in building grain reserves should be strengthened. China may also create incentives for grain processing and circulation enterprises to contribute to grain reserves. And finally, China needs to improve its network of modern grain logistics, which run through major interprovincial corridors and connects major grain-producing regions, distribution centers, and transportation hubs to and from cities and city clusters. The focus should be on consolidating existing grain logistics resources, creating a network of critical grain logistics hubs, and strengthening the connections between such hubs and railway, waterway, and highway transportation infrastructure. Warehousing services should be made more specialized and market-based, and grain warehousing could be professionalized and privatized.

Chapter 11 Timing, Sequencing, and Risks

This report has laid out the directions for a comprehensive urbanization strategy for China that aims to guide China's inexorable urbanization toward an outcome that improves the quality of life for China's citizens. To use economic resources efficiently, and maximize the benefits of urbanization, is a leading consideration. It is complemented by the need to make urbanization sustainable in the face of environmental constraints and the scarcity of natural resources that threaten the balance between humans and nature, perhaps irreversibly. And the objective of equity and fairness for all—the need for inclusiveness—must be imperative for a harmonious strategy that has the interests of all citizens in mind. But the issues of efficiency, inclusion, and sustainability cannot be dealt with separately: they are closely interwoven. By its very nature, the agenda spelled out in this study is comprehensive and all-encompassing; yet the ability of any government to design, introduce, and implement reforms is restricted by capacity and time and the measure of change and reform that society and the economy can agree upon and absorb simultaneously. With these constraints in mind, authorities will need to set priorities and carefully think through the sequence and timeline of implementing the proposed policies.

Timing and sequencing

Reforms in land, fiscal, and finance systems are at the core of the proposed strategy—their implementation is important and urgent. They support urbanization but are also part of the overall reform strategy as spelled out in *China 2030, the* report that the DRC and the World Bank published in the spring of 2013. That report advocates a decisive move from state to market, which will be the backbone for China's shift to quality, instead of quantity, of growth.

Land reform that addresses distortions in the land market, especially in peri-urban areas, stands out as a promising point of departure and would lay the basis for other reforms. It would make land on the urban fringe open for competitive usage, contain unsustainable urban sprawl, and help safeguard the rights of farmers, thus reducing a major source of social tension. While government prepares for stronger property rights for farmers, it may wish to tighten annual conversion quotas in the meantime, because most cities have sufficient land available for their needs in the short term. Land reform is also the basis for reforming the urban planning system to integrate land use with housing and infrastructure planning to arrive at a comprehensive spatial development strategy with the objective of creating livable cities.

Currently, cities in China finance large parts of their expenditures through peri-urban land conversion, and sales and reform of the land market will eliminate this opportunity. It will therefore be necessary to introduce far-reaching fiscal reforms to strengthen the balance sheet of municipalities with new sources of revenue either through direct local levies and taxes or through central government transfers. Equally urgent, government would need to focus on local borrowing of all kinds, first and foremost to assess whether the situation requires action, and the just-completed National Audit Office audit of local government debt is a strong basis for such an assessment. Instances of unsustainable borrowing would need to be addressed. Formal access to borrowing will have to wait until a full regulatory framework is in place, which should follow the strengthening of local government revenue sources. A decision on a temporary fiscal subsidy for integrating migrants into urban areas would accelerate the implementation of a residency system and could be made early on, because the fiscal resources are already available.

Other systemic changes proposed in policy areas in this report could be implemented over time, but presenting a comprehensive plan for implementing the reforms would lend credibility to urbanization. That is especially true for the sustainability agenda that can build on China's impressive set of environmental laws and regulations and where the most important task is to strengthen the institutions, incentives, and instruments that

enable environmentally sound urban development. Greater authority and human resources are needed for environmental enforcement, and more market-based instruments should be used so that the costs of using natural resources and polluting the environment are explicitly priced. These broad-based policy considerations should be adopted immediately. But their implementation will require focus and persistence over a long period.

Risks

The introduction of a property tax might affect property values, with possible knock-on effects on banks and local finances. This risk seems limited, however. First, the proposed property tax, at 1 percent of property values, is modest compared with the current annual increase in value of some 8 percent—with double-digit increases in the large cities. Second, even if prices were affected, banks are well protected against price corrections, because the value to loan ratio has been regulated, and thus their buffers seem more than adequate for any eventuality. An announcement of the tax may cause an increase in the supply of housing, notably of second properties currently held for investment, which is intended and desirable.

