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POLICIES FOR SOUND AND EFFECTIVE INVESTMENT IN CHINA
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BETTER POLICIES FOR BETTER LIVES

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Foreword

Since the beginning of China's economic transformation in the early 1970s, investment has been a driver of China's growth and has contributed to improvements in living standards during the Asian financial crisis in the late 1990s and the recent global financial crisis. Investment has been an effective way of stimulating the Chinese economy, which in turn supported global aggregate demand.

However, as recognised by the Chinese government, this past growth model is not sustainable. Albeit still high by international comparison, returns on investment have fallen and excessive capacity is plaguing several sectors of the economy. Moreover, China's strong economic growth has come at a high cost to the environment as well as a strong increase in the dispersion of incomes, even though inequality has started to decline again in recent years.

In the adjustment process to a more balanced growth model, China is looking for new approaches to investment, recognizing that it is not only the quantity of investment that matters, but also its quality. Investment needs to become more productive, more responsible – both for societies and the environment – and more inclusive, so that all people and firms have the possibility to contribute to it and benefit from the proceeds. Such a new approach to investment entails allowing the market to play a greater role in allocating investment and in encouraging greater private investment in areas where attractive returns can be achieved. It also entails channelling more public investment to areas where social returns are high, such as education, health and social security.

This brochure has been prepared to support the Chinese government in this endeavour. It presents the main policy challenges that the country is facing in its efforts to raise the quality of its inward and outward investment and discusses how the OECD, with its instruments, experience and range of analytical tools, can assist China in its reform process. As part of the G-20 agenda, China has recently published its overall investment strategy. The brochure will deal with the main priorities defined in such strategy, as well as other areas that are considered relevant for improving the country's investment performance.

The publication of this brochure coincides with two major events: the launching of China's 13th Five-Year Plan, which will define objectives, allocate resources and set policy reforms till 2020, and China's presidency of the G-20, which offers China the opportunity to steer the global debate about growth, productivity, inclusiveness and investment.

The OECD is proud of its co-operation and policy dialogue with China over the last decades and looks forward to continue working with the country as it confronts the challenge of moving towards a more balanced and sustainable growth model. Given China's importance for global economic developments, mastering this challenge is not only crucial for China and its people, but also for the rest of the world.

Angel Gurría

Secretary-General, OECD

Key recommendations

- Focus not only on the quantity of investment, but also on its quality, ensuring that investment is productive, inclusive, and responsible to both societies and the environment.
- Improve the matching of subnational government resources with their responsibilities and broaden the municipal tax base to reduce dependency on land leases.
- Implement more effective land use in urban areas by ensuring a better balance between residential and commercial areas in city centres.
- Enhance public sector capacity across all levels of government to engage in public-private partnerships with a focus on value for money, affordability, transparency and sustaining an ongoing PPP market.
- Reduce financing costs by, for instance, lowering further the reserve requirement ratio and enhancing competition in the banking sector.
- Phase out implicit government guarantees to public entities so that all firms compete on a level playing field with regard to finance, regulation, taxation and public procurement.
- Safeguard an orderly access of private firms to capital markets by avoiding overly restrictive rules on new listings and foreign ownership, and ensuring strong regulation of insider trading and corporate governance.
- Further reduce the costs of doing business, including the time required to register new businesses.
- Improve the design of government support measures for R&D and innovation and provide national treatment for foreign R&D investors.
- Provide greater incentives for effective implementation of responsible business conduct standards.
- Provide appropriate support to renewable energy investment, avoiding biases between different types of renewable energy sources.

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1 Introduction

Since the start of the economic reform process in the 1970s, China has been able to generate a large volume of investment from both domestic and foreign sources. This was instrumental in sustaining strong economic growth and related improvements in living standards. However, this growth model is no longer sustainable. Returns on investment have fallen, excessive capacity is plaguing several sectors, and negative externalities have been very onerous, notably in terms of environmental degradation and rising income inequality. A key objective of the Chinese government is therefore to move the economy towards a more balanced, sustainable and inclusive growth path as envisaged by the 13th Five-Year Plan. In this adjustment process, the country is seeking new approaches for smarter, greener and more productive investment. This will require mutually reinforcing reforms to improve investment planning, rebalance the role of government and market forces, mainstream responsible business conduct and encourage greater private investment, especially in green infrastructure. China's growing role as an outward investor may act as a catalyst for the required reforms at home, as Chinese private and state-owned enterprises have to adopt internationally recognised practices and standards.

Backed by strong investment, China's economy expanded rapidly over the past decade

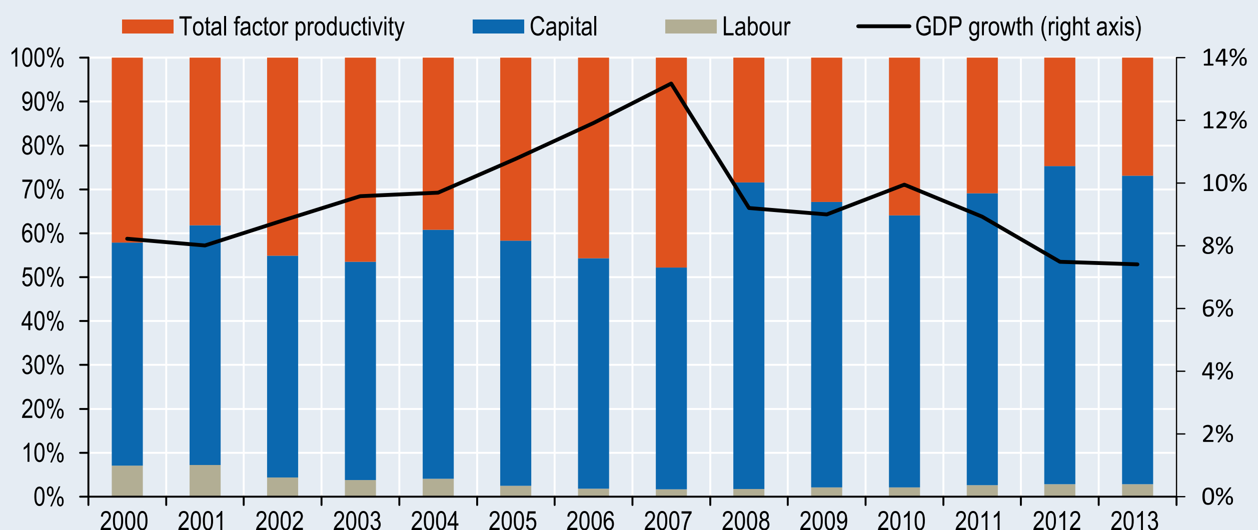
Between 2000 and 2015, China's GDP at market exchange rates increased from USD 1.2 trillion to USD 11.4 trillion, representing a shift from 7.5% to 17% of global GDP (measured in purchasing power parity), propelling China into the group of middle-income countries in less than two decades. Investment has been the major driver of China's economic growth, particularly since the turn of the millennium (Figure 1.1). High rates of domestic investment, complemented by large inflows of foreign direct investment (FDI), helped build a large manufacturing base, well integrated in global value chains. Large investment in infrastructure has supported the rapid urbanisation process and the expansion of industrial sectors, and it has significantly improved domestic and global connectivity.

Investment has also been an effective way of stimulating the economy during downturns. It served as a buffer to prop up growth in the wake of the Asian financial crisis in the late 1990s and rose again sharply during the global financial crisis. The stimulus package of CNY 4 trillion adopted in 2008 in response to the global crisis saved the Chinese economy from the sharp economic downturn seen across the globe.

The rapid expansion of China's economy has greatly improved living standards. During three decades of average annual GDP growth of 10%, disposable incomes have soared, lifting

FIGURE 1.1. **INVESTMENT HAS BEEN A MAJOR DRIVER OF CHINA'S GROWTH**

Breakdown of GDP growth



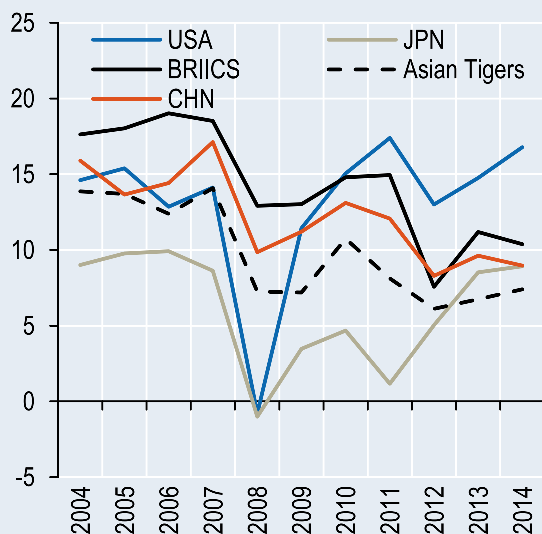
Source: OECD calculations based on Asian Productivity Organization's Productivity Database; OECD Economic Outlook Database and National Bureau of Statistics of China.

hundreds of millions of people out of extreme poverty. The share of the population living in extreme poverty declined from above 90% in the early 1980s to less than 10% today. Overall well-being also improved considerably. The UN Human Development Index jumped by over 50% from 0.50 in 1990 to 0.76 in 2014.

But the old growth model is no longer sustainable

However, as the Chinese government recognises, the old growth model is no longer sustainable. Productivity gains achieved through the shift from agriculture to manufacturing, integration into the global trade system and the associated technology transfer will be more moderate going forward than they have been in recent decades. Moreover, the high fixed investment rates that have underpinned growth have left a challenging legacy. Although still high in international comparison, returns on investment have fallen (Figure 1.2), and excessive capacity is plaguing several sectors, including construction, steel, cement, chemicals, aluminium, shipbuilding and flat glass, as well as electrical and railway equipment. Firms, including many state-owned enterprises (SOEs), are driving down prices to secure market share at home and abroad, fuelling deflationary pressures. In 2015, consumer price inflation hovered around 1.5%, and producer prices have been falling since 2012. At the same time, financial leverage is worryingly high: the 5000 Enterprises Survey puts the financial leverage ratio at 62% in 2015.

FIGURE 1.2. THE RETURN ON EQUITY HAS COME DOWN
Percent



Source: OECD calculations based on Bloomberg.

The old growth model has also had significant negative externalities. For example, CO_2 emissions have more than tripled in two decades to reach 28% of global emissions in 2013 (Figure 1.3, Panel A), and air pollution is estimated to have caused 1.3 million premature deaths in 2010 (OECD, 2014a). The new growth model will also be greener, reflected by the prominence of green growth in the 13th Five-Year Plan: this is the first time that greening growth appears among the major principles of such a Plan.

Moreover, the opening up of the economy was accompanied by a sharp rise in income inequality (Figure 1.3, Panel B). The bulk of the rise came in two surges: between 1992 and 1994 following the first move to open up, and between 1997 and 2003, as state-controlled industries declined and private-sector industry grew. Even though most indicators of income inequality have stabilised since then or begun to decline, inequality remains very high by international comparison. While employment generation has been strong, particularly in

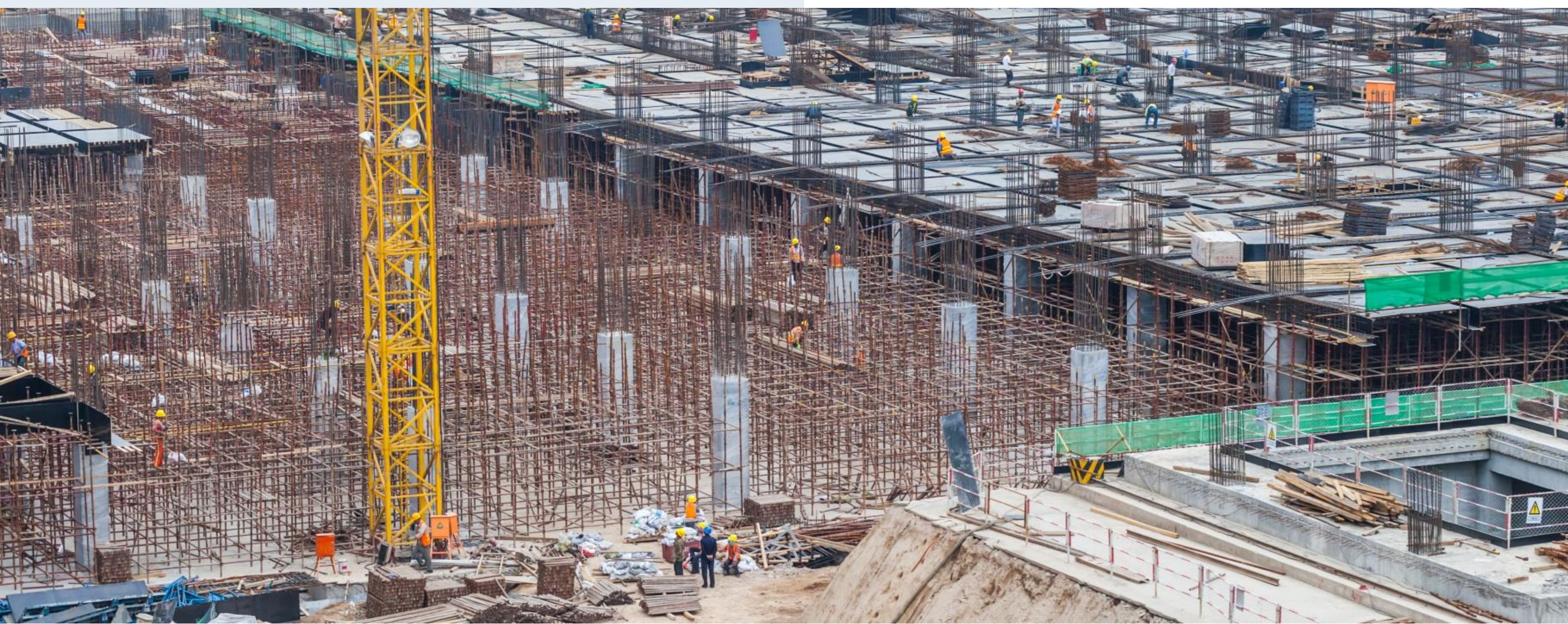
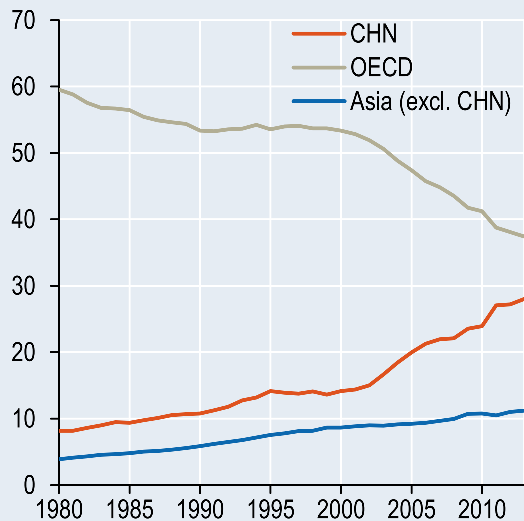
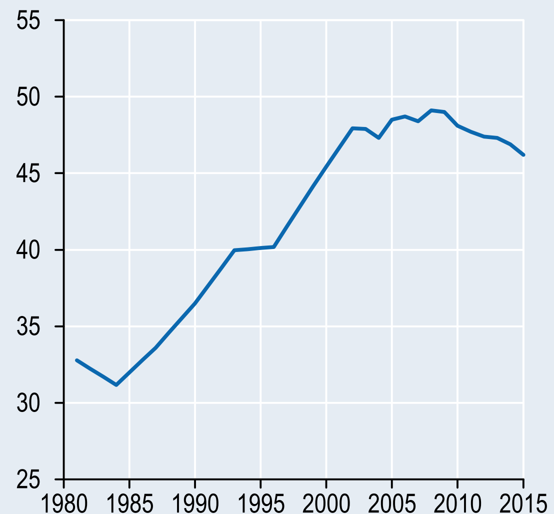


