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TOWARD A NEW ECONOMIC GROWTH MODEL FOR CHINA



Editors

**THOMAS HELBLING
SONALI JAIN-CHANDRA
SIDDHARTH KOTHARI
KRISHNA SRINIVASAN**

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This digital version of *Toward a New Economic Growth Model for China* has been updated to reflect the following changes:

Chapter 9, Figure 9.3, panel 1, page 162: The labels for “Claims on Government” and “Claims on Depository Corp.” in the legend have been corrected. The “Claims on Government” are represented by the dark blue bars in the figure, while the “Claims on Depository Corp.” are represented by the purple bars in the figure.

Preface

China's economic transformation in the past decades has been one of the most remarkable development achievements. Sweeping reforms since the late 1970s, high investment, and integration into the global economy propelled China's growth, which averaged about 9 percent between 1981 and 2024. The improvement in social development indicators is even more striking: life expectancy at birth has increased from 65 years in 1981 to 79 years in 2025, and hundreds of millions of its citizens have been lifted out of poverty—the World Bank's poverty headcount decreased from around 90 percent to zero over the same period. Chinese firms have emerged as global leaders in technology and innovation in some industries.

Yet China has reached a fork in the road. Economic growth has already been slowing from the high rates of previous decades, and domestic demand has been weak since the property market correction began during the pandemic. More fundamentally, many of the factors that drove China's remarkable ascent are reaching their limit. The growth model centered on rapid capital accumulation, which delivered strong gains in past decades, now faces the law of diminishing returns on investment, while high debt levels have increasingly become a constraint. The property and local government sectors are grappling with the legacy of debt overhang and related financial vulnerabilities.

Exports, meanwhile, cannot remain a major engine of growth. As one of the world's largest economies and exporters of goods, China must increasingly rely on domestic sources of demand. Continuing to depend on export-led growth risks stoking further global trade tensions and geoeconomic fragmentation. Moreover, pressures from the demographic transition on the labor force will weigh on growth and public finances, while a renewed pivot to more government intervention in the economy could dampen business dynamism and future productivity growth.

These challenges underscore the need for a new growth model—one driven by consumption, services, and productivity gains. The high-level direction in the 15th Five Year Plan prioritizes increasing consumption as a driver of growth. The authorities also recognize the importance of rebalancing the economy from goods to services.

Achieving the transition to a new growth model will require wide-ranging reforms. This book, *Toward a New Economic Growth Model for China*, lays out an agenda for much-needed structural reforms and improvements to institutional and policy frameworks that could anchor a new growth model for the Chinese economy. The chapters in the book explore how to reduce high household savings and boost consumption, recalibrate industrial policies, and promote business dynamism and innovation, reforms to modernize monetary and fiscal policy frameworks, and upgrades to financial sector oversight and insolvency frameworks.

We hope this book contributes to an informed discussion of the opportunities and challenges facing the Chinese economy, the reforms needed to underpin a new growth model, and the benefits it would offer to China and the Chinese people. A more balanced Chinese economy, internally and externally, also means a stronger and more resilient global economy.

The book reflects the work of IMF staff on China and integrates lessons from the close engagement with the authorities, including through our regular annual consultations (Article IV discussions) and technical collaboration. We are deeply grateful to all the authors who have contributed to the book, many of them current or former members of the China team in the Asia Pacific Department. Much of the work reflected in this volume was undertaken under the guidance of Gita Gopinath, who also generously provided comments on the book after leaving the Fund. We have also benefited from feedback from colleagues across the Fund through the internal review process. Although not directly involved in preparing the book, Tobias Adrian, Jennifer Elliot, Mark Flanagan, Pierre-Olivier Gourinchas, Matthew Jones, Kenneth Kang, and Martin Kauffman greatly enriched our understanding of the Chinese economy through many discussions over the years.

We are grateful to the Chinese authorities, especially colleagues at the People's Bank of China and the Ministry of Finance, for their constructive engagement over the years and for comments on the manuscript.

Finally, we would like to thank Cheryl Toksoz and Patricia Loo of the IMF's Communications Department, who were instrumental in bringing the project to fruition. We are also appreciative of the excellent administrative support provided by Alessandra Balestieri, Paige Brewer, and Mariam Souleyman, the outstanding research support by Jibingxin Han, and the contributions from Cristian Alonso.

Thomas Helbling, Sonali Jain-Chandra,
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PART I

Introduction

China's Economic Transformation: Exceptional Growth, Mounting Challenges and Reform Priorities

Thomas Helbling, Sonali Jain-Chandra, Siddharth Kothari, Krishna Srinivasan

INTRODUCTION

China has undergone a profound economic transformation since the sweeping market-oriented reforms launched under Deng Xiaoping in 1978. The country is now the world's second largest economy after the United States and the largest when adjusted for purchasing power parity.

Waves of reforms and experimentation underpinned the exceptional economic performance and improvements in social indicators—notably the rapid decline in poverty. China registered double-digit growth rates over an extended period, a performance with few parallels in large developing economies. The economy transformed as successive waves of reform were implemented, with the first wave of rural reforms in the late 1970s focused on decollectivizing agriculture. A second wave occurred in the 1990s that included a restructuring of state-owned enterprises (SOEs), among other significant reforms. A third wave of reforms followed China's opening up to the rest of the world, particularly through accession to the World Trade Organization in 2001, which accelerated its growing footprint in the global economy. These reforms powered growth, eliminated extreme poverty, and lifted living standards while reshaping global trade, supply chains, finance, and technology.

Yet China's remarkable economic expansion has also been accompanied by rising constraints and vulnerabilities. Growth has been highly capital intensive and is increasingly limited by diminishing returns on investment. Also, heavy reliance on investment, especially property and infrastructure investment, has contributed to high and rising local government and corporate debt, which is becoming an economic drag. Demographic changes also weigh on growth and add to fiscal challenges, while declining business dynamism threatens productivity.

China must embark on a new growth model, one driven by consumption, services, and productivity gains. This will need to be underpinned by deep and ambitious structural reforms, including to strengthen social safety nets to reduce precautionary savings and boost consumer spending, improve fiscal relations between central and

local governments, revitalize private enterprise, and foster technological breakthroughs, including in emerging areas like AI, while managing financial risks.

This chapter outlines a brief history of China's phenomenal economic rise; discusses the fork in the road it faces because of growing domestic vulnerabilities and global headwinds that call for altering its economic strategy to ensure strong, durable, and balanced growth; and briefly summarizes the bold and ambitious reforms that will be needed to underpin the new growth model. The rest of the book is devoted to articulating at greater length and granularity key aspects of these reforms.

CHINA'S ECONOMIC RISE

China's economic rise has been striking, with the economy having been transformed across several dimensions. In 1978, at the launch of its reform era, China's per capita GDP in purchasing power parity terms (2021 dollars) was about \$900, less than 3 percent of that in the United States and in the bottom 5 percentile worldwide. Since reforms began, real GDP growth has averaged close to 9 percent per year, about 5.5 percentage points higher than the average of emerging markets (Figure 1.1). Compounding over decades, the high growth has translated into the economy growing almost 60-fold, 10 times more than the average emerging market, with China becoming an upper-middle-income country in 2010, and per capita GDP exceeding \$13,000 by 2024.

The unprecedented growth has been accompanied by broad-based structural transformation and impressive gains in various socio-economic metrics. The remarkable buildup of physical infrastructure has enabled rapid urbanization, with the urban population increasing by more than 750 million people over 50 years, more than the current combined population of the Euro Area and the United States. Rising income levels and the broadening coverage of social safety nets helped China eliminate extreme poverty in 2020 (World Bank and DRC 2022). Health outcomes have also improved significantly, with life expectancy rising from 63 years in 1978 to 79 years in 2025, exceeding the emerging market average and closing the gap to advanced economies.

With China's spectacular growth, its importance in the global economy has also increased dramatically. By the 2010s, China became the second largest economy in the world measured at market exchange rates and the largest in purchasing power parity terms, with China contributing about 30 percent of global growth in recent years (Figure 1.1). As a result, developments in China now have global implications (Box 1.1).

China's rise has been powered by its integration into the global trading system. China's share of global trade increased from less than 1 percent in 1978 to more than 12 percent in recent years, making it one of the largest trading nations, including the world's largest exporter and the world's second largest importer. As China's trade grew, it became progressively more integrated into global value chains, with its share of global value chain exports increasing five-fold since the

Figure 1.1. China's Rise: GDP Growth and Contribution to Global Growth

1. GDP Growth

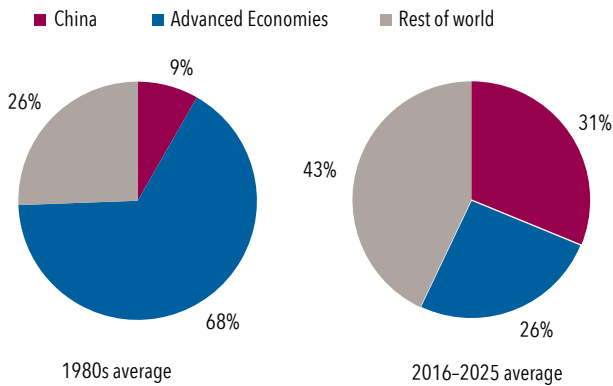
(Percent)



Sources: Penn World Table 11.0; and IMF staff calculations.

2. Contribution to Global Growth

(percent, PPP-weighted)



Sources: IMF World Economic Outlook; and IMF staff calculations.

Box 1.1. China's Rising Global Footprint and Its Growth Implications

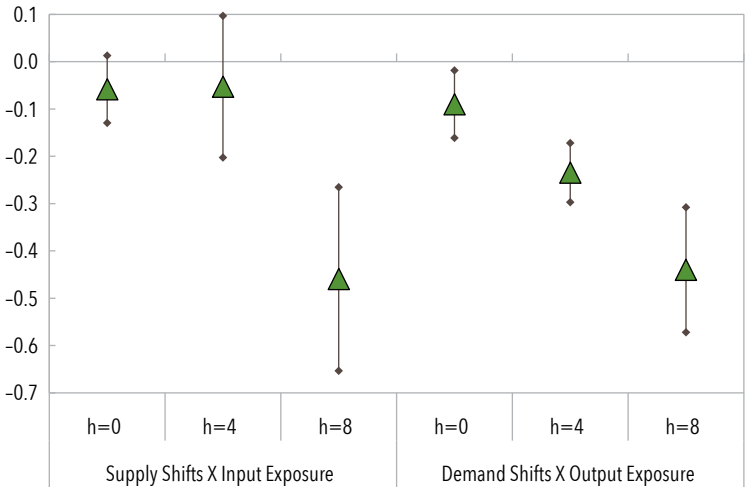
The growing trade links between China and the rest of the world, especially deep integration in global value chains with China at the center, and its sheer size mean that developments in China now have significant global ramifications.

Empirical analysis finds that a 1 percentage point higher growth in China is associated with an increase in growth of 0.3 percentage points in the rest of the world over the medium term, with larger effects for countries with stronger trade links with China. The extent of spillovers depends on the type of economic links that other countries have with China. While global growth responds to both changes in demand and supply originating from China, shifts in supply have larger impacts on countries and firms that are more reliant on Chinese inputs, while shifts in demand have larger impacts on those more reliant on selling to Chinese firms and consumers (Copestake and others 2025).

Going beyond cyclical effects, closer trade links with China have also been associated with higher longer-run growth for other countries. Analysis finds that during China's rise, countries which had deeper trade links with China grew more compared with countries with weaker links, and the economic overperformance was even stronger for countries with greater global value chain links than for all trade (IMF 2023). For example, going from the average backward linkages (share of Chinese inputs used in a countries exports) of non-Asian countries to the Asian average is associated with higher growth of about 0.5 percentage point. This suggests that trade with China did not just provide a demand boost because of strong domestic growth in China, but that global value chain trade with China can also have other benefits, such as greater specialization to exploit comparative advantages, technology transfers, and knowledge diffusion.

Figure 1.1.1. Differential Firm Responses to Shifts in Chinese Demand and Supply by Input and Output Linkages

(Percent change)



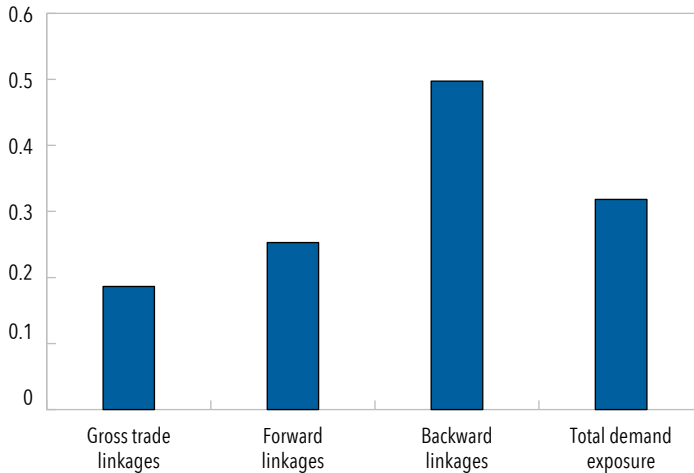
Sources: Copestake and others 2025.

Notes: The green triangles indicate the differential response of firm revenues for country-industry pairs at the 75th percentile of output (input) exposure, relative to those at the 25th percentile, at horizons of 0, 4, and 8 quarters ahead. Error bars denote 68 percent confidence intervals. Standard errors are clustered by firm.

Box 1.1. China's Rising Global Footprint and Its Growth Implications (continued)

Figure 1.1.2. Impact of Greater Linkages with China on Growth

(Percentage points impact on growth of moving from non-Asia and Pacific to Asia and Pacific level exposure for each variable)



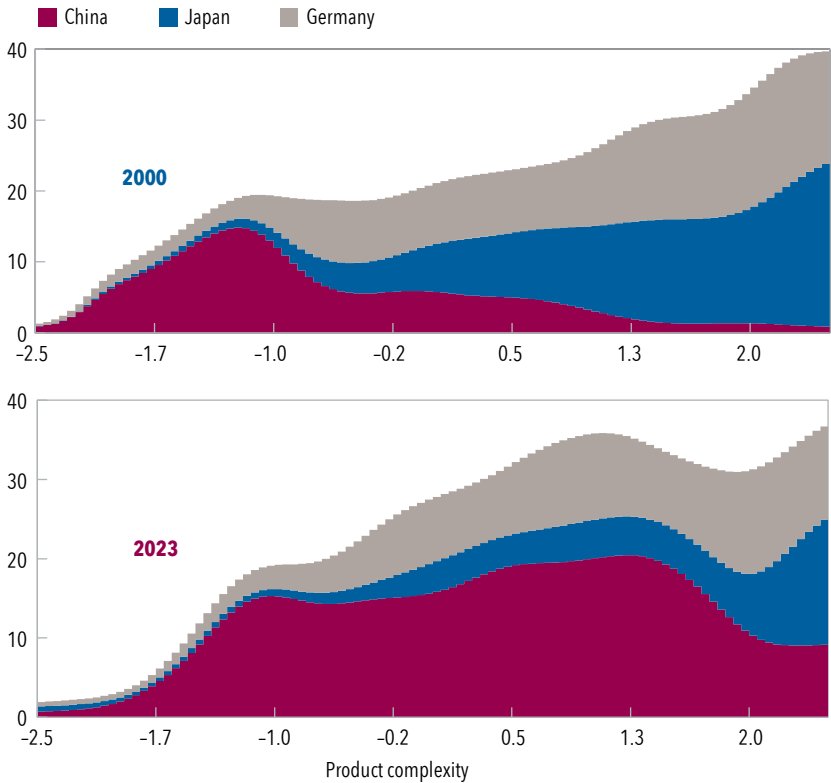
Sources: Eora Global Supply Chain Database; IMF World Economic Outlook Database; and IMF staff calculations.

Note: The figure is based on a panel regression of growth on lagged purchasing power parity GDP per capita, aggregate trade openness, and a measure of trade linkages with China. Each bar multiplies the coefficient on the trade linkage variable with the difference in the median level of the variable in Asia and Pacific and non-Asia and Pacific countries. The first bar is based on gross trade of the country with China as a share of total gross trade; the second and third bars are based on backward and forward linkages of the country with China as a share of total backward and forward linkages, respectively; and the fourth bar is based on share of a country's value added that is absorbed by Chinese demand.

early 1990s. This rise was initially driven by China's assembly of other countries' inputs, but starting in the mid-2000s, China has increasingly become a supplier of inputs to other countries. Furthermore, China is increasingly exporting more sophisticated and complex products, gaining market share in sectors traditionally dominated by advanced economies (Figure 1.2).

The use of the renminbi in international trade and finance has also risen but remains limited for transactions not involving Chinese entities. In 2025, the share of China's current account transactions settled in renminbi increased to above 30 percent from less than 10 percent in 2011. Offshore renminbi lending has also grown rapidly. However, on a global scale, the share of renminbi-denominated transactions remains modest. In the third quarter of 2025, less than 3 percent of

Figure 1.2. Complexity of China's Exports
Percent of Global Trade by Product Complexity
(Percent)



Source: IMF January 2026 World Economic Outlook Database; The Atlas of Economic Complexity; and IMF staff calculations.

Note: China had a higher share of global trade in less complex products in 2000, while its share of trade in more complex products had increased significantly by 2023. Product complexity captures the diversity and sophistication of the productive expertise required to produce a product. Products with a high complexity are those that only a few countries can produce (for example, electronics and chemicals), while products with a low complexity are produced by nearly all countries (such as raw materials and simple agricultural products). See Hidalgo and Hausman (2009).

global trade and about 8 percent of trade finance were settled in renminbi, and the share of renminbi in global foreign reserves holdings remained broadly stable at about 2 percent.

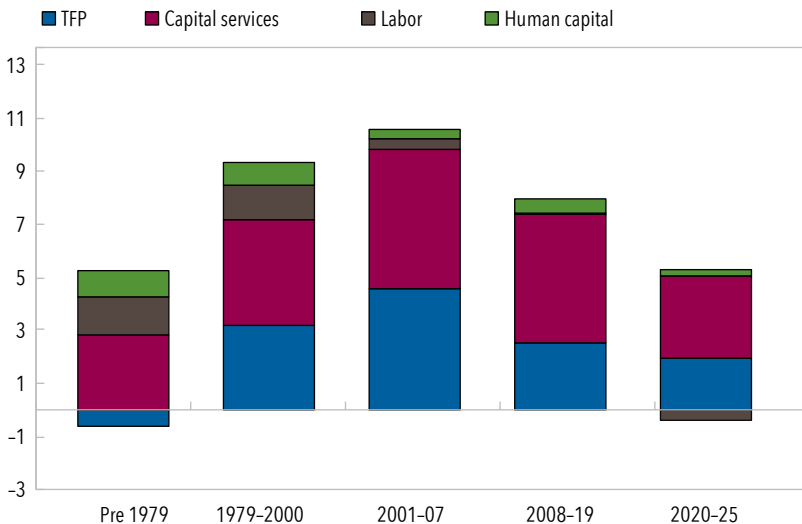
China is also now playing an important role in innovation. Total R&D expenditures in China, when measured in purchasing power parity terms, are only second to the United States. China has achieved high-profile advances in technology in some areas and is operating at or near the technology frontier in many sectors, especially in those related to the green transition.

CHINA'S PHASES OF GROWTH: FROM WAVES OF REFORMS TO RISING VULNERABILITIES

China grew faster than the emerging market average almost every year between 1978 and 2025, overperforming even when controlling for income levels, resulting in rapid convergence of living standards. However, this uninterrupted period of overperformance masks a complex growth story amid evolving political and economic institutions, waves of domestic reforms, changing incentive structures, and tectonic shifts in the global economic landscape within which China operates. As such, different factors have driven growth in China at different points in time.

Doing justice to China's economic history requires its own book. This section provides an unabashedly broad-brushed overview of China's development path since the 1970s. The initial phase of China's takeoff was characterized by successive waves of bold structural reforms, which accelerated productivity growth and culminated in China's accession to the World Trade Organization (WTO) in 2001 (Figure 1.3). After WTO accession, growth accelerated further but was accompanied by global external imbalances. External imbalances receded after the global financial crisis, but the subsequent years saw a buildup of domestic vulnerabilities as growth was driven less by productivity and more by debt-financed investment in infrastructure and real estate, eventually leading to a sharp correction in the property sector starting in 2021. The latter contributed to weak confidence, subdued domestic demand, and deflationary pressures after the COVID-19 pandemic, which, together with a focus on manufacturing

Figure 1.3. Growth Decomposition
(Percent change)



Sources: Penn World Table 10.01; IMF World Economic Outlook; and IMF staff calculations.

investment, amid a real depreciation of the renminbi, has resulted in a renewed dependence on exports to support growth and a recent reemergence of external imbalances.

Though simplified, this historical context can explain the factors driving China's success, including technological advances that create new opportunities, while also helping to identify the genesis of its current challenges and vulnerabilities. Reviewing the past can also uncover policy lessons for the future.

The Reform Waves: 1978 through the 1990s

Before 1978, China's economy was characterized by central planning and government control. Agriculture was organized in communes while SOEs dominated the economic landscape and were focused on heavy industry. There was little or no labor mobility because of strict limitations on the movement of people away from their location of registration. The financial system essentially comprised of the People's Bank of China, which acted as a central and commercial bank. In December 1978, at a key meeting of the Central Committee of the Chinese Communist Party, Deng Xiaoping launched the "reform and opening up" program, which kick-started China's economic transformation.

The first wave of reforms focused on agriculture. After disbanding collectivized communes, the new household responsibility system gave farmers long-term cultivation rights to land, and they could retain any surplus they earned. Agricultural procurement prices were initially raised, and price controls started being eased in the second half of the 1980s. These reforms resulted in significant productivity gains in agriculture, as farmers adopted better production techniques and diversified away from grains. Rural incomes increased by more than 8 percent per year between 1978 and 1990 (Figure 1.4), faster than urban incomes, and rural savings surged.

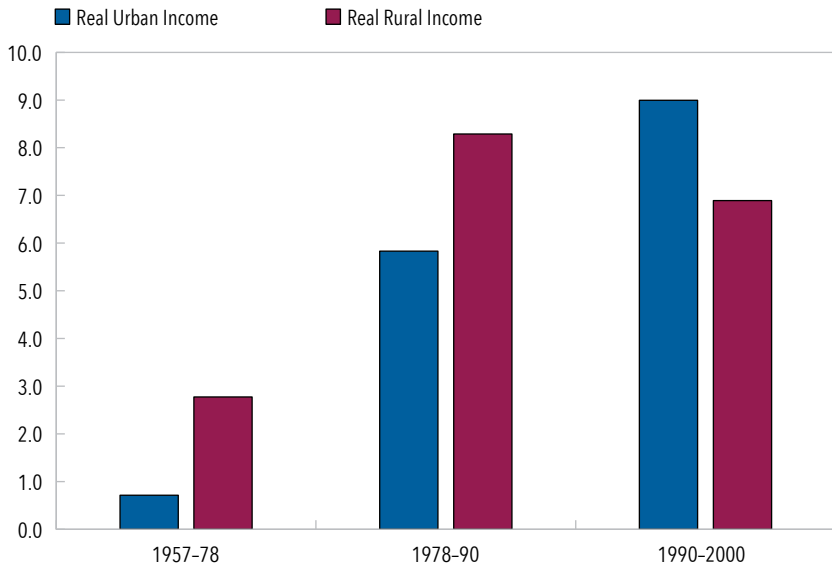
The industrial sector also saw a significant increase in growth after 1978 but did not experience big-bang and coordinated reforms, unlike agriculture. Several policies and factors instead came together to propel industrial growth. Market forces were given more space to operate, with price controls being eased gradually. SOEs continued to play a dominant role, but private enterprises were also given greater space, especially outside heavy industry. The focus shifted to promoting light manufacturing, which better matched China's comparative advantage stemming from low-cost labor. Perhaps most importantly, China opened up to foreign direct investment, establishing the now-celebrated special economic zones in the early 1980s that provided tax incentives and other benefits to foreign companies (Figure 1.4).

Policies in other areas supported this push into manufacturing. Loosening internal migration restrictions and more lax enforcement helped draw many rural workers to the cities, providing cheap labor to factories. China's focus on human capital development since the 1950s meant that these workers were well positioned to power the industrial sector, with average health outcomes and education levels far exceeding other countries at China's level of per capita income. The

Figure 1.4. Reforms Waves: Agricultural Reforms and Special Economic Zones

1. Per Capita Income Growth

(Compounded annual growth rate in percent, deflated by retail price index)



Source: National Bureau of Statistics China; and IMF staff calculations.

2. Special Economic Zones in China



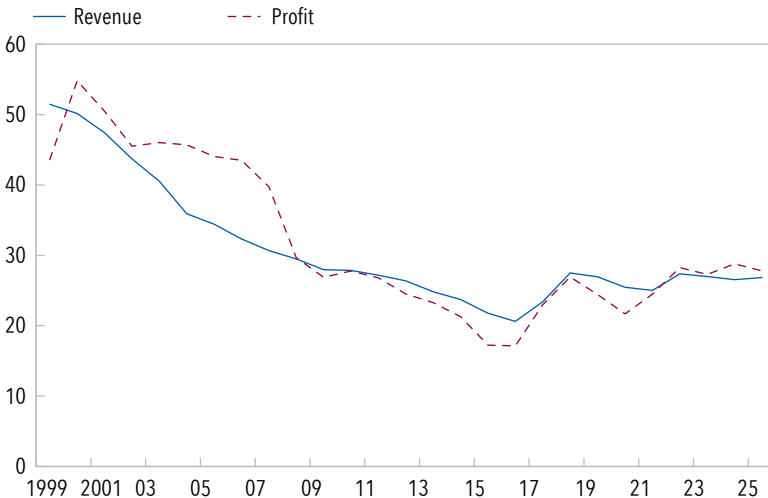
Source: World Bank.

banking system also evolved. The People's Bank of China transitioned to a traditional central bank, and the “big four” state-owned commercial banks were set up to channel growing household savings—including from rural areas—into manufacturing and infrastructure.

Driven by the flurry of reforms, growth averaged more than 10 percent in the decade after 1978, followed by two years of lower growth amid social unrest in cities, which led to significant uncertainty about the direction of economic policies and doubts about the future of reforms. These doubts were laid to rest after Deng Xiaoping's famous “Southern tour” in early 1992. Despite having retired from some of his official positions, his tour called for bold policy measures and reinvigorated the “reform and opening up” program. Domestic and foreign direct investment surged, and many additional reforms were implemented over the 1990s, including three core reforms that paved the way for strong growth.

First, far-reaching SOE reforms were implemented starting in 1995. The number of central and local SOEs had proliferated over the years as the financial sector was directed to funnel resources to SOEs, despite their poor economic performance. The bold reforms of the 1990s consolidated the SOEs in the strategic “commanding height” sectors and shut down or privatized many of the smaller SOEs operating in other sectors, such as light manufacturing. While SOEs remained a more important part of the economy than in peer countries, their footprint was reduced significantly, with SOE firms' share in total revenues and profits declining gradually (Figure 1.5). Furthermore, the financial performance of the surviving SOEs improved and the reforms provided a boost to the

Figure 1.5. Share of State Holding Enterprises in the Industrial Sector
(Percent of total revenues and profits)



Source: National Bureau of Statistics China; and IMF staff calculations.

role of the private sector as property rights were enhanced and the retreat of the SOEs lowered entry barriers.

Second, to complement SOE reforms and address balance sheet weaknesses in the banking sector, a significant financial sector cleanup was initiated in 1998. Nonperforming loans in the big four banks had surged by the mid-1990s because of mounting losses at the SOEs. The cleanup was centered on providing central government fiscal support for recapitalizing commercial banks and the creation of asset management companies to isolate the bad debt. Pressure to lend to unviable government-related entities was also reduced (though not fully removed). Furthermore, policy banks were set up to reduce the burden on commercial banks to support developmental objectives.

Third, landmark urban housing market reforms were also implemented in 1998, which created a market-oriented housing sector with important macroeconomic implications. SOEs and government agencies, which owned most of the urban housing, transferred housing leases to their employees who occupied the units. These individuals were free to resell their housing units after a lock-in period during which prices went up significantly. These reforms essentially amounted to a massive transfer of wealth from the state to urban families that were occupying these units and paved the way for greater investment in the real estate sector, which powered growth in the 2000s.

All was not smooth sailing, however, and some of the policies of this period resulted in the buildup of vulnerabilities and imbalances down the line. For example, the one-child policy, introduced in 1979, accelerated the demographic transition. The SOE reforms led to the dismantling of the previous employer-based social safety net as benefits for many families were tied to employment in SOEs (the “iron rice bowl”), resulting in high household savings for precautionary purposes. The privatization of the housing market created inequities between the insiders who received these housing units and the outsiders who did not. While housing was privatized, land in urban areas was state-owned and local governments were provided rights to it, leading to land sales becoming a crucial source of off-budget financing, especially after fiscal reforms in the mid-1990s that constrained local government revenues.

Despite these caveats, the period from 1978 to 2000 was one which transformed China's economic system from centralized control to a more market-based system with a greater role for the private sector. Per capita GDP grew by more than a factor of six, and capital accumulation was a significant contributor to growth. In a stark change in trend, productivity growth, which was negative on average in the prereform period, added about 3 percentage points to growth per year between 1978 and 2001. The reforms had worked, and the Chinese economy took off.

Export-Led Growth Accompanied by External Imbalances, 2001 to the Global Financial Crisis

The reforms that started in 1978 culminated in China's accession to the WTO in 2001. The reduction in tariffs and nontariff barriers, and other reforms that were required to join the WTO, propelled growth in the early 2000s. Foreign direct

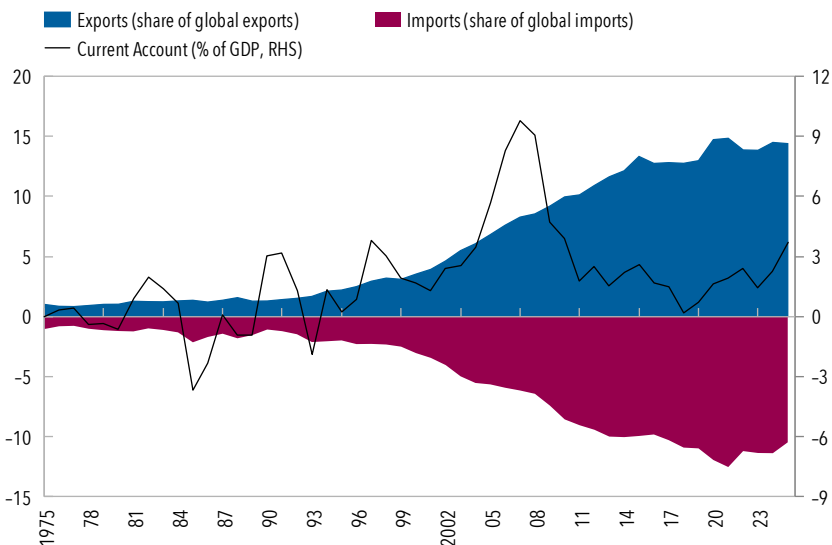
investment inflows remained high, with western multinational corporations leveraging abundant and low-cost labor to make China an export platform, and the country became increasingly integrated into regional and global value chains, resulting in productivity growth increasing even further.

Several factors helped China quickly realize large gains from an opening up of the economy, with export growth averaging 26 percent per year between 2001 and 2007. Investment in infrastructure over the previous two decades, the presence of special economic zones, the productivity-enhancing SOE reforms of the 1990s, and the large and mobile pool of relatively low-cost labor conferred China with critical advantages to benefit from the opportunities from greater trade openness. Furthermore, China had pegged the renminbi to the dollar in 1997. Broad-based weakening of the dollar in the early 2000s resulted in the renminbi depreciating by 13 percent in real terms between 1998 and 2005. Coupled with strong domestic productivity growth, this resulted in a significant undervaluation of the currency.

As a result, strong growth, which averaged close to 11 percent between WTO accession and the onset of the global financial crisis in 2008, was accompanied by rising current account surpluses, which increased sharply to a peak of about 10 percent of GDP in 2007 from an average of 1.7 percent of GDP in the 1990s (Figure 1.6). This was a period which saw the emergence of global imbalances, with large current account deficits in the US and parts of Europe matched by surpluses in emerging Asia, oil-exporting economies, and some European countries. For China, the IMF assessed the current account as excessive in certain years

Figure 1.6. China's Current Account and Goods Trade

(Percent of global trade, LHS; Percent of GDP, RHS)



Sources: IMF World Economic Outlook Database; IMF Balance of Payments Statistics; and IMF staff calculations.