The affordability of a property tax may raise concerns for some. Property prices in China are very high compared with current incomes, especially for those who have lived on fixed incomes for some time, such as pensioners. Even with a low rate, the property tax could take up a large share of current income for some homeowners. From an efficiency point of view, anyone who cannot afford the property tax would have to sell their home and move to less expensive parts of the city, making room for those who can afford it. That, however, may be socially unacceptable. Other countries take care of these risks at the low end of the income strata with exemptions, perhaps some kind of homestead exemption, although too high an exemption may reduce the revenues from the tax too much. Phasing in the tax at low rates initially could also be considered, in part because wages in cities are likely to adjust in light of the tax, and people could adjust their living arrangements, for example, by renting out parts of their apartments to generate income. People with more than one apartment for investment purposes are more likely to sell their additional properties, which would improve the housing market. The alternative to a property tax—such as taxing property values or the value increasing only at the time of transactions—would also solve the problem of affordability, but would distort the property market, and the tax would lose its basic function as a charge for urban services on those who enjoy them.

There is a risk that allowing rural construction land to be sold directly for development could lead to rapid and uncoordinated development. Zoning restrictions would normally prevent this, but local governments may also be keen to expand the city and rezone rural land aggressively. Stronger property rights for farmers should prevent a rush—because prices are likely to be higher—but it may be prudent for China to carefully scale up the successful pilots before setting nationwide policy.

Some fear that stronger rights for rural landholders will stop urbanization effectively, because land will become too expensive to convert, but this is not so. The territorial expansion of cities may slow down, but that should not be confused with slower urbanization, which, as this study has argued, can progress on existing land through densification and redevelopment of existing land. Also, local governments can still convert land, when the higher price they have to pay for rural land is warranted by its urban use.

Finally, there is a risk that in reforming, hukou migrants will move to receive better benefits and services rather than for productive reasons. Previous evidence in China does not seem to support this concern, however, except perhaps for the largest cities. Internationally, there seems little evidence of "benefit migration," but within countries, people do want to move to cities for better public services such as education. That would imply that for a transitional period the requirements for residency in large cities may have to be more stringent than in other places—but with a clear timetable for phase-out. In the medium term, removing mobility restrictions and adjusting the tax structure so that

those who benefit are also taxed—through a property tax, for example—would yield an optimal outcome.

Institutions and governance of the reform agenda

A comprehensive urbanization strategy requires interactions among many actors, at the central and local levels, and coordination between ministries and agencies will be of crucial importance. Urbanization done properly needs to be built on a "Whole of Government" approach at all levels. At the central level, cooperation and coordination between ministries have been notoriously difficult, and ministries tend to develop sector strategies largely independent of each other. Looking to the broader reform agenda, urbanization reforms should be included in the top agenda of the Central Leading Group for Reforms. The Leading Group should also coordinate the formulation and piloting of reform policies at the national level.

China will need to continue to rely on its decentralized administrative structure to implement reforms although a rebalancing of the roles of central and local governments may be required, with the central government taking greater responsibility for policies with national implications such as the basic social security package. To provide incentives for behavioral change within local governments, the central government, after setting the overall development direction, will need to make more effective use of its two main mechanisms for guiding the actions of local governments—the fiscal system and the government personnel system that rewards local leaders' success based on national development goals.

To meet the GDP goals favored under the personnel system, and with considerable technical capacity and ample funds derived from land revenue, local governments have taken the role of implementers of urbanization using public infrastructure construction as a way to boost short-term growth in GDP and jobs and to meet annual targets. In the future, to promote efficient, inclusive, and sustainable development, the role of government at all levels needs to change to allow for the greater involvement of markets. That does not imply a diminished role for government, but rather a different one, in which government steps back from being the main implementer of urbanization to becoming the enabler. The proposed fiscal system reforms, if coupled with greater incentives to promote inclusion and sustainability through more balanced performance targets and longer tenures, would allow local governments to shift their primary focus from constructing infrastructure to creating new policies and practices at the local level that address more complex and intractable problems such as air pollution control. Local government can also take a more active role in regulating development, including in ensuring that local and regional objectives for environmental quality and social inclusion are met.

The rigidity of China's provincial and local administrative structure—on the one hand a strength because it promotes local innovation and initiative—is also a weakness because the intense competition between provinces and cities inhibits effective regional cooperation. In some areas such as the provision of trunk transport infrastructure, regional competition has been overcome by the central government taking a stronger implementation role, but in others, such as management of water and air resources, the lack of regional planning and cooperation has led to an escalation of negative impacts. Regional solutions that stretch beyond provincial and municipal boundaries will be needed to better manage metropolitan areas in order to capture agglomeration benefits and manage externalities.