FIGURE 1.3. **THE STRONG GROWTH PERFORMANCE OF CHINA HAS ALSO HAD ITS COSTS**

Panel A. Environmental cost as measured by percentage share in world CO_2 emissions



Panel B. Income inequality as measured by the Gini coefficient



Note: Data on China's CO_2 emissions for 2011 to 2013 are not fully comparable to the data for earlier years.

Sources: IEA (2015a), CO2 Emissions from Fuel Combustion 2015, http://dx.doi.org/10.1787/co2_fuel-2015-en; World Bank World Development Indicators Database; National Bureau of Statistics of China.

urban centres, job vacancies have increasingly been filled by migrant workers, who lack permanent urban-resident status and suffer discrimination in access to housing and social services. Against this backdrop, not surprisingly, shared and coordinated development also appears among the major principles of the new Five-Year Plan.

Future growth needs to rely on smarter, greener and more productive investment

Today a key objective for the Chinese government is to guide the economy into a more balanced, sustainable and inclusive growth path. The deceleration of capital formation observed recently has already contributed to bringing down growth to 6.9% in 2015. While this is still high in international comparison, it is the lowest growth rate in 25 years. For the period 2016-20, the Chinese government envisages annual GDP growth of at least 6.5%, according to the 13th Five-Year Plan.

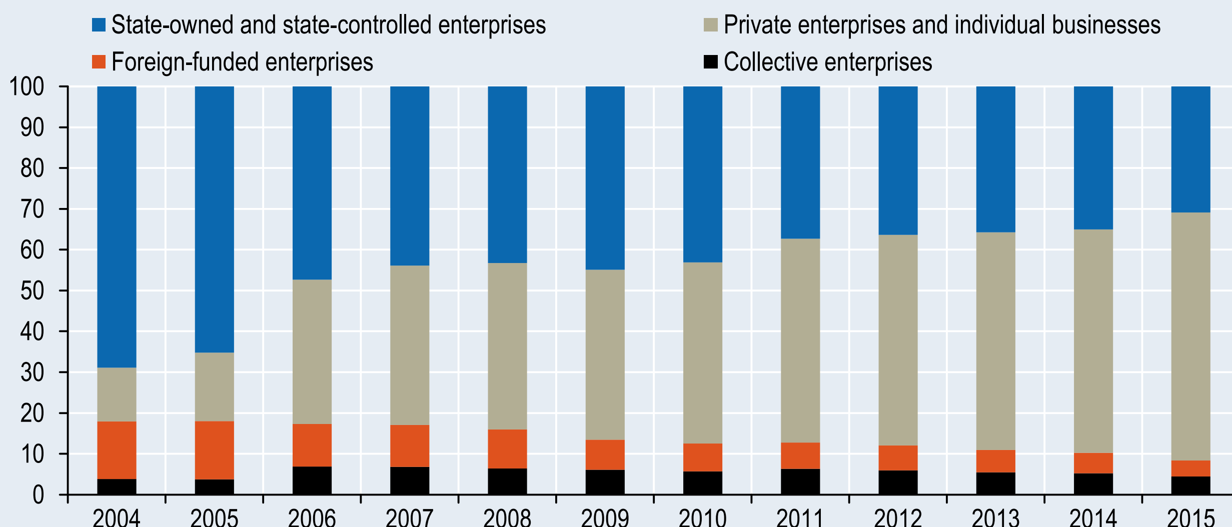
With population ageing, investment, notably in infrastructure and technological upgrading, will continue to play a major role in supporting China's economic and social development. Urbanisation continues to unfold across the country and technology and production processes still have plenty of room to catch up with global front-runners. While Chinese firms are relatively well integrated in global value chains, the value added generated could be raised by a stronger involvement in knowledge-based and skill-intensive service activities, which currently comprise only a small share of value added in China's manufacturing exports.

In the process of adjustment to a more balanced growth model, China is looking for new approaches to investment, recognising that it is not only the quantity of investment that matters, but also its quality. Investment needs to become more productive, more responsible – for both societies and the environment – and more inclusive, so that all people and firms have the possibility to contribute and can benefit equally from the proceeds. The past has shown that investment does not automatically diffuse throughout an economy to yield broad-based and sustainable economic growth, and gains in well-being will not necessarily be broadly shared across regions, firms and the population. Enhancing investment for inclusive growth requires a more holistic approach that considers the interactions between inequality, investment and growth. Micro, small and medium-sized enterprises (SMEs) need to be a focal point in such an approach. Such companies accounted for 60% of China's GDP in 2013 and for 80% of urban employment.

Such a new approach to investment entails allowing the market to price credit risk and rebalancing the role of government and market

FIGURE 1.4. **PRIVATE INVESTMENT HAS BEEN ON THE RISE**

Percent of total fixed investment



Note: Fixed-asset investment does not include investment by rural households.

Source: National Bureau of Statistics of China.

forces by encouraging private investment where private returns can be reaped. The share of private investment in the total has been increasing in recent years (Figure 1.4), reaching two-thirds in 2014. However, fiscal stimulus and therefore potential crowding out, coupled with weak demand and decreasing corporate profitability, have recently reversed this trend.

Participation not only of domestic capital, but also of foreign private capital and also investing in capital markets would help to improve the investment environment. The new approach to investment also entails channelling more public investment to areas where social return is high and the capital stock is low, such as education, health and social security. Ensuring equitable opportunities for education, granting access to public services of at least some minimum standard across the country, accommodating the rising need for old-age care services all have high social returns, but suffer from insufficient investment.

China's growing role as an international investor may help spur reforms at home

In parallel, Chinese outward investment has been expanding fast and has gained global prominence, in the form of acquisitions of foreign companies, by both Chinese state-owned and private enterprises, as well as new greenfield investment, notably but not exclusively in natural resources and infrastructure (Figure 1.5). The companies and financial institutions that engage in foreign investment, particularly those operating in OECD countries, are learning how to adapt to a highly competitive environment where they need to cope with robust standards of economic governance, labour and environmental protection, as well as expectations from foreign civil society. But investments in emerging and developing economies – in infrastructure, mineral and energy resources, and manufacturing – also have to respond to efficiency, sustainability and responsibility criteria. Outward investment may therefore act as a crucial channel to promote the adoption of internationally recognised practices and standards, in terms of both companies' managerial and administrative capacities and the different aspects of a country's policy framework for investment.

China's willingness to promote international co-operation on investment issues is demonstrated by the launch of the One-Belt-One-Road Initiative and by the creation of a new Working Group on Trade and Investment within the framework of its G20 Presidency. This should lead to a dialogue on investment policy making and investment agreements which could favour mutual understanding on the norms which should govern investment at both domestic and international levels. Progress on investment and trade liberalisation will need to go hand in hand with more convergent standards with regards to competition between SOEs and their domestic and foreign private competitors. This in turn could lead to more efficiency-driven Chinese investment in the internal and global markets.

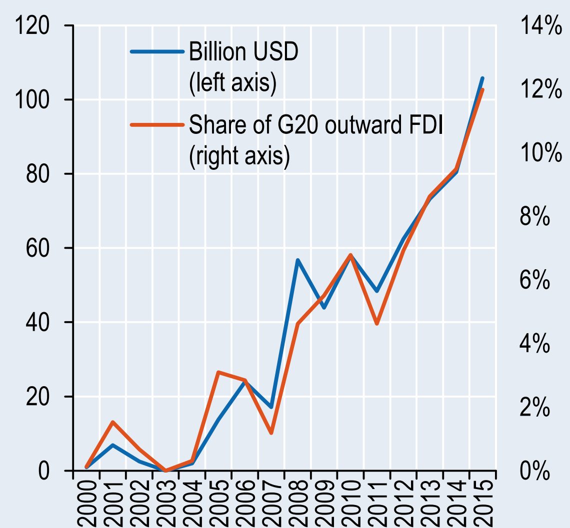
Similarly, China's growing involvement in the international dialogue on cross-border capital flows could facilitate the progressive integration of the economy in global capital markets, thereby contributing to more efficient ways of financing investment. Also, in light of recent heightened capital-flow volatility, significant value is attached to credible commitment mechanisms that could signal to China's economic partners that investment channels will remain open. This, in turn, can help China to continue to attract the long-term, high-quality capital needed to support inclusive growth and sustainable development. China could therefore benefit from adherence to the OECD Code of Liberalisation of Capital Movements, which could provide a multilateral commitment device and a transparent dialogue platform for the necessary reforms.

Mutually reinforcing reforms can help make investment sounder and more effective

This brochure examines the interplay between the role of China as an emerging outward investor and its challenges with regard to domestic investment. It also highlights how the OECD may assist China in reaching its objectives of economic efficiency, environmental sustainability and social inclusiveness. In doing so, it will also touch upon how China's investment policy needs to be adjusted to better reap the benefits of the digital economy. The focus of the brochure is mainly on physical investment, with only a brief discussion of investment in knowledge-based capital and intangibles. Chapter 2 sheds light on how to improve investment planning to enable China to meet its substantial infrastructure investment needs in an effective manner. Chapters 3 to 6 then discuss how to enhance market functioning, focussing on financial sector reform (Chapter 3), capital account opening (Chapter 4), regulatory reform to enhance framework conditions for domestic and foreign private investment (Chapter 5) and reforms of the SOE sector (Chapter 6). The two final chapters deal with mainstreaming of responsible business conduct (Chapter 7) and greening of infrastructure investment to limit the environmental damages of growth (Chapter 8).

FIGURE 1.5. **CHINA'S OUTWARD INVESTMENT HAS GROWN RAPIDLY**

Outward FDI flows



Note: Data for 2015 are estimated based on the first half of the year.

Source: OECD International Direct Investment Database.

2 Making better use of public investment spending

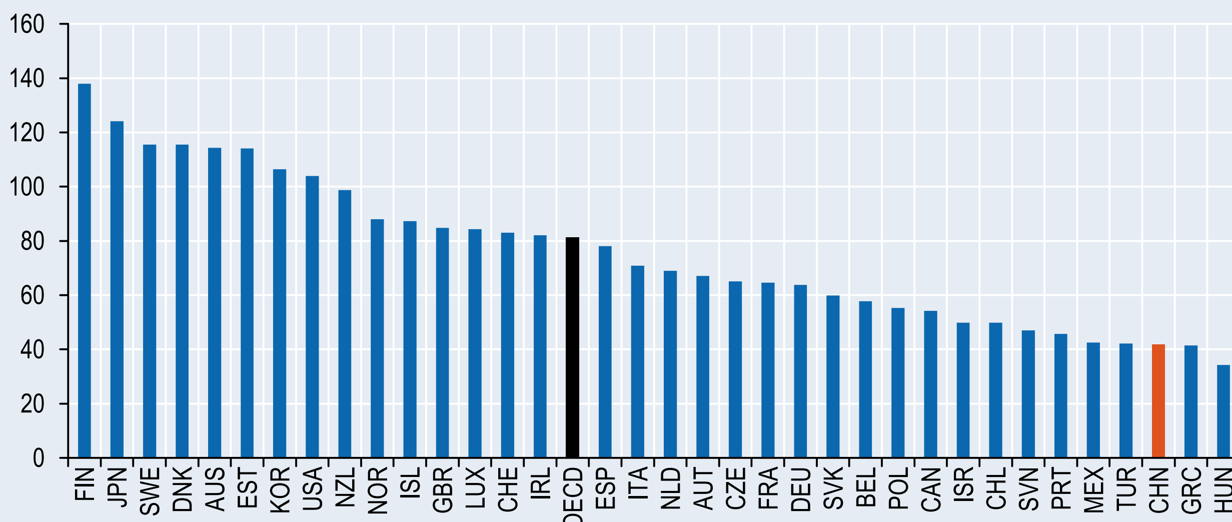
Despite a considerable increase in infrastructure investment, keeping up with the country's infrastructure needs represents a major challenge. To overcome this challenge, the private sector needs to get more heavily involved in the financing and provision of infrastructure, for instance through a greater use of public-private partnerships. Moreover, public investment has to become more efficient and better targeted to where it is most needed. To achieve this, reforms will have to clarify responsibilities for expenditure across all levels of government and strengthen accountability and co-ordination mechanisms. Recent reforms of intergovernmental fiscal relations are steps in the right direction and should be pursued.