(for example, IMF 2006). The People's Bank of China abandoned the US dollar peg in 2005 and allowed a gradual appreciation of the renminbi. Then the global financial crisis hit in 2008 and external demand collapsed, exposing the vulnerabilities of the export-led growth model.

The Investment Boom and the Buildup of Vulnerabilities (2008 to 2019)

Given China's rising reliance on exports in the 2000s, growth should have faltered significantly after the onset of the global financial crisis. However, the Chinese authorities responded to the global financial crisis with a massive stimulus package focused on public investment. The augmented fiscal deficit, including off-budget spending, shot up from just 3 percent of GDP in 2008 to almost 11 percent of GDP in 2009 (Figure 1.7). As a result, while global growth and China's exports slowed significantly, the economy continued to grow at close to 10 percent in 2009 at the height of the global financial crisis.

After the stimulus-propelled surge in the aftermath of the global financial crisis, growth gradually slowed in the 2010s to about 6 percent by the end of the decade. Slowing growth was expected as China got closer to the technological frontier and the scope for catchup declined. But along with the decline in aggregate growth, the sources of growth also changed significantly. Amid a loss of reform momentum, productivity growth slowed significantly, but investment rates remained elevated, with a large rise in debt fueling the continued investment boom.

Some important reform steps were taken during this period. The authorities eased deposit and loan rate controls gradually and increased exchange rate flexibility. The People's Bank of China widened the permissible trading band for the renminbi around the central parity foreign exchange rate (the "fix"), loosened capital flow restrictions and reduced direct foreign exchange market interventions. However, liberalization in the financial markets was gradual and not steady—restrictions were reimposed or interventions increased during periods of market volatility, notably after August 2015 when the markets came under stress.

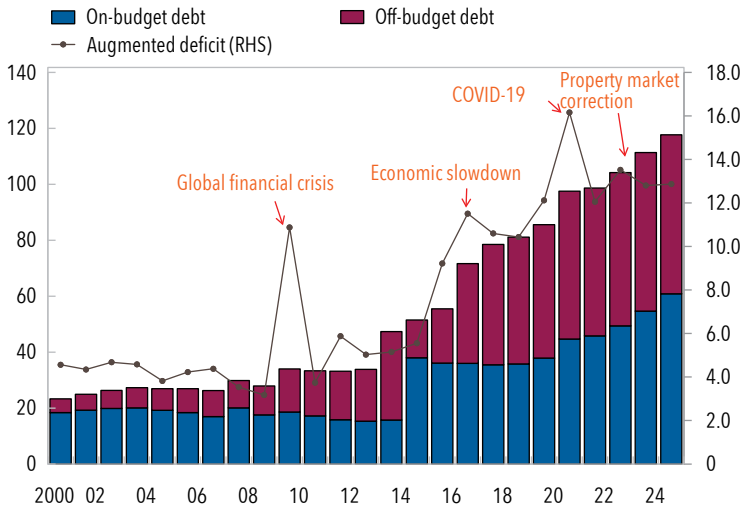
The social protection framework was another area where important reforms took place. The policy measures implemented in the 1990s led to erosion of social safety nets that government agencies and SOEs had traditionally provided. Several steps were taken to fill the gaps, including the introduction of new programs which led to almost universal coverage for medical and pension benefits (see Chapters 2 and 7). While the level of benefits remained low relative to peers, the expanded coverage, especially in rural areas, played a key role in eradicating extreme poverty in China.

These measures were important and welcome, but the bold policy reforms of the previous decades were missing after the global financial crisis. A renewed emphasis was placed on the importance of state actors and actions. The decline in the share of the public sector, including SOEs, in investment, revenues, and profits bottomed out in the mid-2010s and has since stalled at relatively high levels (Figure 1.5) on a cross-country basis.

Figure 1.7. Fiscal Deficit and Real Estate and Infrastructure Investment after the Global Financial Crisis

1. Fiscal Deficit and Debt

(Percent of GDP)

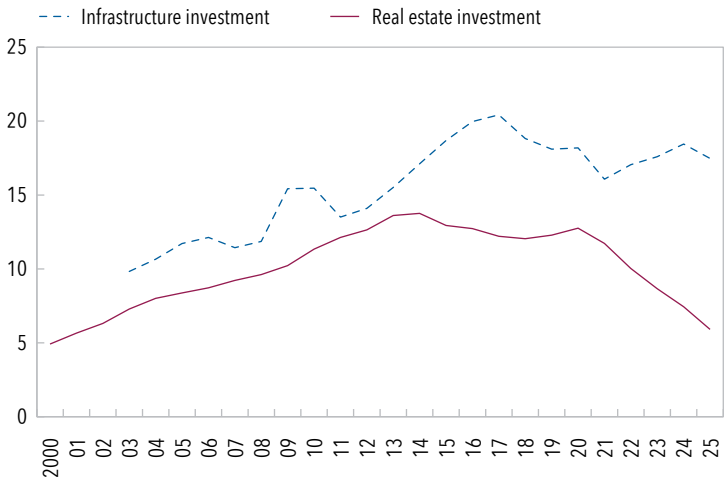


Source: CEIC Data Company Limited; China Ministry of Finance; Wind; National Audit Office; and IMF staff calculations.

Note: On-budget debt includes the official debt of the central and local governments. Off-budget debt includes debt of LGFVs, government-guided funds, and special construction funds.

2. Fixed Asset Investment in Selected Sectors

(Percent of GDP)



Sources: Wind; CEIC Data Company Limited; National Bureau of Statistics China; and IMF staff calculations.

Note: Infrastructure investment follows the Wind definition, which includes transportation, storage, and postal; power, gas, and water production and supply; water conservancy, environment, and public facilities management.

Despite reforms stalling and productivity growth declining, the authorities continued to set ambitious growth targets, which were achieved primarily through a significant ramp-up in infrastructure and real estate investment (Figure 1.7).

Local governments implemented much of the stimulus after the global financial crisis, financing it off-budget using local government financing vehicles (LGFVs), which became a major funding source for the first time (see Chapters 7 and 8). Since then, local governments have continued using off-budget entities to circumvent official borrowing limits and undertake large infrastructure projects.

The ramp-up in infrastructure investment was followed by a real estate boom as local governments raised revenues by developing and selling land to developers, spurring the construction of a large numbers of residential units. To support activity after the growth slowdown in 2015, the shantytown redevelopment project was expanded significantly, notably by utilizing financing from the Pledged Supplementary Lending facility of the People's Bank of China. As a result, real estate investment as a share of GDP rose from about 4 percent in 1997 to a peak of about 14 percent in 2014 and stayed at elevated levels for the rest of the decade.

In addition to supporting growth, the investment boom of the 2010s had two significant effects. First, as investment was directed first at domestic infrastructure and then real estate, it helped reduce the external imbalances of the 2000s. However, new imbalances emerged with excessive reliance on investment as the share of investment rose above 40 percent of GDP. Second, much of this investment was debt-financed, which raised financial vulnerabilities and eventually created a debt overhang, especially among local governments and property developers. The authorities took steps to mitigate financial sector vulnerabilities, for example, by containing risks in the shadow banking sector in 2018–19, but these steps did not prevent an increase in aggregate leverage that resulted in higher systemic financial vulnerabilities.

Challenges since COVID-19, 2020–present

The period since 2020 has been marked by large global shocks and the materialization of long-standing domestic risks in China. The external environment has been shock-prone amid the COVID-19 pandemic, the war in Ukraine, the shifts in US trade policy since 2025, and the war in the Middle East in 2026, which have all had a significant effect on the global and Chinese economy.

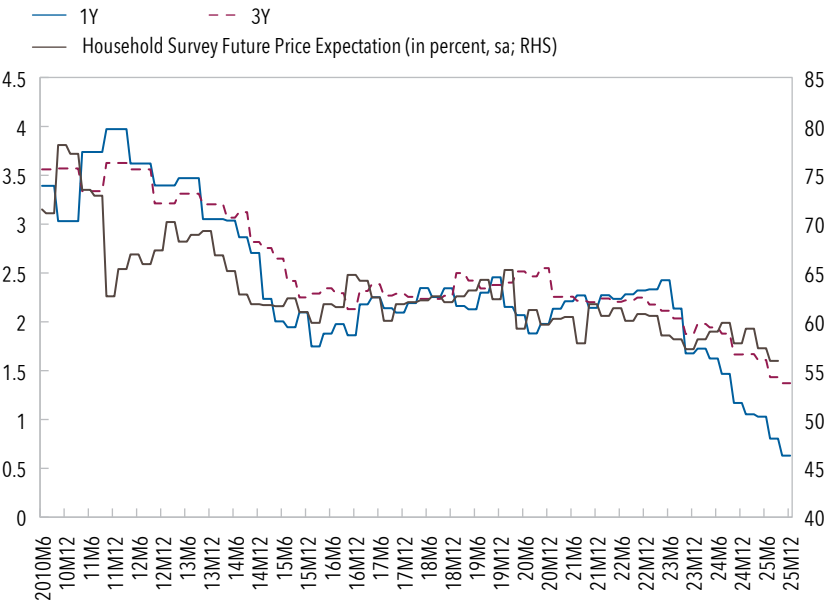
Several domestic factors have contributed to a demand slump and deflationary pressures. The pandemic and the prolonged property sector correction opened large negative output gaps. Weak consumer confidence, softening wage growth, and fiscal tightening at the local government level amid declining land sale revenues caused by the property sector correction have all reinforced the weakness in domestic demand and a persistent negative output gap.

As a result of these shocks, growth has slowed further, averaging less than 5 percent since 2020. The slowdown in total factor productivity growth has continued, while the fall in real estate investment has also reduced the contribution of capital accumulation to growth. At the same time, China's growth has stayed about 2 percentage points above the emerging market average, as domestic demand weakness led to

deflationary pressures that also boosted competitiveness and supported a rotation in the sources of growth to net exports. With this rotation, domestic imbalances have also been accompanied by external imbalances, which also contributed to the emerging global imbalances in 2024-25.

Furthermore, consumer price inflation was consistently below 1 percent from mid-2023 through 2025, producer prices inflation and GDP deflator growth were negative, and inflation expectations declined (Figure 1.8). While the energy price shock in 2026 associated with the war in the Middle East has resulted in an uptick in inflation, prices in domestic downstream industries have continued to decline amid weak domestic demand and deflationary pressures could reemerge if global energy prices decline. If deflation became entrenched, the consequences would be significant, including through higher real rates that would depress domestic demand even more, and worsening debt dynamics that would add to vulnerabilities.

Figure 1.8. Inflation Expectations
(Percent change, year over year)



Sources: Haver Analytics; Consensus Economics; PBC urban depositor survey; NPC Reports; and IMF Staff calculations.

Note: The household survey future price expectation is calculated as the percentage of respondents who believe next quarter price level will "increase" + 0.5 x percentage of respondents who believe next quarter price level will "basically not change". A lower index number means lower expectation on rising price level in the next quarter.

THE CHALLENGES: SPUTTERING GROWTH ENGINES, ELEVATED VULNERABILITIES

China's economy is at a crossroads as many of the forces that propelled growth in the past are no longer viable drivers. The economy faces several challenges, including diminishing returns on investment, a prolonged adjustment in the real estate sector, and limited scope for export-led growth amid rising geopolitical tensions. Addressing these challenges will be necessary to lay the groundwork for sustainable and high-quality growth and further China's income convergence with advanced economies by lifting living standards.

Investment-Led Growth Constrained by Diminishing Returns and Elevated Debt

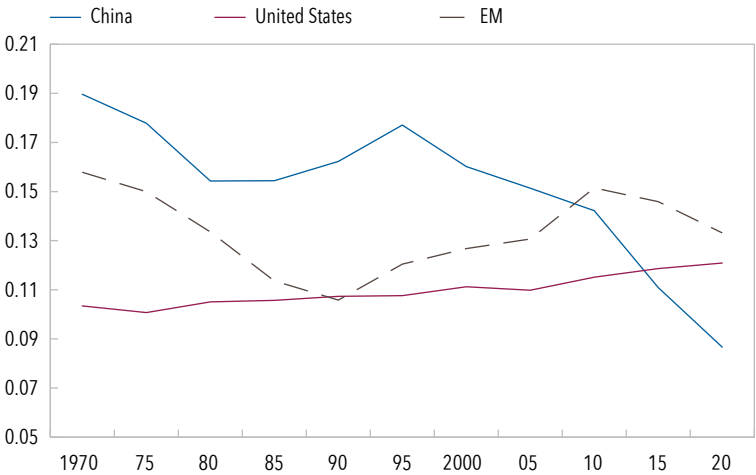
The exceptionally high investment ratios in China have resulted in the buildup of significant risks. The investment-to-GDP ratio rose from an average of about 30 percent of GDP in the 1990s to a peak of almost 45 percent of GDP in the early 2010s, driven by the stimulus following the global financial crisis. Since then, a modest rebalancing has occurred, with the investment-to-GDP ratio dropping to about 40 percent of GDP. However, China continues to invest significantly more than its peers—investment-to-GDP ratios average about 20–25 percent in emerging markets. A continued reliance on investment to drive growth will be challenging and undesirable for two reasons.

First, returns on investment have declined significantly, falling below the emerging market average (Figure 1.9). Decades of high investment have resulted in a large capital stock—capital intensity as measured by the capital-output ratio has increased rapidly from about 2 in the 1990s to well above 5 in 2023 and now exceeds the average in emerging markets and advanced economies. Growing misallocation of capital has accompanied high investment rates, with investment largely undertaken by the government or government-linked entities and geared toward infrastructure and real estate, crowding out private capital.

Second, high investment has mostly been debt financed, resulting in a buildup in leverage and elevated financial sector risks. Financial deepening and reforms had led to a steady increase in the private-credit-to-GDP ratio from 50 percent of GDP in 1978 to about 100 percent of GDP in 2007. Since the global financial crisis, this ratio has risen to close to 200 percent of GDP in 2025, well above the emerging market and advanced economies average of 50 and 100 percent of GDP, respectively. Coupled with higher government debt, much of this credit has been used to finance the real estate boom and investment in infrastructure. Financial stress among property developers has already resulted in losses for the financial system, and one-third of LGFVs do not have sufficient earnings to meet their interest payments, thereby posing significant risks for the financial system. Continued reliance on investment would result in further buildup of debt and vulnerabilities in the financial sector, increasing risks of severe adverse macrofinancial feedback loops.

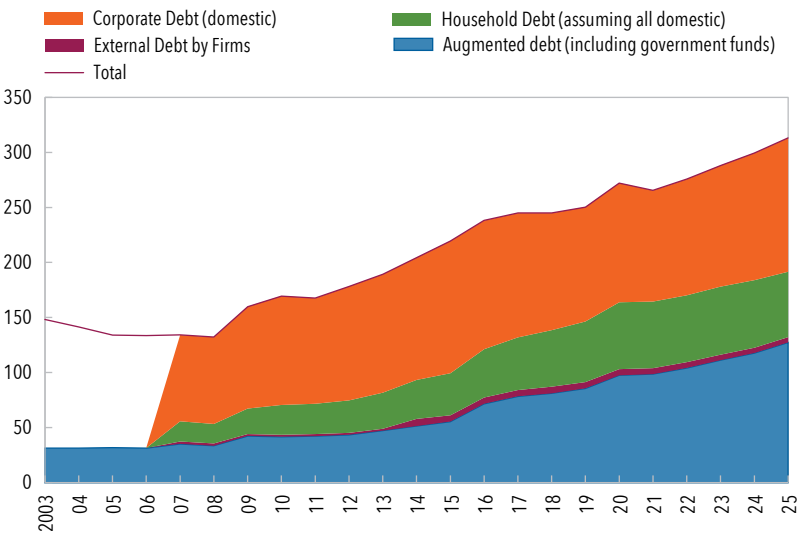
Figure 1.9. Capital Productivity

1. Marginal Product of Capital
(Assuming Cobb-Douglas production function)



Sources: Penn World Table 11.0; and IMF staff calculations.

2. Total Social Financing
(Percent of GDP)



Sources: Haver Analytics; Wind; CEIC Data Company Listed; and IMF staff calculations.

The Real Estate Sector Cannot Sustain Growth Again

The real estate sector was central to driving China's growth after the global financial crisis. The sector's share in GDP reached 20 percent in 2019, after the stimulus and the support from the massive shantytown development program in the mid-2010s. Housing prices increased sharply, especially in Tier 1 cities, and property developers built up leverage.

A significant property sector correction began in 2021 after the adoption of the Three Red Lines policy in 2020 to curb developer leverage. Since then, sharp and protracted declines have occurred in primary market sales, housing starts, and real estate investment. Several large, highly indebted developers have become insolvent, and home prices have declined, especially in the secondary markets.

The impact of the prolonged property sector adjustment has been far reaching, contributing to significant demand weakness and deflationary pressures. The sharp decline in residential investment has directly reduced GDP, detracting about 5 percentage points from growth since 2021. Activity has also been affected through various other channels. The impact on consumer confidence and private consumption has been negative, including through adverse wealth effects. The impact on local governments is also notable: they have relied on land sales as a key funding source and face liquidity constraints, especially in economically or fiscally weaker provinces, also limiting their ability to provide needed public services.

Recognizing the challenges, the authorities have taken several policy steps to support housing demand, address the inventory overhang, and support developer finances. However, additional measures are needed to complement the current set of policies with the goal to ensure a less costly and more efficient adjustment. This is essential to restore confidence, boost consumption, and rebalance the economy.

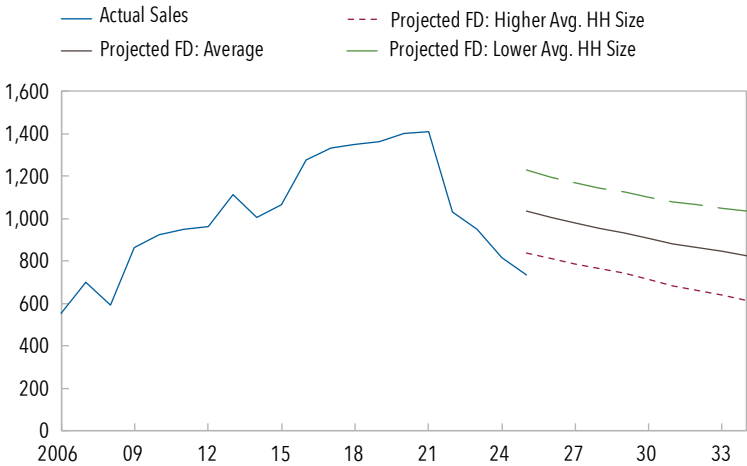
However, the real estate sector cannot again become a significant driver of growth even when the correction ends. An IMF analysis indicates that fundamental demand for new housing will decline by 35 to 55 percent relative to the past decade because of demographic trends and slower urbanization (Figure 1.10). As such, the policy goal is stabilization at a new equilibrium and at a lower level, with past experience showing clearly that using the sector as a driver of growth risks inflating a bubble with the associated costs and risks.

Limited Potential for Public Sector-Led Growth

The general government—the central government and local governments, including their financing vehicles—has played a large role in the Chinese economy historically, though its ability to drive future growth will likely be constrained. Large general government deficits and elevated debt vulnerabilities, particularly at the local government level, limit the extent to which fiscal policy can support growth.

Per the IMF's definition, the general government deficit in China has averaged more than 12 percent of GDP since 2015, one of the highest in the world. The high deficit, in large part, reflects decades of heavy investments in infrastructure by local governments and LGFVs, which spurred connectivity and productivity

Figure 1.10. Residential Real Estate Sales and Projected Fundamental Demand
(Floor area, millions of square meters)



Sources: CEIC Data Company Limited; and IMF staff calculations.
Note: FD=Fundamental Demand; HH=Household.

in earlier phases of growth but are now running into diminishing returns. In addition, tax revenues have weakened in recent years, adding to the deficit. The high deficits have also translated into a large buildup of debt. While the central government’s debt levels have remained relatively low (about 30 percent of GDP in 2025), local government debt has increased significantly. The IMF estimated that augmented debt—which includes central government, local governments, and LGFVs—has risen rapidly to more than 120 percent of GDP in 2024, up from 35 percent in 2007.

Spending needs are projected to increase because of the aging population, while local government finances are strained by the property bust because land sales constituted a large share of their revenues. The high debt means that at this juncture, there is more limited room for the general government to support growth to the same degree as in the past. Once deflationary pressures ease durably, significant fiscal consolidation will be needed at the general government level to stabilize debt. As such, the general government sector is likely to detract from future growth instead of supporting it.

Limits to Growth Contributions from Manufacturing and Exports

Despite weak domestic demand after the deep and protracted property sector correction since 2021, growth in China has held up relatively well. This is largely because of two interrelated factors.

First, China's strategy of promoting high-tech and green industries has resulted in a surge in manufacturing investment, in part reflecting industrial policy support through instruments such as directed credit to these and other priority sectors. This has offset some of the drag from the real estate sector and led to a significant increase in production capacity in tradable sectors, with some of it possibly being economically nonviable. The strong capacity increases during a time of weak domestic demand and a negative output gap have led to deflationary pressures and a pivot toward exports.

Second, the contribution of exports to growth has increased in recent years, supported by downward pressure on prices because of weak domestic demand, including export prices, that have rendered Chinese exports more competitive. As a result, external imbalances have reemerged since 2024. China's current account surplus has increased to 3.7 percent of GDP in 2025, up from an average of 1.4 percent of GDP between 2015 and 2019.

However, the pivot toward manufacturing investment and exports may not be sustainable. Trade restrictions between China and the United States during 2017-19, the Russian invasion of Ukraine, and the global proliferation of trade actions in 2025 after the imposition of tariffs by the United States have led to increased geoeconomic tensions (Figure 1.11). With the emergence of external imbalances, concern is growing among some trading partners that China's manufacturing dominance and strong exports are hurting workers and creating supply chain and security vulnerabilities in strategic sectors. The risk of additional trade actions by major advanced economies and emerging markets is rising. In this environment of geoeconomic fragmentation, the ability of external demand to sustain Chinese growth is likely to be constrained.

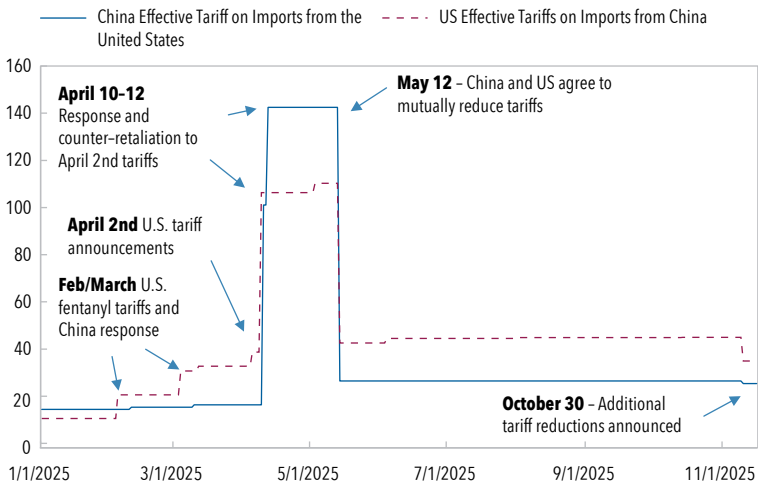
Demographics Remain a Drag and Add to Fiscal Pressures

China is experiencing a significant demographic transformation characterized by rapid population aging, a shrinking labor force, persistently low fertility rates, and increasing longevity. China's working-age population peaked in 2015 and has been declining ever since. Despite the end of the one-child policy, fertility rates remain low and the new cohorts being born are significantly smaller than those that are retiring. As a result, the working-age population is expected to contract further from 984 million in 2024 to 745 million by 2050. In addition, China's aging speed is considerably faster than in most other regional economies. The old-age dependency ratio—estimated at 21.2 percent in 2024—is projected to double by 2040, faster than even Japan (Figure 1.12).¹

Such a rapid demographic transition will reshape the economy, posing challenges in terms of sustaining growth potential and putting pressure on public finances. The expanding labor force contributed 17 percent to annual growth between 1980 and 2015. However, the working-age population is

¹ The old-age dependency ratio is the number of people age 65 or older per 100 people of working age (20–64 years old).

Figure 1.11. China-US Effective Tariff Rate
(Percent)



Source: WTO-IMF Tariff Tracker.
Note: Data acquired as of November 12, 2025. Chart plots the weighted average effective tariff, including exemptions granted for certain products.

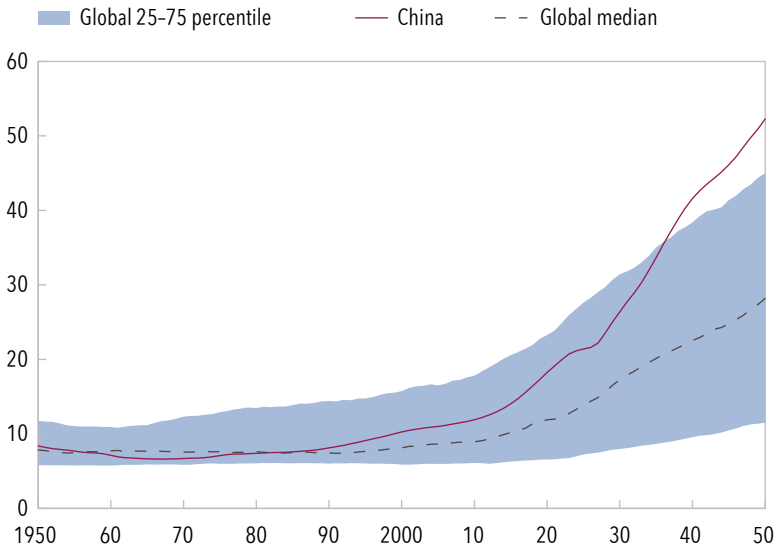
already shrinking and is projected to decline significantly, dragging down the economy’s growth potential. Keeping other factors unchanged, demographics alone will result in China’s potential growth declining by 2 percentage points by 2050.

With a rising old-age dependency ratio, fewer workers will support the growing pool of retirees, straining the pension system. Higher spending will also be required for health care and elderly care. Estimates suggest that without additional measures, pension spending alone will increase from 5.4 to about 12 percent of GDP between 2025 and 2050. As retirees will eventually dissave, China’s elevated household savings will likely decline. This will reduce the pool of funding to finance investment, adding to the constraints on investment-led growth.

Incentives, Dynamism, Weakening Productivity Growth

Amid fewer major economic reforms and continued industrial policy interventions, incentives for strong productivity growth may have weakened. Two developments are symptomatic in this respect.

First, the continued significant role of SOEs in China’s economy can distort the level playing field between private firms and SOEs. This is a concern, given large productivity gaps between the two types of firms, with much of the lower productivity in SOEs reflecting misallocation of capital as the lack of hard budget constraints and preferential access to credit have allowed SOEs to undertake low-return investments (Chapter 5). High SOE leverage and their weak productivity

Figure 1.12. Old-Age Dependency Ratio*(Percent)*

Source: United Nations; and IMF staff calculations.

implies that resorting to SOEs to support the economy will pose a drag on overall economy-wide productivity, perpetuate capital misallocation, and crowd out private firms.

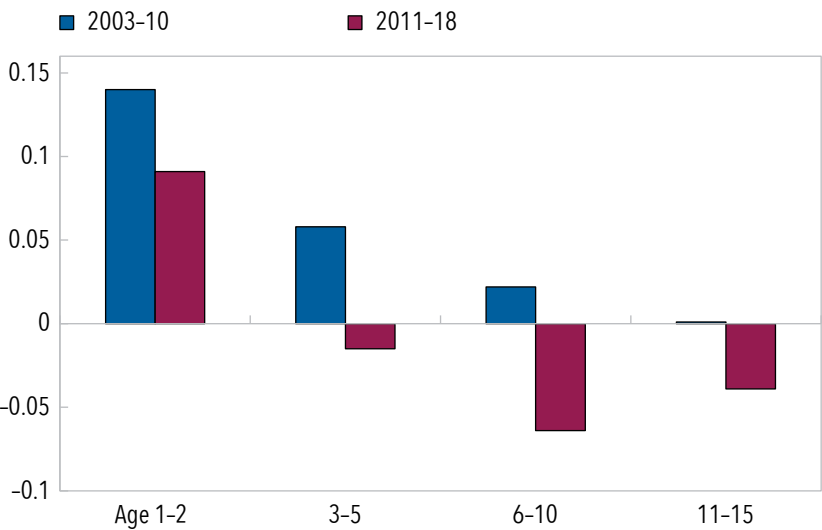
Second, business dynamism has also declined, impeding productivity gains and the full realization of innovation-driven growth. Newer and privately owned firms, which generally tend to be more productive, have not been growing as fast in recent years (Chapter 5, Figure 1.13). This lack of dynamism weakens incentives and opportunities for innovation and adoption of new technology.

With the unlevel playing field and declining business dynamism, productivity growth has declined and poses material headwinds to China's medium- and long-term growth potential. Opportunities still exist, including from new technologies such as AI, which could boost productivity growth. However, without significant structural reforms that improve resource allocation and provide the right incentives to capitalize on new opportunities, slowing productivity growth will remain a drag on growth.

TOWARD A NEW GROWTH MODEL FOR CHINA

With the foundations of the old model showing clear signs of strain amid the challenges discussed in the previous section, China will need an ambitious and multipronged reform agenda to ignite new growth engines while containing vulnerabilities. The Chinese policymakers recognize these challenges and aim to

Figure 1.13. Three-Year Growth Rate of Productivity by Firm Age
(Percentage points, relative to firms in the 15+ age range)



Source: Cerdeiro and Ruane 2022.

anchor economic reforms around a set of interconnected strategic priorities within the broader framework of “high-quality development”. As articulated in the 15th Five-Year Plan (2026–30), the authorities plan to prioritize the need to boost the role of domestic demand, with an emphasis on consumption, aim to promote innovation and technological self-sufficiency, deepen market-oriented reforms, and reinforce sustainability and security. They have already taken some welcome policy steps in the right direction, including modest improvements in the social safety net, an increase in the retirement age, and policies to reduce local government debt vulnerabilities.

However, more forceful policy steps are needed, similar to China’s implementation of deep reforms in the 1980s and 1990s. In particular, a reinvention of its development model requires a comprehensive reform program comprising three key elements.

First, entrenched incentive structures in the economy need to change, notably the primary role of annual growth targets as a coordinating mechanism, which has played a key role in underpinning the current growth model.

Second, deep structural reforms will be needed to rebalance the economy along several dimensions and reverse the decline in productivity growth. Priorities include transitioning away from debt-fueled investment toward household consumption and rebalancing away from manufacturing and exports toward under-exploited service sectors, which would also reduce the emissions intensity in the economy and help meet climate goals. Levelling the playing field across all types

of firms and revitalizing the private sector while reducing the role of the state will help boost productivity and maximize returns from new technologies like AI.

Third, to complement the new growth model and manage the systemic and increasingly complex economy, upgrades will be needed to economic institutions and frameworks. Fiscal reforms that reduce the state's footprint, including by lowering high deficits, and support rebalancing will be essential. Furthermore, the state-dominated financial system, the monetary policy framework, and the insolvency regime will need to be reformed to cater to a new growth model predicated on market-based credit allocation and pricing.

Reforming the Incentive Structure

Durably changing the growth model will require altering economic incentives embedded in the old growth model. In past decades, local officials have operated under the overarching incentive to prioritize headline GDP growth in the pursuit of meeting and exceeding growth targets, with performance assessments and promotion prospects tied—explicitly or implicitly—to meeting them. In practice, delivering this growth has relied on rapid infrastructure spending, business promotion ahead of economic viability considerations, heavy recourse to land sales for financing, and the significant expansion of LGFVs, contributing to increasingly inefficient investment and mounting debt burdens. Therefore, a fundamental reshaping of these incentives is needed to support reforms.

Achieving this in practice could be challenging. National and provincial targets can serve as helpful coordination tools and signals of policy intent, but when treated as binding, they create distortions that lead to the buildup of vulnerabilities. These include local governments prioritizing short-term growth over long-term sustainability and supporting unproductive and zombie firms to preserve output and employment. The adoption of a lower and more flexible GDP growth target range (of 4.5 to 5 percent) in 2026 is a welcome step. Going forward, reducing the central role of GDP targets and replacing them with broader metrics—such as debt sustainability, employment generation, environmental outcomes, and public service provision—is essential. Aligning local government incentives with long-term national objectives—as opposed to annual growth targets—is critical to breaking the cycle of debt-fueled expansion and misallocation of resources and for laying the foundation for attaining the government's goal of high-quality growth.