Finally, greater participation of China's citizens in the urbanization process would enhance accountability of local governments and ensure that policies are responsive to local needs. In some areas, China has a relatively mature system of citizen involvement—examples are local elections, consultation processes for environmental impact assessments, and China's long-established complaints system. But in many cases, the usefulness of citizen involvement is diminished by the lack of access to information. Especially in the field of environment, greater transparency

and disclosure of pollution information, including compliance data, would enhance citizens' ability to engage constructively and meaningfully.

Notes

1. From 2000 to 2010, urban natural increase, net migration, and urban reclassification accounted for about 15, 43, and 42 percent of urban growth, respectively.
2. ADB 2012a; Rosenthal and Strange 2003; Black and Henderson 1999; Lucas 1993.
3. World Bank 2009.
4. Glaesser and Joshi-Ghani 2014.
5. Campos 2012.
6. Black and Henderson 1999; Lucas 1993; Rosenthal and Strange 2003.
7. Desmet and Fafchamps 2006.
8. World Bank 2013.
9. Conventional investment numbers are measured as "fixed capital formation," which in China is available only at the national level. At the city level, China publishes data on "Fixed Asset Investment," which covers investment in existing assets, including land. This measure tends to drive up ICORs when asset prices rise more rapidly than capital goods prices. Thus, city-level ICORs are not comparable with national or international ones.
10. Authors' estimates based on NBS data: www.stats.gov.cn/english/Statisticaldata.
11. This paragraph largely draws from the NBS Migrant Survey, December 2012.
12. DRC 2014.
13. DRC 2014.
14. Hort and Kuhnle 2000; Kwon 2007; Knight, Li, and Song 2006.
15. Cai and Henderson 2013.
16. Huang, Wang, and Qiu 2012.
17. Huang, Wang, and Qiu 2012.
18. Deininger and Jin 2008.
19. Bank staff estimates of the correlation between urban land price increases and density using CEIC data.
20. This extraordinarily high share of labor reflects in part the lack of mechanization in agriculture (see chapter 4), but it may also result from a low remuneration for agricultural land.
21. In comparable international prices.
22. Authors' calculations based on NBS 2013.
23. China Development Research Foundation 2010.
24. Gan and others 2013.
25. Davies and others 2007. Note that the data from the China survey are not necessarily comparable to the numbers in this paper.
26. Caselli and Coleman 2001.
27. Knight, Li, and Song 2006.
28. Interprovincial migration in China rose from 25 percent of all migration in 2000 to 32 percent by 2010; in the United States, it constituted nearly 50 percent from 1947 to 2012.
29. Page 2011.
30. Gallagher 2013.
31. Liu 2008; Wang 2010.
32. In March 2011, the State Council (2012) drew up *A Notice on Actively and Stably Pushing Forward the Hukou System Reform*. The full text was released in March 2012.
33. Zhang and Tao 2012; Zhang 2012.
34. Barrett, Joyce, and Maitre 2013 and Dustmann, Frattini, and Halls 2010.
35. Meng and others 2012.
36. Man, Zheng, and Ren 2011.
37. Man, Zheng, and Ren 2011.
38. Li 2012; Huang and Jiang 2009; Logan, Fang, and Zhang 2010; Zhang and Chen 2014.
39. http://www.labour-daily.cn/web/NewLabourElectronic/newpdf/PdfNews.aspx?Calendar=2011-9-24.
40. PBOC 2013.
41. Lall, Timmins, and Yu (2009) evaluated the relative importance of wage differences and public services in migrants' decisions to move in Brazil. Their findings showed a distinction in preferences according to income level: for relatively well-off people, basic public services were not important in the decision to move, but for the poor, differences in access to basic public services did matter.
42. Liu, Park, and Zhao 2010.
43. Sugar, Kennedy, and Leman 2012.
44. Currie and Vogl 2012; Currie and Neidell 2005; Padula and others 2013.
45. MEP 2013.
46. NBS database.
47. DRC and ERI 2009.
48. OECD 2009.
49. World Bank 2011.
50. Weber and others 2008.
51. Feng and others 2013.
52. World Bank and DRC 2013.
53. Based on income.
54. See supporting report 6, "Financing Urbanization," for details of the model and simulations.
55. World Bank Institute and PPIAF 2012.
56. Ruggeri-Laderchi, Olivier, and Trimble 2013.

57. Few public transport systems are unsubsidized. However, subsidies can be lower if individual car use is made more costly through taxes and levies.
58. World Bank and DRC 2013.

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