Investment needs remain substantial in some sectors

China has led global infrastructure investment flows in the past few years. China's total infrastructure spending in 2015 amounted to over CNY 56 trillion, representing around 13% of China's GDP. The world's largest single project finance deal for infrastructure in 2015 was the Yalong Lianghekou hydropower plant, valued at CNY 56 billion (USD 8.6 billion).

Despite these massive efforts to upgrade China's infrastructure, investment needs remain substantial in several sectors. China's latest urbanisation plan, released in 2014, targets an urbanisation rate of 60% in 2020, up from 53.7% in 2013, representing roughly 100 million new urban residents. The urbanisation rate reached 56.1% in 2015, steadily advancing towards the 2020 target. The Ministry of Finance (MoF) estimates the cost to provide these residents with adequate infrastructure and public services such as housing, transportation, wastewater treatment and utilities at CNY 42 trillion (around 70% of 2013 GDP). In rural areas, there is a need to further upgrade transport connections and electricity grids. This will improve rural living standards and also help optimise farm production by boosting productivity and better linking agricultural producers to end markets. There are also substantial investment needs in digital infrastructure. Compared to the OECD average, China lags in broadband penetration: fixed broadband subscriptions amounted to 19.7 subscriptions per 100 inhabitants in 2014, compared to the OECD average of 28.2. Even more progress needs to be made in increasing mobile broadband penetration, where the rate is about half the OECD average (Figure 2.1). An upgrading of China's digital infrastructure is not only crucial to sustain the high growth rates

FIGURE 2.1. **MOBILE BROADBAND PENETRATION IS LAGGING**
Mobile broadband subscriptions per 100 inhabitants, December 2014



Source: OECD Broadband Portal for OECD countries and ITU World Telecommunication/ICT Indicators 2015 for China.

that its leading hardware and software companies as well as Internet platforms have experienced in recent years, but also to better connect China to other Silk Road countries. According to the 13th Five-Year Plan, the Chinse government aims to achieve full coverage of broadband networks in both urban and rural areas by 2020.

These sizable investment needs require more efficient and more targeted public investment and greater private-sector involvement in the financing and provision of infrastructure. The same applies to related services: road, railways, ports and airports are more effective when complemented by adequate transport services, just as telecommunication infrastructures are more effective when access is widespread and they are put to increasing use. The provision of high-quality and cost-effective services hinges on having competitive markets for those services, which in turn depends on having open and well-regulated markets (see Chapter 5).

Competencies and revenues assigned to subnational governments are not well balanced

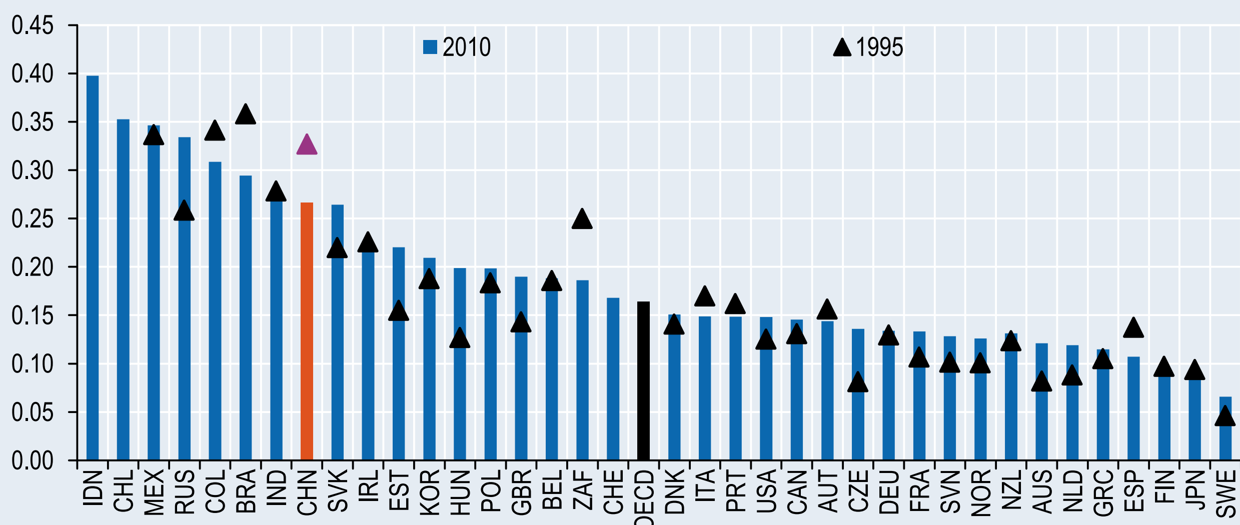
In terms of expenditure responsibilities, China is one of the most decentralised countries in the world. The central government accounts for only 15% of total expenditures, and this share has been trending downward. The responsibility for financing urban development has been left almost entirely to municipal governments, with limited financial support from the central government. The assignment of revenues, by contrast, is centralised through the tax-sharing system.

The current system yields significant horizontal fiscal disparities across provinces, but also within provinces, especially between urban and rural areas. In addition, the responsibilities of subnational governments (SNGs) are not precisely defined and can differ by province. This has led to service delivery gaps, redundancies and inefficiencies (OECD, 2015a). Although reorientation of infrastructure investment towards the less prosperous regions (notably under the aegis of the Western Development Programme) and urbanisation have contributed to reducing regional inequality, regional disparities remain more pronounced than in many OECD countries (Figure 2.2).

China has recently made progress in intergovernmental fiscal relations to ensure a greater balance between competencies and revenues assigned to SNGs. State Council Opinion 2015/71 on Reforming and Improving the Central-Local Fiscal Transfer System aims to address the mismatch by making the fiscal transfer system more transparent and increasing the share of general transfers so that subnational governments can allocate funds more efficiently.

FIGURE 2.2. **REGIONAL DISPARITIES ARE SUBSTANTIAL**

Inequality in GDP per capita across TL3 regions



Note: TL2 regions for AUS, BRA, CAN, CHL, CHN, COL, IND, IDN, MEX, RUS, ZAF and USA. Regions are classified on two territorial levels reflecting the administrative organisation of countries. The large TL2 regions represent the first administrative tier of subnational government. The small TL3 regions are contained in a TL2 region.

Source: OECD (2013a), Regions at a Glance, http://dx.doi.org/10.1787/reg_glance-2013-en.

Greater transparency of SNG budgets can help avoid overinvestment

The system of public finance for SNGs encourages too much investment, without requiring from decision makers the necessary monitoring and accountability. Municipalities often lack an investment plan as well as reliable and timely revenue and expenditure data for budget planning, monitoring, expenditure control, and reporting. The consequence has been poorly controlled commitments of government resources, often resulting in large build-ups of arrears, along with excessive borrowing and misallocation of resources. To increase transparency, the 2014 amendment to the Budget Law requires publication of all four budget accounts (general budget, fund budget, social security budget and SOE accounts). This is an important step in the right direction.

Co-ordination failures across levels of government lead to inefficiencies

Despite a strong tradition of urban planning, economic and political pressures have led to much new urban development that suffers from extreme functional segregation, the development of very large superblocks, poor internal connectivity and inadequate investment in public transport. Intercity competition has also led to duplication of infrastructure, not all of which has been absorbed by high growth rates and could thus be considered wasteful. In Guangdong Province, for example, competition within the Pearl River Delta has resulted in five international airports now serving the region. While Zhuhai airport was planned for a maximum capacity of 12 million passengers, by 2013 it was only handling 2.8 million passengers (OECD, 2015a).

To improve management of urbanisation processes, in particular with respect to planning investments, the system of cities and vertical government relations needs to be reformed. It currently encourages competition more than co-operation. Weak co-operation mechanisms reflect the fact that Chinese cities have traditionally had rather broad administrative boundaries and thus little need for co-ordination across city lines; they were geographically quite distinct entities. At the metropolitan scale for instance, no incentives are in place to enhance co-ordination and build a metropolitan strategy. The hierarchical structure of governments also prevents horizontal and vertical co-operation. Governments are required to interact with the level of government immediately above and below, meaning that a county-level city, for example, cannot interact with the central government (though in many provinces it can interact with the provincial government). Fragmented administrative jurisdictions and

multiple institutions further complicate regional and urban planning, and impede effective investment and long-term development strategies. As reflected in the 2014 OECD Principles for Effective Public Investment Across Levels of Government (OECD, 2014b), overcoming co-ordination challenges enables more targeted and well-informed investment, taking advantage of economies of scale and sectoral complementarities.

More effective planning and investment processes also hinge on reforming land use. Local governments have the largest say in determining when and how rural land is converted to urban uses, and it is they who then sell urban land-use rights to investors. This creates strong incentives for them to manipulate the land market, particularly because the sale of land-use rights is by far their most important source of income. This often results in unfair treatment of rural dwellers, inflated housing costs for urban residents and inefficient land use in cities.

If well managed, public-private partnerships can help overcome public financing gaps

Facing limited investment capacity from subnational governments, the MoF has been pushing for public-private partnerships (PPPs), which are seen as a way to channel substantial private capital into the infrastructure sector. A National PPP Fund of CNY 180 billion (USD 28 billion), financed by the central government budget and ten financial corporations, was established in 2015, and many subnational governments are trying to establish similar funds at the subnational level. The central government has identified a large number of PPP projects (known as Government Social Capital Co-operation). The MoF has introduced two rounds of PPP model projects (233 projects, worth CNY 817 billion or USD 125 billion), and the National Development and Reform Commission (NDRC) has introduced two rounds of PPP promoting projects (2 529 projects, worth CNY 4.24 trillion or USD 0.65 trillion). According to MoF estimates, by the end of 2015, approximately 755 PPP contracts had been signed, worth a total of CNY 1.8 trillion (USD 0.3 trillion).

While PPPs can deliver cost-effective infrastructure in the right circumstances, OECD research shows that PPPs are also a challenge for the public sector. As reflected in the 2012 OECD Principles for Public Governance of PPPs (OECD, 2012), such challenges include putting in place an enabling institutional framework (both in terms of regulation and human capacity); establishing a focus on maximising value for money from PPPs through the right procedures and tools (rather than just accessing off-budget finance); and integrating PPPs into the ordinary budget process, especially in the medium term, in order to ensure transparency and infrastructure that is affordable for both governments and users. In order to ensure a vibrant PPP market and keen bidding, governments should develop a strategic policy

with respect to what sectors and models will be tendered, and bring to market a continuous stream of projects that are more or less standardised. Many countries have responded to these challenges by developing clear policies, setting up dedicated PPP units, updating capital budgeting and accounting systems, giving the MoF a stronger role in scrutinising projects, and enhancing private finance capacities across all levels of government. The Chinese government is also moving in this direction. It has updated its PPP guidelines and aims to simplify approval procedures for PPP projects and facilitate adequate land access for project purposes.

Public procurement needs to be strengthened

A major issue related to public procurement in China is bid rigging, with groups of firms conspiring to raise prices or lower the quality of the goods or services offered in public tenders. Cross-country estimates suggest that bid rigging can add an additional 20% or more to procurement prices. In addition, procurement that minimises the possibilities of cartels is also key to foster competition and keep markets functioning properly. The OECD has adopted a Recommendation on Public Procurement (OECD, 2015b) which aims to support proper allocation of public resources by using public procurement as a strategic tool, increasing efficiency in public spending and mitigating risks such as inefficiency and corruption, which are often prevalent in major infrastructure and other complex procurement projects. The OECD has also adopted Guidelines for Fighting Bid Rigging in Public Procurement (OECD, 2009), which may be used to help both national and local authorities to detect and prevent bid rigging by checking procurement laws and practices.

Another problem is unclear responsibilities. In the early 2000s, two public procurement laws were issued, the Bidding Law drafted by the NDRC and the government procurement law, drafted by the MoF. The bidding law covers construction of large-scale infrastructure, public utilities, and public investment projects (completely or partially). It stipulates that the NDRC takes a leading role in tenders and bids processes. The Government Procurement Law, as amended in 2014, covers other public procurement areas. It stipulates that the MoF takes a leading role. This may have led to uncertainty as to who is the main driver of the PPP programme. This in turn may compound private sector perceptions that risks emanate more from the legal, regulatory and political environment than from the projects themselves. An alignment of these roles and responsibilities would be beneficial.

Key recommendations

- Focus not only on the quantity of investment, but also on its quality, ensuring that investment is productive, inclusive, and responsible to both societies and the environment.
- Continue developing a coherent governance framework for infrastructure that clearly sets goals and assigns institutional responsibilities.
- Introduce stronger co-ordination mechanisms between the central government and SNGs, as well as across SNGs.
- Make greater use of co-financing arrangements between central and SNGs.
- Improve the matching of SNG resources with their responsibilities and broaden the municipal tax base to reduce dependency on land leases.
- Reform land-use processes, in particular conversion processes, to strengthen protection of rural dwellers and make requisition procedures more transparent and market-oriented.
- Implement more effective land use in urban areas by ensuring a better balance between residential and commercial areas in city centres.
- Enhance public sector capacity across all levels of government to engage in PPPs with a focus on value for money, affordability, transparency and sustaining an ongoing PPP market.
- Step up measures to fight bid rigging in public procurement by adhering to and implementing the OECD Recommendation on Fighting Bid Rigging in Public Procurement.