China's unique economic system, in which market forces operate alongside extensive state intervention, complicates reforms. State-owned enterprises continue to dominate key sectors, local governments rely heavily on land sales and off-balance-sheet financing to drive economic activity at the local level, and the financial system is predominantly state dominated. While these structural attributes led to rapid growth in the past and ensured stability and preserved employment during downturns, they are now leading to pervasive capital misallocation and heightening financial risks. Rebalancing the relationship between the state and the private sector will also address some of the key shortcomings of the old growth model.

The Key Focus of Structural Reforms

Key structural reform priorities include rebalancing toward consumption, promoting the service sector as a source of growth, boosting productivity, scaling back unwarranted industrial policies, and further developing green sectors (discussed in detail in Chapters 2 through 6). These reforms are economically necessary but complex, underscoring the need for a comprehensive and well-sequenced set of policies.

Rebalance the economy toward consumption. Rebalancing toward consumption would lead to more resilient, inclusive, and greener growth. To lift consumption durably, the authorities should take steps to reduce households' incentives to save, including strengthening social safety nets—both the adequacy and coverage—and reducing income inequality by increasing the progressivity of the tax system. Ultimately, boosting consumption in China will entail structural transformation, which will take time and require changes in income distribution, the provision of social protection and local government incentives to do so, and altering institutional arrangements that have long been geared toward investment-driven growth. The recent housing market correction has also contributed to elevated household savings and discouraged consumption, primarily through wealth effects. Policies that promote a more efficient property market transition, including by using central government fiscal resources, can prevent an even more prolonged drag on consumption.

Unleash services as an engine of growth. Despite rapid growth, China's service sector remains underdeveloped relative to its stage of economic development, suggesting significant potential for services to drive growth. Measures to unleash the potential of the service sector include reducing regulatory restrictions that prevent firm entry in some service subsectors (e.g. telecommunication, health), reducing interprovincial barriers to trade, opening up to trade in services, pursuing further SOE reforms in the service sector, and allowing greater labor mobility. Some of these measures—for example, building a unified national market and further opening up to trade and investment in services—are already planned and should be accelerated.

Scaling back industrial policies. Efforts should be made to scale back the size of industrial policy in China, which would help rebalance away from manufacturing while also reducing factor misallocation and fiscal costs. Industrial policy should be pursued cautiously and only to tackle well-defined market failures. To the extent that it is implemented, industrial policy should use budgetary tools, which tend to be more transparent and less distortionary than more indirect measures such as preferential credit allocation or regulation. The authorities should also increase transparency of industrial policy measures to improve policymaking.

Reignite productivity growth by allowing greater role for market forces. To boost productivity growth, policies should ensure a more level playing field between private businesses and SOEs and improve business dynamism by facilitating firm entry and exit. While new technologies such as AI hold potential to

accelerate productivity growth, reforms of the enterprise sector are necessary to reap the full potential.

Harnessing the green transition as a source of growth. China is making significant progress on climate goals, notably through rapid expansion of renewable energy and green technologies. At the same time, China remains the world's largest emitter. Fostering an efficient green transition will not only mitigate climate change but will also yield domestic benefits: more sustainable and less volatile growth, improved energy security, and reduced air pollution. Key policy recommendations include expanding and reforming the Emissions Trading System, continuing power market reforms, including increasing the role of market prices, strengthening interprovincial power trading, and reducing the role of coal.

The Key Focus of Framework Reforms

China's fiscal, monetary, and financial policy frameworks were built to support a phase of development when mobilizing investment and expanding industry were the overriding priorities. For decades, these frameworks proved to be highly effective and delivered impressive growth by channeling high domestic savings into infrastructure and manufacturing, also generating employment. Yet the very success of this model has created vulnerabilities and risks that now render reform necessary.

As China's economy has matured, growth has slowed, debt has risen, and imbalances have become more pronounced. Going forward, fiscal challenges emanate from an aging population, rising social spending needs, and elevated and increasing local government debt. Monetary policy, which has supported growth and stability simultaneously using a range of price and quantity tools, now faces diminishing effectiveness as credit expansion becomes less effective in delivering productivity and sustainable growth. Meanwhile, a financial system dominated by state-owned banks and guided by administrative controls has not been allocating capital efficiently, while deficiencies in the insolvency framework have hindered reallocation of resources.

These challenges are interconnected. Vertical fiscal imbalances and gaps in the fiscal framework encourage off-budget borrowing by local governments and impinge on financial stability. A financial system that encompasses credit targets and benefits from structural policy tools reinforces investment-led growth. Fiscal resources geared toward investment and not supporting consumption result in elevated precautionary savings. Given the interlinkages, a coordinated rethinking of how fiscal frameworks, monetary policy tools, and financial institutions interact is required. Reforming these policy frameworks is not about abandoning them, given their past effectiveness, but about refining them, as discussed in Chapters 7 through 11, and making them fit for purpose to help manage China's much larger, more complex, and globally systemic economy.

Overcoming fiscal challenges by improving fiscal frameworks, including addressing vertical imbalances. There are three key areas for fiscal reforms. First, the authorities should reallocate expenditure from investment to social protection,

while undertaking reforms to make the pension system more sustainable. Second, comprehensive tax measures are needed to raise revenue and support rebalancing, including by making labor taxes more progressive, strengthening capital income and property taxation, and taxing consumption more efficiently. Comprehensive tax reforms, along with greater allocation of revenue from the central government to the local government, would reduce local governments' reliance on land sales and off-budget financing, which would help close their large structural fiscal gaps and ensure that they can meet their expenditure mandates. Third, fiscal framework reforms should improve fiscal planning and address local government debt overhang by restructuring the debt of distressed LGFVs, as many of them have unsustainable business models that generate negative cash flow. Debt write-offs and asset sales should be part of the restructuring strategy, though the complexity of this operation will require careful preparation to manage macrofinancial risks.

Furthering monetary policy framework reforms. Despite recent improvements, China's monetary policy framework remains complex. The authorities continue to pursue multiple, sometimes conflicting, objectives using a combination of price and quantity instruments, which complicates policy formulation and communication. To improve the effectiveness of its framework, the People's Bank of China should narrow its set of objectives, explicitly recognize domestic price stability as the primary objective of monetary policy, and allow for greater exchange rate flexibility. Such reforms will clarify the nominal anchor for monetary policy and allow for more focused and clear policy formulation. Streamlining the current toolkit—in particular, discontinuing routine use of quantity-based and unconventional policy tools would enhance transmission of interest rate-based policy. Credit growth targets should be de-emphasized and structural monetary policies wound down.

Framework reforms to secure financial stability. The authorities have implemented significant changes to the financial regulatory and supervisory architecture to support their elevated focus on risk mitigation. However, financial stability risks remain elevated amid significant credit risks from property sector and LGFV debt, declining bank profitability, and heightened vulnerability of small banks. Going forward, additional reforms are needed to safeguard financial stability amid these significant credit risks. Reform priorities include strengthening crisis management and bank resolution frameworks, adopting a comprehensive strategy to address weak banks, and enhancing systemic risk oversight.

Improving the insolvency framework. A well-functioning insolvency framework is essential to ensure business dynamism, improve resource allocation, and tackle debt vulnerabilities. Despite improvements over the years, the framework in China faces shortcomings, notably in tackling complex group and cross-border insolvencies. Upgrading the framework by further aligning it to international standards, and strengthening the capacity of insolvency professionals and courts will be important to efficiently tackle legacy vulnerabilities from the property sector and LGFVs and ensure more efficient resource allocation.

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PART II

Structural Reforms for a New Growth Model

Reducing Household Savings and Boosting Consumption

Yizhi Xu and Fan Zhang

Household savings in China exceed savings in peer countries significantly, reflecting structural factors such as limited social safety nets. Cyclical factors, such as the ongoing property sector slump, have also contributed to higher household savings in recent years. High savings have facilitated China's overreliance on investment, which now faces diminishing returns. In this context, reducing savings is part of the transformation needed to rebalance the economy toward consumption and ensure sustainable growth in the future. Analysis suggests that increasing social spending on rural households and relaxing urban household registration (Hukou) restrictions in large cities can reduce household savings significantly. The recent housing market correction has also contributed to elevated household savings and discouraged consumption, primarily through wealth effects and a collapse in consumer confidence. Policies that reduce uncertainty about the delivery of presold houses and facilitate a more efficient stabilization of the property sector can boost consumer confidence and prevent a prolonged drag on consumption.

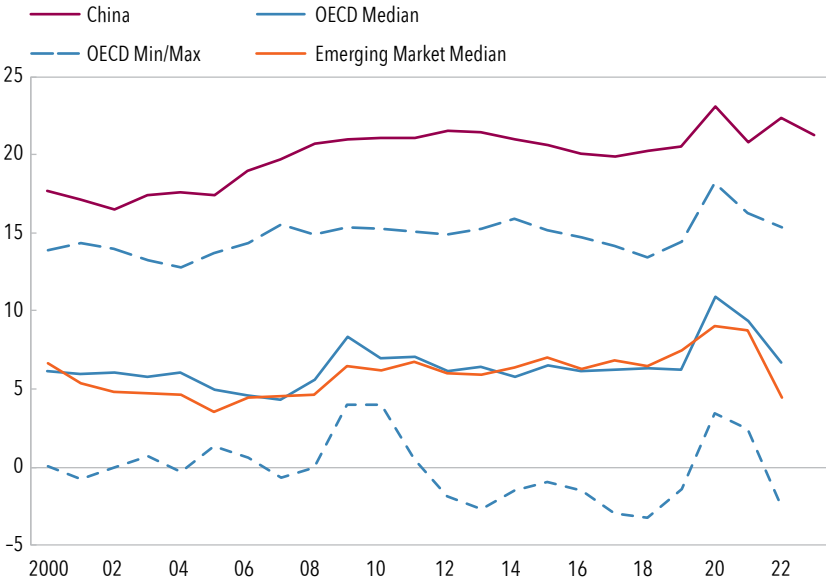
INTRODUCTION

China's economy relies too heavily on investment, facilitated by household saving rates that are far above those in peer countries (Figure 2.1). Structural factors such as population aging, low social spending, and limited access to social benefits for migrant workers have encouraged higher retirement savings and precautionary savings to insure against shocks. The household saving rate rose further during the pandemic, mirroring the global uptick in savings. However, in contrast to other countries, savings have remained elevated in China amid a prolonged real estate market slump and collapse in consumer confidence.

China's investment-led development model faces constraints: returns to capital accumulation have declined after decades of overinvestment, and the significant increase in debt used to finance high investment has created financial vulnerabilities. Reducing the high household saving rate and rebalancing the economy toward consumption would improve household welfare and support the transformation away from debt-financed investment needed to ensure sustainable growth.

Figure 2.1. Household Saving Rate

(Percent of GDP)



Sources: China flow of funds; Haver; OECD; and IMF staff calculations.

Note: EM includes China, Hungary, India, Kazakhstan, Mexico, Poland, South Africa, and Thailand.

Under current conditions, reducing excess household savings and strengthening private consumption would help address domestic and related external imbalances by absorbing economic slack, durably easing deflationary pressures, and lowering China's elevated current account surplus.

Determining how to boost consumption requires in-depth analyses of what drives high household savings in China and how social spending, reforms to China's housing registration system (called *Hukou*), and housing market developments shape household savings.¹

Prefecture-level analysis suggests that targeted measures to raise government expenditure on health and social security in rural areas can reduce rural households' saving rate significantly. China's social spending is low compared with international peers, and increasing that spending would lift consumption.

Household-level analysis finds that migrant residents in urban areas who do not have urban *Hukou* registrations tend to save more than those with urban

¹ There is a rich literature that investigates drivers of China's high household savings. These drivers include demographic changes (Modigliani and Cao 2004; Curtis, Lugauer, and Mark 2015; Choukhmane, Coeurdacier, and Jin 2023), weak social safety net protection (Blanchard and Giavazzi 2005; Chamon and Prasad 2010; He and others 2018, 2019), house prices and homeownership (Wang and Wen 2012; Chen, Hardin, and Hu 2018) and income inequality (Zhang and Zhang 2015; Zhang and others 2018; Han and Zhang 2022).

Hukous. Hukou reforms in smaller cities have been significant, but progress has been slower in larger cities, where a sizable share of those migrant population still has limited access to social benefits. This finding suggests that accelerating Hukou reforms implementation could help reduce high savings.²

Housing market developments also shape household savings significantly, notably through the wealth effect. Analysis suggests that during the ongoing real estate market correction, the wealth effect from lower house prices has driven an increase in savings, and weaker household confidence has amplified the impact.

Increasing consumption requires comprehensive and forceful reforms that lower precautionary savings, including increasing social spending (especially in rural areas), accelerating Hukou reforms in urban areas, and making the tax system more progressive. A more efficient transition of the property sector to a new equilibrium is essential to restoring consumer confidence and preventing a prolonged drag on consumption.

INCREASING GOVERNMENT SOCIAL SPENDING IN RURAL AREAS

China's social spending lags peer economies and is distributed unevenly, contributing to higher precautionary savings. Although social spending on health care, social security, and education as a share of GDP has doubled since the early 2000s, it remains markedly below that of OECD or emerging market peers (Figure 2.2, panel 1). Health care and social security spending are each only about 3 percent of GDP, significantly lower than the OECD averages of 7.2 and 8.2 percent, respectively.³

Insufficient government social spending—especially targeting vulnerable groups such as rural and elderly populations—is likely to increase the private burden on households, as they need to build buffers to protect against future shocks. Private health expenditure as a share of disposable income is among the highest across peer countries, especially in rural areas (Figure 2.2, panel 2), which is consistent with strong precautionary savings motive among Chinese households.

Prefecture-level analysis shows that higher government expenditure on social security and health care reduces savings among rural households significantly.⁴ Figure 2.3 shows that a 10 percent increase in government expenditure on social security and health care reduces the rural household saving rate by up to 0.5 and 0.8 percentage points, respectively, five years after the spending increase. However, the medium-term impact on urban households is negligible and could reflect better access to social benefits in urban areas.

² As of 2023, 27 percent of residents in urban areas (17.8 percent of the total population) held rural Hukous.

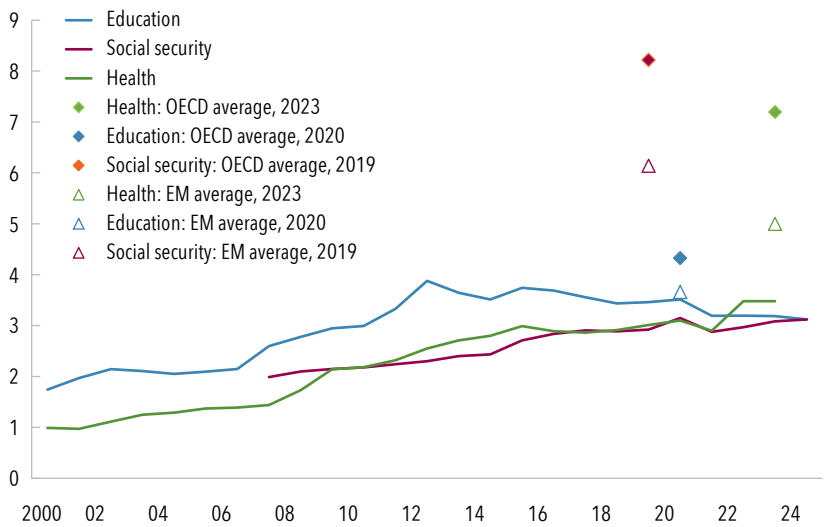
³ Using a broader definition of government social security spending, which includes both general public budget and social security fund expenditure, China's social security spending reached about RMB 7.6 trillion, or 5.6 percent of GDP (see 2024 Statistical Bulletin on Human Resources and Social Security Development). This ratio remains below the averages of both OECD member countries and EMDE peers.

⁴ Annex 2.1 provides more details about this analysis.

Figure 2.2. Government Social Spending versus Household Private Health Expenditure

1. Government Social Spending

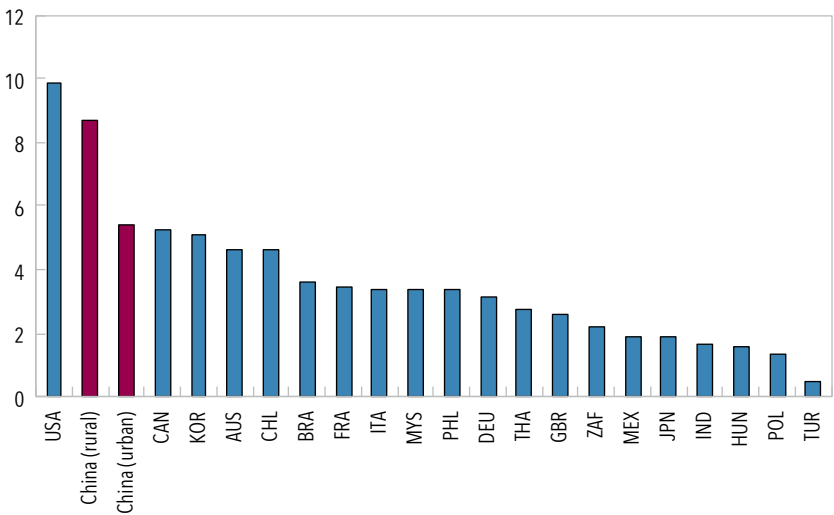
(In percent of GDP)



Sources: CEIC; IMF External Sector Report; OECD; and IMF staff calculations.

2. Private Health Expenditure

(Percent of disposable income)

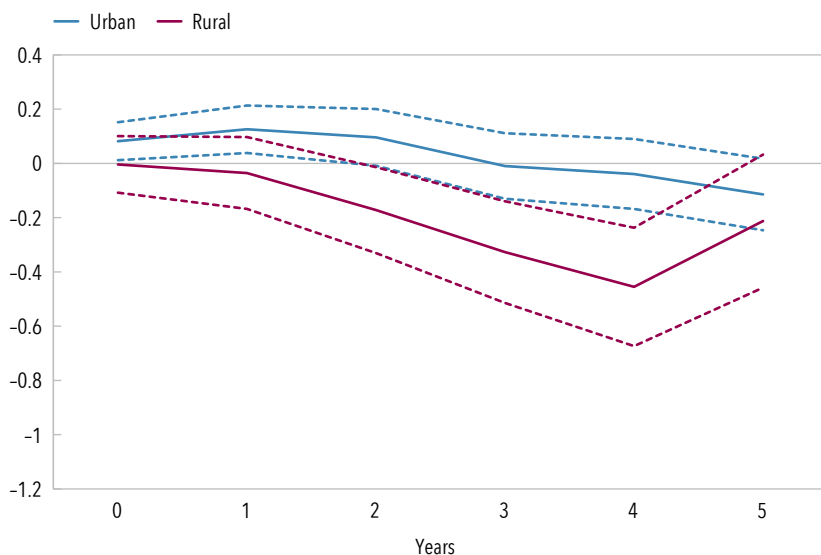


Sources: CEIC; Haver; WHO; and IMF staff calculations.

Figure 2.3. Impact on Household Saving Rate after an Increase in Social Spending

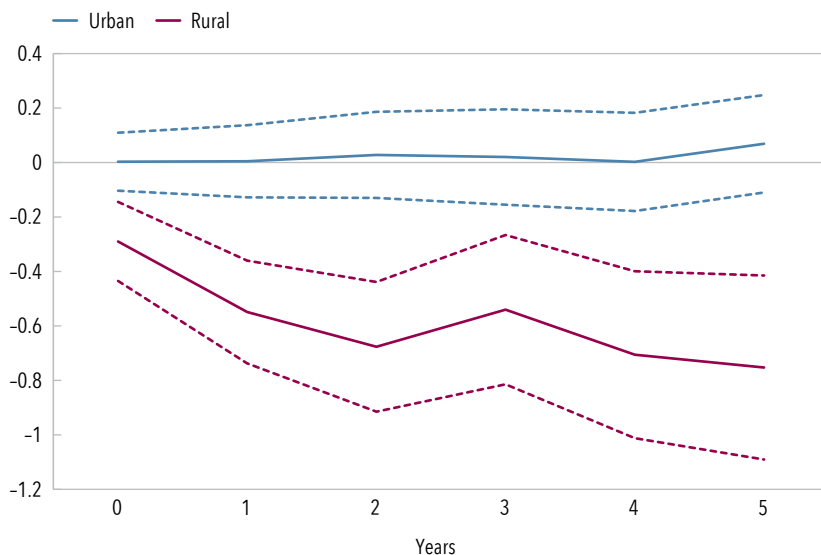
1. Impact of Public Social Security Spending on Saving Rate

(Percentage points; with 10 percent higher public social security spending per capita)



2. Impact of Public Health Care Spending on Saving Rate

(Percentage points; with 10 percent higher public health care spending per capita)



Sources: CEIC Data; and IMF staff calculations.

Note: The figure shows the impulse response impact on urban and rural household saving rates after a 10 percent increase in public spending on social security (panel 1) and health care (panel 2). The dashed lines indicate the confidence bands with 90 percent confidence. Standard errors are clustered at the prefecture level. Annex 2.1 provides more details.

Additional prefecture-level analysis shows that government health spending reduces household savings more in areas with vulnerable populations, such as less urbanized or lower-tier cities, where public services are weaker and risks are higher (Xu and others 2025). For example, a 10 percent increase in health spending lowers the rural household saving rate by up to 1.3 percentage points in low-urbanization cities, about 1 percentage point more than in highly urbanized cities.

The findings support the hypothesis that social spending can reduce precautionary saving motives among rural households and underscore the case for more targeted expansions of social spending for rural populations.

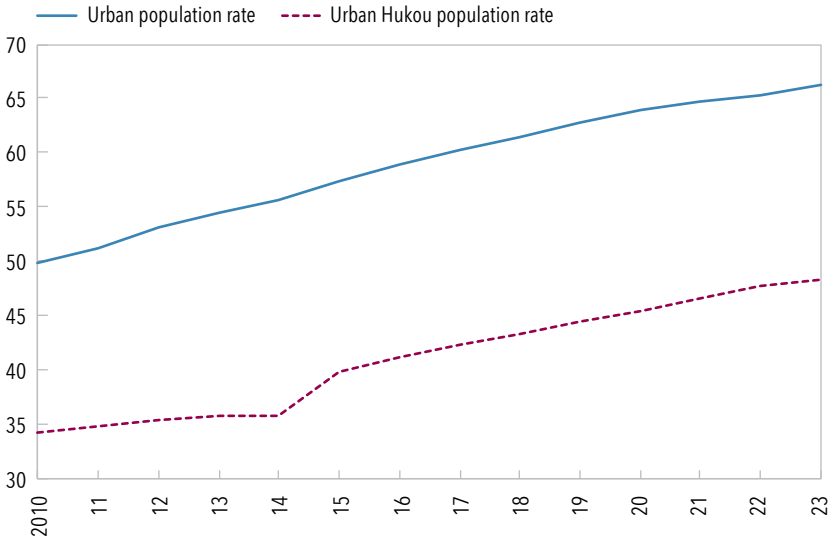
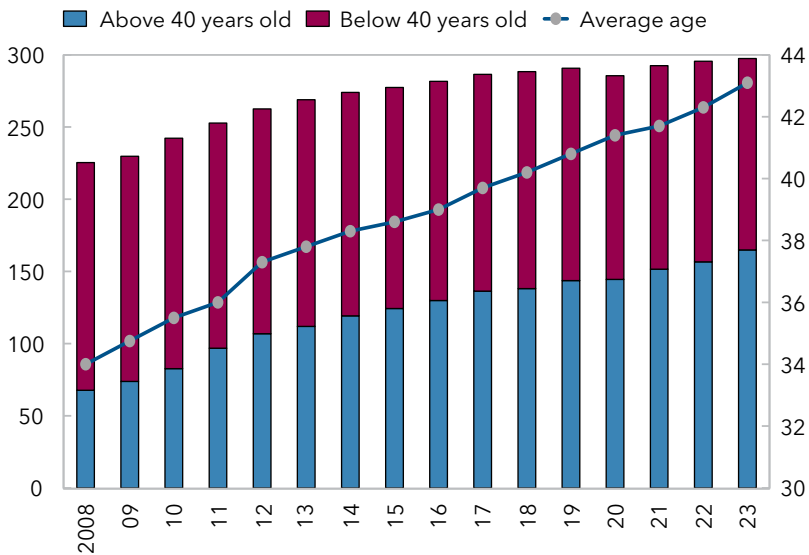
ACCELERATING IMPLEMENTATION OF HUKOU REFORMS IN URBAN AREAS

China's unique Hukou system of household registration shapes savings behavior in urban areas. Over the past 40 years, rapid growth, structural transformation, and extensive infrastructure development have driven substantial rural-to-urban migration and urbanization. The urban population share reached nearly 70 percent by 2023.

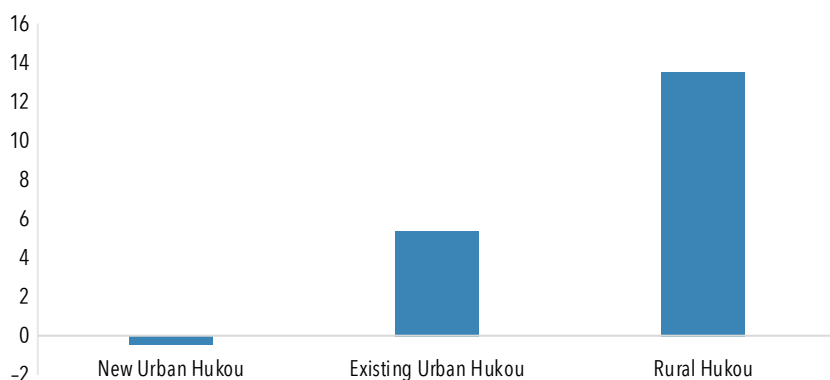
However, many urban residents still hold rural Hukous, which classify them as rural residents and exclude them from fully accessing the social benefits that urban Hukou holders receive (Figure 2.4, panel 1). For example, rural Hukou households living in urban areas have a longer pension contribution period and receive lower benefits. These residents also face barriers to accessing compulsory and college education, have limited employment opportunities, and must meet higher requirements to purchase homes in megacities. As the average age of the migrant population increases, the persistent disparity in access to social benefits such as health care and social security has increased precautionary saving motives among rural Hukou workers even more (Figure 2.4, panel 2).

Since the early 2000s, small cities have made progress in implementing substantial Hukou reforms to address rapid urbanization and significant social inequities, focusing on two key areas. The authorities have gradually relaxed registration restrictions in small and medium cities, especially after 2014 when the State Council called for abolishing the rural-urban distinction. Currently, cities with fewer than 3 million residents have lifted Hukou restrictions completely, whereas large cities still use a point-based system that factors education, employment, and social contributions into determining urban Hukou eligibility. Authorities have also worked to equalize social benefits in some regions for all urban residents regardless of Hukou status, including providing full access to educational institutions, employment services, basic pension and medical coverage, and housing security.⁵

⁵ In 2023, Zhejiang province announced a major Hukou reform across all cities except for the capital city, Hangzhou, enabling households to access full social benefits throughout the province for all registered family members, including dependent children and parents.

Figure 2.4. Urban Population Profile and Migrant Workers**1. China: Urbanization Rates***(Percent of total population)***2. Migrant Workers***(LHS: number in million; RHS: average age)*

Sources: CEIC Data; and IMF staff calculations.

Figure 2.5. Urban Households Saving Rate*(Percent of disposable income; average during 2012–22)*

Source: China Family Panel Studies; and IMF staff calculations.

Note: The chart presents average urban area household saving rates during 2012–22, controlling for household characteristics.

However, gaps between urban and rural Hukou households persist in large cities and fuel precautionary household saving. Strict residency rules still apply, and access to benefits, such as eligibility for home purchases, are unequal. For example, homebuyers must hold Hukou registration and show a record of social security contributions or personal income tax payments. High school students from migrant families must take college entrance exams in their Hukou-registered prefectures, which usually have significantly lower college acceptance rates than Tier 1 cities such as Beijing and Shanghai.

An empirical analysis used household-level microdata from the China Family Panel Studies to assess whether Hukou status has a significant effect on urban households' saving behavior.^{6, 7}

The results show that urban households with urban Hukous tend to save significantly less than rural Hukou households, with a saving rate of about 7.0 percentage points lower (Annex Table 2.1.1, column 1), which suggests that Hukou status is a crucial driver of household savings even after accounting for pension coverage and other household characteristics.

New urban Hukou households—those that migrated and obtained a new urban Hukou—save even less than households that have always held an urban Hukou

⁶ The China Family Panel Studies is a nationally representative longitudinal survey conducted biennially by Peking University's Institute of Social Science Survey. Spanning from 2010 to 2022 across 31 provinces, the survey provides the most up-to-date, comprehensive information on households' consumption and saving behaviors, social safety net coverage (including pension and medical insurance plans), and demographic characteristics. In each round, the sample covers 13,000 to 17,000 individuals from more than 6,000 urban households. The latest survey in 2022 was published in November 2024.

⁷ Annex 2.2 provides more details about this analysis.

registered in their current cities (Annex Table 2.1.1, column 2). Many of these households likely accumulated high savings before obtaining the new urban Hukou. Expectations of greater future social benefits from their new Hukou status also reduced savings.

Urban Hukou reforms in the 2010s also helped narrow the saving rate gap between urban and rural Hukou households. In 2014, the authorities launched a nationwide urban Hukou reform program (the New-Type Urbanization Plan) to grant 100 million urban Hukous to migrant households and reduce social benefit gaps between urban and rural Hukou households in lower-tier cities. Annex Table 2.1.1, column 3, shows that after the authorities announced pilot cities between 2014 and 2016, household saving rates in those cities declined significantly and the gap between urban and rural Hukou households narrowed.

These results underscore an important policy implication: continued Hukou reforms, especially in megacities, could have a substantial effect on reducing urban household savings.

STABILIZING THE REAL ESTATE SECTOR TO BOOST CONSUMPTION

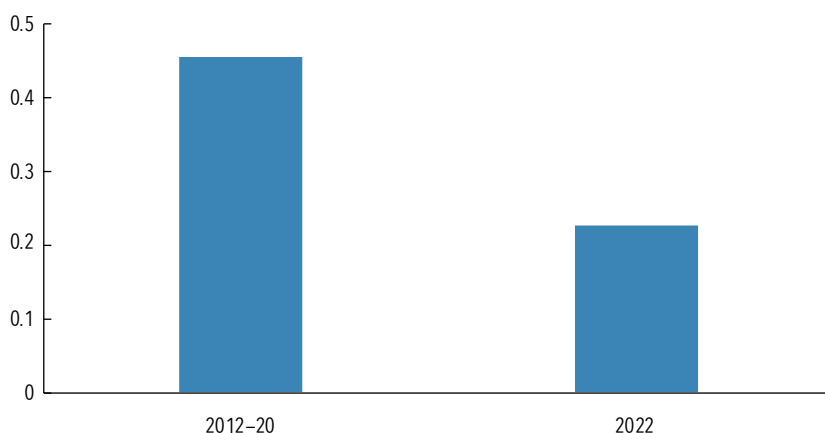
Developments in the housing sector also affect households' savings decisions. China's real estate sector has grown significantly since the early 2000s to about 20 percent of GDP by 2020 after accounting for links across other sectors. Household wealth is increasingly related to home prices: more than 90 percent of households own properties, which is among the highest homeownership rates globally (Huang, Yi, and Clark 2020), and housing wealth accounts for a large share of household total net worth. However, rising vulnerabilities in the real estate market led to a prolonged multiyear contraction marked by a sharp decline in property sales and a correction in house prices. As of December 2025, residential property sales measured by floor space sold declined by more than 50 percent from the peak in 2021, and housing starts declined by 80 percent over the same period. House prices have also declined, falling by 12 percent in the primary market and 21 percent in the secondary market. The smaller declines in the primary market might reflect local government guidance directing property developers to limit price movements.

An assessment of how housing market developments influence saving behavior draws on household-level survey data from the China Family Panel Studies over 2012–22. The analysis isolates the property market wealth effect, with particular attention to the recent real estate market correction.⁸ Changes in house prices affect household wealth and thus alter homeowners' consumption and saving

⁸ Existing literature has provided evidence that house prices affect household savings through multiple channels (for example, Zhang and others 2018), but most studies have focused on the period of rapid real estate market expansion, and only a few have empirically examined distinct channels through which the housing market developments could affect household savings.

Figure 2.6. Wealth Effect: Impact of Lower Net Housing Asset on Homeowners Saving Rate

(Percentage points; with a 20 percent decline in house price)



Sources: CFPS; and IMF staff estimations.

Note: Solid bars indicate statistical significance with 90 percent confidence.

behavior. House price corrections or a more pessimistic outlook for future house price growth can lead to reduced household consumption and higher savings.⁹

The empirical analysis found evidence of a wealth effect channel in China (Figure 2.6; Annex Table 2.2.1). The ratio of net housing asset (NHA) to income among urban households shows a significant association with the household saving rate. A decline in the NHA-to-income ratio equivalent to a 20 percent drop in house prices increased the urban household saving rate by 0.45 percentage points during 2012–20.¹⁰ Although the magnitude of the wealth effect has decreased since 2021 (Figure 2.6), the change is not statistically significant, and the wealth effect remains robust (Annex Table 2.2.1, column 2).¹¹ This finding suggests that declining house prices in recent years continue to weigh on consumption and contribute to elevated household savings. To the extent that price

⁹ House price changes can also affect saving and consumption through a down payment channel that influences the saving behavior of potential home buyers, especially those who do not own property. Falling housing prices reduce the required down payment and thus the incentive to save. However, a major housing market slump can weaken that relationship if potential home buyers delay home purchases and reduce saving for a down payment. The analysis controls for the down payment channel, but the discussion focuses on the wealth effect because the down payment effect has weakened during the housing market correction (Xu and others 2025).

¹⁰ The analysis calculated the estimated impact as the product of the change in the ratio of net housing asset (NHA) to income (–22.7), corresponding to a 20 percent decline in house prices, and the coefficient of NHA-to-income ratio reported in Annex Table 2.2.1 (–0.02).

¹¹ As Annex Table 2.2.1, column 2 shows, the difference in the NHA wealth effect impact between 2012–20 and 2022 is not statistically significant.

adjustments have been restrained, additional house price declines could intensify wealth effect pressures.

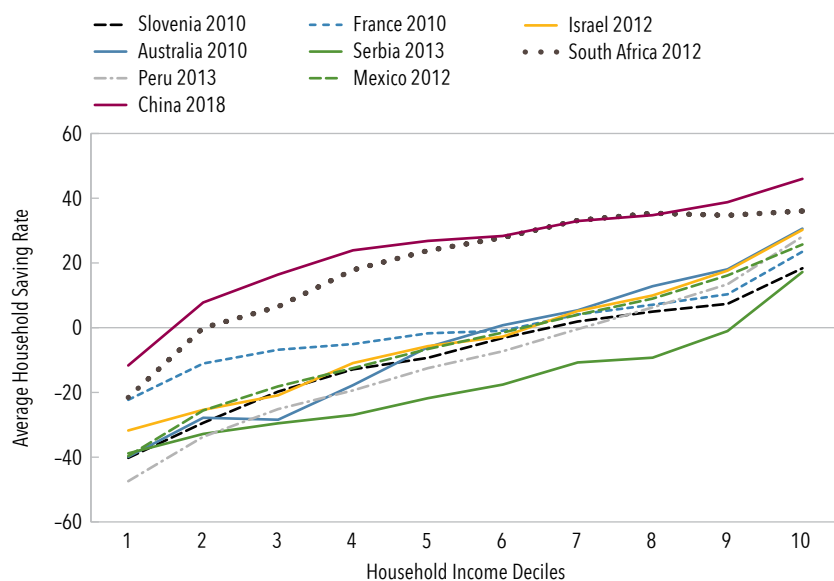
The protracted property market adjustment also affects household savings through declining confidence. Uncertainty about future house prices, property developers' finances, and developers' ability to deliver houses has weighed on consumer confidence, which plummeted in mid-2022 and has not recovered. In an environment of elevated uncertainty, households tend to self-insure by strengthening precautionary saving and dampening current consumption.

Overall, the findings suggest that the housing market correction has had a significant impact on household savings. The wealth effect remains robust, lowering consumption and raising savings. Subdued consumer confidence amplifies the wealth effect despite limited house price adjustments.

CONCLUSIONS AND POLICY IMPLICATIONS

Reducing the aggregate household saving rate requires a multifaceted policy approach. Strengthening the social safety net can help mitigate precautionary saving motives, especially in China, where lower-income groups exhibit relatively high saving rates compared with peers in other countries (Figure 2.7). Policy efforts should also focus on stimulating consumption through measures that

Figure 2.7. Average Household Saving Rate by Income Deciles
(Percent of disposable income)



Sources: Chinese Household Income Project (CHIP); Luxembourg Income Study (LIS) Cross-National Data Center; and IMF staff calculations.

facilitate an efficient and shorter housing market adjustment and preserve household wealth.

The findings point to several policy priorities for reducing household savings through comprehensive and forceful measures.

Increasing social spending to align with international peers can help reduce high household savings, especially if targeted towards rural households. A calculation that assumes doubling social spending in more rural areas resulted in an additional fiscal cost of 1.0 percent of GDP, a cumulative increase in consumption of 1.8 percent of GDP over five years, and a decline in the saving rate of 1.1 percentage points of GDP (Xu and others 2025). Social spending targeted to rural households should therefore be a priority, given the fiscal constraints facing local governments.

In urban areas, accelerating Hukou reforms gradually can reduce the gap in social benefits between migrant and urban Hukou households. Hukou reforms are incomplete in major cities with populations greater than 3 million, so liberalizing Hukou registration restrictions and providing more equitable social benefits to households regardless of Hukou status would help address the disparity.

The downward correction in the housing market also affects household savings through the wealth effect and consumer confidence. Measures that facilitate a more efficient and less costly transition in the real estate sector to a new equilibrium can also avoid a prolonged drag on consumption and additional increases in household savings.¹²

ANNEX 2.1. PREFECTURE-LEVEL ANALYSIS: SOCIAL SPENDING AND HOUSEHOLD SAVINGS

The prefecture-level analysis was based on prefecture-level annual data from 2012 to 2022 and covered approximately 240 prefectures out of 293 prefecture-level cities in China. All prefecture-level variables except for saving rates were winsorized at the 0.5 percent level.

The following prefecture-level panel fixed-effects local projections specification was used to investigate the hypothesis that higher social spending is associated with a lower household saving rate:

$$\Delta \text{Saving_Rate}_{i,area,t+h} = \beta_{1,h} \log(\text{Spending}_{i,t}^{SS}) + \beta_{2,h} \log(\text{Spending}_{i,t}^{Health}) + \beta_{3,h} \log(\text{Spending}_{i,t}^{Edu}) + \beta_{4,h} X_{i,area,t} + \gamma_i + \gamma_t + \varepsilon_{i,b} \quad \forall h = 1, 2, \dots, 5 \quad (2.1.1)$$

where $area \in \{\text{urban}, \text{rural}\}$, with the regressions estimated separately by urban and rural areas. The dependent variable is the cumulative change in household saving rate in prefecture i from year $t - 1$ to $t + h$, and the key explanatory variables include the logarithm of social spending on social security, health care,

¹² As highlighted in IMF (2026), measures include deploying central government financing to complete presold unfinished housing, accelerating the exit of unviable developers, and allowing greater housing price flexibility.

and education. The specification also controlled for a vector of prefecture-level characteristics such as house price-to-income ratio (different for urban and rural subsamples), house price growth, GDP per capita, and the first lag of household saving rate to isolate the finding from other confounding effects such as housing affordability, housing market cycles, income levels, and autocorrelation, respectively. Prefecture and year fixed effects were also included. Standard errors clustered at the province level. Figure 2.3 presents the estimates for $\beta_{1,b}$ and $\beta_{2,b}$ in urban and rural areas, together with the 90 percent confidence intervals.¹³

ANNEX TABLE 2.1.1.

Role of Hukou Status in Affecting Urban Households' Savings			
Variables	Baseline	New Urban Hukou Households	NUP Hukou Reform
Urban Hukou	-7.03*** (0.82)		-7.88*** (0.85)
New urban		-10.09*** (1.55)	
Existing urban		-6.80*** (0.82)	
After NUP reform			-3.69* (2.06)
Urban Hukou × post-NUP reform			6.07** (2.22)
Pension	-2.06*** (0.56)	-2.06*** (0.56)	-1.82*** (0.54)
Education	-1.39*** (0.10)	-1.38*** (0.10)	-1.32*** (0.11)
log(income)	32.51*** (0.82)	32.53*** (0.82)	32.49*** (0.81)
Debt-to-income ratio	-11.36*** (0.86)	-11.34*** (0.86)	-11.36*** (0.85)
Household size	-3.54*** (0.23)	-3.54*** (0.23)	-3.54*** (0.23)
Age	-0.14 (0.15)	-0.15 (0.15)	-0.10 (0.13)
Age ²	0.45*** (0.14)	0.46*** (0.14)	0.42*** (0.13)
Observations	30,033	30,033	30,026
R-squared	0.21	0.21	0.21
Industry fixed effects	Yes	Yes	Yes
Province-year fixed effects	Yes	Yes	Yes
Household fixed effects	No	No	No
Year fixed effects	No	No	No

Source: China Family Panel Studies 2012–22.

Note: This table reports the estimated coefficients from equation 2.2.1 based on the full urban sample of the China Family Panel Studies from 2012 to 2022. The column “Baseline” presents the baseline estimates, and the column “New Urban Hukou Households” presents the estimates from a variant of equation 2.2.1 that includes new urban and existing urban dummies. Column “NUP Hukou Reform” includes an interaction between the Hukou dummy and the after-NUP-reform dummy for pilot cities after the announcements. Standard errors clustered at the province level. NUP = New-Type Urbanization Plan.

* $p < .1$; ** $p < .05$; *** $p < .01$.

¹³ Xu and others (2025) include additional results and robustness checks.

ANNEX 2.2. HOUSEHOLD-LEVEL ANALYSIS: URBAN HUKOU AND HOUSEHOLD SAVINGS

The following household-level panel regressions examined the hypothesis that Hukou status has historically been a significant determinant of urban household savings:

$$Saving_Rate_{i,t} = \beta_1 UrbanHukou_{i,t} + \beta_2 Pensions_{i,t} + \beta_3 Controls_{i,t} + \gamma_{province-year} + \gamma_{industry} + \epsilon_{i,t} \tag{2.2.1}$$

where the regressions are estimated with the urban sample. The dependent variable is household *i*'s saving rate in year *t*, and the explanatory variables include households' urban Hukou status dummy, pension dummy, other household characteristics controls, and province-year fixed effects for households' registered locations and industry fixed effects for household heads' employment.

The saving rate was calculated as the difference between urban households' disposable income and annual expenditures, which was then divided by disposable

ANNEX TABLE 2.2.1.

Real Estate Market and Household Savings		
Variables	Baseline	Difference-in-difference
log(income)	16.969*** (0.368)	16.935*** (0.370)
NHA-to-income ratio	-0.020*** (0.006)	-0.020*** (0.006)
Deposit-to-income ratio	-0.196*** (0.068)	-0.139* (0.071)
Dummy for nonhomeowner	2.778*** (0.738)	3.070*** (0.790)
Deposit-to-income ratio × dummy for nonhomeowners	-1.283*** (0.251)	-1.443*** (0.279)
NHA-to-income ratio × 2022 dummy		0.010 (0.033)
Deposit-to-income ratio × 2022 dummy		-0.583*** (0.206)
Dummy for nonhomeowner × 2022 dummy		-1.833 (1.516)
Deposit-to-income ratio × dummy for nonhomeowners × 2022 dummy		1.060* (0.602)
Household fixed effects	Yes	Yes
Time fixed effects	Yes	Yes
Observations	31,905	31,905
R-squared	0.105	0.106

Source: China Family Panel Studies 2012-22.
Note: The estimated coefficients from regression equation 2.3.1 are based on the full urban sample of the China Family Panel Studies from 2012-22. Column "Baseline" presents the baseline estimates, and column "Difference-in-difference" presents the estimates with an alternative specification that includes interactions with the 2022 dummy. Standard errors clustered at the household level. NHA = net housing asset.
p* < .1; **p* < .01.

income. In the empirical tests, saving rate observations were winsorized at the 10 percent level and excluded if any were below –200 percent.

ANNEX 2.3. HOUSEHOLD-LEVEL ANALYSIS: REAL ESTATE MARKET AND HOUSEHOLD SAVINGS

The household-level analysis leveraged the biennial household-level survey data from the China Family Panel Studies. The following specification was used to disentangle the wealth and down payment effects:

$$\begin{aligned} \text{Saving_Rate}_{i,t} = & \beta_1 \log(\text{Income}_{i,t}) + \beta_2 \text{NHA}_{i,t} + \beta_3 \text{Deposit}_{i,t} \\ & + \beta_4 \text{Non_homeowner}_{i,t} + \beta_5 \text{Deposit}_{i,t} \times \text{Non_homeowner}_{i,t} + \tau_i + \tau_t + \epsilon_i \quad (2.3.1) \end{aligned}$$

The specification includes both households' housing-related net worth and bank deposit-to-income ratio, while controlling for household income, household fixed effects, and year fixed effects. $\text{NHA}_{i,t}$ is the net-housing-asset-to-income ratio of household i in year t , which serves as a proxy for property-related household wealth and was calculated by subtracting the household's mortgage balance from the value of currently owned properties, then divided by household income. The net-housing-asset-to-income ratio was winsorized at the threshold of 500.

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Service Sector as an Engine of Growth

Natalija Novta, Yizhi Xu, and Robert Zymek

China's service sector has potential to be a sustainable growth driver that can help the country converge to advanced economy income levels, create jobs, and meet the growing demand for services from a wealthier and aging population. The sector has shown strong innovation, especially in information technology and financial services. However, it also shows high and increasing capital and labor misallocation, which suggests scope for substantial productivity gains. Reforms such as accelerating trade openness in services, removing interprovincial and other regulatory barriers, and pursuing more state-owned enterprise reforms can reduce misallocation and increase productivity and thus unlock the sector's potential.

INTRODUCTION

Many of China's traditional growth drivers face headwinds, including the property sector, infrastructure investment, and manufacturing exports (Chapter 1). Achieving sustainable growth on the demand side requires China to rebalance the economy away from investment and toward consumption. On the supply side, the country needs new growth engines to replace construction-related sectors and traditional manufacturing. In this context, the service sector—which includes activities such as trade and accommodation, transport and communications, health care, education, and financial and business services—is an underexploited growth driver.

China's increasingly wealthy and aging population is driving rapid growth in demand for services, and policies should support the transition to a more service-based economy. The service sector remains small by international comparison: the value-added share of services in advanced economies exceeds China's share by 20 percentage points.

Yet empirical evidence underscores the sector's potential as a sustainable growth driver. The perception that services have low productivity levels often leads to expectations that a larger service sector would drag down aggregate productivity growth (Baumol 1967). However, that pattern has not been the case in China, where many expanding market service subsectors have exhibited both high productivity and strong productivity growth, supporting aggregate total factor productivity (TFP) growth.

Despite high innovation in China's service sector, resource misallocation has increased in the services sector, with capital and labor becoming more concentrated in less-productive service firms, which affects aggregate productivity growth adversely. Misallocation in market services exceeds that of similar sectors in peer countries and in China's manufacturing sector.

These findings suggest that the right policies—especially those that lift barriers to competition and promote trade openness—can unlock the service sector's potential to boost growth by reducing resource misallocation and thereby increasing productivity.

STYLIZED FACTS

China's service sector has expanded significantly since the 1980s, and productivity growth has been robust in recent years but could still improve considerably.

The sectoral composition of China's economy has shifted significantly since the 1980s. The service sector's share of nominal value added has grown from less than 30 percent to more than 50 percent (Figure 3.1, panel 1). The secondary sector's share of nominal value added began to decline gradually after 2011, although employment remained relatively stable. Other countries have also experienced this pattern of structural transformation, but the service sector in China remains a smaller share of GDP than in peer economies with similar levels of per capita income (Figure 3.2).

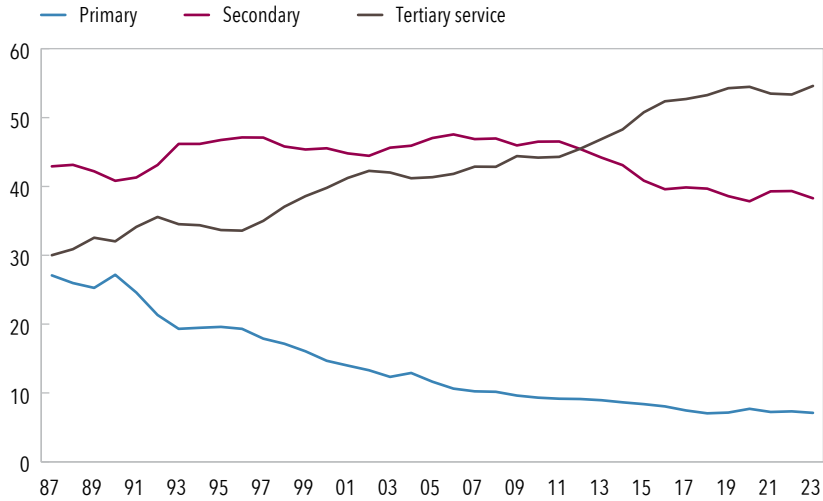
Since the early 2000s, TFP growth in the service sector has been substantial and has outpaced TFP growth in the secondary sector (Figure 3.1, panel 2). However, heterogeneity in TFP growth is significant across subsectors within both the secondary and tertiary sectors (Figure 3.3). The service sector includes diverse activities, with a clear distinction between market and nonmarket services. Government agencies or noncommercial entities often provide nonmarket services such as health care, education, and government administration. These subsectors have expanded with the growth of per capita income, but they have contributed little to aggregate TFP growth because they tend to have low levels of productivity and exhibit low or even negative TFP growth. By contrast, market services such as financial and information technology services and transport, along with manufacturing subsectors, are more productive and have shown positive TFP growth. Real estate services and industries with significant state ownership, such as oil and gas, are exceptions and experienced negative TFP growth between 2003 and 2019.

The large increase in services' share of value added and the heterogeneity in productivity performance across sectors raise a question: how has the shift toward the service sector affected aggregate productivity growth in China? A shift-share analysis suggests a positive effect. Structural reallocation of capital and labor toward services has contributed positively to aggregate TFP growth in China since

Figure 3.1. Long-Term Developments of China's Tertiary Service Sector

1. Nominal Value Added Share

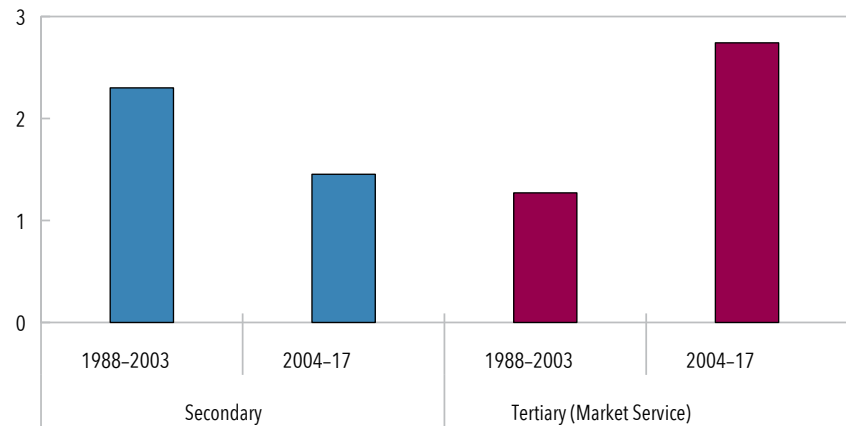
(In percent)



Sources: Haver Analytics; and IMF staff calculations.

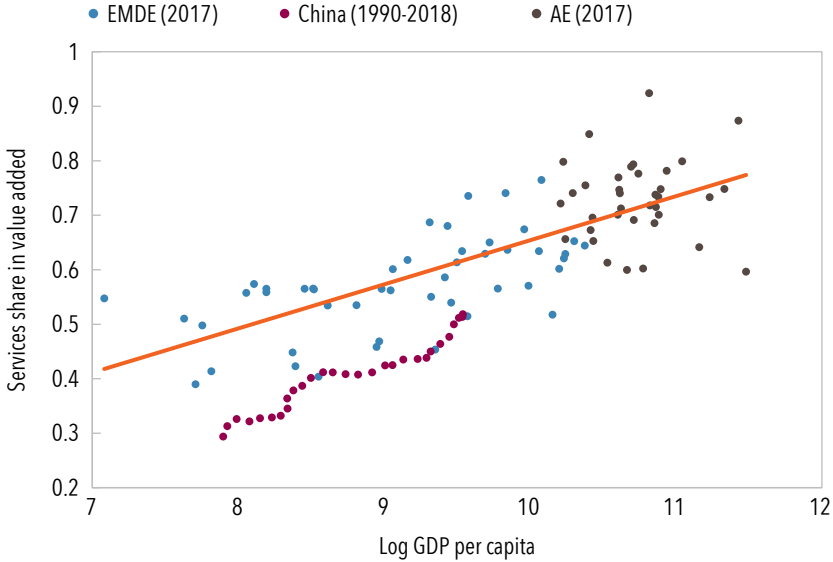
2. Sectoral Weighted TFP Growth

(In percent)



Sources: World KLEMS; and IMF staff calculations

Notes: TFP growth is defined as $\Delta \ln(NVA) - \Delta \ln(P) - \alpha \Delta \ln(L) - (1-\alpha) \Delta \ln(K)$, where NVA is nominal value added, P is sectoral deflator, L is employment multiplied by labor quality index, K is capital stock, and α is labor income share.

Figure 3.2. GDP Per Capita and Size of the Service Sector

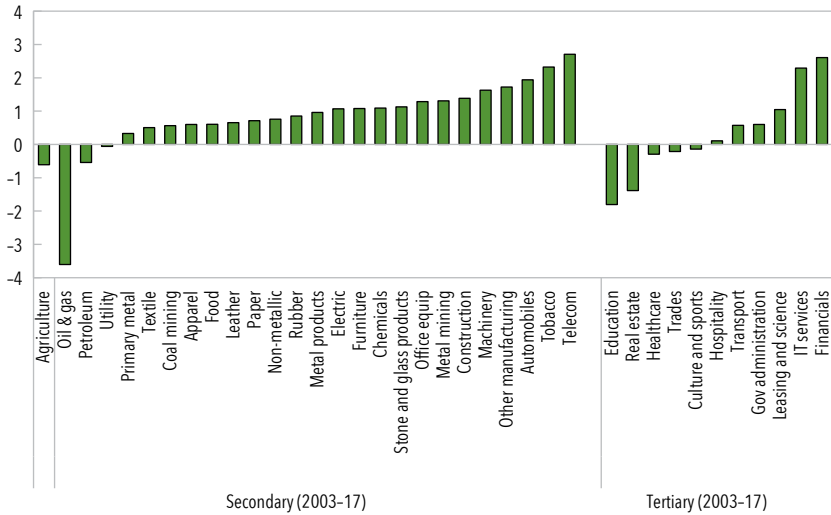
Sources: Haver; and IMF staff calculations.

early 2000s.¹ Market service sectors that expanded had higher TFP levels than the sectors from which labor moved, such as agriculture and some heavy industries, including oil and gas. The shift toward market services contributed strongly to TFP growth in the 2000s (Figure 3.4). The contribution remained positive in the 2010s but weakened somewhat because real estate services expanded and contributed negatively to overall TFP growth in market services.²

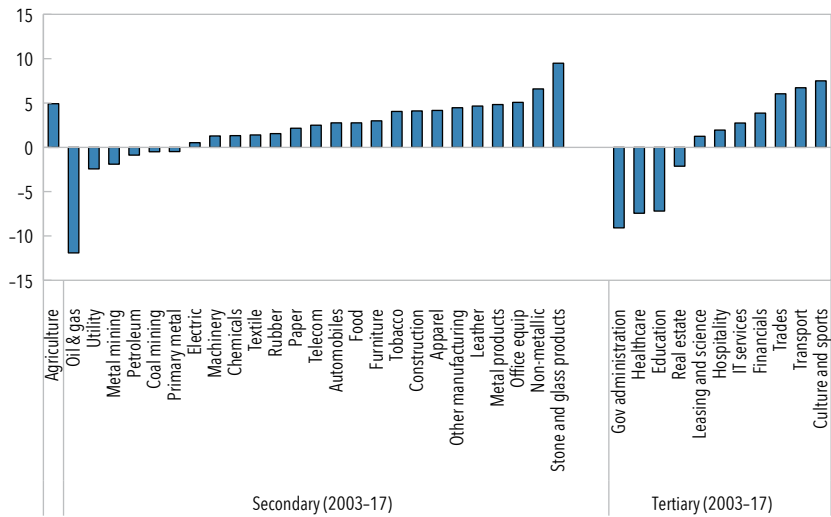
These trends suggest that continued expansion of services need not drag down productivity growth. As long as high-productivity market services continue to innovate rapidly and exhibit high productivity growth, expanding their share of value added will drive aggregate productivity growth in China. This is consistent with the finding in IMF (2018) that structural transformation toward the service sector has contributed positively to growth across emerging economies.

¹ Two main factors drive aggregate productivity growth: structural change and within-sector productivity growth, primarily because of innovation. A shift-share analysis decomposed aggregate productivity growth into growth from structural change (the expansion or contraction of sectors) and within-sector productivity growth. The contribution of structural change to aggregate productivity growth depends on the relative productivity levels of the expanding and contracting sectors. Annex 3.1 provides details of the shift-share analysis.

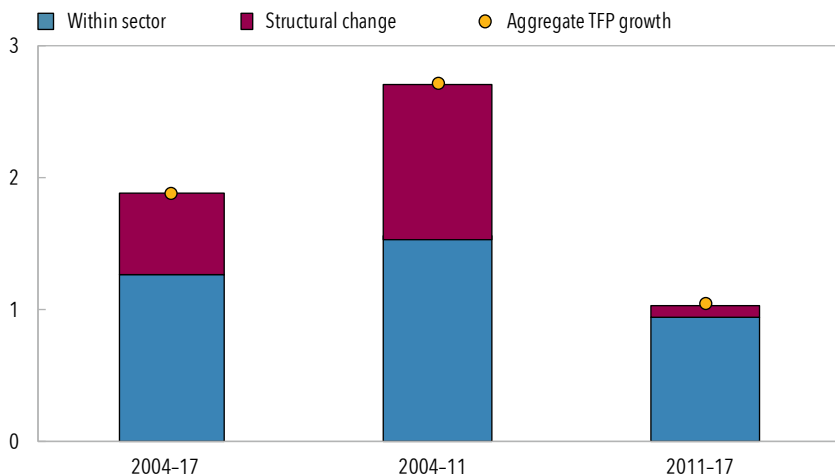
² Even when low-productivity nonmarket services are included in the shift-share analysis, rebalancing toward services has not affected aggregate TFP adversely.

Figure 3.3. TFP Level and Growth by Sector**1. Average TFP Level by Sector***(Logarithm of TFP; 2003–17)*

Sources: World KLEMS; and IMF staff calculations.

2. Average TFP Growth by Sector*(In percent; 2003–17)*

Sources: World KLEMS; and IMF staff calculations.

Figure 3.4. Contributions to Aggregate TFP Growth*(In percent; incl. non market service sectors)*

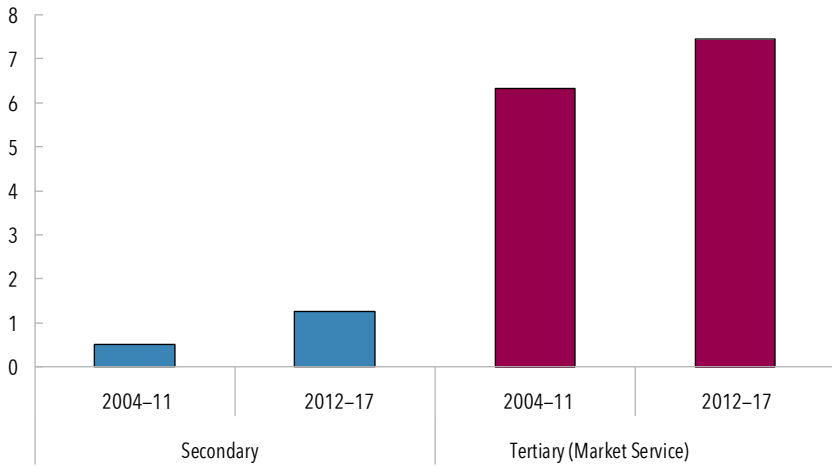
Sources: World KLEMS; and IMF staff calculations.

INNOVATION AND RESOURCE MISALLOCATION IN THE SERVICE SECTOR

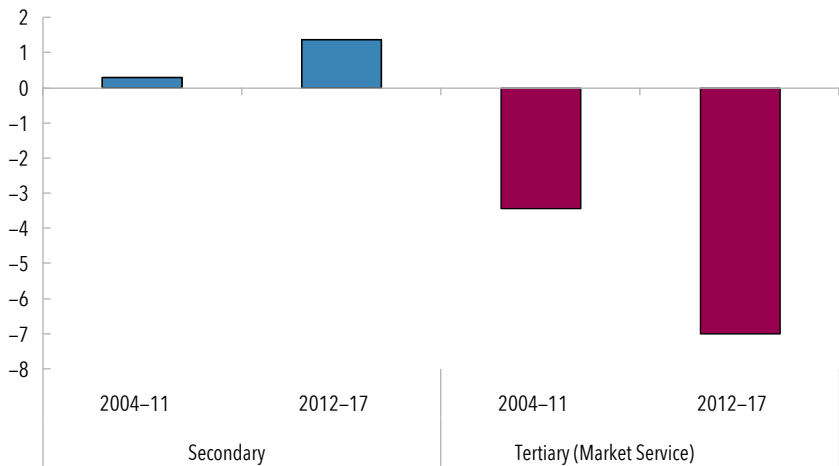
Market services can play a crucial role in productivity growth. Two factors drive TFP growth within sectors: technological innovation within firms and allocative efficiency of capital and labor across firms. Innovation is the dominant driver of TFP growth in perfectly competitive markets without frictions and policy distortions. Ideally, the most innovative firms can quickly attract capital and labor away from less-productive firms, and with efficient resource allocation, those firms can achieve the highest possible productivity growth.

In China, however, while service sector firms have been highly innovative (Figure 3.5, panel 1), capital and labor allocation across firms has become increasingly less efficient (Annex 3.2). This decrease in efficiency is likely because of excess capital and labor employed in state-owned entities amid structural impediments to labor mobility, along with a lack of competition and trade openness in services.

Firm-level data show that although allocative efficiency in the manufacturing sector improved slightly over the past two decades, it worsened notably in the market service sector (Figure 3.5, panel 2). Declining allocative efficiency means that capital and labor are increasingly concentrated in unproductive firms because of a variety of frictions. Some frictions, such as the time a young firm needs to attract talent and expand, reduces allocative efficiency only temporarily. Other frictions reduces allocative efficiency more structurally—for example, policies that favor state-owned or connected firms through preferential credit and

Figure 3.5. Innovation and Misallocation of Capital and Labor**1. Innovation Growth***(percent)*

Sources: Orbis; World KLEMS; and IMF staff calculations.