3 Enhancing the effectiveness of China's financial sector

A well-functioning financial sector is crucial for efficient and effective investment. Chinese authorities have taken a number of measures in recent years to improve the functioning of the financial sector, in particular to dampen the growth in lending by non-bank financial institutions. However, an important reform agenda still lies ahead. As the Chinese economy is embarking on a path of more balanced and sustainable growth, it is important to let the market play a greater role in allocating resources and pricing production factors. Moreover, there is a need to further enhance competition in the banking sector and develop non-bank sources of finance that cater to the needs of innovative and service-based firms.

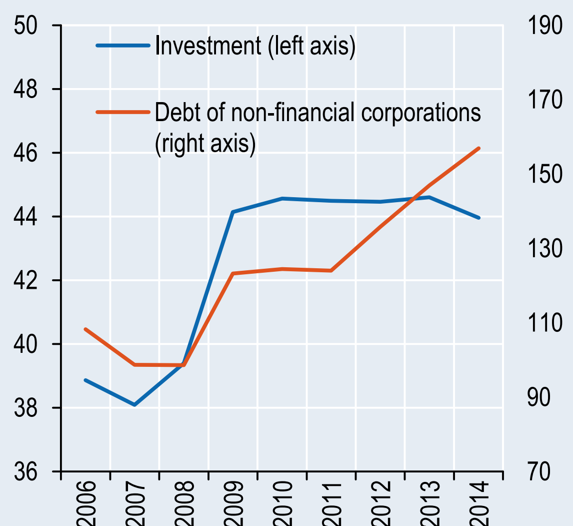
Past stimuli have led to high corporate indebtedness

While the stimulus package of CNY 4 trillion adopted in 2008 saved the Chinese economy from the global economic downturn, it came at the cost of leaving the enterprise sector heavily indebted and subnational governments accumulating large amounts of implicit debt. Such a sharp rise in credit entails higher risks, but risk was not fully priced in, owing to implicit government guarantees to public entities. Prior to the crisis, return on capital was high and increasing, until 2006 when it peaked, at around 17%. It then fell by half in the following ten years. High and increasing rates of return enticed many firms into unrealistic expansion plans fuelled by cheap credit. Corporate leverage by state-owned enterprises soared, and the burden grew amid falling returns and raising real interest rates in the industrial sector – driven by deflation, excess capacity and weak demand. From 2006 to 2015, corporate debt rose by 60 percentage points, to over 160% of GDP (Figure 3.1).

In addition to weighing on profitability, high corporate debt also affects the health of the banking sector, as sooner or later it will show up on banks' balance sheets as non-performing loans (NPLs). The banking sector is now in a much healthier condition than it was after the Asian Financial Crisis, when it had to handle large amounts of non-performing corporate debt, but it faces a rise in NPLs in the near future. So far, loans 90 days past due at the largest banks have grown substantially faster than NPLs. This may suggest an increase in forbearance by lenders. The risk is that such forbearance will slow the exit of underperforming firms, reducing the efficiency of resource allocation and aggregate productivity growth. The combined ratio of special-mention loans and NPLs is around 6.5%, well above the official NPL ratio, but still at a manageable level. Combined with strong capital ratios, this should enable the financial system to withstand the foreseeable increase in NPL ratios as bad debts come to light.

FIGURE 3.1. THE INCREASE IN THE INVESTMENT RATE WAS ACCOMPANIED BY SOARING CORPORATE DEBT

Percent of GDP



Source: National Bureau of Statistics and Bank of International Settlements.

Lending by non-bank financial institutions (NBFI) has increased even faster than bank lending. Caps on bank deposit rates led investors to search for higher-yielding assets at the same time as bank lending was constrained by the regulated loan-to-deposit ratio. As a result, lending outside the traditional banking sector surged. This provided firms with increased access to finance, with banks often using NBFI products and third-party institutions as tools for regulatory arbitrage. The rate of return on NBFI products, which are less regulated, has tended to exceed the bank

deposit rate, partly reflecting the riskier profile of the underlying loans. To respond to financial stability concerns associated with the rapid growth in NBFI credit, in 2014 authorities implemented a range of measures that dampened the growth in such activity.

NBFI instruments were also often used to fund Local Government Investment Vehicles (LGIVs), which are established to finance public real-estate and infrastructure projects. Until the amendment of the Budget Law, SNGs had to balance their budgets every year, so they were not able to borrow. Instead, they used LGIVs to undertake investment projects. Implicit SNG debt accumulated in that way exceeded one-third of GDP by 2014. Given perceived implicit guarantees by the local governments, these vehicles were able to borrow at a lower cost than private companies. To halt this unsustainable trend, the central government announced in 2014 that it would take on part of the debt, clearly stating that it was a one-off measure, and that thereafter SNGs could borrow only subject to quotas and the investment vehicles only on their own responsibility with no possibility of a future bailout. Restrictions on LGIV borrowing have, however, since been eased, raising the risk of another pile-up of implicit debt.

Allowing the market to price credit risk and removing implicit guarantees will help improve allocation of resources

The cost of capital has been low over recent decades, as a lack of market forces in pricing and allocating capital led to widespread misallocation. Coupled with the longstanding single performance indicator for government officials – output growth – this created a bias towards investment to expand production capacity. In the process, local officials competed to offer low-cost or free land, cheap credit, tax concessions and other subsidies to attract investment. Industrial policy guaranteed cheap credit and energy to favoured sectors and gave a competitive edge to capital-intensive and energy-intensive products in global markets. At the same time, LGIVs channelled large amounts of borrowed money to investment.

As China is entering a "new normal" period of growth, it is increasingly important to allow the market to play a greater role in allocation of resources and pricing of production factors, as these will be indispensable to transition to a higher quality of growth. That entails removing implicit guarantees to public entities and ending bailouts. Owing to implicit guarantees to public borrowers, private businesses, especially smaller businesses, are crowded out of the formal market and have to resort to retained

earnings or informal borrowing to finance their activities. In addition, small firms' access to credit would be enhanced if they were subject to more rigorous reporting and disclosure requirements. While all enterprises are now required to disclose their annual reports, it is not clear to what extent this new rule is being enforced.

Monetary policy has repeatedly come to the rescue of corporate and non-corporate borrowers by lowering interest rates and reducing reserve requirements to boost liquidity and support debt servicing. While this provides an opportunity for firms and SNGs to refinance their debt at lower cost, many of them are not able to borrow to finance more investment. Falling profitability and already high leverage curtail firms' room to further increase leverage, and subnational governments are constrained by their allocated debt quotas. In case of a sharp fall in property prices, the capacity of firms to refinance could be jeopardised, as property is used as collateral for 30% to 40% of corporate bank borrowing.

In the coming years, an increasing share of investment is likely to stem from China's three "policy banks". These institutions were recapitalised with around USD 80-90 billion of new funds in 2015 and are tasked with undertaking government-directed investment. Policy banks can lend up to 18 times their registered capital. Two of the institutions, the China Development Bank and the Export-Import Bank of China, are expected to invest heavily in the One-Belt-One-Road Initiative, while the Agricultural Development Bank of China will continue to focus on investment projects that improve rural living standards.

New sources of corporate finance need to be further developed

China's financial system is predominantly bank-based, with around 70% of new financing in 2015 coming from banks. While the sector remains heavily dominated by China's large four state-controlled institutions, recent government reforms, such as the licensing of new private banks, are likely to heighten competition. In addition, further development of non-bank funding sources is necessary to meet the needs of the innovative and service-based firms being promoted under China's 13th Five-Year Plan.

Young innovative firms often have difficulty accessing finance in a bank-based financial system, due to the lack of a proven track record and limited internal funds or collateral. Using China's national definition of SMEs, about 54.5% of SME bank loans were collateralised in 2014, up from 50.6% in 2009. As a remedy, SMEs tend to provide financing support to one another via credit guarantees or commissioning loans through the banking system or third parties. This creates a risk that defaults by one firm may be transmitted to others, potentially triggering further business failures. Moreover some businesses (especially microbusinesses experiencing difficulties in getting a bank loan) often seek alternative financing from the shadow banking system, at much high interest rates than the formal financing system.

To counter these problems, Chinese authorities eased credit conditions for SMEs by broadening the types of assets that qualify as collateral, promoting development of state-owned companies to guarantee SME loans, and encouraging development of microfinance companies to cater to the needs of small businesses. In 2014, 8 791 such small credit companies were in operation, providing about CNY 942 billion of loans to small businesses. In addition, Chinese authorities implemented a number of measures to cut non-interest costs associated with bank loans. The average loan fee charged to SMEs declined from 2.3% of the total value of the loan in 2013 to 1.4% in 2014.

While standard bank loans remain the most widespread source of finance for small and micro firms, alternative financing instruments are progressively gaining in importance. Internet financing platforms, like peer-to-peer (P2P) finance, microfinance and crowdfunding, have grown rapidly in recent years. The licensing of third-party payment businesses in 2011 was instrumental in the rapid growth of P2P lending. While market regulations need to be tightened in response to a high incidence of fraud in the sector, the government issued draft new rules on Internet financing in July 2015. Factoring and leasing are also gaining more traction as alternative sources for SME finance. While uptake is still limited to a small subset of SMEs, especially medium-sized businesses, the fast growth of these instruments shows promise and suggests that asset-based finance may soon become a viable finance solution for more SMEs in China.

China's equity markets have also begun to play a larger role in financing firms, with equity fundraising on China's stock markets rising in the first half of 2015 (before initial public offerings were suspended in July 2015). Moving from an approval-based to a registration-based system for initial public offerings (IPOs) in March 2016 is an important step towards allowing the market to play a greater role in allocating resources. The regulatory focus will shift from pre-listing approval based on profitability and prospects to post-listing information disclosure. The transition is expected to be gradual, with the government retaining some control over pricing of IPOs. The market for equity financing has also become more active for SMEs, with the establishment in 2012 of the National Equities Exchange and Quotations (NEEQ), which offers financing instruments specific to small businesses.

The corporate bond market has also expanded rapidly over recent years, with particularly strong issuance since 2013, when commercial banks were first allowed to issue corporate bonds for the first time. Interest rate spreads between corporate and government bonds fell to very low levels in late 2015, which is good for issuing firms. However, any repricing of risk due to changes in investor perception about implicit government guarantees or the financial health of corporations could increase debt-servicing costs and prompt further defaults. The bond market still has ample room to increase its depth and the variety of products offered. In addition, it remains segmented, with corporate bonds issued on the exchange market and financial bonds on the interbank market. As the two markets are supervised by different regulators, there are co-ordination issues. A new office, set up in January 2016 under the State Council to co-ordinate between the central bank and the three regulators for banks, securities and insurance will mitigate these issues.

Key recommendations

- Enhance financial stability through measures such as provisioning for actual bad loan exposures, including off-balance-sheet loans.
- Reduce financing costs by, for instance, lowering the reserve requirement ratio and enhancing competition in the banking sector.
- Phase out implicit government guarantees to public entities so that all firms compete on a level playing field with regard to finance, regulation, taxation and public procurement.
- Allow orderly defaults of enterprises to facilitate better pricing of risk.
- Safeguard an orderly access of private firms to capital markets by avoiding overly restrictive rules on new listings and foreign ownership, and ensuring strong regulation of insider trading and corporate governance.

4 Progressively liberalising the capital account

China has recently committed to opening its capital account, which could greatly improve the effectiveness of investment. While associated reforms are already well underway, three challenging reforms still lie ahead: completing capital account convertibility and the internationalisation of the Chinese currency; improving the monetary transmission mechanism and the efficiency of capital markets; and fully opening up the financial services sector. Careful sequencing of these reforms will be essential to ensure an orderly liberalisation of capital flows.

Capital account opening has the potential to greatly boost the effectiveness of investment

Open and transparent capital flow channels are vital to draw in investment. If done right, the opening up of China's capital account will allow China to benefit from lower funding costs abroad and entry of foreign firms as long as rates of return are higher in China than elsewhere. This will lead to better allocation of resources, improved domestic economic and financial efficiency, higher productivity via greater competition in the market for corporate control, and enhanced domestic access to credit. Ultimately a more open capital account will contribute to the country's attractiveness to foreign investment and its future economic growth and development.

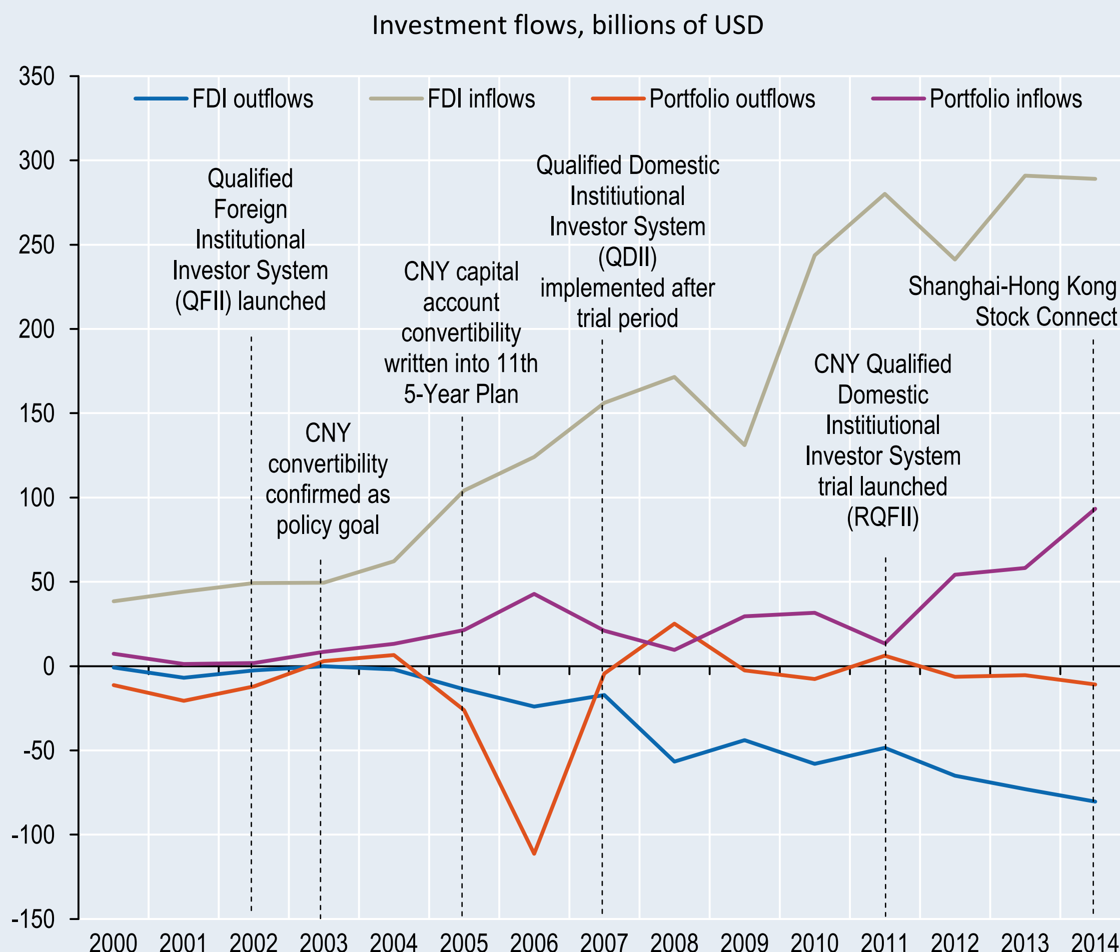
China's significant progress in capital account liberalisation is generating considerable interest and attracting wide recognition (Figure 4.1). Inflows of direct investments have been increasing considerably over the past decade due to new free trade treaty agreements, although there is still an approval process, as well as restrictions in various sectors (see Chapter 5). At present, foreigners can access China's capital markets through various routes, such as the Qualified Foreign Institutional Investor scheme. More recently, many foreign monetary authorities have signed foreign exchange swaps with the People's Bank of China (PBoC). In the Shanghai Free Trade Zone (launched in 2013 as a laboratory for reforms, including capital account liberalisation), free trade accounts were announced in mid-2014, allowing free cross-border transfers of funds.

The regulatory and institutional sides of the reforms are also important. Steps need to be taken to upgrade statistical surveillance, create a new supervisory framework, and ensure that the prudential measures adopted are not distortive. More recently, 2014 marked the launch of the Shanghai-Hong Kong Stock Connect and 2015 the launch of the Mainland-Hong Kong Mutual Recognition of Funds. In 2016, the Shenzhen-Hong Kong Stock Connect is expected to be launched.

While this reform programme is already well underway, three challenging policy reforms lie ahead: completing capital account convertibility and the internationalisation of the Chinese currency; improving the monetary transmission mechanism and the overall efficiency of capital markets; and completing the opening up of the financial services sector (see Chapter 3).

FIGURE 4.1. **CHINA HAS BEEN STEADILY LIBERALISING INVESTMENT INFLOWS AND OUTFLOWS**

Investment flows, billions of USD



Note: Qualified Foreign Institutional Investor System (QFII) is a quota system that allows on a selective basis global institutional investors to invest in CNY denominated capital market; Qualified Domestic Institutional Investor System (QDII) is a quota system that allows institutional investors in China to invest in allowable foreign securities; CNY Qualified Domestic Intuitional Investor (RQFII) is an expanded QFII that allows for settlement in offshore CNY.

Source: OECD analysis based on State Administration of Foreign Exchange of China (2015).

Monetary policy transmission can be improved

Monetary policy has not played an important role in capital formation in China and, in general, monetary transmission has not been very effective, as borrowers are mostly SOEs and LGIVs. In October 2015, the PBoC scrapped the deposit-interest-rate ceiling, about two years after it had scrapped the lending-interest-rate floor. This has been a positive move towards market-based pricing for credit and has largely ended a subsidised credit system that channelled household savings at low cost into state-guided borrowing for investment. One result, however, has been to widen credit spreads for private businesses, but not for SOEs and other public borrowers, which continue to enjoy implicit guarantees (see Chapter 3). Recent defaults, including those of some SOEs related to missed payment on interest or principal indicate that there is now a greater willingness to gradually remove implicit guarantees.

Going forward, with the role of monetary policy increasing, it will be important to properly communicate such policy, including exchange rate measures, to stabilise market expectations, allow forward-looking price formation and reduce shock-induced volatility. This has been underscored by recent market jitters following concerns about the slowing economy. Fears that the slowdown could be more pronounced than expected prompted a sharp fall in domestic stock markets in the first weeks of 2016, triggering weakness in all major global equity markets.

A more flexible currency is a prerequisite to opening up the capital account

Greater flexibility of the Yuan renminbi is crucial to making it a shock absorber in light of China's

capital account opening. Exchange rate flexibility was increased in August 2015, accompanied by a 1.8% devaluation against the US dollar. Expectation of further Yuan renminbi depreciation triggered capital outflows and prompted the authorities to step in to defend the currency, resulting in a sharp decline in foreign exchange reserves. The authorities also imposed reserves for currency derivatives. Further measures, including more rigorous monitoring of foreign exchange purchases by businesses and individuals and a crackdown on illegal foreign exchange transactions, curbed capital outflows and limited the decline in reserves. In the transition from a daily fixing mechanism to a market-based exchange rate system, a trade-weighted basket peg can help to anchor expectations and damp output fluctuations (Yoshino, Kaji and Asonuma, 2014). In fact, in response to the start of monetary tightening in the United States, China's authorities have announced the publication of a trade-weighted currency index (the CFETS RMB Index) in an attempt to broaden market focus from the CNY-USD bilateral rate.

Carefully sequencing capital account opening will be crucial

As the government pursues these reforms, the recent financial crisis and persistent global financial imbalances have highlighted the importance of carefully sequencing financial liberalisation. This includes establishment of prudential regulation to protect against short-term speculative capital flows; overall strengthening of regulatory institutions, in particular better co-ordination among regulatory agencies; deepening of domestic capital markets; and careful management of public and corporate debt in foreign currency.

As China advances this agenda, it will be important to find the right balance between liberalising the financial sector and safeguarding financial stability. Considering the likely global implications of opening such a large financial market, it will be important to conduct this process in an open and transparent manner. Here, China can benefit from the experience of OECD countries: Turkey liberalised outward direct investment and portfolio investment at the same time; Sweden liberalised operations in Treasury bills and longer-term government bonds together; and Italy and Ireland liberalised operations in equities and bonds in tandem rather than in sequence. Several countries, including France and Norway, maintained restrictions on lending to non-residents in local currency until the last stage of liberalisation, for fear of facilitating speculation against the currency. Such steps can be discussed in an open manner through the usual monitoring mechanism, and countries can obtain international endorsement for their sequencing steps through the same mechanism.

China could also benefit from adherence to the OECD Code of Liberalisation of Capital Movements (OECD, 2011a), which could provide a multilateral commitment device and a transparent dialogue platform for the necessary reforms. Such adherence will serve as an open and positive signal to global capital markets of China's commitment to liberalisation in the long term. Used by all OECD countries and a growing number of emerging economies that have adhered to it, the Code has proven to be an effective way of framing a concrete plan towards progressive liberalisation, by systematically defining capital flow measures and a transparent list of reservations from them. Such plans have been designed to fit countries' policy priorities in global financial markets.

The Code favours gradual liberalisation, which allows each Adherent to abolish restrictions at its own pace. It can serve China as a sequencing tool. The Advisory Task Force on the Codes (ATFC) is a broad forum of discussions for the community of Code's Adherents. China can benefit from actively participating in this forum, where it can share liberalisation plans, and peers can share views and concerns in an open manner.

Key recommendations

- Prioritise currency flexibility and currency convertibility.
- Continue to raise transparency on the PBoC's exchange rate policy.
- Once greater exchange rate flexibility has been achieved, allow overseas portfolio investments by residents and facilitate foreign investment by private firms.
- Persevere with the efforts toward further capital account openness.
- Consider adhering to the OECD Code of Liberalisation of Capital Movements.

5 Improving framework conditions for more effective private investment

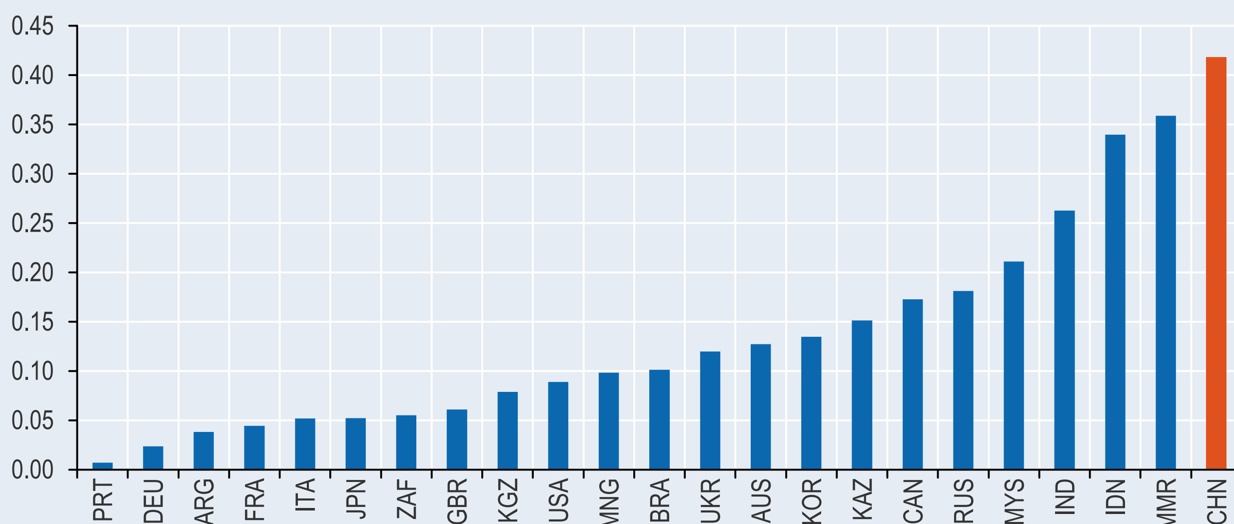
China has made important progress to attract and promote private investment, and the government is determined to reform further to let the market play a greater role in the economy. This will involve greater reliance on market-based pricing, opening up previously off-limit industries to private and foreign entry, strengthening competition policy, and creating a more level playing field for non-state-owned market players, as discussed in Chapter 6. These efforts will help create an environment more conducive to domestic and foreign private investment and would make it easier for Chinese firms to upgrade and pursue their internationalisation strategies. To attract more private investment specifically to research and development, China will also have to revamp its innovation policy framework.

A competition-friendly regulatory environment can help boost investment

The Chinese government is determined to make the regulatory framework more conducive to competition. Administrative simplification, the abolishment of price controls and the opening up to private capital industries that had previously been off limits all suggest that the market is to be given a greater role. Notably, with the abolishment or delegation to subnational level of over 350 administrative procedures, it has become easier to do business in China. This is particularly important for SMEs, which tend to suffer disproportionately from cumbersome administrative procedures. Also, in January 2015, the NDRC announced that it will lift price control on 24 commodities and services including tobacco leaves (although a minimum price will remain in place to protect farmers), railway bulk cargo, parcels, privately funded cargo, passenger transport, domestic air cargo, passenger freight of some airlines, and port service fees (including fees on container loading, ship rubbish treatment and water supply). Furthermore, the first banks established on private initiative started their operation in 2015.

These important initiatives notwithstanding, the need for further reform remains substantial. Competition remains low in many sectors, particularly in network industries. Introducing competition into, for instance, the energy sector and shifting towards retail prices that reflect actual costs of generating, transmitting and distributing electricity and incorporate the environmental costs of carbon-generated energy are key ways to enhance efficiency. Also, in some network sectors, incumbent enterprises, mostly very large ones, inhibit entry by new firms and thereby constrain the scope for innovation. One example is the digital economy, where innovation by smaller firms is inhibited as they have no

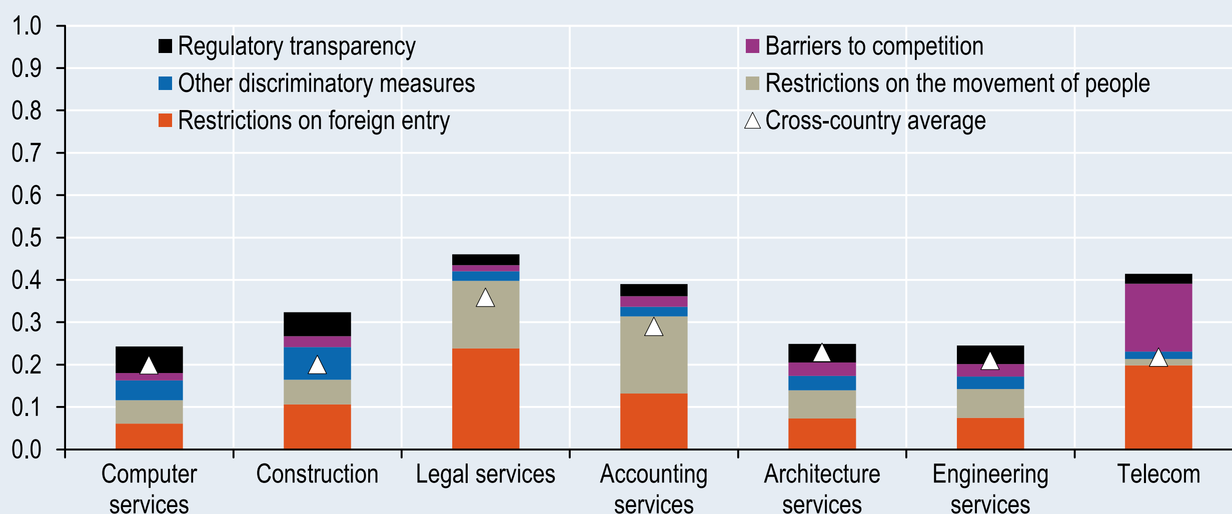
FIGURE 5.1. **CHINA MAINTAINS A RELATIVELY RESTRICTIVE REGIME FOR FOREIGN INVESTORS**
FDI Regulatory Restrictiveness Index, from 0 (open) to 1 (closed), 2014



Source: OECD FDI Regulatory Restrictiveness Index database, http://www.oecd.org/investment/fdiindex.htm.