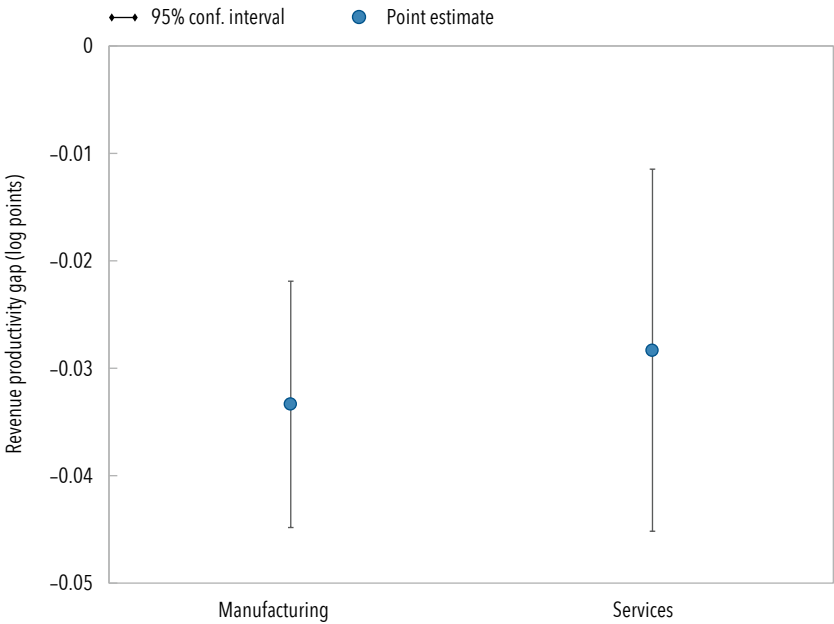
2. Allocative Efficiency Growth*(percent)*

Sources: Orbis; World KLEMS; and IMF staff calculations.

subsidies, which is common in China (Figure 3.6); or regulatory barriers that prevent new firms from entering the market or restrict nationwide operation of existing firms in the absence of a unified national market. Frictions such as those constrain TFP growth that firms’ underlying innovation could otherwise achieve.

Allocative efficiency of China’s service sectors is also worse than in other countries. International comparisons show a large allocative efficiency gap in services between China and its peers (the productivity loss China experienced relative to comparator countries because of factor misallocation). On average, China’s allocative efficiency gap is about 25 percentage points relative to five major economies and is especially large in subsectors such as hospitality, retail, and information services (Figure 3.7).³ This gap implies potentially sizable gains in productivity and income from structural reforms that improve resource allocation in the service sector.

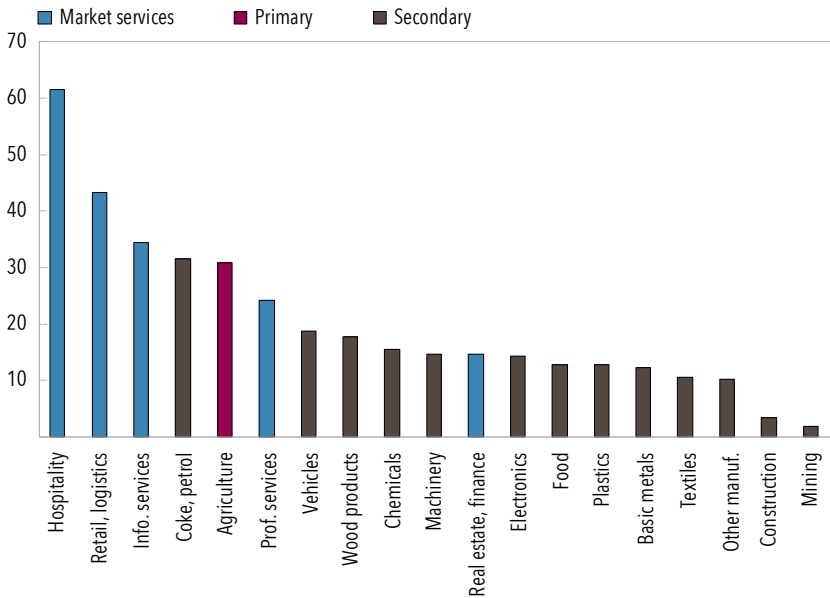
Figure 3.6. SOE Revenue Productivity Gaps. 2018



Sources: Bureau van Dijk Orbis; Wind; and IMF staff calculations.
Note: Point estimates and confidence intervals from a regression of (the log of) firm revenue productivity on sector fixed effects and an SOE fixed effect for the cross section of Chinese firms in 2018. Revenue productivity is computed as value added per capital and labor input, as in Hsieh and Klenow (2009).

³ The five advanced economies include France, Germany, Italy, Japan, and the United States. The approach taken to estimate capital and labor misallocation (allocative efficiency) is based on seminal work by Hsieh and Klenow (2009). The analysis was restricted to market services because firm-level data are not available for public services. Annex 3.2 provides more details about the methodology for measuring allocative efficiency.

Figure 3.7. Allocative Efficiency Gap: China Relative to Major AEs, 2019
(In percent)



Sources: Bureau van Dijk Orbis; and IMF staff calculations.

Note: The allocative efficiency gap represents China's implied TFP loss from greater measured resource allocation relative to an average of five major AEs (DEU, FRA, JPN, ITA, USA; weighted by PPP GDP).

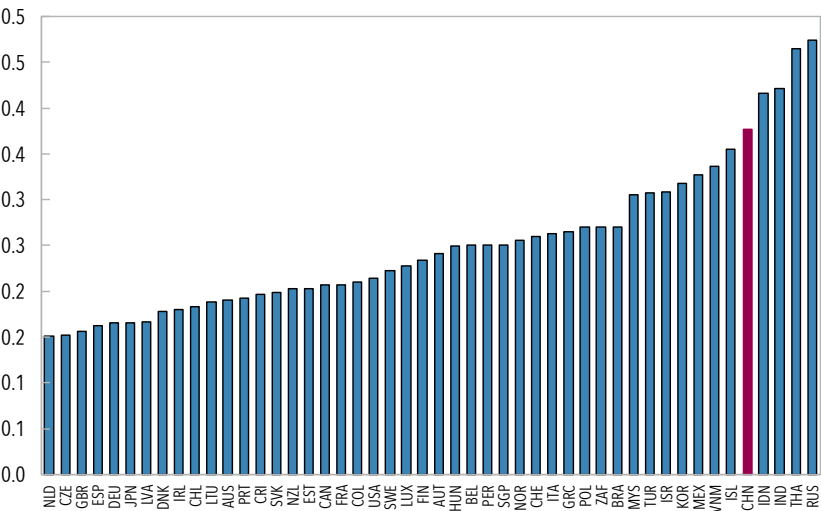
REFORMS TO LIFT ALLOCATIVE EFFICIENCY AND PRODUCTIVITY

Addressing allocative inefficiency is critical for increasing productivity in the service sector. Capital and labor allocation improves in competitive markets, with lower barriers to firm entry and greater trade openness. China is still among the countries with the highest restrictions on trade in services (Figure 3.8, panel 1), reflected in tighter restrictions on foreign entry, low regulatory transparency, and more barriers to competition. State-owned enterprises also have a strong presence in China's market service sector (including in finance, transport, storage, and post and communications) that could reduce market competition (Figure 3.8, panel 2). Other domestic interprovincial and regulatory barriers to entry can also restrict competition.

Capital and labor allocation in manufacturing has improved, and the following policies can help improve capital and labor allocation for services. China should reduce regulatory restrictions that prevent firm entry in some service subsectors, reduce interprovincial barriers to trade, open services to trade, pursue additional state-owned enterprise reforms in the service sector, and allow greater labor mobility. The authorities have already planned some measures, such as building a unified national market and increasingly opening services to trade and investment,

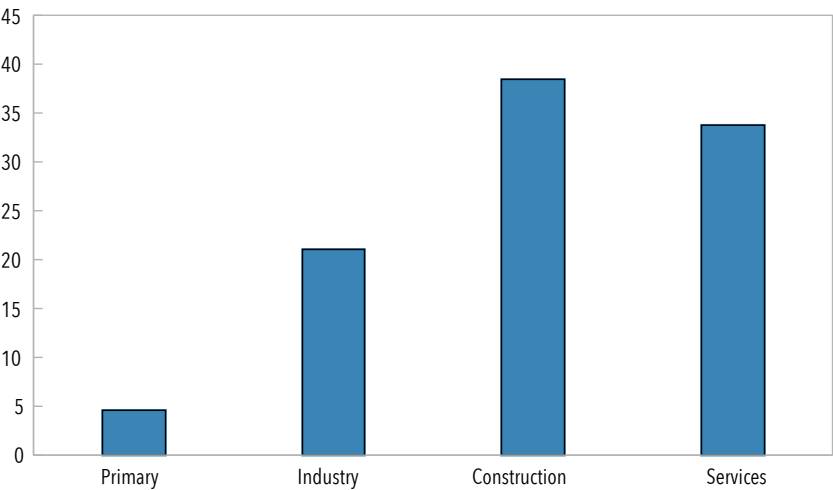
Figure 3.8. Factors Related to China’s Low Allocative Efficiency

1. Service Trade Restrictiveness Index, 2022
(Simple average across 22 service sectors)



Sources: OECD Services Trade Restrictiveness Index; and IMF staff calculations.

2. Share of SOEs in Sectoral Value Added, 2017



Sources: Chinese National Bureau of Statistics; and Zhang (2019).
Note: Primary includes farming, forestry, animal husbandry, and fishing.

and they should proceed more quickly. Continued deepening of Hukou reforms and strengthening of the social safety net (Chapter 2) would also help by allowing greater mobility and flexibility in the labor market.

Continued innovation and policies that improve allocative efficiency in the service sector will allow expansion of high-productivity services to support aggregate TFP growth. Previous IMF analysis documented convergence of productivity toward the global frontier across most service subsectors (IMF 2018), which underscores the sector's dynamic potential. Therefore, accelerated development of competitive service industries will be instrumental in sustaining long-term growth and supporting China's convergence to advanced economy income levels.

ANNEX 3.1. SHIFT-SHARE ANALYSIS

Taking differences over a given period:

$$\Delta \ln TFP_{c,t} = \Delta \left(\sum_{s=1}^S \theta_{c,s,t} \ln TFP_{c,s,t} \right). \quad (3.1.1)$$

where for country c in year t , aggregate TFP_{ct} is a weighted sum of sectoral productivities, where $TFP_{c,s,t}$ is the productivity of sector s , and $\theta_{c,s,t}$ is the share of sector s in aggregate value added of country c in year t .

Decomposing further yields:

$$\Delta \ln TFP_{c,t} = \sum_{s=1}^S (\Delta \theta_{c,s,t}) \ln TFP_{c,s,t-1} + \sum_{s=1}^S \theta_{c,s,t-1} (\Delta \ln TFP_{c,s,t}). \quad (3.1.2)$$

where the growth in aggregate TFP is the sum of structural change (the first term on the right-hand side) and the change in within-sector total factor productivity (the second term).

ANNEX 3.2. AGGREGATE TOTAL FACTOR PRODUCTIVITY AND ALLOCATIVE EFFICIENCY

Aggregate total factor productivity (TFP) in country c and year t can be written as follows:

$$\ln TFP_{ct} \equiv \ln TFP_{ct}^* + \sum_{s=1}^S \theta_{cst} \ln AL_{cst}, \quad (3.2.1)$$

where TFP_{ct}^* is the "ideal" TFP that would prevail in the absence of misallocation, and AL_{cst} is allocative efficiency in country c , sector s , and year t . It follows that the growth of aggregate TFP can be decomposed as follows:

$$\Delta \ln TFP_{ct} \equiv \Delta \ln TFP_{ct}^* + \Delta \ln AL_{ct}, \quad \Delta \ln AL_{ct} \equiv \Delta \sum_{s=1}^S \theta_{cst} \ln AL_{cst}. \quad (3.2.2)$$

The term $\Delta \ln TFP_{ct}^*$ captures the growth in TFP resulting from innovation in firms' productivities, entry of new product varieties, or both. The term $\Delta \ln AL_{ct}$ captures the TFP impact of changes in allocative efficiency.

Allocative efficiency was inferred at the sector level from firm-level data on value added and factor inputs, following Hsieh and Klenow (2009) and Bils,

Klenow, and Ruane (2021). Assuming that firm output is produced using a constant-returns-to-scale Cobb-Douglas technology with a sector-specific labor share $1 - \alpha_s$, and that such output is imperfectly substitutable across firms with a constant substitution elasticity σ , Hsieh and Klenow (2009) show that

$$\widehat{TFPQ}_{snt} \propto \frac{VA_{snt}^{\frac{\sigma}{\sigma-1}}}{K_{snt}^{\alpha_s} L_{snt}^{1-\alpha_s}}, \quad \widehat{MRPK}_{snt} \propto \frac{VA_{snt}}{K_{snt}}, \quad \widehat{MRPL}_{snt} \propto \frac{VA_{snt}}{L_{snt}}, \quad (3.2.3)$$

where VA_{snt} , K_{snt} , and L_{snt} are the value added, capital stock, and employment, respectively, of a firm n operating in sector s in year t ; and $\widehat{TFPQ}_{snt}$, $\widehat{MRPK}_{snt}$ and $\widehat{MRPL}_{snt}$ are measures of the firm's real productivity ($TFPQ$, total factor productivity quantity), marginal revenue product of capital ($MRPK$), and marginal revenue product of labor ($MRPL$), respectively. Given firm-level data on value added, labor use and capital use, and values for the parameters α_s (the capital share) and σ (the elasticity of substitution between the outputs of different firms), calculating the measures of a firm's real productivity and marginal revenue productivities is thus possible.

$TFPR_{snt}$ is the total revenue factor productivity of firm n in sector s in year t .

$$= MRPK_{snt}^{\alpha_s} MRPL_{snt}^{1-\alpha_s}, \quad \overline{TFPR}_{st} = \overline{MRPK}_{st}^{\alpha_s} \overline{MRPL}_{st}^{1-\alpha_s}, \quad (3.2.4)$$

where $\overline{TFPR}_{st}$ is a measure of the average revenue-based total factor productivity ($TFPR$) in sector s , and $\overline{MRPK}_{st}$ and $\overline{MRPL}_{st}$ denote the revenue-weighted harmonic means of firms' $MRPK$ s and $MRPL$ s in sector s , respectively.

Following Hsieh and Klenow (2009), TFP in sector s can then be decomposed as follows:

$$TFP_{st} = TFP_{st}^* \times \underbrace{\left[\sum_n \frac{\left(TFPQ_{snt} \frac{\overline{TFPR}_{st}}{TFPR_{snt}} \right)^{\sigma-1}}{\sum_n TFPQ_{snt}^{\sigma-1}} \right]^{\frac{1}{\sigma-1}}}_{\equiv AL_{st}}, \quad (3.2.5)$$

where TFP_{st}^* denotes the sector's "ideal" TFP that would prevail in the absence of misallocation, and $AL_{st} \in [0,1]$ captures allocative efficiency. Only $\Delta \ln TFP_{st}$ and $\Delta \ln AL_{st}$ can be measured directly, so $\Delta \ln TFP_{st}^*$ is inferred indirectly from the difference between the two.

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Scaling Back Industrial Policies to Reduce Misallocation

Daniel Garcia-Macia and Siddharth Kothari

Industrial policies are a core part of China's economic strategy. The government uses various policy tools—such as subsidies and regulations—to promote strategically important economic sectors. However, official information on the scale and effects of industrial policy support is largely unavailable. This chapter addresses that gap, estimating that industrial policy imposed a fiscal cost of about 4 percent of GDP annually over 2013–23, with most support directed to manufacturing. The chapter also examines how industrial policy affects factor allocation. Different instruments have distinct impacts: subsidies often cause excessive production, whereas trade and regulatory barriers limit production to suboptimal levels. Overall, factor misallocation from industrial policies is estimated to lower domestic aggregate total factor productivity (TFP) by about 1.2 percent. Even after accounting for knowledge spillover benefits, model estimates suggest that scaling back industrial policy in China would reduce misallocation and increase productivity.

INTRODUCTION

Industrial policies aim to transform the economy's sectoral structure and have been widely adopted worldwide, especially since 2020. In China, they have long been a central part of the government's policy toolkit, which uses a range of instruments to promote strategically important economic sectors. These instruments include cash subsidies, tax benefits, subsidized credit, subsidized land, trade and regulatory barriers, and industry coordination (State Council 2005).¹ The central government sets the strategic priorities for industrial policy in its Five-Year Plans (for example, People's Republic of China 2026), but implementation is highly decentralized and occurs through local governments and multiple government agencies. For example, local governments distribute cash and in-kind subsidies, the Ministry of Finance determines sector-specific tax rates, and the People's Bank of China allocates credit to selected sectors, including through structural credit facilities.

¹ *Decision of the State Council on Promulgating and Implementing the Temporary Provisions on Promoting Industrial Structure Adjustment*, [2005] No. 40, State Council, People's Republic of China.

These policies have affected China's economy significantly, helping to develop specific industries and technologies (Goldberg and others 2024; Barwick, Kalouptsi, and Zahur 2025; Barwick and others 2025) but also leading to fiscal costs, financial sector risks, and potential factor misallocation (Chen, Herrera, and Lugauer 2022; DiPippo, Mazzocco, and Kennedy 2022). However, official information on the size and effects of industrial policy support is largely unavailable.

To examine these issues, the analysis in this chapter measured the scale of industrial policy support, evaluated its effects on resource allocation and productivity, and assessed whether current policies target sectors with the greatest growth spillovers.

The analysis used data from listed firms' financial reports and the land registry to quantify the size of China's main industrial policy instruments (based on Garcia-Macia, Kothari, and Tao 2025). Cash subsidies, tax benefits, subsidized credit, and subsidized land for favored sectors are estimated to total about 4 percent of GDP per year. The manufacturing sector receives a disproportionate share of support, with semiconductors, high-tech manufacturing, and automobiles benefiting the most from cash subsidies and tax benefits.

A structural model assessed the impact of industrial policy on domestic factor misallocation and aggregate productivity (Garcia-Macia, Kothari, and Tao 2025). The analysis found that these policies distort resource allocation across and within sectors. Factor misallocation caused by industrial policies was estimated to lower China's aggregate TFP level by about 1.2 percent compared with a baseline without such policies, potentially lowering GDP by up to 2 percent after accounting for capital accumulation.

A separate model of sectoral technological spillovers assessed whether China's industrial policies effectively target sectors with large spillovers (Garcia-Macia and Sollaci 2025). The results show that policy support is concentrated too heavily in a few sectors compared with the optimal distribution, which suggests that making support more horizontal across sectors (scaling back industrial policies) can raise productivity and increase growth.

These findings highlight the need to reduce the scale of industrial policies in China to lower fiscal costs and reduce factor misallocation while lifting productivity. Less support for manufacturing sectors can also rebalance the economy toward services—an underused growth driver (see Chapter 3)—and ease trading partners' concerns about the role of industrial policies in boosting export competitiveness amid growing geoeconomic fragmentation. Greater transparency about industrial policies would improve policymaking and enable detailed assessments of their costs and benefits, including international spillovers.

QUANTIFYING INDUSTRIAL POLICIES

Financial statements of listed firms from the Wind Data Service database and land transaction data from the land registry were used for calculating the equivalent fiscal cost of four key industrial policy instruments in China over 2010–23: cash subsidies, tax benefits, subsidized credit, and subsidized land for favored sectors. The analysis then combined those four instruments to estimate their total fiscal cost.

Cash Subsidies

Cash subsidies are the most straightforward instrument to measure because firms report them explicitly in their income statements. Figure 4.1 shows the subsidy rate by sector (defined as aggregate cash subsidies as a share of value added),² highlighting the top and bottom thirds among 21 industry groups in the Wind database. The most subsidized sectors are ones the authorities often designate as priorities, including semiconductors, high-tech manufacturing, and automobiles (for example, People's Republic of China [2021]), whereas the least-subsidized sectors include consumer goods, services, real estate, and energy. Overall, aggregate subsidy rates declined from 2.4 percent in 2013 to 2.0 percent in 2023, but the sectoral ranking remained remarkably stable.

Tax Benefits

Favored sectors also receive support through tax benefits. Although the top statutory corporate income tax rate is 25 percent, firms in certain high-tech sectors pay a reduced rate of 15 percent and are exempt from taxes during their first two years.

The analysis measured tax benefits at the sector level as the difference between the top statutory corporate income tax rate and the sector's effective rate. The effective rate, defined in the Wind database as corporate income tax payments divided by total earnings before taxes in a given year, captures various benefits to the extent they differ across sectors, including asset-specific investment incentives or tax discounts for firms in special economic zones.

As shown in Figure 4.1, panel 2, the sectoral ranking for tax benefits aligns closely with that for cash subsidies (Figure 4.1, panel 1): most sectors in the top and bottom thirds for cash subsidies also appear in the corresponding groups for tax benefits. However, the time trend differs. Aggregate tax benefit rates rose from 4.4 percent of profits in 2013 to 6.3 percent in 2023.

Credit Subsidies

Credit allocation is another important tool of industrial policy. The People's Bank of China incentivizes banks to provide low-cost loans to specific sectors, such as high-tech and green technologies, through various structural credit facilities.³

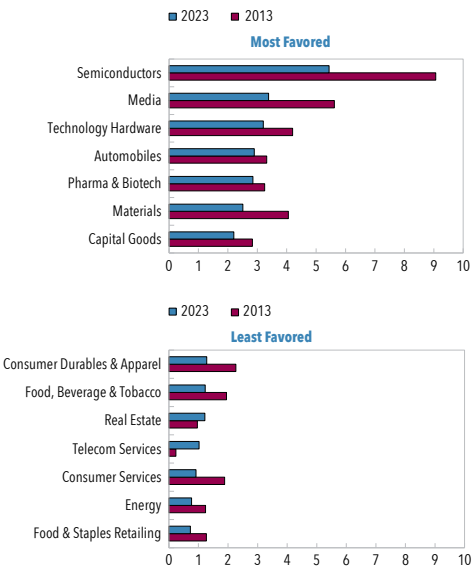
Credit subsidies were measured as differences in average effective interest rates across sectors after accounting for standard financial determinants and other control

² Value added is not available in the Wind database. The analysis constructed it as revenues minus operating costs net of labor costs, where labor costs were approximated as the firm's labor count times urban wages from the National Bureau of Statistics—following David and Venkateswaran (2019)—and rescaled to match the aggregate labor share in the KLEMS database.

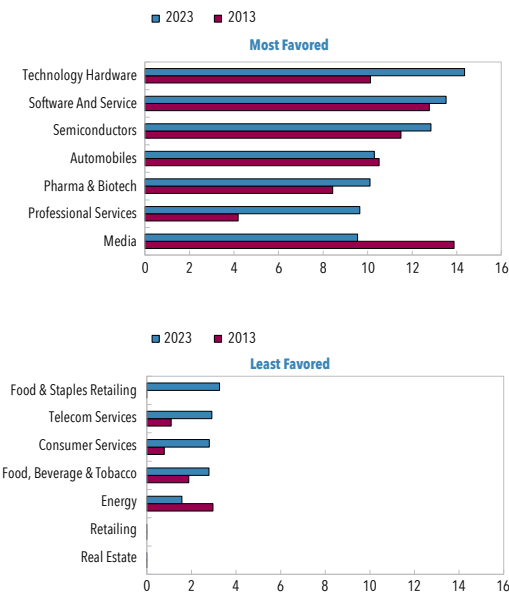
³ Recent examples include the Sci-Tech Innovation and Technological Transformation Lending Facility introduced in 2024 and the Carbon Emission Reduction Facility from 2021.

Figure 4.1. Cash Subsidies and Tax Benefits by Sector

1. Cash Subsidies
(Percent of value added)



2. Corporate Income Tax Benefits
(Percent of profits)



Sources: García-Macia, Kothari, and Tao 2025; and Wind database.
Note: Sectors are grouped into 21 categories according to the Wind definition of industry group. Shares are calculated at the sector level. The sample includes only listed firms and excludes financial firms and firms with negative value added. In panel 2, corporate income tax benefits are calculated as the difference between the statutory tax rate of 25 percent and the effective rate, defined as corporate income taxes over profits. Firms with nonpositive profits or income tax payments are excluded. Sectors with negative tax benefits are truncated at zero.

variables. Effective interest rates were defined as interest payments divided by interest-bearing liabilities from the previous year. A regression analysis related the effective interest rate at the firm level to sector fixed effects to estimate the credit subsidy for each sector, controlling for financial variables that can affect credit costs for firms.⁴

Interest rates were found to be slightly lower for sectors that receive large cash subsidies and tax relief. However, a greater differential was found for the manufacturing sector as a whole. Manufacturing firms on average pay effective interest rates that are about 0.4 percentage point lower than firms in other sectors. The analysis used the manufacturing result as the benchmark.

Land Subsidies

At lower levels of government, in-kind subsidies—including discounted land use rights—commonly support certain sectors and firms. For example, the central government authorizes local governments to sell industrial land to priority sectors at 70 percent of the standard price of industrial land.⁵

The analysis used land registry data to estimate land subsidies. The land registry data covers all firms and about 1.6 million transactions.⁶ Consistent with the approach used for other instruments, the estimation was based on sector-level differences in land prices and compared the unit prices of land the government sold to firms in the manufacturing sector with those of nonmanufacturing market-based sectors (excluding land for public uses).

Industrial land in China is typically much less expensive than land for other uses (Lam and Schipke 2016; DiPippo, Mazzocco, and Kennedy 2022), but simple price comparisons might conflate factors related to location. To address this, the analysis used geographic coordinates for each transaction to compare manufacturing land prices with nearby nonmanufacturing land prices. For each manufacturing land transaction, the equivalent unit price of other sectors was calculated as the average price of nonmanufacturing land transactions within a 1-kilometer radius in the same year.

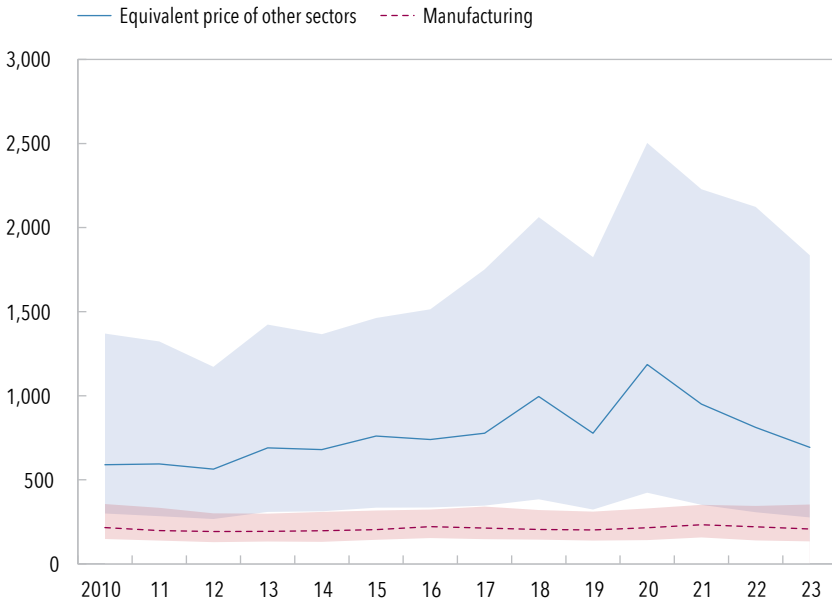
Figure 4.2 shows the median land prices and compares manufacturing and nonmanufacturing sector prices for nearby transactions. The median manufacturing land price has been stable at slightly more than 200 renminbi (RMB) per square meter, whereas the nonmanufacturing land price has exceeded RMB 600 per square meter consistently, which implies a discount of at least two-thirds for manufacturing firms. The manufacturing discount grew larger during the property market boom through the 2010s and then dropped after the property market correction began in 2021, which suggests that the government shielded manufacturing firms from the broader rise in land values.

⁴ See Garcia-Macia, Kothari, and Tao (2025) for the exact regression specification. The regression included controls for firm type—whether the firm is a central state-owned enterprise (SOE), local SOE, foreign firm, or private firm—and various financial variables.

⁵ *Notice of the General Office of the Ministry of Land and Resources on Issuing the Guidelines for the Implementation of Industrial Land Use Policies*, Document no. [2016] No. 38, General Office of the Ministry of Land and Resources, People's Republic of China.

⁶ The data are compiled by the Real Estate Registration Center of the Ministry of Natural Resources.

Figure 4.2. Unit Prices of Land by Sector
(Real RMB per square meter; median and interquartile range)



Sources: Garcia-Macia, Kothari, and Tao 2025; Ministry of Natural Resources; and Wind.

Note: Data for the figure are from a sample of 1.6 million land transactions, after excluding land for public uses, transactions with prices at the top and bottom percentiles, and transactions with less than two nearby nonmanufacturing properties. The dotted line plots the median price for land sales to manufacturing firms. The solid line plots the median price for nonmanufacturing transactions within 1 kilometer of each manufacturing transaction and in the same year. Shaded areas show interquartile ranges. RMB = renminbi.

State-Owned Enterprises versus Privately Owned Enterprises

A commonly held perception is that China channels industrial policy mainly through state-owned enterprises (SOEs). The analysis of various policy instruments shows that although SOEs appear to benefit more from credit subsidies, policy support extends well beyond state firms.

Both cash subsidy and tax benefit rates are higher for private firms than for SOEs, though the difference in cash subsidies largely reflects the dominance of private firms in favored sectors. After controlling for sectoral activity, SOEs receive higher cash subsidy rates.

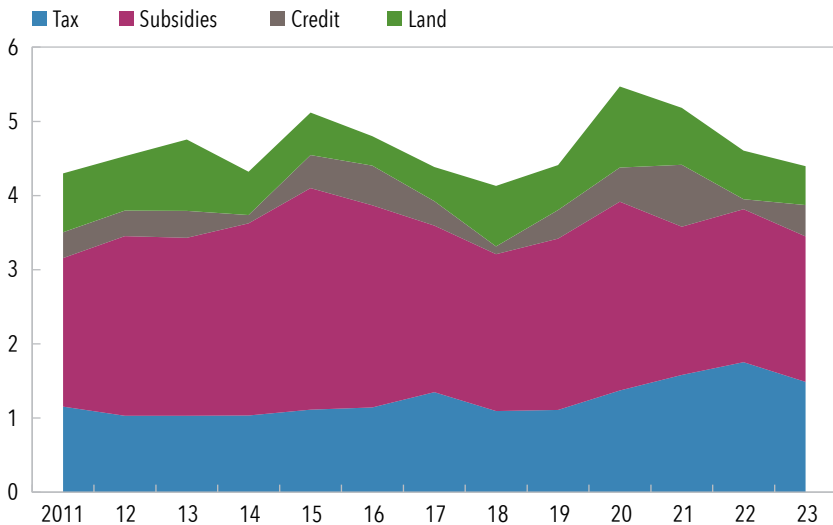
The analysis also found that SOEs—especially central SOEs—receive lower effective interest rates than private firms do, consistent with previous literature (for example, Schipke, Rodlauer, and Zhang [2019]; Jurzyk and Ruane [2021]; DiPippo, Mazzocco, and Kennedy [2022]). However, differences between SOEs and private firms in industrial land prices are statistically insignificant.

Total Size of Industrial Policy

The analysis estimated the equivalent fiscal cost of industrial policy as a share of GDP by aggregating support delivered by the four instruments.⁷ Figure 4.3 shows that total industrial policy support reached up to 4.4 percent of GDP as of 2023. Cash subsidies accounted for the largest share (2.0 percent of GDP in 2023), followed by tax benefits (1.5 percent), land subsidies (0.5 percent), and subsidized credit (0.4 percent). The total size of industrial policy remained broadly stable over time, though its composition shifted. Tax subsidies have gained importance since 2020, reflecting pandemic tax relief for firms, whereas the use of other instruments has declined slightly.

Although international comparison is difficult because of lack of harmonized data, according to the European Commission, state aid in EU countries—including cash subsidies, tax benefits, and credit subsidies—averaged about 1.5 percent of GDP in 2022, with large manufacturing economies slightly above that level.

Figure 4.3. Industrial Policy Support by Instrument over Time
(Percent of GDP)



Sources: Garcia-Macia, Kothari, and Tao 2025; Ministry of Natural Resources; and Wind.

Note: Results for listed firms were extrapolated to all firms and corrected for the disproportionate share of corporate income tax revenue contributed by listed firms. Financial firms were excluded. Labor costs (to calculate value added) were inferred from employee counts. Land subsidies and subsidized credit were based on advantages for the manufacturing sector relative to other sectors, excluding the real estate sector.

⁷ This estimation uses an economic definition of IP based on identifying preferential policy support for some sectors relative to others. Such a definition may differ from legal interpretations (e.g., based on WTO law). Moreover, this calculation required additional assumptions, including some extrapolation for the instruments estimated with data on listed firms, detailed in Garcia-Macia, Kothari, and Tao (2025).

Criscuolo and others (2023) report similar averages across nine OECD economies. Therefore, China appears to use industrial policy more intensively.⁸

The estimates in Figure 4.3 could potentially overstate the size of industrial policy if non-listed firms receive proportionally less support. However, they exclude other instruments that lack sectoral data, such as tax benefits beyond corporate income taxes and subsidized equity funding through government-guided funds, which would increase the total.

IMPACT OF INDUSTRIAL POLICY ON FACTOR MISALLOCATION

In addition to generating fiscal costs, industrial policy could also increase factor misallocation by diverting production factors from their most productive uses. The analysis estimated the productivity costs of industrial policy in China through factor misallocation.

Framework

The analysis defined factor misallocation based on the model of Hsieh and Klenow (2009). The model described an economy of firms with different levels of total factor productivity (TFP), defined as *output* per unit of inputs. Profit maximization implies that higher-TFP firms use more production factors (capital and labor) than lower-TFP firms, which also maximizes aggregate productivity and output.

In an equilibrium without distortions, factors should be allocated such that total factor productivity in revenues (TFPR), defined as *revenues* per unit of inputs, equalizes across firms. Profit-maximizing firms would reallocate production factors across firms to capture any excess returns per unit of inputs, so any TFPR differences would disappear in equilibrium. Observed TFPR differences therefore reflect misallocation of production factors, which reduces the economy's aggregate productivity.⁹

In practice, however, measured TFPR variation might also reflect mismeasurement or adjustment costs, but policies—including industrial policies—can also drive it. For example, firms that receive more subsidies can charge lower prices and produce above the level that maximizes aggregate productivity, using too many inputs per unit of revenue and thus showing a lower TFPR. By contrast, firms with more market power (such as those protected by barriers to competition or growth) can produce below the optimal level to raise prices, resulting in a higher TFPR.

⁸ These studies used slightly different methods to quantify industrial policies, but they covered similar instruments.

⁹ Annex 4.1 presents the key expressions that relate policy distortions to TFPR and productivity losses.

Empirical Approach

The analysis linked industrial policy counts with TFPR levels to capture how industrial policies contribute to misallocation. It estimated TFPR using firms' financial reports from the Orbis database—which covers more than 300,000 listed and non-listed firms in China—and sector-level data from the KLEMS database. Industrial policy counts were obtained from Juhász and others (2025), who used a text-based analysis of policy documents to identify industrial policies in the Global Trade Alert database.¹⁰ Industrial policy measures are classified into five broad categories: subsidized financing, other subsidies, tax relief, trade barriers, and regulatory barriers.

The analysis combined the TFPR measures with sector-level data of industrial policy counts to relate industrial policies with between-sector and within-sector factor misallocation. Data availability restricted the estimation to the impacts of policies implemented over 2009–18 on sectoral outcomes in 2018. By covering a long period, this specification captured delayed policy impacts.

The analysis tested three hypotheses: (1) Sectors with higher subsidies tend to show lower sector-level TFPR, (2) sectors subject to entry barriers from trade or regulatory policies tend to show higher sector-level TFPR, and (3) sectors with more industrial policy measures tend to show higher TFPR dispersion *within* the sector, which can happen when industrial policies affect firms in the sector unevenly. The first two hypotheses relate to misallocation between sectors, and the third relates to misallocation between firms within a sector.

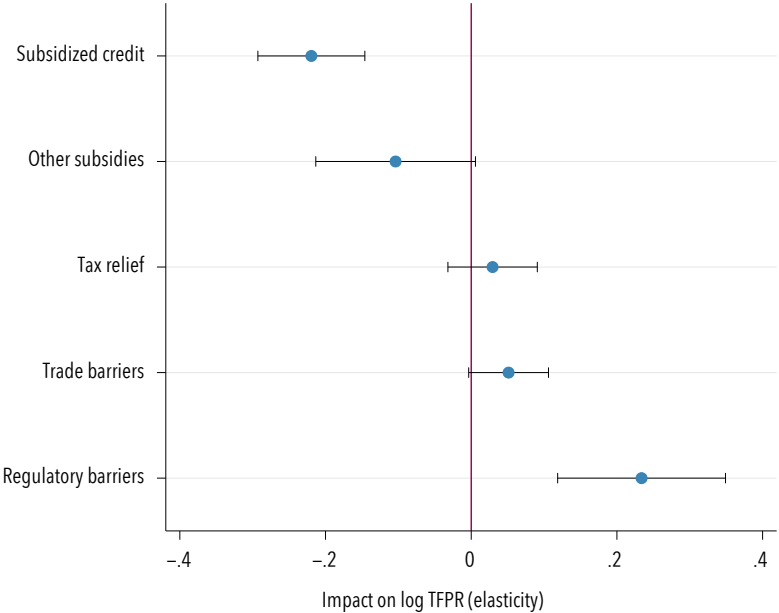
Misallocation between Sectors

The analysis considered hypotheses 1 and 2 first. Figure 4.4 shows how sector-level TFPR relates to the intensity of the five types of industrial policy measures. Subsidies, whether through credit or cash, tended to lower a sector's TFPR, as expected. The coefficient for subsidized credit was larger in absolute terms and more statistically significant than the coefficient for other subsidies. However, other subsidies were twice as prevalent in the data, so their total impact on TFPR outcomes was larger, consistent with the results in Figure 4.3. However, as expected, trade and regulatory barriers tended to increase TFPR, which suggests that firms in these sectors could benefit from market power.

The result for taxes is ambiguous and statistically insignificant, however. A possible interpretation is that some tax credits encourage production, as subsidies do, whereas others are provided only to small firms and thus discourage growth in inputs, which would raise TFPR. Overall, though, Figure 4.4 shows that industrial policies tend to generate misallocation (differences in TFPR) across sectors.

¹⁰ The Global Trade Alert database provides an imperfect measure of industrial policy intensity because it lacks information on the size of each policy measure. However, the database is the only publicly available measure at the economy-wide level that covers an extended period and a wide range of instruments.

Figure 4.4. Impact of Industrial Policy on Sector TFPR by Measure, 2009–18



Sources: Garcia-Macia, Kothari, and Tao 2025; Global Trade Alert database; Juhász and others 2025; KLEMS; and Orbis.

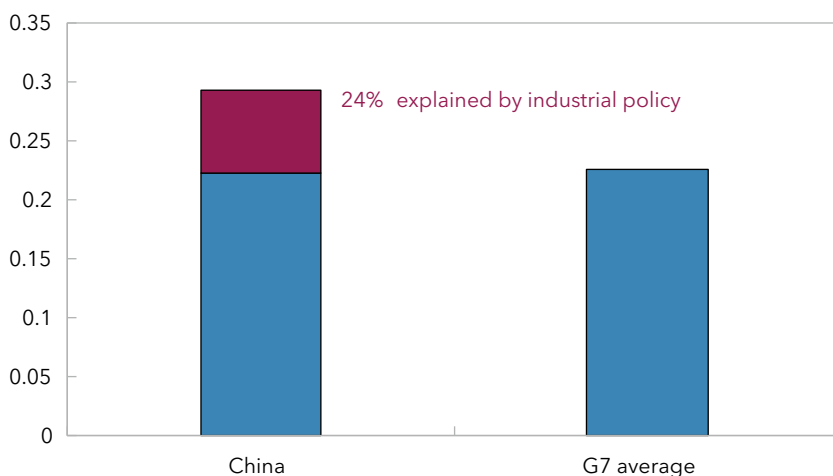
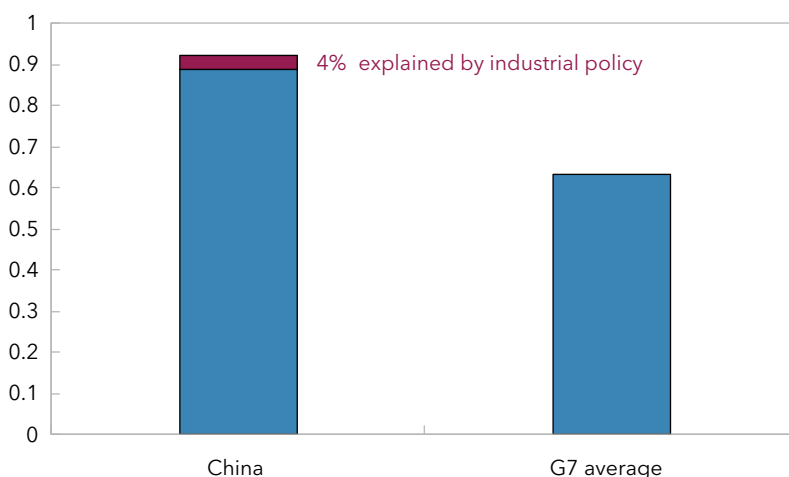
Note: The coefficients show the elasticity of TFPR to industrial policy counts in each category, based on a sector-level regression at four-digit level of Nomenclature of Economic Activities (NACE), with NACE two-digit sector fixed effects, using 2018 firm-level data for China and policies over 2009–18. The regression excludes the agriculture, finance, and nonmarket sectors, and NACE four-digit sectors with fewer than 10 observations in a given year. Whiskers indicate 90 percent confidence intervals, with standard errors clustered at the NACE two-digit sector level.

Misallocation within Sectors

Industrial policies also generate misallocation between firms within a sector (hypothesis 3). Sectors with industrial policies during 2009–18 showed a 14 percent higher within-sector TFPR dispersion in 2018 (measured by the inter-quartile range), and the difference was statistically significant. Although industrial policy measures varied only at the sector level, the distortions created appear heterogeneous across firms within a sector either because firms lack equal access to benefits or because benefits affect them unevenly (for example, larger and more connected firms could capture more subsidies).

Contribution to Overall Misallocation

Misallocation generated by industrial policies explains a nonnegligible share of overall misallocation in China. Figure 4.5 shows that about one-quarter of total

Figure 4.5. Contribution of Industrial Policy to Overall Misallocation**1. Between-Sector TFPR Dispersion, 2018***(Log TFPR, standard deviation)***2. Within-Sector TFPR Dispersion, 2018***(Log TFPR, standard deviation)*

Sources: Garcia-Macia, Kothari, and Tao 2025; Global Trade Alert database; Juhász and others 2025; KLEMS; and Orbis.

Note: The shares explained by industrial policy are based on sector-level regressions relating industrial policy to TFPR dispersion between and within sectors, respectively. The G7 average includes countries with sufficiently large samples in Orbis: France, Germany, Italy, Japan, and the United Kingdom. TFPR = total factor productivity in revenues

misallocation between sectors relates to differences in industrial policy intensity. The share for within-sector misallocation is lower at 4 percent, likely because industrial policy aims to transform the sectoral structure of the economy, and distortions within sectors arise mainly as unintended by-products. However, overall misallocation between firms is three times as large as misallocation between sectors, so even though industrial policy explains a smaller share of total within-sector misallocation, the within-sector channel can still have significant effects on aggregate productivity.

Figure 4.5 provides an international benchmark by applying the same exercise to Group of Seven (G7) countries with sufficiently large samples in Orbis: France, Germany, Italy, Japan, and the United Kingdom. In those five countries, the relationship between industrial policy and misallocation is statistically insignificant between and within sectors, probably because industrial policy was much less relevant or less distortive in those countries (at least during 2009–18, before the recent wave of industrial policy in advanced economies). Therefore, the G7 bars in Figure 4.5, panels 1 and 2, show only overall misallocation. As expected, G7 countries tend to have less overall misallocation than China, and part of that gap could reflect industrial policy–induced misallocation in China, especially for between-sector misallocation.

Productivity Losses

The analysis combined the estimated contribution of industrial policies to misallocation with the Hsieh and Klenow (2009) model to calculate the associated loss in aggregate productivity (see the formula in Annex 4.1). Overall, factor misallocation generated by industrial policies was estimated to reduce domestic aggregate TFP by about 1.2 percent relative to a baseline of no industrial policy, with most of that reduction driven by misallocation between sectors. Over time, lower capital accumulation associated with lower TFP could lower the level of GDP by up to 2 percent. These results could be interpreted as a lower bound because potential mismeasurement of industrial policy intensity could attenuate the estimates.

INDUSTRIAL POLICY BENEFITS

The analysis has focused so far on the costs of industrial policy, both the fiscal cost of providing support and the aggregate productivity losses from misallocation induced by industrial policy. Industrial policies can also generate benefits, such as promoting innovation and knowledge spillovers that can eventually raise productivity in certain sectors. The final phase of the analysis used a model that included these benefits—along with the costs—to assess whether existing industrial policies in China and other leading industrial economies should be extended or scaled back.

Model and Calibration

The analysis used a macroeconomic model of innovation with a cross-sector network of knowledge spillovers (Garcia-Macia and Sollaci [2025], based on Liu and Ma [2023]) to derive the optimal distribution of innovation inputs across sectors. In this model, the key potential benefit of industrial policy, or sector-specific support, was the ability to direct innovation toward sectors that generate broader knowledge spillovers, which then raises economy-wide innovation, productivity growth, and welfare. The model also included the additional benefits of innovation in *green* sectors, which contribute to mitigating greenhouse gas emissions. However, excessive concentration of support in a few sectors or poor targeting can be wasteful and lead to misallocation of innovation efforts and other production factors.

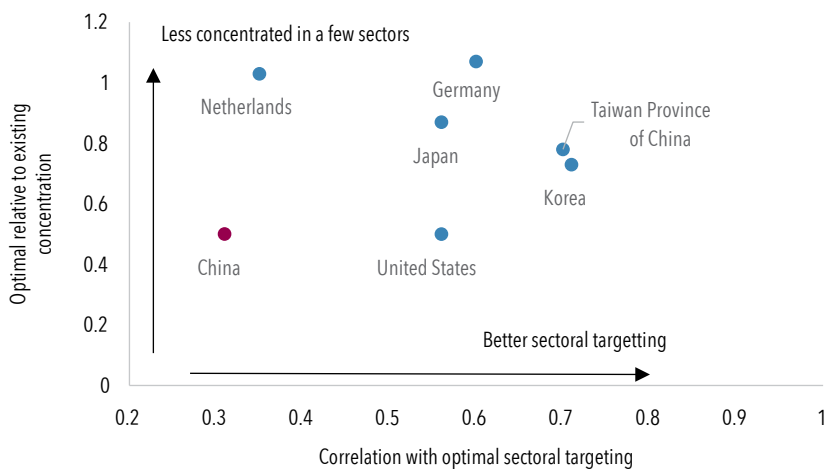
The model calibration used cross-sector patent citations from the European Patent Office's PATSTAT database to measure knowledge spillovers. Sectors with patents that are cited more often by subsequent patents in other sectors were assumed to generate broader knowledge spillovers because their innovations contribute to building knowledge in the other sectors. Generating more spillovers is typical in sectors related to basic innovation, such as chemicals or semiconductors, whereas innovation in more applied sectors such as textiles generates fewer spillovers. The existing allocation of innovation across sectors was measured with the number of active inventors in each sector, also from PATSTAT data.

Assessing Existing Policies

To assess the optimality of existing industrial policies, Figure 4.6 compares the sectoral allocation of innovation in the data (which reflects existing policies) with the optimal allocation from the model. The figure focuses on two summary statistics. The horizontal axis shows the correlation across sectors between the optimal and existing allocations. Positive values indicate that policies are directing innovation to the right sectors according to the model, whereas a value of 1 would indicate perfect targeting. The vertical axis shows the optimal sectoral concentration of innovation relative to the concentration in the data. Values less than 1 indicate that existing policies create excessive concentration of innovation in a few sectors, which suggests a need to scale back industrial policies. Economies near the top right of the chart feature a better sectoral allocation of innovation.

Figure 4.6 shows that existing policies in leading economies tend to direct innovation support to broadly the right sectors, because the correlation between observed and model-implied optimal distributions is positive in all cases. However, China features the lowest correlation among the selected economies at 0.3, which suggests that drivers other than innovation and green spillovers (such as security or self-sufficiency considerations) could influence the allocation of support. Also, the intensity of industrial policies, reflected in the concentration of innovators in certain sectors, is excessive in most economies, especially in the two largest economies: China and the United States. China concentrates more on high-tech sectors such as semiconductors, while the United States leans toward

Figure 4.6. Optimality of Existing Industrial Policies for Innovation, Selected Economies, 2010–20



Sources: International Patent Classification Green Inventory; European Patent Office PATSTAT database; Garcia-Macia and Sollaci 2025; and World Input-Output Database.
Note: The y-axis shows the ratio between the model optimum and data of the Herfindahl-Hirschman concentration index of innovation (as measured by patents) at the three-digit International Patent Classification sector level. A lower ratio indicates that innovation is more concentrated in a few sectors relative to the optimum. The horizontal axis shows the correlation between the observed and optimal distributions of innovation across sectors.

consumer-oriented sectors such as health. In both economies, sectoral concentration should fall by about half, according to the model. Thus, scaling back the intensity of industrial policies and improving targeting could reduce misallocation and raise productivity growth.

A caveat relates to the possibility that some of the “excess” concentration in the data is not caused by industrial policies but instead reflects that certain sectors are inherently more patentable than others. However, such sectoral differences are likely similar across economies and should not explain the large differences in concentration observed in the data, with some economies such as Germany or the Netherlands close to or below the optimal level of concentration.

CONCLUSION

Industrial policies impose a substantial fiscal cost in China, equivalent to about 4 percent of GDP. They also distort the allocation of production factors, which is estimated to lower aggregate productivity by about 1.2 percent. Although policies are targeted somewhat to sectors that generate more knowledge spillovers, the concentration of support in a few sectors is about twice the optimal value, according to a model of industrial policy and innovation.

These findings highlight the need to scale back the size of industrial policy in China to reduce fiscal costs and factor misallocation and raise productivity. Policymakers should pursue industrial policy cautiously and only to address well-defined market failures (IMF 2024b). When implemented, industrial policy should use budgetary tools, which tend to be more transparent and less distortionary than indirect measures such as credit allocations or regulation (IMF 2024a). The authorities should increase transparency around industrial policy to improve policymaking and ease trading partners' concerns.

ANNEX 4.1. ESTIMATING FACTOR MISALLOCATION FROM INDUSTRIAL POLICIES

Estimating Total Factor Productivity in Revenues

Following the model of Hsieh and Klenow (2009), the key statistic to measure factor misallocation is dispersion in total factor productivity in revenues (TFPR), defined as revenues per unit of inputs. At the firm level, TFPR is given by:

$$TFPR_i = \frac{p_i y_i}{k_i^{\alpha_k} l_i^{1-\alpha_k}},$$

where i indexes the firm, p is the price, y is output, k capital, l labor, and α_k is the sector-specific capital share.

In equilibrium, profit maximization implies that TFPR depends only on firm-specific distortions w :

$$TFPR_i \propto \frac{1}{1 + \omega_i}.$$

Empirically, TFPR is calculated as:

$$\widehat{TFPR}_i = \frac{\text{value added}_{i,t}}{(\text{fixed assets}_{i,t})^{\alpha_k} (\text{labor}_i)^{1-\alpha_k}}.$$

Value added is defined as gross output minus intermediate inputs. Labor is proxied by the firm's cost of goods sold (from Orbis) times the sector-level share of labor costs in the cost of goods sold (from KLEMS). The capital share $\alpha_{k,t}$ is estimated with the average capital to value added across countries expected to feature less distortions—the countries at the bottom quarter by cross-sectoral TFPR dispersion in KLEMS (in ascending order: Sweden, Denmark, Czechia, Japan, and Italy).

Relating TFPR to Industrial Policy

The chapter discusses three hypotheses: (1) sectors with higher subsidies tend to show lower sector-level TFPR, (2) sectors subject to entry barriers from trade or regulatory policies tend to show higher sector-level TFPR, and (3) sectors with more industrial policy measures tend to show higher TFPR dispersion *within* the sector. These hypotheses were tested with the following regression specification:

$$y_{2018,s} = \beta_x * IP_{2009-18,s}^x + \delta * y_{2008,s} + \gamma_s + \epsilon_s,$$

where s indexes the sector at the four-digit level of Nomenclature of Economic Activities (NACE); y is the dependent variable relevant to each hypothesis; $IP_{2009-18,s}^x$ is a vector with the cumulative intensity of industrial policy measures in sector s over 2009–18 for different instruments indexed by x (for example, cash subsidies and tax benefits); γ_s is a sector fixed effect for a less granular level of sectoral aggregation than s (NACE two-digit), which controls for broader demand or technological factors; and ϵ_s is an independent error term, potentially correlated within each broad sector $\bar{s}$.

Industrial policy intensity is defined as:

$$IP_{2009-18,s}^x = \log \left(1 + \sum_{t=2009}^{2018} NIP_{t,s}^x \right),$$

where NIP is the number of industrial policy measures of type x covering a given sector in a given year in Juhász and others (2025), and the numeral 1 between the parentheses allows for including sectors with zero industrial policy measures during the period of analysis.

The dependent variable y depends on the hypothesis tested. For hypotheses 1 and 2, it is the sector-level average of $\log(TFPR_{i,t})$, and for hypothesis 3, it is the interquartile range of $\log(TFPR_{i,t})$ within each sector.

Misallocation and Aggregate Total Factor Productivity

Aggregate total factor productivity can be approximated as an additive function of the variance in TFPR (Hsieh and Klenow 2009):

$$\log TFP \cong \frac{1}{\sigma-1} \log \left(\sum a_i^{\sigma-1} \right) - \frac{\sigma}{2} \text{var}^*(\log TFPR_i).$$

Using the variation in TFPR (between and within sectors) explained by industrial policies in the regressions, this expression allows calculation of the aggregate total factor productivity loss attributable to industrial policy through its effects on misallocation.

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LIFTING PRODUCTIVITY GROWTH: PROMOTING INNOVATION AND BUSINESS DYNAMISM¹

Marshall Mills, Diego Alejandro Cerdeiro, Emilia Magdalena Jurzyk, Cian Ruane²

China has greatly boosted its spending on R&D and innovation. However, productivity growth has slowed amid stalled reform momentum and declining business dynamism, which has resulted in growing misallocation of resources (especially capital). State-owned enterprises tend to be significantly less productive than private firms yet continue to play a large role and receive preferential access to credit. In addition, the reallocation of resources from older, less productive firms toward younger, more productive firms has also slowed significantly. Deeper structural reforms are necessary to unlock the full potential of China's economy, including improving the efficiency of innovation policies, leveling the playing field for businesses, and opening up the economy to more competition. An increasing role of market forces in resource allocation and fostering a dynamic business sector can support productivity growth in China.

INTRODUCTION

Productivity growth in China has slowed since 2007, which weighs on China's growth potential and compounds the impact of the shrinking labor force. At the same time, indicators of innovation such as patents have boomed, and the authorities have increasingly emphasized innovation, technological self-reliance, and “new quality productive forces,” including in the 15th Five-Year Plan. China has also achieved high-profile advances in technology in some sectors, such as AI, space exploration, and advanced manufacturing. Given that innovation is expected to promote productivity growth, the juxtaposition of these observations appears paradoxical and raises questions: Why is productivity growth slowing despite the authorities' policy focus and impressive gains in innovation? And what

¹ Longji Li and Ningxin Jiang provided research support for the chapter.

² The opinions expressed are those of the author and do not reflect the views of the Central Bank of Ireland or the European System of Central Banks.

can be done about it? This chapter explores some of the potential reasons driving these trends and policies that can lift productivity.

First, the chapter documents the slowdown in productivity growth in China since 2007, especially in manufacturing. Total factor productivity (TFP) growth has fallen by around half from its peak to below 2 percent.

Second, the chapter examines innovation policies and achievements, detailing the significant rise in R&D spending and outputs as measured by patents; China now spends more on R&D than any country besides the United States and files more patents than any other country. However, by many measures, China's patents appear to have historically been of lower average quality and economic value, compared with those of advanced economies, although recently this gap may be narrowing. While policies have successfully funneled more resources toward innovation, there remains significant scope to improve the efficiency of innovation policies, including the policy instruments used and the excessive targeting of policy support for certain sectors.

Third, the chapter highlights declining business dynamism in China and the key role played by generally less productive state-owned enterprises (SOEs), which are factors that can potentially explain why high spending on R&D and innovation has not translated into higher productivity growth. A growing misallocation of resources, especially capital, across firms and sectors has been holding back productivity growth. Older and state-owned firms often benefit from preferential access to credit and face limited competitive pressures, fueling this misallocation. At the same time, newer and privately owned firms, which generally tend to be more productive, have not been growing as fast in recent years (Cerdeiro and Ruane 2024). This lack of dynamism, in turn, weakens incentives and opportunities for innovation and adoption of new technology; rough estimates of this effect suggest that it is lowering manufacturing productivity growth by 0.8 percentage point each year (Cerdeiro and Ruane 2024).

Building on these findings, the chapter argues that while innovation holds the potential to raise productivity growth (including through the use of new technologies such as AI), reforms to level the playing field between private and SOEs and improve business dynamism will be just as important. In this context, the Chinese authorities' focus on unifying the national market, introducing reforms such as the Private Economy Promotion Law, and promoting recent initiatives to ensure "fair competition" is welcome. At the same time, additional and more forceful reforms—including promoting a favorable business environment, advancing SOE reforms, opening up the domestic economy, and reforming the enterprise sector to facilitate the entry and exit of firms—are needed to increase productivity growth.

PRODUCTIVITY TRENDS

After the kickoff of reforms in 1978, China experienced rapid growth in TFP, helping fuel its historic economic expansion. However, productivity growth peaked before the global financial crisis, after rapid industrialization, trade opening,

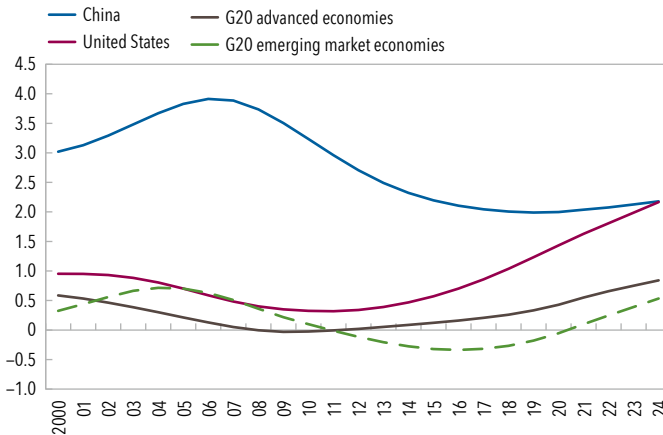
and market-oriented reforms, and it has been slowing steadily since then. Although most other economies—both advanced and emerging market—have also experienced sluggish TFP growth during this period (Figure 5.1; IMF 2024d), the slowdown in China has been larger.³ Strikingly, although productivity growth in China has historically been as much as 2 percentage points higher than in the United States, the gap has virtually closed in recent years.

Some slowdown in productivity growth in China could be expected as it catches up to more advanced economies in income levels and technology, although China still has room to benefit from catching up (Zhu, Zhang, and Peng 2019). Nevertheless, this chapter presents evidence that declining allocative efficiency has contributed to the slowdown in productivity, beyond what could be expected from catching up alone. If not reversed, the slowdown in TFP growth, combined with a shrinking labor force, will translate into lower potential growth in China. Its previously rapid convergence toward advanced economies' per capita income levels would then decelerate significantly.

The slowdown in aggregate TFP growth has occurred despite an ongoing structural transformation away from the lower productivity primary sector. Services have steadily risen as a share of GDP, at the expense of the primary sector and, more recently, the secondary sector (Figure 5.2). As the average productivity of expanding sectors has been higher than that of contracting sectors, these broad sectoral shifts have, on average, supported productivity growth (Chapter 3, IMF

Figure 5.1. China and G20 Countries: TFP Growth

(Percent, year-over-year; Hodrick-Prescott trend with common COVID outliers)



Sources: Penn World Table 10.01; *World Economic Outlook*; and IMF staff calculations.

Note: TFP = total factor productivity.

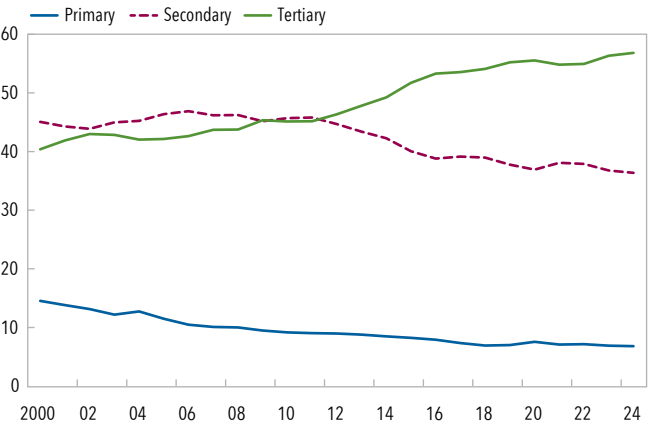
³ Productivity is hard to measure accurately; this chapter uses a similar methodology as IMF 2023 and IMF 2024d. In particular, GDP mismeasurement with expansion of the digital economy is often mentioned as a potential explanation for the productivity slowdown. The quantitative relevance of this issue, however, remains an open question (IMF 2024d).

2024c). China still appears to have potential for productivity gains through this channel, with scope for further reducing employment in the primary sector (particularly agriculture).

Aggregate TFP growth has slowed because of the slowdown in productivity growth within all sectors, including manufacturing, services, and agriculture (Figure 5.3, IMF 2024c). Much of China’s earlier TFP growth came from the manufacturing sector. However, this trend has largely stalled. TFP growth in the

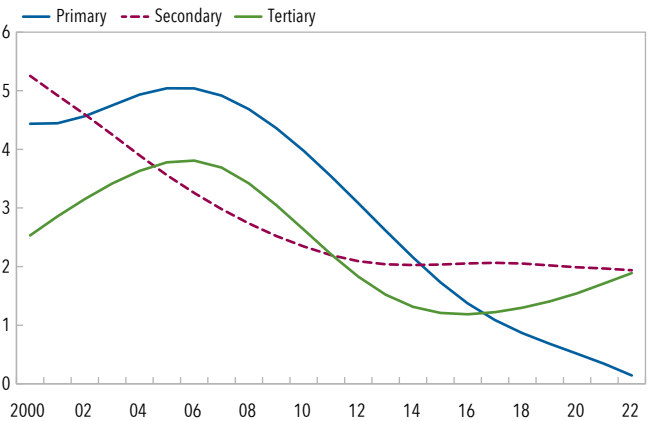
Figure 5.2. Share in GDP by Sector

(Percent, GDP at current prices)



Source: Haver Analytics.

Figure 5.3. Within-Sector TFP Growth

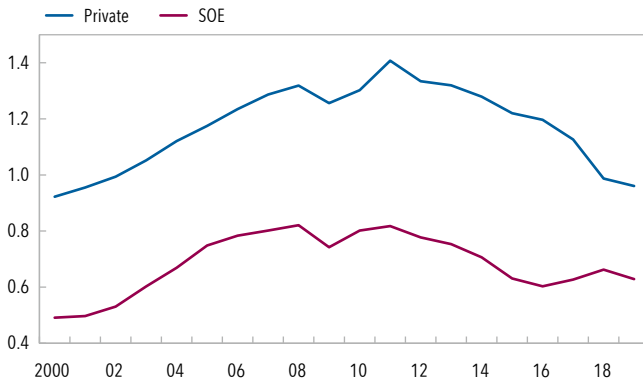


Source: IMF staff estimates.

Note: TFP = total factor productivity.

Figure 5.4. Capital Productivity in Manufacturing

(Controlling for industry composition)



Source: Cerdeiro and Ruane (2022).

Note: The figure controls for industry composition of SOEs by aggregating within-industry capital productivity using time-invariant industry-specific weights. SOE = state-owned enterprise.

service sector now rivals that in manufacturing. In fact, several market services have experienced faster productivity growth than manufacturing sectors and are potential growth drivers in the future (see Chapter 3), in part because of rapid innovation by younger privately owned enterprises (POEs) linked to mobile payment apps and other IT advances (Dychtwald 2021).

Productivity growth within sectors comes from both new products and processes (that is, innovation) that lead to more efficient use of resources within each firm, and from shifting resources from lower productivity firms to higher productivity ones (that is, resource reallocation). Trends in both factors have potentially contributed to the slowdown. Although metrics of innovation have accelerated, they have not led to faster productivity growth, in part because of inefficiencies in innovation policy (Innovation and Public Policies section). Misallocation of resources has also persisted or worsened in a number of ways, including (1) across and within service sectors (see Chapter 3), (2) between SOEs and POEs, with the former having preferential access to factors of production (Figure 5.4), and (3) because of worsening business dynamism (see Closing SOE–POE Productivity Gaps and Improving Business Dynamism section).

The rest of the chapter delves deeper into these drivers of aggregate productivity, first focusing on innovation and then on resource misallocation and the role of an uneven playing field.