Figure 5.2. **China imposes relatively strong restrictions on trade in services sectors**

Services Trade Restriction Index (STRI), from 0 (least restrictive) to 1 (most restrictive)



Note: The cross-country average takes into account all countries included in the STRI database, i.e. all 34 OECD Members, plus Brazil, China, Colombia, India, Indonesia, Latvia, Russia and South Africa. Measures are recorded on a Most Favoured Nations basis, and preferential trade agreements are not taken into account.

Source: STRI database, www.oecd.org/tad/services-trade/services-trade-restrictiveness-index.htm.

access to the major Internet platforms owned by a couple of large enterprises. Moreover, Internet fees are high, speed is low and consumers often have no choice of provider, as networks are not shared.

The opposite problem applies to manufacturing industries and some services sectors, such as retail or land transportation, where competition is fierce and companies engage in cut-throat price competition rather than innovation, endangering product quality and safety. This race to the bottom often leads to counterfeiting and ignoring product safety regulations. Establishing and enforcing standards while raising consumer awareness and enhancing consumer protection would help promote fair competition, provided such efforts do not unduly raise barriers to entry.

Effective competition also hinges on a strong competition law and policy framework. Competition enforcement should apply the same criteria to both domestic and foreign firms, and China should continue to work towards applying international best practices in competition policy. The China Law Press has recently published over 50 executive summaries of the OECD Competition Committee Roundtables, which will help Chinese competition agencies to ensure best practices in their competition policy. With the rise in cross-border business activities, good co-operation between Chinese competition authorities and those in other countries has become crucial to ensure a level playing field for firms. Large costs can arise from a lack of co-operation and co-ordination, such as duplicate investigations and a sizable risk of inconsistent decisions. Governments can generate substantial benefits by removing these costs through improvements in enforcement of competition laws across borders. The OECD has played a pivotal role in fostering the co-operative environment in the competition field, including through the Recommendation on International Co-operation in Competition, adopted in 2014 (OECD, 2014c). Adhering to this recommendation could significantly strengthen the ability of China's competition authorities to fight anti-competitive behaviour by multinational enterprises.

Foreign direct investment can boost competition and international knowledge spillovers

China has made impressive progress in attracting foreign investment over the past decades. Between 2000 and 2014, annual foreign direct investment inflows averaged 3 ½ percent of GDP, boosting the stock of foreign direct investment to USD 2.7 trillion at the end of 2014, equivalent to 26% of GDP. While this is in line with other large developing economies and on a par with some of the largest OECD economies, it is likely below China's potential level, given the size of its economy and long-term growth prospects.

One reason for this mediocre performance could be strong competition from other fast growing markets in attracting foreign investment. OECD

investors, for instance, have, on average, invested less in China than in some of the high-growth economies in Southeast Asia. Surveys among investors highlight a number of potential reasons, including concerns over intellectual property rights (IPR), the lack of transparency in public procurement, burdensome regulations and the lack of a level playing field between foreign and domestic enterprises (PwC, 2013).

According to the OECD FDI Regulatory Restrictiveness Index, China is one of the countries that have most liberalised their statutory restrictions on international investment over the past two decades. Yet, despite this impressive reform effort, China still remains one of the most restrictive countries for foreign investors (Figure 5.1). Foreign equity limits still apply in numerous sectors and all proposed foreign investment projects must be submitted for screening and approval conditioned on net economic benefits to the Chinese economy.

In particular, many service sectors remain partly off limits to foreign investors (Figure 5.2). China's openness to trade in services is governed by the Catalogue of Industries for Foreign Investment. While foreign investment is encouraged in parts of the construction sector, some computer and engineering services, the management of railway infrastructure, road freight, parts of maritime transport, parts of the distribution sector and accounting, it is prohibited in most of the motion picture and broadcasting sectors as well as in postal and domestic express services. In other service sectors, foreign direct investment is permitted, but is subject to varying conditions. Examples of restrictions include labour market tests for workers seeking to provide services in China on a temporary basis, preferential treatment of domestic suppliers in public procurement, and limitations on cross-border mergers and acquisitions.

Open and efficient markets for services are fundamental to underpin participation in global value chains and, hence, to facilitate the diffusion of new technologies (OECD, 2015c). In the case of China, a key risk is that low productivity in some domestic service sectors indirectly constrains productivity growth in more dynamic downstream sectors. OECD work shows, for example, that a more open and well-regulated telecommunications sector is associated with higher mobile and broadband penetration and lower prices of telecommunications services, which in turn are associated with more exports of both manufactured goods and services. A 10% increase in the fixed broadband penetration rate is associated with about 1.5% more exports of cars and about 1.8% higher exports of computer services on average, all else being equal.

While investment treaties are typically used to protect established foreign investments, they can also be an effective means to foster investment liberalisation and secure access to foreign markets. With over 120 treaties concluded, China has a broad treaty network. While most of these do not contain liberalisation provisions, China's

FIGURE 5.3. **CHINA'S INNOVATION PERFORMANCE LAGS BEHIND WHAT BUSINESS R&D SPENDING WOULD SUGGEST**

Triadic patents and business R&D expenditure, 2014

Source: OECD calculation based on OECD Main Science and Technology Indicators Database, Eurostat Science, Technology and Innovation Databases, and UNESCO Institute for Statistics Science, Technology and Innovation Databases.

recent treaty practice shows that this is changing. Many of the treaties that China is currently negotiating are likely to include important investment liberalisation provisions, including the Regional Comprehensive Economic Partnership as well as agreements with the United States and the European Union. China has also signed a number of free trade agreements with investment chapters, some of which, such as those with Australia and Korea, contain liberalisation provisions.

Stronger private investment in R&D and innovation requires improvements in China's innovation policy

Chinese gross expenditure on research and development (GERD) has constantly increased over the last decade, from 1.22% of GDP in 2004 to 2.05% of GDP in 2014. OECD data suggests that countries with a higher share of GERD funded by the private business sector tend to have better innovation outcomes. Although the Chinese business sector accounts for 75% of China's GERD, the domestic private enterprise sector accounts for less than a third of this share, which partly explains why China's innovation performance lags behind (Figure 5.3).

The government's call for Mass Entrepreneurship and Mass Innovation focuses on encouraging private sector investment in R&D and innovation more broadly. Achieving this goal will require improvements in the general regulatory framework to strengthen competition, as discussed above, and also improvements in conditions that are more directly linked to firms' innovation activities. This includes in particular better protection of IPR. To strengthen IPR protection, China has increased the number of courts handling IPR disputes, launched information-sharing platforms on IPR law enforcement and plans to revise its patent and copyright laws. Stronger IPR protection is crucial not only for incentivising firms to invest in innovation, but also for improving the valuation of their intangible assets, which will help to attract third-party financing. It should also enhance China's position to tap into foreign R&D funding which, despite some increase in recent years, accounted for less than 1% of China's business expenditure on R&D in 2014.

Furthermore, China needs to continue the development of capital market institutions tailored to finance innovation (see Chapter 3). Increased openness and a reduction in IPO listing requirements in capital markets such as ChiNext, over-the-counter exchanges, and stock exchanges will strengthen the exit channels for venture capital. International and Chinese experience suggests that the most successful model for government support to private venture capital is government co-financed hybrid venture capital arrangements in which the government invests passively as a limited partner with capped returns in funds focused on neglected market segments.

In additional, it is fundamental to improve the design of government support measures in order to increase their effectiveness and reduce fiscal costs and possible unintended effects. In the current context, it is important to ensure that private enterprises, especially young SMEs, are not put at a disadvantage relative to incumbents, for instance with respect to the eligibility for R&D tax incentives and other government support measures.

Key recommendations

- Further reduce the costs of doing business, including the time required to register new businesses.
- Consider making use of the OECD's Competition Assessment Toolkit to identify unnecessary restraints on market activities and develop less restrictive alternatives.
- Continue to explore the use of investment treaties to liberalise inward and outward foreign-investment flows.
- Foster the development of market institutions to finance innovation.
- Improve the design of government support measures for R&D and innovation and provide national treatment for foreign R&D investors.
- Increase the resources available to the agencies dispensing government funding and rebalance outlays towards fundamental research.
- Focus more on the quality of academic research output, instead of only the quantity, when evaluating performance.
- Avoid promoting "national champions" in new strategic sectors.
- Strengthen IPR enforcement by raising awareness of laws and increasing penalties for infringements.

6 Improving the governance of state-owned enterprises

The state is by far China's largest owner of enterprises, with the share of SOEs in total economic activity estimated at close to one-third. The efficiency of this sector is therefore of overriding importance to continued growth and prosperity of the economy. Chinese authorities have recently embarked on a reform process to align China more closely with internationally accepted good practices, such as the OECD Guidelines on Corporate Governance of State-Owned Enterprises, and to broaden ownership in currently state-owned or state-controlled sectors. These steps will also help to make China more attractive to foreign investors by improving competitiveness and allowing foreign enterprises to partner with individual SOEs. However, additional measures will be needed to safeguard a level playing field and ensure that SOEs do not benefit from undue advantages.

SOEs play an important role in the Chinese economy, but their performance is sometimes disappointing

The efficiency of SOEs is of decisive importance to the Chinese economy. In absolute terms, no single country has a larger number of SOEs than China: by the latest estimate, more than 150 000 legal entities are owned by the state, around 38 000 of them by the central government.

Like most other emerging economies, China has a strong concentration of SOEs in the utilities, mining and minerals, and financial sectors, which are directly responsible for delivery of public services and/or of major importance for downstream competitiveness of other parts of the business sector. Slightly more unusual, there is also strong remaining ownership of SOEs in parts of the manufacturing sector that are considered strategic. Overall, more than 25% of the manufacturing output and anywhere between 10% and 100% of various segments of the service sector are controlled by the state (Figure 6.1).

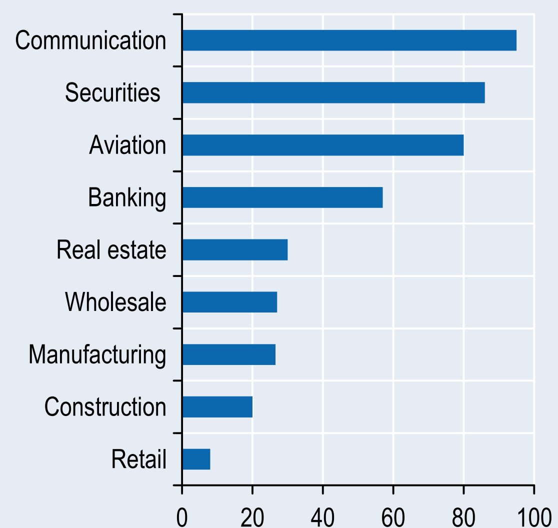
But the financial performance of Chinese SOEs is not impressive. According to some estimates, they earn profits at about half the level of comparable private firms. This has been ascribed to a mixture of outright inefficiencies and the fact that a number of SOEs seem to be burdened by undisclosed public policy obligations. Overall, this may also reflect a more general misallocation of economic resources, as indicated by evidence of overcapacity and overleveraging in some state-controlled sectors.

Governance reform can help improve the performance of SOEs

An effective corporate governance system – one that affects the environment for access to capital, the allocation of resources between competing ends and the monitoring of investments once they are in place – is essential to China's ambitions to boost the role of market forces in optimising resource allocation.

FIGURE 6.1. **SOEs ACCOUNT FOR A SIZABLE SHARE OF ECONOMIC ACTIVITY IN SECTORS THAT SHOULD BE MORE OPEN TO COMPETITION**

Percentage share of SOEs in revenue, output or assets of the respective sector



Note: The data refer to assets in the financial industry and revenue or outputs in other sectors. Estimates shown in the figure do not take into account enterprises with significant but not dominant state ownership and, in this sense, they present a cautious estimate of state ownership.

Source: *OECD (2015d), State-Owned Enterprises in the Development Process,* *http://dx.doi.org/10.1787/9789264229617-en*.

Efforts to reform the governance of SOEs are now underway. The current administration has presented reform proposals to develop a modern corporate system and improve the supervision and administration of state-owned assets. These

proposals appeared in the Decision of the Central Committee of the Communist Party of China on Several Major Issues Concerning the Comprehensive Deepening of Reform, which was adopted in November 2013 at the Third Plenary Session of the 18th Central Committee of the Communist Party of China. More details of the reform plans were disclosed through the Guidelines on Deepening SOE Reform, issued by the Chinese government on 15 September 2015.