INNOVATION AND PUBLIC POLICIES

China has made the promotion of R&D, advanced manufacturing, and innovation a top policy priority. This focus is part of explicit strategies to upgrade manufacturing capabilities and foster high-tech industries. In recent years, the

authorities have stressed the key role of “new quality productive forces” as a driver of growth, and the 15th Five-Year Plan (2026–30) has also emphasized innovation and technological self-reliance, including in emerging sectors such as new energy, aerospace, biomanufacturing, and AI. The authorities have relied on targeted cash and credit subsidies, generous tax breaks for R&D, and government funding for basic research.

How successful have these policies been in promoting innovation and productivity? This section provides an overview of recent trends in various metrics of innovation and the policy instruments used to promote innovation. It then recommends reforms to improve the efficiency and effectiveness of innovation policies.

Overview of Public Policy for Innovation in China

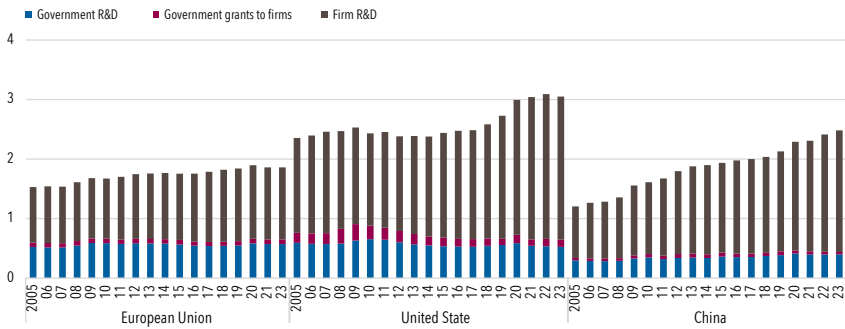
In recent years, China has seen a significant increase in resources devoted to innovation. R&D spending as a share of GDP has risen from around 1 percent of GDP in 2005 to 2.7 percent of GDP in 2024 (Government of China, 2025), which is well above the 2.2 percent of GDP average for emerging markets, around the average for Organisation for Economic Co-operation and Development (OECD) countries, but still below the United States at 3.5 percent of GDP. The authorities have met the 14th Five-Year Plan’s (2021–25) target to raise R&D spending by at least 7 percent each year. In nominal terms, China now only trails the United States in total R&D spending. In terms of outcomes, R&D spending has risen by 9.8 percent per year in nominal terms in 2021–15 (faster than nominal GDP). Spending on basic research rose by 10.5 percent per year, reaching 6.9 percent of total R&D spending (although still a lower proportion than the OECD average of 15.3 percent).

Fiscal policy has played a key role in supporting innovation in China, with greater reliance on tax incentives compared with advanced economies. The surge in overall R&D has been driven by greater spending by firms (Figure 5.5), which have benefited from increasingly generous tax deductions for R&D. In fact, the OECD’s measure of R&D tax incentive rate for China now stands at over 30 percent, well above the levels in the European Union or the United States (Figure 5.6).⁴ In addition to tax incentives, innovation is also supported by public R&D, as well as more indirect instruments, such as financing support for innovative firms (for example, through government-guided funds), coordination of innovation supply chains by public–private consortia, and broader production and demand subsidies for certain sectors.

⁴ The R&D tax incentive rate is an Organisation for Economic Co-operation and Development measurement for how much firms’ marginal R&D costs are reduced through tax relief. An R&D tax incentive rate of 30 percent means that tax relief lowers firms’ effective R&D costs by 30 percent (OECD 2025). In 2024, China issued “Guidelines on Major Tax and Fee Incentive Policies Supporting Scientific and Technological Innovation in China,” which laid out the numerous incentives.

Figure 5.5. R&D Spending

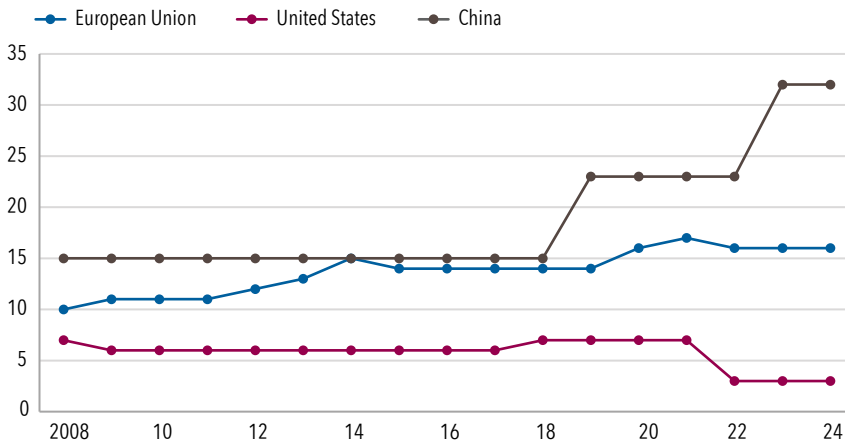
(Percent of GDP)



Source: OECD 2025

Figure 5.6. R&D Tax Incentive Rate

(Percent)



Source: OECD 2025

Another key feature of China's innovation policy is the targeting of specific sectors, in line with its industrial policy. For example, corporate income tax rates are substantially lower for certain high-tech sectors, particularly software and integrated circuits. Innovation inputs have also been heavily skewed toward these sectors, especially electric and electronic components (which include batteries and semiconductors, see also Chapter 4 and Garcia-Macia and Sollaci 2024).

China's financial sector also plays a key role in promoting innovation, including the targeting of specific sectors (IMF 2025; World Bank 2025a). For example, the October 2023 Central Financial Work Conference laid out a comprehensive road map to achieve "financial development with Chinese characteristics" that targeted science and technology, green technology, and digital finance. This

targeting relies on China’s bank-dominated financial system and is achieved primarily through directed bank lending and credit subsidies. Other more market-oriented mechanisms, such as equity markets and private sector venture capital, should play a greater role in supporting innovation (World Bank 2025b). In particular, recent efforts to promote and facilitate initial public offerings have helped address a constraint to financing innovation (SCMP 2026).

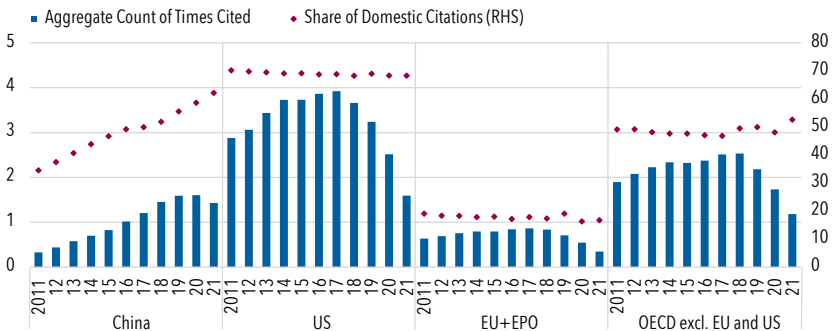
The policy focus on innovation has succeeded in boosting R&D spending, including the targeting of priority sectors, but how effective has it been in promoting high-quality innovation?

Effectiveness of Innovation Policies

The higher R&D spending in China has produced substantial results according to common measures of innovation.⁵ Patent filings have grown 60 percent between 2015 and 2023 (and eightfold in the 15 years to 2023). In 2023, China accounted for around 40 percent of all patent filings worldwide, far above the next largest share of 13 percent for the United States (Figure 5.7).

However, by many measures, China’s patents appear to have historically been of lower average quality and economic value, compared with those of advanced economies, although recently this gap may have narrowed.⁶ Patent quality is inherently complex to measure, particularly in China, where institutional features may affect patent behavior.⁷ Although citations alone are not a direct measure of

Figure 5.7. Statistics on National Origins of Citations in Annual Patent Filings (lhs in millions; rhs percent)



Source: OECD 2025. Note: EU = European Union; lhs = left-hand scale; OECD = Organisation for Economic Co-operation and Development; rhs = right-hand scale; US = United States.

⁵ According to Atkinson (2024), China has become a global leader in technology in several sectors and is making rapid progress in other key sectors.

⁶ For example, based on evidence from the Nature Index, China’s research output in top journals in natural and health sciences has surpassed the United States and other advanced economies, and China now dominates the top-ranked universities in those fields (Nature 2025).

⁷ Patent subsidy programs have incentivized applications and grants, encouraging the filing of low-quality patents (Dang and Motohashi 2015; Chen and Zhang 2019).

patent quality, they are positively related to patent value (Harhoff, Scherer, and Vopel 2003), and the number of citations of Chinese patents has typically remained below that of US patents,⁸ despite filing more patents (Figure 5.7). Moreover, Dechezleprêtre, Ménière, and Mohnen (2017) found that around 72 percent of Chinese patents did not lead to subsequent related domestic or foreign patent filings (compared with 13 percent for the United States), suggesting that the average value of Chinese patents was low in that period.⁹

Nevertheless, the impact of innovation on productivity remains positive and significant, even if lower average patent quality dampens it. Studies (Fang, He, and Li 2016; König and others 2022; Zhou and Dahal 2024) have found a positive effect of R&D and patents on individual firms' productivity in China.¹⁰ At the same time, these studies often highlight that the incentives and ability to adapt innovations—which can be dampened by SOE dominance and large incumbents—have also played an important role in the magnitude of the effect.¹¹

Studies suggest that the targeting of sectors for innovation support in China has delivered mixed results. Focusing innovation policy on some sectors is appropriate under certain circumstances. Innovation in some sectors (for example, semiconductors) can generate positive productivity and knowledge spillovers to other sectors (Liu and Ma 2023). Sectors such as green energy or electric vehicles help achieve policy objectives by addressing externalities (for example, decarbonizing the economy). As noted earlier, R&D and patents have boosted individual firms' productivity.

However, targeting is also prone to policy mistakes and high fiscal costs. Model analysis (Chapter 4 and Garcia-Macia and Sollaci (2024) on industrial policy, which overlaps significantly with China's targeted promotion of R&D) suggests that the current degree of targeting in China (and other countries) is excessive: The optimal distribution of industrial policy support across sectors would only be a third as concentrated.

⁸ Boeing and Mueller (2019) assessed Chinese patent quality using forward citations. They extend a quality index based on internationally comparable citation data from international search reports to consider foreign, domestic, and self-citations. Their findings show that, based solely on foreign citations, the quality of Chinese Patent Cooperation Treaty (PCT) applications is roughly one-third of the non-Chinese benchmark. When domestic and self-citations are included, however, Chinese patent quality appears to converge with or even surpass international standards.

⁹ Using the number of patent families with at least two patents (that is, with no subsequent related domestic or foreign patents, thus excluding low-value singletons), Dechezleprêtre and others (2017) estimated that China's share of global innovation output is around 9½ percent, compared with the United States at 36 percent and Japan at 15 percent.

¹⁰ In addition, Zhu and Sun (2023) also found that R&D had a positive effect on productivity growth at the provincial level.

¹¹ This finding is well aligned with the findings of multicountry studies (Westmore 2013; Sweet and Eterovic 2018).

Policy Recommendations to Promote Innovation

Overall, although innovation policy has been successful in channeling more resources into R&D, there remains substantial scope to improve the cost-effectiveness and efficiency of the innovation toolkit. Following are the key reform priorities:¹²

- *Relying more on direct fiscal support for innovation rather than indirect instruments.* Evidence across countries indicates that public spending on fundamental research, as well as R&D tax credits and grants for firm R&D, tend to be more cost-effective and well targeted in promoting innovation than indirect instruments. Indirect instruments, which appear to be more prevalent in China than in most OECD countries, tend to display several disadvantages. For example, financial sector policies that allocate credit to specific sectors or firms can encourage excess leverage and favor SOEs or large incumbents, which tend to be less innovative and productive. Such policies can also hold back innovation and productivity gains through reallocation of factors.
- *Focusing policy design and implementation in which they are most effective.* Concerning policy design, grants are most effective when directed at earlier stages of the innovation life cycle, when firms are more likely to face financing constraints. R&D tax incentives—a key tool in China—are more cost-effective at promoting innovation when they are easily accessible across all firms, rather than limited in scope (for example, by sector as in China). Public R&D should focus on fundamental research that is less likely to be carried out by firms. In terms of the implementation of policy, effective government support to innovation typically requires upgrading the public sector's technical capacity, avoiding duplication of efforts (for example, by local governments), periodically recalibrating programs as needed to respond to changing conditions, promoting transparency to enhance accountability and responsiveness to conditions, and acting in line with open and competitive markets to ensure efficiency and market incentives.
- *Scaling down the degree of sectoral targeting.* As discussed earlier, model analysis suggests that the current degree of targeting of innovation support in China is excessive. Furthermore, targeting is often prone to policy mistakes and high fiscal costs, which usually outweigh the benefits. Targeting specific sectors with subsidies and other advantages should be guided by economic rationales, such as positive externalities and spillovers, as well as correcting market failures. These policies should be based on rigorous cost–benefit analysis so as to yield positive net benefits.
- *Continuing efforts to enhance the legal and regulatory framework for innovation and intellectual property rights.* The ongoing efforts to enhance the frame-

¹² The policy recommendations in this section are drawn from the April 2024 Fiscal Monitor (IMF 2024a).

work for enforcing patents and intellectual property rights can help protect and incentivize innovators.

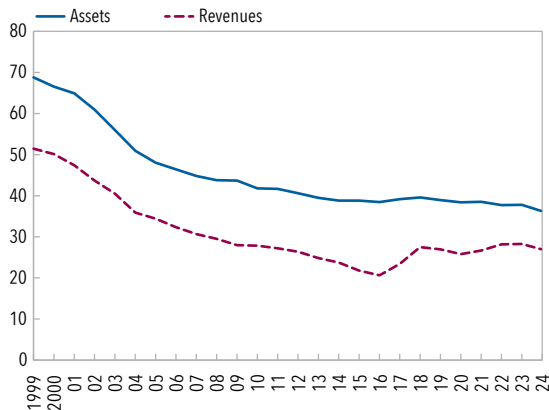
- *Fostering business dynamism.* The impact of innovation on productivity depends on the incentives and capabilities for firms to commercialize and adopt new technologies. Empirical evidence suggests that innovation is more vibrant in ecosystems characterized by competition and firm turnover. Furthermore, the impact of innovation on productivity depends on business dynamism, which allows successful innovators and adopters, often young firms, to grow rapidly. The following sections will examine these issues, including the impact of weak business dynamism and an unlevel playing field on productivity in China.

CLOSING SOE-POE PRODUCTIVITY GAPS AND IMPROVING BUSINESS DYNAMISM

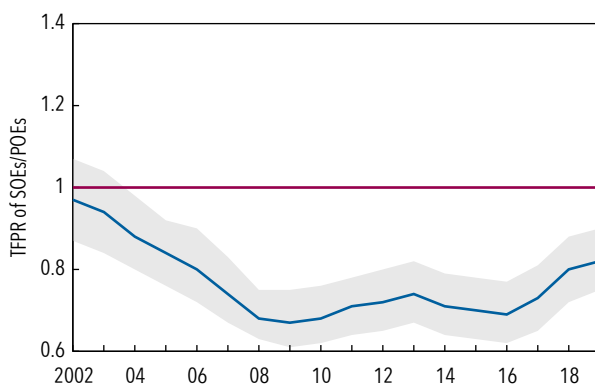
Over the past four decades, China's economy has gradually shifted from centralized state control toward market orientation, though progress has stalled in recent years. This transition has been particularly evident in the industrial sector, where the share of SOEs in total output declined from 50 percent in 1998 to 30 percent by 2005. The reallocation of resources from SOEs toward POEs coincided with strong aggregate productivity growth. However, this momentum has stalled since the mid-2010s (Figure 5.8), reflecting a renewed emphasis on maintaining government control over large and strategically important enterprises (Brandt, Van Biesebroeck, and Zhang 2012; Hsieh and Song 2015).

The plateauing in the private sector's role in the economy has also been accompanied by a general decline in business dynamism in China (Cerdeiro and Ruane 2024). The rates of creation of new firms, growth of more productive firms, and

Figure 5.8. SOE Share of Manufacturing Assets and Revenues



Source: Jurzyk and Ruane 2021. Note: SOE = state-owned enterprise.

Figure 5.9. TFPR Gap between SOEs and POEs over Time

Source: Jurzyk and Ruane 2021.

Note: This figure plots the TFPR gap between SOEs and POEs between 2002 and 2019. These are obtained by regressing $\ln(\text{TFPR})$ on an SOE dummy, controlling for sector $\times$ year fixed effects. The coefficient on the dummy is then exponentiated. Data on listed firms are from Wind. POEs = privately owned enterprises; SOEs = state-owned enterprises; TFPR = total factor productivity of revenue.

exit of existing, less productive firms have all slowed. This section explores the implications of these trends on China's productivity. First, the large productivity gap between SOEs and POEs is documented, and the potential productivity gains from closing this gap are quantified. Next, the section describes and quantifies the impact of declining churn in China's economy, highlighting the slower growth of younger and more productive firms. Finally, the business sector reforms that can help tackle these challenges are discussed.¹³

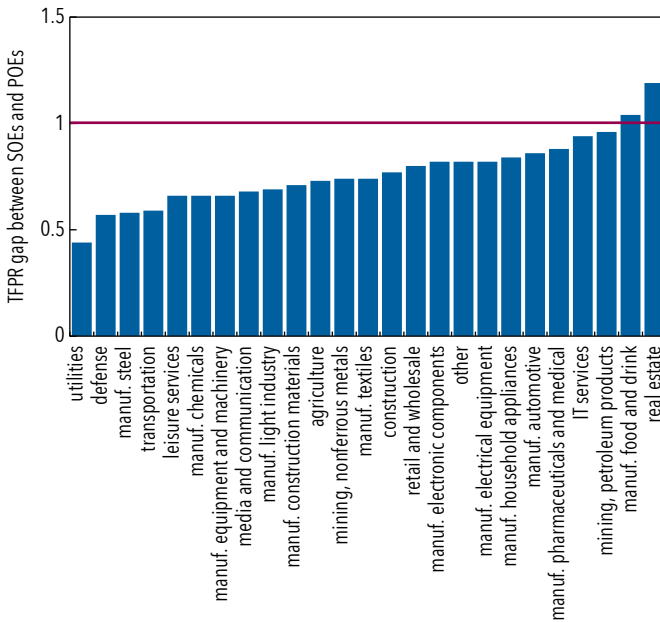
Misallocation and the SOE-POE Productivity Gap

The observed lower productivity of SOEs relative to POEs reflects large structural differences, with significant implications for economic growth. This section uses a comprehensive Wind dataset of listed firms from 2002 to 2019 to document differences in productivity between SOEs and POEs. The analysis focuses on total factor productivity of revenue (TFPR), a commonly used measure of firm-level efficiency, which captures revenues per unit of inputs.¹⁴

- *Productivity gaps have persisted between ownership types*, with SOEs consistently underperforming relative to private firms, even within the same industry and year. On average, SOEs exhibit TFPR levels that are 31 percent

¹³ The empirical findings in this section are largely based on data through 2019, in part reflecting the fact that the sample of Chinese firms in Orbis shrinks significantly after 2019. Extending the analysis to more recent data is left for future work.

¹⁴ These results are based on the findings in Jurzyk and Ruane (2021).

Figure 5.10. TFPR Gap between SOEs and POEs by Sector

Source: Jurzyk and Ruane 2021.

Note: This figure plots the TFPR gap between SOEs and POEs by sector (1 means no gap).

TFPR gaps are estimated from 2016 to 2019. Data on listed firms are from Wind.

POEs = privately owned enterprises; SOEs = state-owned enterprises; TFPR = total factor productivity of revenue.

lower than their private counterparts (Figure 5.9). The TFPR gap persists even after controlling for firm age and size. The productivity gap has been stable since 2008, after growing sharply in 2002–08, a dynamic period that coincided with the listing of high-TFPR private firms.¹⁵ Moreover, the form of state ownership—whether central or local government—did not significantly affect productivity, with both types exhibiting similar gaps of around 30 percent.

- *Capital productivity is the dominant source of the gap, potentially reflecting preferential access to finance.* A key insight from the analysis is that capital productivity of SOEs is, on average, 51 percent lower than that of private firms, whereas the labor productivity gap is only 6 percent. At the same time, the capital-to-labor ratio of listed SOEs was 45 percent higher than that of private

¹⁵ These temporal dynamics observed by Jurzyk and Ruane (2021) are consistent with earlier findings by Berkowitz, Ma, and Nishioka (2017) and Hsieh and Song (2015), who documented similar trends among industrial firms prior to 2013. Cerdeiro and Ruane (2024) confirmed the productivity gap for nonlisted firms.

firms. This finding implies that SOEs are significantly more capital intensive, yet they fail to use capital efficiently. One likely explanation for the capital intensity and low capital productivity of SOEs is their preferential access to finance. SOEs faced borrowing costs that are 25 percent lower than those of private firms, even after accounting for leverage (Jurzyk and Ruane 2021; Chapter 4). This financial advantage can enable SOEs to invest heavily in fixed assets, often with less rigorous efficiency considerations.¹⁶

- *Productivity gaps were widespread and persistent across sectors, though with some heterogeneity.* The TFPR gap is not confined to a few sectors but is widespread across the economy and present within narrowly defined sectors, suggesting that ownership structure plays a significant role in shaping firm-level productivity (Figure 5.10). The magnitude of the gap, however, varies considerably and persistently across sectors.
- *In addition to lower TFPR, SOEs also have lower returns to R&D.* Importantly for the paradox of China's rising innovation and falling productivity growth, SOEs relative to POEs were less innovative (Fang, He, and Li 2016), had lower returns to R&D, diminishing returns to patent stocks, and failed to profit from higher quality R&D (Boeing, Mueller, and Sandner 2015).

The large and persistent TFPR gaps between SOEs and POEs suggest significant resource misallocation. Jurzyk and Ruane (2021) use model-based analysis to estimate the impact of closing these productivity gaps. In a counterfactual scenario in which the TFPR of SOEs is equalized with that of private firms within each sector, the model predicts economy-wide output gains of approximately 6 percent in the steady state. When the reforms also include equalization of capital intensity, the gains rise to 7.5 percent of GDP. Furthermore, the model suggests that the share of SOEs in aggregate value added would decline from 58 percent to around 50 percent after reforms, as resources shift from low-productivity SOEs to high-productivity POEs.

These results are likely an upper bound as the model interprets all differences in average productivity as indicators of policy-induced distortions. Some alternative explanations—such as SOEs being more capital intensive, having higher overhead costs, or private firms being younger and adjusting their inputs slowly to reach their optimal size—may account for some of the observed gaps. However, these factors likely cannot fully explain the systematic and persistent underperformance of SOEs, as the evidence points to a role for policy distortions—particularly in credit allocation and investment incentives—as key drivers of inefficiency.

Overall, the productivity gaps between SOEs and POEs underscore the importance of addressing resource misallocation in China's state sector, with potentially large productivity gains possible.

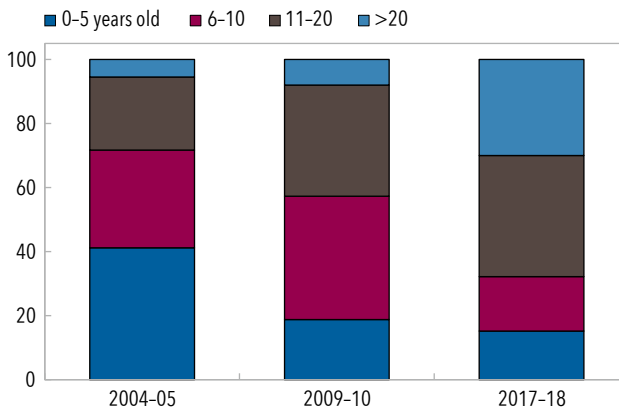
¹⁶ These findings are consistent with other studies, such as Bai, Lu, and Tian (2018) and Harrison and others (2019), which documented that industrial SOEs tended to receive more favorable credit terms than private firms.

Declining Business Dynamism

High levels of business dynamism are typically associated with a vibrant entrepreneurial ecosystem, characterized by innovation, competition, and the efficient allocation of resources (see, for example, Haltiwanger 2011; Decker and others 2014; Akcigit, Ates, and Chikis 2023). This section uses firm-level data from Orbis for the period from 2003 to 2018 to discuss the broad-based decline in China's business dynamism across various metrics.¹⁷

- *The role of young firms in the economy has declined.* Young firms can be an important driver of aggregate productivity growth provided adequate financing is accessible (Alon and others 2018). In China, the revenue share of younger firms (less than 10 years) has declined dramatically from around 70 percent in 2003–04 to around 30 percent in 2017–18 (Figure 5.11).
- *Life-cycle growth has declined.* Similar to other countries, average firm growth consistently decreases with age (conditional on survival) in China, but, strikingly, the revenue growth advantage of younger firms has fallen markedly. The difference between the (weighted) average revenue growth of firms under 10 years relative to firms above 16 years of age decreased from 15.3 percent in 2003–10 to 8.4 percent in 2011–18.
- *Productivity growth and innovation over the life cycle have weakened.* The slowing life-cycle growth of Chinese firms may be partly explained by a decrease in innovation activities by young firms, feeding into a weaker life cycle of productivity. In particular, investments by young firms into R&D,

Figure 5.11. Revenue Share of Young Firms



Source: Cerdeiro and Ruane 2024.

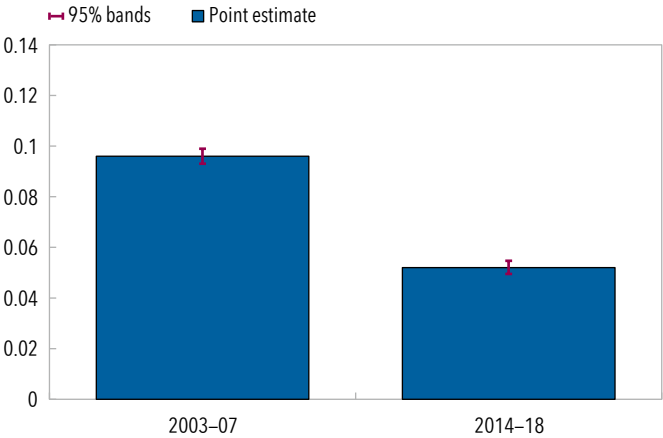
Note: The figure plots the share of revenues accounted for by firms in four different age-groups: 0-5, 6-10, 11-20, and 21+. The shares are averages across two years during three different periods: 2004-05, 2009-10, and 2017-18. The sample is manufacturing firms with over 5 million renminbi (RMB) in revenue in Orbis.

¹⁷ These findings are based on the results in Cerdeiro and Ruane (2024).

process efficiency, quality improvements, and other intangible inputs all declined in the 2010s.

- *Capital misallocation between young and old firms has increased.* Although capital productivity monotonically decreases with firm age as expected, the gap in capital productivity between firms under 10 years of age and older than 16 years increased from 22 percent in 2003–10 to 30 percent in 2011–18. This indicates a worsening allocation of capital between young and old firms over time.
- *The responsiveness of capital allocation to capital productivity has declined.* The responsiveness of capital allocation to differences in capital productivity has also fallen sharply, driven particularly by limited reallocation from older to younger firms. The extent to which capital reallocates over time toward firms with higher capital productivity is a key determinant of the allocation efficiency of capital (Asker, Collard-Wexler, and De Loecker 2014). An important measure of reallocation is the dispersion of input growth, which captures both the dispersion in the shocks that firms experience and the extent to which these shocks result in input shifting. Dispersion in input growth tends to be higher when the economy is dynamic with many high-growth firms (Akcigit and Ates 2019a, 2019b). In China, the dispersion in total asset growth has declined by one-third over the sample period (from 0.126 in 2003–07 to 0.083 in 2014–18). Furthermore, the responsiveness of capital growth to capital productivity also declined (Figure 5.12), including

Figure 5.12. Response of Capital Growth to (Log) Average Capital Productivity



Source: Cerdeiro and Ruane 2024.
 Note: The figure shows the coefficients (and 95 percent confidence intervals) obtained from firm-level regressions of capital growth against the lagged log (average product of capital) and lagged log(total assets), controlling for sector-year fixed effects. We run the regression separately for the first 3 years and last 3 years of our sample. The sample is manufacturing firms with over RMB 5 million in revenue.

notably for old firms (16+) with low capital productivity for which one would expect a shrinking capital stock.

Why did China's business dynamism slow down so dramatically during the 2010s? Some drivers may be shared with other countries, whereas others are specific to China. For example, both changing demographics and rising market power have played a role in driving the decline of US business dynamism (Akcigit and Ates 2019b; Pugsley and Şahin 2019). In China, the prevalence of SOEs is likely playing a role (Jurzyk and Ruane 2021; Cerdeiro and Ruane 2024).

In particular, young manufacturing firms operating in provinces with higher SOE intensity tend to have weaker revenue growth, capital growth, and productivity growth. Being in a province with a higher SOE share of assets is associated with 3.5 percent lower revenue and input growth for young firms and a 3.25 percentage-point lower elasticity of capital growth to capital productivity. Brandt, Kambourov, and Storesletten (2020) also found that regional state presence was an important factor in reducing the creation of new firms prior to 2008. These findings are increasingly relevant as the authorities seek to mitigate large regional disparities.

Although these findings do not prove a causal link of negative localized spillovers from SOEs to private firm dynamism, they are suggestive that prevalence of SOEs may be contributing to poor business dynamism in China. Furthermore, other research has also documented several mechanisms that could explain the link between SOEs and broader business dynamism. First, local capacity constraints for inputs could lead to the crowding out of the private sector. Young firms may find it harder to hire talented workers in local markets, where workers have more options in SOEs, which tend to provide greater job security. Second, similar capacity constraints and inefficiencies could also be relevant in capital markets. SOEs have advantages in obtaining capital financing from banks, in part because of perceived implicit government guarantees (see earlier and Bai, Lu, and Tian 2018). The efficiency of the local banking system for capital allocation may therefore be worse in SOE-intensive regions, leading to relatively lower financing availability for young private firms, feeding large capital productivity gaps. Third, local regulations favoring SOEs may be introduced, given the political economy problems discussed in Brandt, Kambourov, and Storesletten (2020). Given their close links, local governments may feel pressure to ensure the viability of local incumbent SOEs, including introducing regulatory barriers that make it harder for young firms to grow.

Putting all these facts together, a simple model of firm dynamics suggests that the decline in life-cycle dynamism seen in the 2010s can contribute to a 2.3-percentage-point decline in manufacturing productivity growth every three years, or roughly 0.8 percentage point annually (see Cerdeiro and Ruane 2024).¹⁸ Half of this decline comes from the lower asset share of more productive younger firms, with the other half stemming from the slower productivity growth of younger firms.

¹⁸ The model uses relatively strong assumptions, including a fixed capital stock.

Policy Recommendations to Reduce Misallocation and Improve Business Dynamism

As argued earlier, productivity growth and innovation are impeded in China by an uneven playing field and falling business dynamism. Targeted reforms that promote more efficient capital allocation and reduce preferential treatment of SOEs could yield substantial gains. Following are some specific recommendations:

- *Promoting a level playing field, including by advancing SOE reforms.* A level playing field with respect to regulatory decisions, access to financing, land and inputs, and government procurement allows firms to compete on market-based criteria, thereby promoting innovation, productivity, and efficient allocation of resources. Targeting support to specific sectors can be helpful in certain circumstances, such as the presence of externalities (see Chapter 4). Efforts to mitigate regional disparities should seek to promote private sector dynamism across regions, rather than rely on SOEs. Reforms should also improve SOE corporate governance, as well as reduce and eventually eliminate SOE cost and credit advantages, which tend to bolster their competitive positions even as they tend to innovate less, while also hurting business dynamism more broadly.
- *Enacting financial sector reforms* to diversify financing sources, promote more market-based allocation, scale back targeted credit allocation, and reduce reliance on banks for credit in favor of other mechanisms like equity markets and private sector venture capital firms.
- *Strengthening and increasing the use of restructuring frameworks for SOEs and POEs.* The orderly exit of unprofitable and unproductive firms, including SOEs, will directly raise average productivity and indirectly support productivity gains by other firms by freeing up resources. Reform priorities include completing the updating Enterprise Bankruptcy Law to enhance insolvency regime, increasing capacity and expertise of courts, as well as establishing comprehensive regulation of insolvency administrators (see Chapter 11 for details). At the same time, the reallocation of resources typically comes with some friction and costs, such as job losses, and it would be desirable to enhance the social safety net, unemployment insurance schemes, and active labor market policies (such as job placement assistance) to cushion these impacts. Progress on these social measures would also facilitate further reducing the role of SOEs in supporting employment.
- *Further reinforcing competition policy and its enforcement.* The Chinese authorities are bolstering competition policy and enforcement, notably with the passage of the Private Economy Promotion Law that aims to strengthen private firms' property rights and access to government procurement. Developing accompanying legislation and regulations is needed to effectively ensure competitive neutrality.
- *Accelerating opening up of domestic markets, particularly in services.* Barriers to entry and unnecessary regulation impede competition and hamper new

entrants that promote productivity. Recent moves to remove internal market barriers should be accelerated, especially in services, in which productivity gains are strong. Moreover, local government procurement advantages favor incumbents and hold back competition, and they should therefore be limited and eventually eliminated.