The stated purpose of the reforms is to move the economy towards greater market orientation, modernisation and internationalisation. In striving for greater modernisation, in particular, policy makers intend to make centrally owned SOEs "stronger, better and larger". At the same time, the Guidelines highlight that one of the main motives driving the reform is not only to solidify "law-based" governance of SOEs but also to "strengthen and improve the leadership of the Chinese Communist Party over SOEs". Also central to the plans is a push to improve the operation and management of state-owned capital. To this end, the ownership agency, SASAC (State-owned Assets Supervision and Administration Commission of the State Council), shall categorise all the SOEs in its portfolio as either commercial or public-policy focused.

The proposed governance reforms are broadly consistent with the OECD Guidelines on Corporate Governance of State-Owned Enterprises (OECD, 2015e), which were recently revised with China's active participation. Particularly recommended are a stronger market orientation and a clarification of the objectives that specific SOEs are expected to pursue. The central position of the Communist Party (as opposed to institutions operating under the government's delegated authority) differs from international standards. But if these powers are exercised via transparent ownership policies and implementable corporate objectives, then the reform proposals would be consistent with and supported by OECD's Guidelines. Safeguarding SOEs and their management from ad hoc political interventions will be of major importance.

Measures to professionalise boards of directors are another urgent reform priority for China's SOE sector. Progress has been made in recent years in establishing boards overseeing most of the SOE corporate groups under SASAC's auspices, but they mostly consist of executives from the group companies and politically connected individuals. Individual board members and professional managers at SOEs with incentive schemes comparable to those in the private sector, would likely enhance efficiency and boost profitability (OECD, 2013b). Mixed ownership of SOEs could also be a means to professionalise and diversify boards. Better board performance will also hinge on putting in place a well-structured system for performance monitoring, which in turn requires the goals of the firm to be clearly specified.

Opening the SOE sector to private investment

In the Decision of the Central Committee of the Communist Party of China on Several Major Issues Concerning the Comprehensive Deepening of Reform, the Chinese government also made

proposals to promote a mixed-ownership economy. With the intent of increasing the market orientation of SOEs that are classified as commercial, policy makers will allow private actors to hold capital shares in those enterprises that operate in sufficiently competitive sectors. This excludes, in particular, commercial SOEs carrying out strategic projects related to national security or operating in industries considered crucial to the national economic lifeline.

The government has also announced plans to increase private investment in many sectors hitherto dominated by the state. In the first half of 2014, several large SOEs in the energy sector announced their intention to divest parts of their assets, including in the petroleum sector. Railway construction and telecommunications infrastructure are other tightly state-controlled sectors in which the authorities are seeking private investment. Even so, current proposals seem to be rather modest in scope and are unlikely by themselves to fundamentally reduce the role of SOEs in the economy. So far, there has been no suggestion that the regulatory protection SOEs enjoy in a number of sectors should be pared back. The status quo is somewhat problematic from the perspective of ensuring the level playing field between private firms and SOEs that is an essential element in a mixed economy.

Key recommendations

- Establish clear specifications of the state's commercial and strategic goals for different types of SOEs coupled with a continued effort to categorise SOEs as either commercial or tasked with pursuing public-policy goals.
- Continue efforts to reform SOE boards of directors with a view to enhancing both their professional competences and their capacity to exercise objective and independent judgment.
- Ensure that commercial operations of SOEs take place on a level playing field, where SOEs are neither unduly advantaged nor disadvantaged relative to private competitors.
- Broaden the ownership base of SOEs, including by listing an increasing number of companies on stock markets.
- Rely on securities regulation, stock market rules and market mechanisms to ensure continued improvements in governance and transparency.
- Reduce state ownership in commercially-oriented service industries such as retailing, hotels, restaurants and construction.
- Encourage types of investment that create long-term value by SOEs at central and local level.

7 Promoting responsible business behaviour by Chinese corporations

China has made considerable progress in promoting responsible business conduct (RBC) at home and abroad. However, efforts to date have lacked a comprehensive and systematic approach. A comprehensive RBC policy addressing a broad range of material risks concerning the environment, corruption, competition, and social and human rights should be developed and promoted across all sectors. In addition, international co-operation on RBC could help China develop practical ways of preventing and addressing adverse effects of business operations both in China and in countries that host Chinese investment, particularly in weak governance zones. The experience of countries which have adhered to the OECD Guidelines for Multinational Enterprises, the leading instrument to encourage RBC, may prove useful as China aims to broaden the scope of its approach to RBC and further prevent and address non-compliance by companies. Similarly, countries that have acceded to the Anti-Bribery Convention have demonstrated stronger enforcement of their bribery laws.

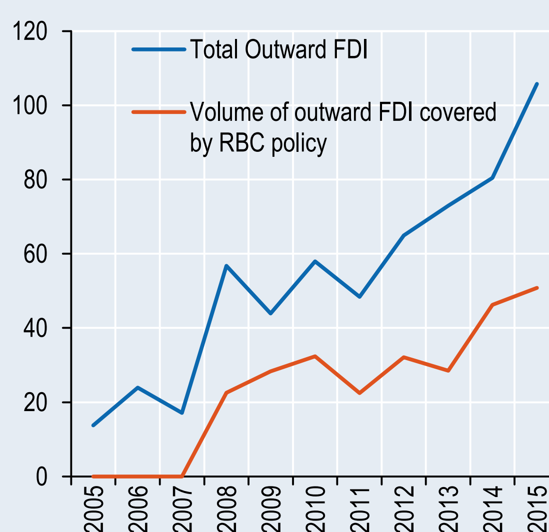
China has made considerable progress in promoting responsible business conduct

Following decades of attracting investment into China and with rapidly growing Chinese outward investment, China's business and government sectors are increasingly aware of the benefits of responsible behaviour by companies and the risks associated with misbehaviour. These risks include legal liabilities and damage to a company's reputation, which can all adversely affect long-term profitability and prospects. Safety in production, risk management and promoting integrity in business are major concerns of China's policies regarding investment in China and overseas. Chinese companies and investors have a strong incentive to factor social responsibility into their long-term business strategy in order to retain the licence to operate both in China and abroad.

The Chinese government has taken measures to regulate companies' business conduct, and has developed a number of guidelines, for investors in China and Chinese companies operating abroad. These guidelines set out expectations, requirements and recommendations to promote RBC. The Company Law of 2005 calls on enterprises to "observe social morals and commercial ethics" and "undertake social liability". The State-owned Assets Supervision and Administration Commission of the State Council has issued Guidelines to the State-owned Enterprises Directly under the Central Government on Fulfilling Corporate Social Responsibilities. The Shenzhen Stock Exchange (in 2006) and the Shanghai Stock Exchange (in 2008) issued social responsibility and environmental guidelines and disclosure requirements for listed companies. Confidence of investors that the capital they provide can be protected from misuse by corporate managers, board members or controlling owners is an important factor in the development and proper functioning of capital markets. Corporate governance plays a crucial role to help build this environment of trust, transparency and accountability for fostering long-term investment, as indicated by the international benchmark the G20/OECD Principles of Corporate Governance (OECD, 2015f).

FIGURE 7.1. **CHINA IS EXPANDING THE COVERAGE OF ITS RBC POLICIES**

Outward FDI covered by RBC policy in percent of total outward FDI by China



Note: The share of outward FDI covered by RBC policy is estimated on the basis of the sectoral shares of outward mergers and acquisitions covered by various RBC guidelines.

Sources: OECD FDI Statistic database, Dealogic M&A Analytics, Secretariat calculations.

Policies and recommendations to promote RBC among outward investors now cover a range of sectors such as the timber and forestry industry, textiles, enterprises owned by the central government and, more recently, companies involved in the global minerals supply chain. Chinese companies operating in the mineral supply chain abroad are encouraged to incorporate fair operating practices and address human rights and labour issues, as well as to protect the environment and promote community engagement. In addition, China criminalised the bribery of foreign public officials in 2011. When mapped against China's outward FDI, the country's RBC policies have expanded from virtually no coverage in 2007 to around 50% in 2015 (see Figure 7.1).

These efforts are also taken up by industry organisations like the China National Textile and Apparel Council (CNTAC), which is the former Textiles and Apparel Ministry in China. The latter was reorganised in the 1990s and is today the national industry authority responsible for the textile and apparel sector in China. CNTAC undertakes multiple efforts aimed at promoting a responsible textile and garment sector in China. These include establishing and monitoring implementation of the CNTAC code of conduct and management systems for responsible conduct; carrying out research on business benefits of RBC by manufacturers; and providing support to SMEs in the textile and garment sector in China.

But there are still gaps in the legal framework

As China's outward FDI has expanded, it has also become more diversified into new sectors that are not covered in the current RBC policy framework. As a result, the coverage of RBC policies in terms of volume of FDI has started to fall behind, declining from a peak of around 60% in 2009 to 50% today. For example, foreign direct investment by privately owned firms in sectors such as transportation, energy, and finance are not covered under current Chinese RBC policies.

Furthermore, there is some incoherence in the current framework. State-owned firms across all sectors are expected to follow the 2008 Guidelines on Fulfilment of Social Responsibility by Central Enterprises, while privately-owned firms have not been provided with similarly broad guidance. This leads to a different playing field for different types of firms and also risks causing confusion among investors.

Effective implementation of RBC policy is crucial, but difficult

A challenge that China shares with all countries seeking to promote RBC relates to effective implementation. This includes the need for mechanisms to efficiently manage disputes between enterprises and the societies in which they operate. Under the OECD Guidelines for Multinational Enterprises (OECD, 2011b), National Contact Points embedded in adhering countries' governments, are tasked with promoting RBC as well as addressing complaints when companies do not observe the recommendations. This system could serve as a model for China, as it seeks to promote uptake of RBC standards and have impact on the ground.

Additionally, many enterprises find that RBC standards lack a practical approach to help companies actually implement standards into their operations. The OECD provides practical guidance to companies to operationalise RBC standards in specific sectors. These sector-specific approaches have helped promote uptake and implementation, and have been taken on board by some sectors in China. For example, the OECD's guidance to companies on operating responsibly in conflict-affected and high-risk areas in the minerals supply chain are the basis for the recent Chinese Due Diligence Guidelines for Responsible Mineral Supply Chains (December 2015). OECD guidance in the agriculture, garment and footwear, and financial sectors could be similarly incorporated into future Chinese standards and laws.

Combating corruption should be a central element of China's efforts to promote RBC

Promoting RBC also includes addressing the challenge of effectively combating corruption domestically and abroad. China's domestic anti-corruption campaign is an important part of this, but it could be strengthened by enforcing China's foreign anti-bribery laws and enhancing its anti-bribery framework in line with international standards. Chinese companies that engage in corruption abroad are at risk of losing contracts, being blocked from accessing international markets and having no recourse to international arbitration.

The Anti-Bribery Convention (OECD, 2011c) is the keystone of international anti-bribery efforts. It helps countries to advance anti-bribery as a matter of transnational public policy and to enhance trust in the global economy, public institutions and private industries. Accession to this Convention would enhance China's enforcement of transnational anti-bribery measures and facilitate stronger international co-operation in these cases. China would directly contribute to international standards and policy making, and actively participate in monitoring implementation of these standards by its trade and investment partners and competitors.

Key recommendations

- Provide comprehensive RBC standards applicable to all sectors to strengthen confidence in Chinese companies.
- Provide greater incentives for effective implementation of RBC standards.
- Set up a non-judicial mechanism to address complaints related to business conduct.
- Consider acceding to the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions (Anti-Bribery Convention).

8 Fostering green investment

China's strong economic growth has come at the cost of environmental degradation, such as air and water pollution. Containing these negative environmental effects will require the country's manufacturing industries to invest in cleaner production technologies and cleaner energy supply. The Chinese government is making substantial efforts to support such developments, including green procurement, policy support for deployment of renewables and, more recently, promotion of green financing instruments. But additional efforts are needed. Most notably, environmental regulation still remains lax in comparison with OECD countries.

China's strong economic growth has come at a cost to the environment

In China, decades of extensive growth, along with uncontrolled industrial expansion, have led to a neglect of the environment. For example, even though water quality has improved somewhat in recent years, 37% of the country's fresh water system remains inappropriate for contact with human skin. Similarly, even though China has arguably succeeded in slowing the increase in the effect of air pollution on health, the number of deaths due to outdoor air pollution still rose by about 5% between 2005 and 2010, compared to an average 4% fall in OECD countries over the same period (Figure 8.1).

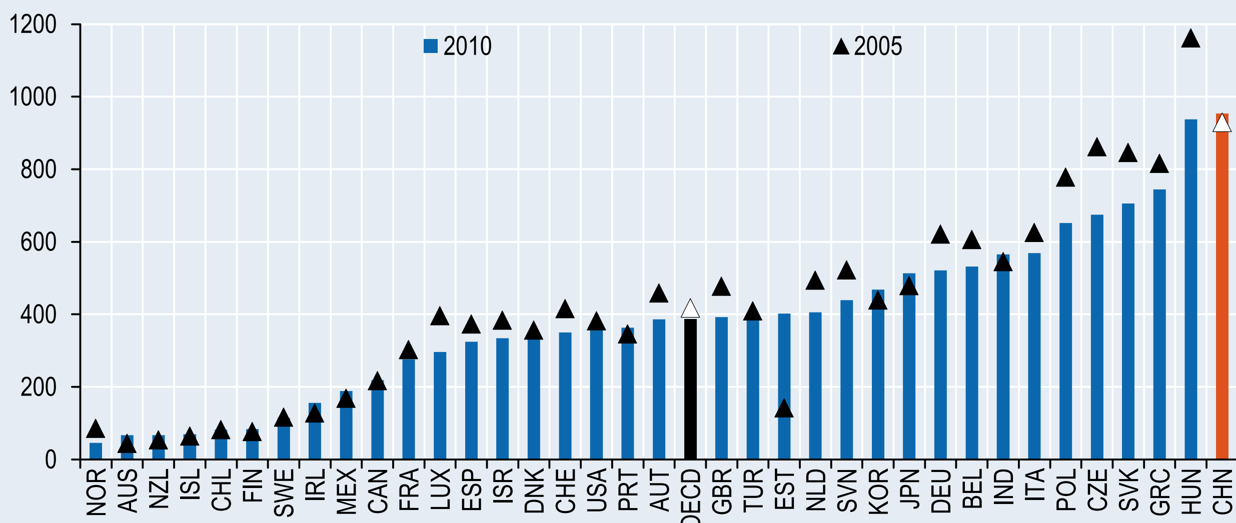
To tackle these issues, the government has identified investment in green infrastructure, especially clean energy, as a top policy priority. The PBoC has estimated that green development in China will require an annual investment of at least CNY 2 trillion in the next five years (about 3% of GDP), with 85% of the financing needing to come from the private sector (PBoC/UNEP, 2015).

Further reducing China's emissions in the energy sector

To date, a large share of increased energy demand in China has been met through rising coal-fired power generation and use of coal in industry, threatening to lock its energy infrastructure into carbon-intensive emissions pathways (IEA, 2015b). As declared in its 2015 (Intended) Nationally Determined Contribution, China intends to achieve a peak in its emissions around 2030. Notably, China's coal demand growth is slowing down. And if low carbon investment policies are coupled with a rebalancing of the economy, then a structural peak in coal demand is possible over the medium term (IEA, 2015c).

FIGURE 8.1. **AIR POLLUTION IN CHINA IS CAUSING A HIGH NUMBER OF DEATHS**

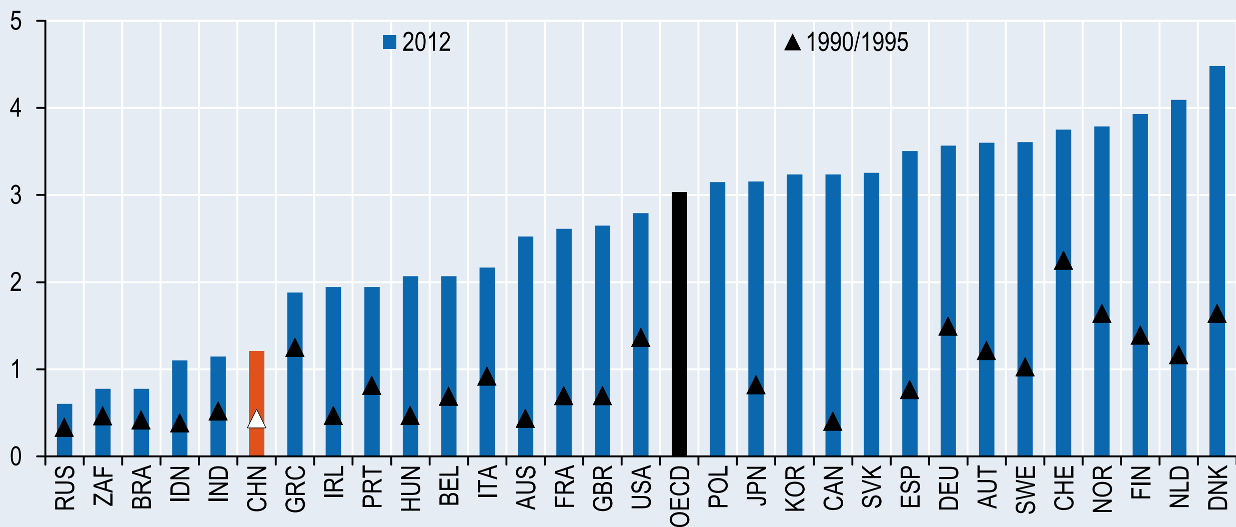
Deaths from ambient air pollution, per million capita



Source: Institute for Health Metrics and Evaluation (2013), Global Burden of Disease (GBD) Visualizations: GBD compare, *http://viz.healthmetricsandevaluation.org/gbd-compare/.*

FIGURE 8.2. **ENVIRONMENTAL REGULATION IS LESS STRINGENT IN CHINA THAN IN OECD COUNTRIES**

Environmental Policy Stringency Indicator, 2012



Note: The higher the value of the indicator, the more stringent the regulatory stance.

Source: OECD (2016), How stringent are environmental policies?, OECD Publishing, Paris, forthcoming.

Still, despite these factors and having one of the world's youngest and most efficient coal-fired power fleets, meeting this emissions target will require a sustained shift in energy production and consumption trends. There appears to be excess investment in coal-fired power generation capacity in China, which will make further decarbonisation more difficult and expensive. Greater effort is required to achieve an emissions path consistent with limiting global warming to 2 °C. This could primarily be achieved through increased efficiency measures as well as higher levels of renewable investment, but also through progressively reducing the use of the remaining, least-efficient coal-fired power generating plants and prohibiting their construction (IEA, 2015b).

Technology upgrading can help clean the manufacturing industry

Widespread pollution is related to inefficient expansion in many heavy industries in previous decades and to excessive use of coal as a source of energy, but also to lax environmental standards and enforcement. Some preliminary OECD estimates show that while the stringency of China's environmental policies has increased in recent years, it remains below that of many OECD countries and is similar to the OECD average level of the 1990s (Figure 8.2). This suggests there is still room to better incentivise firms to improve energy and environmental performance, through both "carrot and stick" policies.

R&D investments can be a key driver of productivity growth and resource efficiency gains, breaking the technological path dependency, which is usually high in the heavy-industry sector. As a big CO_2 emitter in China, the steel industry can play a major role in mitigating climate change and pollution, not only by reducing the carbon emissions of its production processes (e.g. through carbon capture and storage technologies), but also by contributing to the infrastructure of a low-carbon economy. R&D investments in this sector increased by about 50% over 2011-13. While four out of the top ten R&D-performing steel manufacturers are Chinese, only one remains in the list of top ten patent applicants. This shows that effective utilisation of R&D resources is just as important as the amount of resources allocated. In the current context of low profitability of the steel industry, the financial resources available for innovation are scarce and should therefore be used soundly.

The "Made in China 2025" roadmap and a series of recent policy announcements provide guidelines to restructure and upgrade the traditional manufacturing sectors, while promoting the expansion of high value-added activities through entrepreneurship, innovation and market means. As the restructuring process deepens during the 13th Five Year Plan, more resources are likely to be allocated to the emerging production sectors that present new investment opportunities.

Recent OECD work on the linkages between environmental policies, productivity growth and

competition yield further insights that could be valuable to Chinese policy makers as they implement reforms. First, environmental policies, if properly designed, can be made more stringent without hampering aggregate productivity growth. However, at the firm level, only the most technologically-advanced firms register a positive effect on productivity growth from stricter environmental policies, while the less productive firms experience a productivity slowdown. Second, evidence shows that ambitious environmental targets can be pursued in ways that are friendly to competition. Environment-related red tape affects the costs of market entry and slows down the process, and some regulations can discriminate between incumbents and new entrants. Policy makers should therefore aim to design competition-friendly regulations that provide a true level playing field and an enabling environment for the more efficient and cleaner players to enter the market.

China is also using public procurement as a means to foster investment in green technologies. Specific public procurement initiatives have been developed, such as the Recommendations on the Implementation of Environmental Labelling Products in Government Procurement and the first government procurement list for Environmental Labelling Products. These documents, which are launching the Chinese Governmental Green Procurement strategy, require all levels of state bodies, institutions and organisations to give priority to purchasing Environmental Labelling Products and prohibit them from purchasing any product that harms the environment or human health. This specific initiative is managed jointly by the MoF and the Ministry of Environmental Protection and has been included in the OECD collection of best practices on green procurement.

The investment environment for renewable energy can be improved

Success to date in attracting investment has been in part due to the strong policy support China has provided to clean energy infrastructure projects, especially since the 12th Five-Year Plan (2011-15). This has included investment incentives for the deployment of renewable energy, primarily through a feed-in tariff programme; preferential access to financing for solar photovoltaic and wind-turbine manufacturing; and removing restrictions to foreign ownership in power generation (OECD, 2015g).

China’s policy support for clean energy is driven by the country’s fight against local air pollution as well as its international commitments on climate change. Prior to COP21, China released its Intended Nationally Determined Contribution which included, *inter alia*, a target for peaking GHG emissions around 2030 and a target for increasing the share of non-fossil fuels in primary energy consumption to 20% by the same year. Achieving the latter target means adding about

800-1 000 GW of non-fossil capacity (including nuclear, hydro and other renewables), roughly equivalent to all the existing coal-fired power generation plants currently operating in China.

To further boost investment in clean energy China also needs to enhance the enabling conditions for such investment, beyond policies focusing specifically on clean energy deployment. As highlighted by the OECD Policy Guidance for Investment in Clean Energy Infrastructure (OECD, 2015h), a first area for reform relates to electricity markets. The electricity market in China is heavily regulated, with no spot market and power tariffs set by provincial governments. Even where higher tariffs have been awarded to renewable generators (such as through the feed-in tariff scheme), a mixture of competing incentives for grid operators has meant that wind and solar output has sometimes been curtailed in favour of coal-fired generation, despite the latter's higher short-run costs (IEA, 2014). Recent announcements that greater attention will be paid to enforcement of the existing policy for priority dispatch of renewables are therefore welcome. Furthermore, introduction of a carbon price via a national CO_2 emissions trading system now appears likely. Allowing further flexibility for passing through of CO_2 costs (and adjustment of planned running times to reflect CO_2 costs) could help to improve the effectiveness of the carbon price (OECD/IEA/NEA/ITF, 2015).

A second area for reform relates to remaining barriers to international trade and investment in solar and wind energy. This concerns particularly mid-stream manufacturing of equipment such as wind turbines and solar photovoltaic (PV) panels, for which China is a major player. The emergence of global production networks implies that policies aimed at supporting Chinese PV or wind manufacturing companies in midstream segments of the value chain may hinder the profitability of downstream power plant companies looking to deploy the technology. This is because such measures can increase the cost of inputs or reduce overall demand for downstream activities. China has already made welcome progress in this area, for example by lifting limits on foreign ownership for solar and wind-power generation, and removing local-content requirements for wind energy. In 2010, China also removed its tariff on imported wind turbines.

The presence of specific national standards in wind energy in China may hamper international investment in wind energy (OECD, 2015g). Since 2011, China requires all wind-turbine manufacturers to meet and attain national government standards and test certifications in order to be eligible for domestic wind-power projects. Only national certificates are accepted. Since Chinese standards differ from international standards, foreign producers need to adjust their turbine models to meet Chinese standards, which can create barriers to entry for foreign investors. China has also provided substantial preferential access to financing for Chinese solar manufacturers: state-owned banks provided more than CNY 260 billion (USD 40 billion) in preferential loans and credit lines to Chinese solar manufacturers in 2010 alone. The alleged

use of dumping or actionable subsidies has led several countries to impose trade remedies (including countervailing and anti-dumping duties) on solar panels imported from China.

New financial instruments and institutions can help ramp up green investment

The Chinese government is planning to foster green investment through the promotion of new financial instruments and the establishment of related institutions. In July 2015, the PBoC launched the Green Finance Committee (GFC), a multi-sectoral group tasked with investigating green finance reforms. The GFC, comprised of 85 members representing 65% of China's financial assets, has six main areas of research, with working parties addressing issues such as green banks, green bonds, and responsible investment.

Meanwhile, the China Council for International Cooperation on Environment and Development (CCICED) has recommended the creation of a National Green Development Fund (CCICED, 2015), which shares some of the characteristics of green investment banks. If implemented as proposed, the fund would have a capitalisation target of approximately CNY 300 billion (USD 47 billion) and could raise more private capital as required. The fund would focus on providing equity investments to facilitate access to other financing, including bank loans. It would operate on a commercially sustainable basis and seek to pool capital from investors with differing risk and return requirements. Its focus would be on investments in resource efficiency, renewable energy, industrial pollution control and advanced vehicle technologies.

Chinese authorities are taking welcome steps to promote green bonds. In December 2015, the PBoC released final regulations for the issuance and trading of green bonds in China's inter-bank bond market. It also published a Green Projects Catalogue, developed by the GFC and the China Society for Finance and Banking which defines the assets and projects qualified for green bond financing. The definitions cover the areas of energy conservation, pollution control, resource utilisation, clean transport, clean energy and adaptation. In October 2015, the Agricultural Bank of China issued the first Chinese mainland green bond. The USD 1 billion bond, listed on the London Stock Exchange and A-rated by Fitch, is the first green bond denominated in CNY.

Key recommendations

- Move to full market-based pricing for natural gas and coal.
- Achieve a peak in GHG emissions in the energy sector consistent with the 2 °C goal, notably through additional energy efficiency measures, higher levels of renewable investment, and the phasing out of inefficient coal-fired power plants.
- Deregulate electricity prices and avoid preferential electricity pricing for selected industrial users.
- Increase air and water pollution levies and strengthen their legal basis by moving towards a system of explicit pollution taxes.
- Promote a streamlined collection process for pollution levies to ease the burden on local governments and businesses.
- Continue to improve national standards for motor vehicles and fuels by extending high standards in leading cities across the country and gradually phase in still stronger standards in line with technological advances and international best practice.
- Establish targets for a broader range of environmental objectives based on scientific and economic analysis and continue to ensure that local governments are held responsible for achieving environmental objectives.
- Improve national data collection and dissemination of all major pollutants including CO_2 and other GHGs.
- Provide appropriate support to renewable energy investment, avoiding biases between different types of renewable energy sources.
- Address supply bottlenecks with wind and solar energy and continue to promote improved investment co-ordination and grid connectivity
- Remove outstanding barriers to international trade and investment in solar and wind energy, such as divergent technical standards.
- Make greater use of innovative green financial instruments, such as green bonds.

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