CONCLUSION

Despite major investments in innovation and R&D, China's productivity growth has slowed significantly since 2007, raising a paradox. China's economic ecosystem has become less dynamic, and the shift from centralized state control toward greater market orientation has stalled. SOEs are significantly less productive than private firms but continue to receive preferential access to credit, which perpetuates resource misallocation, especially for capital. The reallocation of resources from older, less productive firms toward younger, more productive firms has slowed.

Sustained structural reforms are necessary to unlock the full potential of innovation-led growth. Recent policy initiatives such as the Private Enterprise Law are steps in the right direction. Nevertheless, boosting productivity growth will require broad and sustained policy efforts to improve the efficiency of innovation policies, to level the playing field between SOEs and POEs, and open up the economy. Better leveraging market forces for resource allocation and fostering a dynamic enterprise sector through reforms that facilitate the entry and exit of firms can make a vital contribution to lift productivity growth in China.

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Delivering an Efficient Green Transition

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China has made considerable progress on climate goals, notably through rapid expansion of renewable energy and green technologies, resulting in reduced emission intensity and pollution. However, given China's still large emissions, the pace of decarbonization is crucial to limiting global temperature rises. An efficient green transition will mitigate climate change and yield domestic benefits: more sustainable and less volatile growth, improved energy security, and reduced air pollution. A key policy recommendation calls for expanding and reforming China's intensity-based emissions trading system (ETS) to cover more sectors and to shift from an intensity-based model to a quantity-based model with permit auctioning. Continuing power market reforms—including a larger role for market prices, stronger interprovincial power trading, and a smaller role for coal—would increase efficiency and energy security in China.

INTRODUCTION

Achieving the Paris Agreement's goal of limiting global warming to well below 2 degrees Celsius will require significant cuts in greenhouse gas emissions globally. China has committed to reaching peak emissions before 2030, reducing economy-wide net greenhouse gas emissions by 7 percent to 10 percent from peak levels by 2035, and achieving carbon neutrality before 2060. The country has made significant progress toward achieving these goals, with many notable results. A massive expansion in renewable energy has produced a faster decline in emission intensity than in advanced economies and reduced absolute emissions between March 2024 and March 2025 (Myllyvirta 2025), the first such decline outside an economic slowdown. China also leads in many green technologies, including electric vehicles and green hydrogen production.

At the same time, absolute emissions in China rose rapidly between 2000 and 2023 as the country developed and its industrial sector expanded. China alone accounted for 32 percent of CO₂ emissions in 2023. The speed of China's decarbonization will therefore be crucial to limiting global temperature increases. China will likely overperform on its 2030 climate goals, but projections show emissions decreasing slowly afterward. Achieving the 2060 target while avoiding

disruptive reductions around mid-century will thus require additional efforts in coming years.

Against this backdrop, the chapter highlights that China's climate policies will have an outsize importance for the global green transition and will benefit China domestically, including by reducing future damage from climate change. Well-designed climate policy can make the green transition efficient, inclusive, and secure, thus generating benefits for long-term economic growth.

A more efficient green transition will require aligning incentives with the need to reduce emissions. A key reform priority in this area is to further expand China's ETS and transition from an intensity-based system to a quantity-based ETS. Also, many energy-related prices are controlled in China, suggesting that efficiency could improve if market prices better align firms' production and investment decisions with the needs for long-term growth.

Making the green transition inclusive will require compensating those most affected by climate policy, such as low-income households that rely on energy-intensive goods and employees in the coal-producing regions in the north. Auctioning permits in the ETS instead of allotting them free of charge can raise revenues to finance transfers.

Finally, climate policy should be consistent with China's energy security objectives and navigate the challenges of geoeconomic fragmentation, as several major economies are turning inward and prioritizing energy self-reliance. Addressing energy security challenges will require investing in a flexible electricity grid and energy storage.

BENEFITS OF THE GREEN TRANSITION

Reducing greenhouse gas emissions is essential to addressing the global climate crisis, but China is also benefiting from decarbonizing its economy, with more benefits expected in the future. The green transition will support more sustainable long-term growth and improve energy security, and China will likely benefit from its comparative advantage in producing low-carbon products such as solar panels, batteries, and electric vehicles.

Reducing emissions would limit future damage from climate change and thus make long-term growth less volatile and more sustainable. If temperature increases remain unchecked, China will face heat waves, more frequent droughts and floods, more severe tropical cyclones, and agricultural losses. The Intergovernmental Panel on Climate Change's comprehensive assessment identifies additional harmful effects on water availability, biodiversity, and sea-level rise. Achieving emissions declines consistent with limiting the increase in global temperatures to 1.5–2 degrees Celsius by 2100 could mitigate these negative impacts substantially.

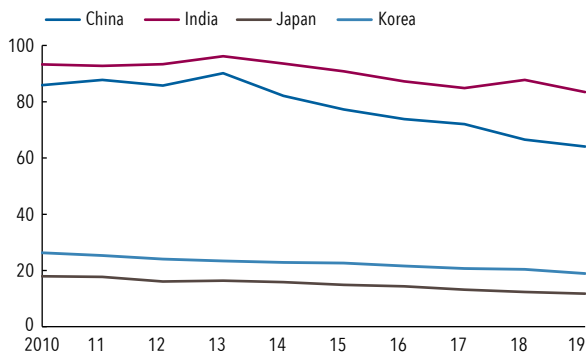
A successful green transition would also reduce air pollution, which would improve health outcomes and productivity. The government made reducing pollution a priority and began implementing stringent policy measures in 2012

while monitoring progress closely. These measures helped reduce the concentration of fine particulate matter (PM_{2.5}) in the air by nearly 50 percent between 2015 and 2025 (Silver and others 2025), and deaths related to air pollution declined after peaking at a little more than 1 million in 2015 (Figure 6.1; Geng and others 2021). Also, the lower air pollution improved health outcomes, which can have a positive effect on productivity: empirical estimates suggest that a decrease of 1 microgram per cubic meter in PM_{2.5} would increase productivity by 0.82 percent.

The green transition will also help China improve energy security. Energy demand has risen sharply—especially since 2000—and electricity demand will likely continue to grow, reflecting strong demand from AI data centers. Domestic consumption of fossil fuels has also climbed and exceeds domestic production (Figure 6.2). The ongoing shift to electric vehicles reduces dependence on oil imports, while renewable energy investment helps reduce reliance on imported natural gas.

The investment needed for the green transition also creates new economic opportunities. China has achieved dominance in solar photovoltaic manufacturing because of continued innovation, low-cost production factors, economies of scale, and government support. China produced nearly 75 percent of all photovoltaic modules in 2021, and strong investment in solar technologies has driven the rapid decline in renewable energy costs. Wind energy, batteries, and electric vehicle industries have followed similar growth trajectories (Enerdata 2024): China produces more than 70 percent of batteries for electric vehicles (Lombardo and others 2025) and almost half of the electric vehicles itself (IEA 2025). Also, exports of these green goods have grown steadily in recent years.

Figure 6.1. Death Rate Attributed to Ambient Air Pollution
(Per 100,000 population, age standardized)

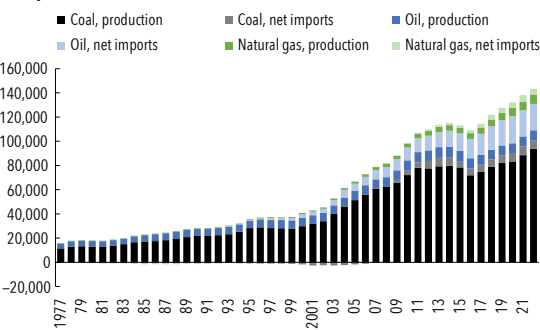


Source: World Health Organization Global Health Observatory database of ambient air pollution attributable deaths (<https://www.who.int/data/gho/data/indicators/indicator-details/GHO/ambient-air-pollution-attributable-deaths>).

Figure 6.2. Fossil Fuel Supply and Electricity Production in China

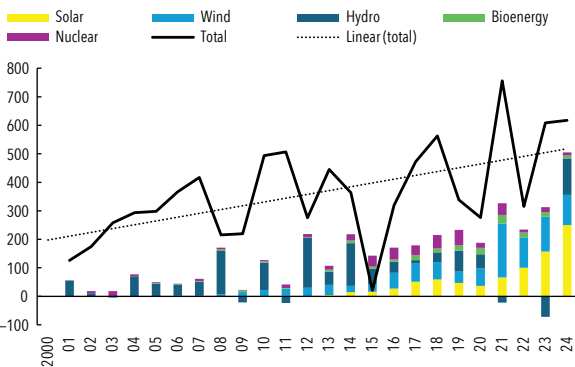
1. Consumption and Net Imports of Fossil Fuel

(Petajoules)



2. China: Increase in Total and Low-Carbon Electricity Production Per Year

(Terawatt-hours)



Sources: International Energy Agency, World Energy Balance database; and Ember Electricity Data Explorer.
Note: The bars in panel 2 show the growth in low-carbon energy. Fossil fuels cover the difference in the total.

Clean energy technologies have become an important part of China's economy. By some measures, the clean energy sector (defined broadly to include renewables, nuclear power, electricity grids, energy storage, and electric vehicles and railways) accounted for 9 percent of GDP in 2023, up from 7.2 percent in 2022 (Myllyvirta 2024). However, even though China has prioritized electric vehicles and renewable energy sectors as engines of growth, and those sectors will continue to play an important role, they cannot replace China's traditional growth drivers completely. For example, projections indicate that those sectors will offset only about half of the drag from the property sector in the medium term (IMF 2024).

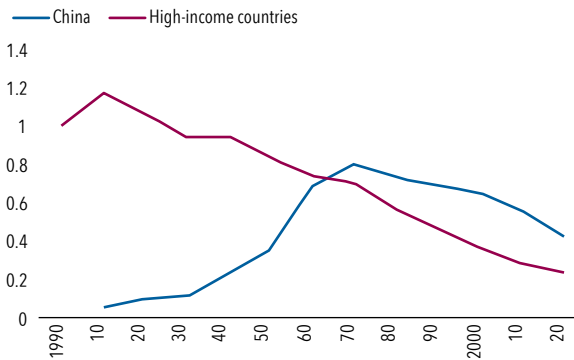
EMISSIONS TRENDS AND GOALS

China's climate policy has made progress on many fronts. Emission intensity has declined steeply since 1990 and peaked at a lower level than in advanced economies (Figure 6.3, Panel 1). Until very recently, emissions per capita remained lower than in advanced economies though higher than in emerging market and developing economies (Figure 6.3, panel 2). China could reach peak emissions well before the 2030 target because of its massive expansion in renewable energy (Myllyvirta 2025). China is also set to exceed its 2030 nationally determined contribution (NDC) target for renewable capacity and its target on raising the non-fossil fuel

Figure 6.3. Emission Intensity and Emissions Per Capita

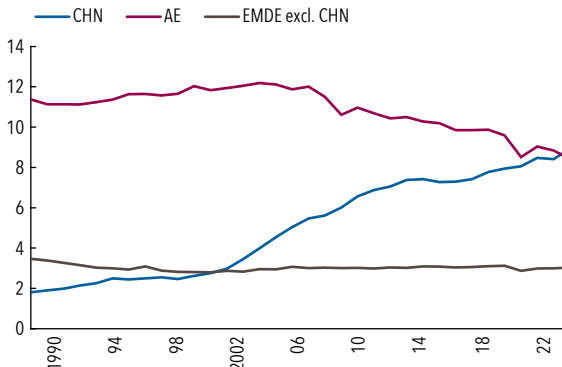
1. Decadal CO₂ Emissions

(Kilograms of CO₂ per international dollar of GDP)



2. CO₂ Emissions Per Population

(Tonnes of carbon dioxide)



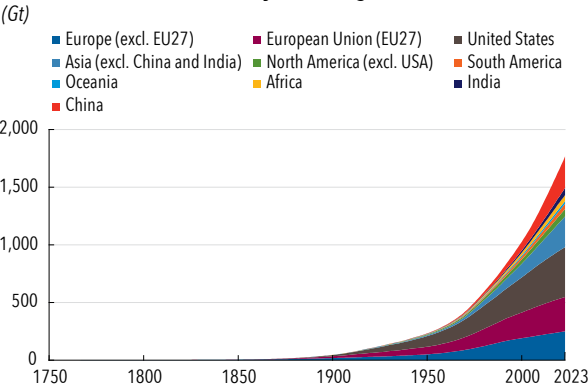
Sources: Our World in Data; Global Carbon Budget; Bolt and van Zanden, Maddison Project Database 2023; IMF, Climate Change Dashboard; and IMF, World Economic Outlook. Note: Emissions intensity is expressed in kilograms of CO₂ emitted per dollar of GDP, averaged for each decade. Fossil fuel and industry emissions are included. Land use change emissions are not included. GDP data are adjusted for inflation and differences in living costs between countries. GDP in international dollars at 2011 prices. AE = advanced economy; CHN = China; EMDE = emerging market and developing economy.

share in energy consumption. Successful renewables deployment has prompted authorities to shift their focus to electricity consumption targets. The government introduced a nationwide intensity-based ETS in 2021 and in 2023 published a plan to control methane emissions. All levels of government have climate targets, including state-owned enterprises.

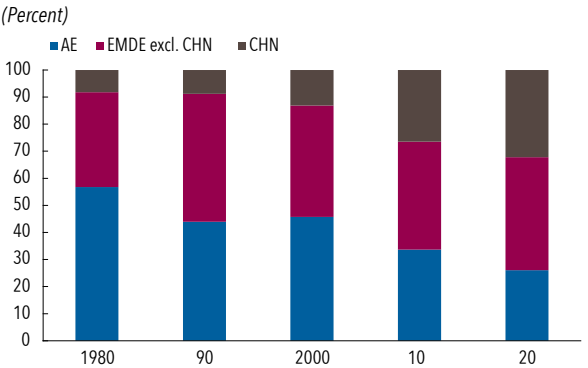
However, current NDCs, including that of China, are insufficient to meet Paris Agreement temperature goals. Limiting global warming to 1.5–2 degrees Celsius will likely fall out of reach unless global emissions decline by 25–50 percent below 2019 levels by 2030. Therefore, all major CO₂ emitters, including China, need to strengthen ambition and cooperation. China’s share of cumulative emissions is relatively small but growing quickly (Figure 6.4, panel 1), implying that the country plays a crucial role in global climate mitigation. Because China is currently the largest emitter of greenhouse gases (Figure 6.4, panel 2), its mitigation efforts will

Figure 6.4. Share of Cumulative Emissions and Share of Annual Emissions

1. Cumulative CO₂ Emissions by World Region



2. Share of Annual CO₂ Emissions



Sources: Our World in Data; Global Carbon Budget (2024); IMF, Climate Change Dashboard; IMF, World Economic Outlook.
Note: Panel 1 presents cumulative CO₂ emissions from fossil fuels and industry only. Land use change is not included.
AE = advanced economy; CHN = China; EMDE = emerging market and developing economy.

have direct global implications for climate change. China also sets climate standards for other large emerging market economies and thus is pivotal in reaching the global emissions peak.

In this context, China's commitment to reaching net zero emissions by 2060 is a crucial step and implies a fast decarbonization path. Increasing mitigation efforts early and reaching peak emissions at a lower level would achieve this objective most efficiently. An earlier emissions peak would also allow for smaller emission reductions in later years, when cuts are most costly (Chateau and others 2022). Taking stronger climate mitigation action earlier would also reduce stranded assets (carbon-intensive infrastructure that needs to be retired before the end of its economic lifetime).

CURBING DOMESTIC EMISSIONS: POLICY RECOMMENDATIONS

The green transition promises many benefits. Evaluating China's mitigation policies can help identify efficient approaches to achieving climate goals while addressing distributional concerns.

Emissions Trading System Reform Priorities

China's national ETS has been an important part of the country's climate policy since 2021. The intensity-based ETS is the single largest climate policy instrument in the world, and it allocates free allowances to firms based on four fuel- and technology-specific benchmarks for coal and gas power plants. Each year, every fossil fuel power plant receives carbon emissions allowances equal to the product of the benchmark for the plant's technology class and production in that period. Coal-fired power generators have higher benchmarks and receive more allowances. Power plants with emission intensities higher than the benchmark must reduce emission intensity or buy allowances from fossil fuel plants with intensity lower than the benchmark. China's intensity-based ETS partially covers the industrial sector (cement, iron, steel, and aluminum) and provides incentives to firms to improve emission intensity. Firms can use retrofits, shift power generation to the most efficient plants, or use carbon capture, utilization, and storage technology—if cost effective—to improve emissions intensity (IEA 2022). However, if firms' aggregate production rises, the total number of carbon emission permits in the system increases.

Reforms could improve the effectiveness of China's ETS. Black and others (2024) used the IMF and World Bank Climate Policy Assessment Tool, a flexible and transparent spreadsheet model, to consider the welfare implications of several ETS reform options. Key priorities include the following:

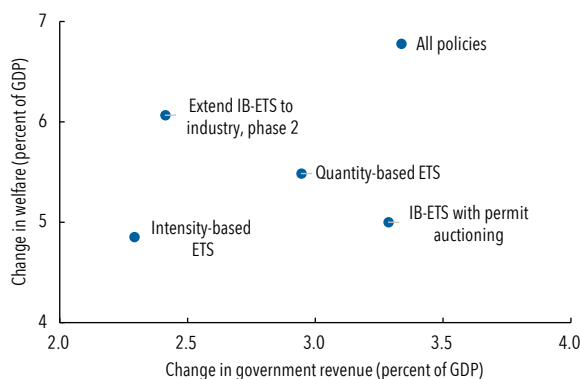
Increase coverage. China's ETS initially covered only fossil fuel power plants, but in 2025, the system was extended to some industrial sectors, increasing coverage from 44 percent to about 60 percent of emissions. Authorities announced plans to include all industrial firms in the ETS in 2027 (Xinhua 2025), which

would extend coverage to 80 percent of emissions. Such reforms would maximize welfare and require smaller electricity price increases than alternative approaches to reach the same level of emissions compatible with China's NDCs (Figure 6.5; Black and others 2024). Limiting large efficiency improvements to fossil fuel power plants costs more than pursuing smaller efficiency improvements across a larger set of covered firms.

Raise revenues. The current intensity-based ETS allocates all allowances for free instead of raising fiscal revenue. Authorities could auction a share of permits and cumulatively raise up to 3.3 percent of GDP in revenues (Black and others, 2024) through 2035, which they could use to provide transfers to low-income households and reverse the regressivity of climate mitigation policy. Improved communication about climate policies and the focus on supporting low-income, cash-constrained households (often rural) could help increase the reforms' social acceptability.

Transition to a quantity-based ETS (cap-and-trade system). China should switch to a quantity-based ETS that caps total economy-wide emissions.¹ The current ETS mainly encourages fossil fuel electricity producers to reduce emissions *intensity*, which can support overall emission reductions among power plants but does

Figure 6.5. China's ETS Reform Options Consistent with Reaching Same NDC Emissions: Cumulative Effect through 2035



Source: Black and others (2024).

Note: The "all policies" scenario refers to simultaneous reforms to extend coverage to industry, switch to a quantity-based ETS, and use permit auctioning. ETS = emissions trading system; IB-ETS = intensity-based emissions trading system; NDC = nationally determined contribution. <https://icapcarbonaction.com/en/ets-prices>

¹ A quantity-based ETS ideally sets an economy-wide cap on total emissions. Covered firms must hold allowances in each trading period equal to their emissions. Firms with low emissions can sell allowances on the market, and firms with high emissions must buy allowances. By contrast, an intensity-based ETS does not cap total emissions. An immediate shift to a quantity-based ETS would incentivize greater use of renewables and a shift from coal to gas generation. However, a rapid transition to gas would be difficult because domestic gas extraction is relatively low, which could raise energy security concerns.

not require it. However, reducing emissions more directly through the price of electricity, as in a cap-and-trade system that affects both supply and demand, is less costly (Goulder and others 2022). Authorities have announced plans to implement a cap-and-trade system by 2030 (Xinhua 2025), but they could expedite the process.

Black and others (2024) also used the Climate Policy Assessment Tool to analyze a reform scenario that combines these options. Under the “all policies” scenario, China would transition to a quantity-based ETS that covers all industrial sectors with full permit auctioning. In addition to the revenue increase, the reform would increase welfare gains from about 5 percent of GDP under the intensity-based ETS to 7 percent of GDP through 2035 (Figure 6.5).

Other Reform Priorities

Several other reforms can help ensure an efficient and equitable green transition.

Continuing with power market reforms. Allowing power prices to fluctuate more freely based on market conditions is a key priority. China has already reduced the role of administrative pricing in electricity markets (IEA 2023). Reforms that increase the role of market prices would improve efficiency by better matching demand and supply and signaling the market value of additional capacity to investors. Over the long term, investment guided by price signals would ensure that the electricity grid remains robust and flexible enough to absorb increasing shares of renewable energy. Additional power sector reforms include strengthening interprovincial power trading and expanding the grid system; scaling up ancillary services, such as peak shaving, and reserves, voltage, and frequency regulation to stabilize renewable energy generation and support its growing share in the energy mix; and reducing the role of coal as quickly as possible.

Rebalancing. Rebalancing the economy away from manufacturing and investment and toward services and consumption can play a key role in reducing emissions. A simulation using the computable general equilibrium model IMF-ENV shows that a 1 percentage point increase in the consumption-to-GDP ratio decreases emissions by about 1 percent (Chateau and others 2022). Therefore, faster rebalancing would reduce economic vulnerabilities linked to debt-fueled investment (Chapter 1) and support greener growth, creating a virtuous cycle (Chateau and others 2022). Key policies include strengthening the social protection system (Chapter 2) and opening the service sector (Chapter 3).

Climate finance. Supporting climate finance could accelerate the transition to a carbon-neutral economy. China is one of the world’s largest green finance issuers, and banks’ green lending dominates the market. Authorities are working to improve green bond standards to ensure that proceeds finance eligible climate mitigation and adaptation projects. Greater use of external reviews can improve the reliability of climate-related information. A market-oriented climate finance ecosystem that attracts more domestic and foreign investors and offers more diversified products would require better climate-related data, clearer definitions,

and stronger disclosures. These steps are also important to curb greenwashing, support capital-market deepening, and improve comparability.

CHALLENGES AHEAD

China must coordinate the next steps in its green transition domestically and externally. Key domestic challenges include preparing the electricity grid for a high share of renewable energy, ensuring a reliable energy supply, and supporting workers moving from carbon-intensive sectors to green sectors.

Reliability of electricity supply. China is rapidly expanding its renewable energy production (Figure 6.2) but continues to expand coal capacity. Concerns about the reliability of electricity supply drive continued investment in coal capacity, especially because power outages have become more frequent since 2020 (Shen and others 2024). Coal capacity is intended to play a supporting role, increasing output when renewable energy output is insufficient. However, this strategy increases emissions and costs because coal power plants remain idle when on standby.

While ensuring reliability of its electricity supply, China should balance new coal plant permitting by increasing retirements of older, less efficient coal power plants. Greater transparency about the costs and benefits of new coal-fired power plants and their alignment with China's climate goals should also be provided.

Renewable energy can be the basis of a reliable, secure, and cost-competitive energy system in China (He and others 2020; Lu and others 2021; Wang and others 2023). Integrating renewable energy requires upgrades to the power system. Investments include building energy storage (Li and others 2022; Lu and others 2021), expanding transmission capacity through a more interconnected electricity grid that pools electricity from larger geographical regions (Guo and others 2023), and adjusting power load on the demand side (Wang and others 2023). Battery use has increased significantly in recent years because prices dropped by 84 percent between 2014 and 2024 (BloombergNEF 2024). Advanced energy economy models project renewable energy rising to close to 100 percent globally by 2050 in a 2 degrees scenario, flanked by complementary investments in the electricity system (Schwerhoff 2024).

Mitigating effects on coal workers and coal-producing regions. Anticipating and preparing for geographic shifts in labor demand will be important for the labor market. Employment in coal mining has already declined by more than half between peak employment in 2013 and 2021, despite constant production. Coal mining and other coal-related sectors face more job losses. However, because the phase-out of coal capacity will likely be gradual, early retirement can absorb part of the employment decline (Yuan and others 2023). Job losses will occur in a few regions, where labor reskilling and support for new industries will be necessary. The transition to renewable energy could also create new opportunities because energy-intensive industries will likely relocate to areas with abundant renewable energy (Verpoort and others 2024). Renewable energy is projected to create

substantial new employment and absorb about 25 percent of unemployment from coal between 2025 and 2060 (Niu and others 2024). However, coal mining regions could still lose more coal-sector jobs than new opportunities can absorb quickly.

ETS reforms and competitiveness. Broadening the scope of the national ETS and lowering the emissions budget will increase the cost of producing electricity, especially from coal. There are concerns that this might increase electricity prices generally and thus reduce the competitiveness of Chinese products. However, three factors could mitigate these effects. First, given coal power plants' low utilization rate, a carbon price signal could cause the retirement of some highly inefficient coal plants (Wu and others 2023), improving the efficiency of electricity production. Second, evidence suggests that carbon prices could reduce the market power of highly polluting firms (Wang and Zhang 2022), so the price increase would reduce firms' profit margins and limit pass-through to users. Third, the ETS would generate government revenue. Besides compensating low-income households for price increases, authorities could use part of the revenue to reduce the tax burden on firms (Black and others 2024).

CONCLUSION

China's leadership in addressing the global climate crisis is vital for China and the world. The gap between current mitigation pledges and the emissions reductions needed to limit warming to 1.5–2 degrees Celsius can be closed equitably, consistent with the principle of common but differentiated responsibilities and with manageable costs for China and the global economy (Black and others 2022). In this context, the pace of China's decarbonization will be crucial for limiting global temperature increases and would also benefit China by reducing the risks from sea-level rise, droughts, and heat waves, and improving domestic health through lower pollution.

Stepping up climate policy action while managing the reliability of electricity supply carefully will be crucial for a successful green transition in China. Authorities have recently extended the ETS to additional sectors, but a quantity-based ETS would be more effective. Auctioning permits would raise revenues that could compensate workers and regions affected by the transition away from carbon-intensive technologies. Power market reforms that allow electricity prices to fluctuate more freely can increase efficiency. Ensuring reliability of electricity supply while expanding intermittent renewable sources and scaling back coal capacity will require investment in a flexible grid and energy storage.

A well-designed transition that strengthens the ETS, expands market-based electricity pricing, mobilizes climate finance, and supports workers and regions affected by structural change can lower emissions while sustaining growth and energy security. By aligning these reforms with continued investment in a flexible electricity system and clean energy technologies, China can accelerate decarbonization and strengthen its leadership in the global response to climate change.

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PART III

Macro and Financial Frameworks for the New Growth Model

Reforming the Fiscal Framework: The Challenges and Way Forward

Yongquan Cao and Daniel Garcia-Macia

China's fiscal policy since the global financial crisis has relied on large public investment to achieve ambitious growth targets and counter shocks. Local governments often financed this investment through off-budget channels. Weak tax revenues combined with this scaling up of investment resulted in large aggregate fiscal deficits and high and rising government debt levels. Going forward, spending pressures will rise even more because of aging and the need to improve still inadequate social protection that weighs on household consumption and welfare. To address these challenges, this chapter presents a comprehensive medium-term strategy focused on mobilizing revenues, scaling back inefficient investment, and undertaking pension and social security reforms to ensure fiscal sustainability and promote rebalancing toward consumption.

INTRODUCTION

China's fiscal policy over the past two decades has prioritized public investment to promote economic growth and stabilize the economy during downturns. The authorities also expanded coverage of the health care and pension systems substantially during this period, though important gaps remain in the adequacy of social benefits. Limited social safety nets led households to save a large share of their income to self-insure against lifetime risks (see Chapter 2), and a relatively closed financial system directed those savings toward domestic investment, which produced unbalanced growth.

Extensive decentralization of expenditure to local governments has also defined China's fiscal policy. However, spending mandates have often exceeded budget resources, while ambitious growth targets encouraged local governments to increase capital expenditure. As a result, local governments relied on nonstandard channels to finance investment, including sales of land use rights and off-budget borrowing through various entities. Meanwhile, tax revenues have declined, particularly since the COVID-19 pandemic, while the real estate adjustment since 2021 has reduced land-related revenue sharply.

These trends have resulted in large general government fiscal deficits, rising debt levels, and related vulnerabilities. Off-budget entities such as local government financing vehicles (LGFVs) face increasing difficulty servicing their debts.

Fiscal pressures will intensify further because of rapid population aging, which will raise pension and health spending, signaling greater challenges ahead.

China retains some fiscal space to counter economic shocks, but mounting fiscal challenges require comprehensive medium-term reforms to ensure fiscal sustainability and facilitate rebalancing toward consumption.

A comprehensive medium-term strategy is needed to mobilize revenue, scale back inefficient investment, and reform pension and social security programs. Recommended reforms to address these needs include reallocating expenditure from investment to social protection and reforming the pension system to improve its sustainability; comprehensive tax measures to raise revenue and support rebalancing, including more progressive labor taxes, higher capital income and property taxation, and more efficient consumption taxation;¹ and fiscal framework reforms that improve fiscal planning and address the local government debt overhang (see Chapter 8 for more details).

THE FISCAL FRAMEWORK: KEY FEATURES

Understanding fiscal trends and challenges in China requires a holistic view of the highly decentralized fiscal framework, which includes the official budgetary accounts and several off-budget entities that conduct quasi-fiscal activities.

The official budget consists of four accounts: the general public budget; the government-managed fund budget, which channels proceeds mainly from transfers of land use rights and special-purpose bonds to capital spending; the state capital operations budget, which reports dividends and asset transaction proceeds of state-owned enterprises; and the social insurance fund budget, which covers the pension, medical, unemployment, and other social programs. All four budgets cover both the central government and local governments.

Budgetary planning takes place on a single-year horizon. Each March, the Ministry of Finance submits annual central and subnational budgets to the National People's Congress. If unanticipated shocks arise during the fiscal year, the State Council requests the National People's Congress Standing Committee to conduct an in-year budget revision (invoked in 1998, 2020, 2023, and 2024) to raise the general budget deficit target or expand bond issuance quotas. The system lacks a medium-term fiscal framework and formal fiscal rules.

China's fiscal system is among the most decentralized in the world (Wingender 2018). Fiscal expenditure (both on- and off-budget) is highly decentralized to the four layers of local government, which are responsible for about 85 percent of on-budget government expenditures. However, local governments have relatively limited revenue shares because of the 1994 tax reform that centralized revenue collection, so they rely heavily on transfers from the central government and land sales.

¹ The discussion of expenditure reforms is based on Bonthuis, Cao, and Freudenberg (2026); and IMF (2022). The tax reforms discussion draws on IMF (2024b).

This misalignment—often called a vertical fiscal imbalance—has led to unfunded mandates at the local level. Combined with incentives to achieve ambitious growth targets, these mandates have spurred the proliferation of off-budget local government entities that conduct quasi-fiscal activities. LGFVs are the most prevalent type. Local governments set them up to borrow funds for financing infrastructure and development projects outside the formal budget, which allows local authorities to pursue high growth targets through debt-financed investments despite limited on-budget resources (see Chapter 8 for a deeper discussion). Other off-budget entities include government-guided funds, which channel inexpensive equity funding to priority investment projects, and special construction funds.²

However, official general government statistics exclude off-budget entities. To provide a more comprehensive measure of fiscal activity and the fiscal stance, the IMF also reports statistics for an *augmented* definition of the general government that consolidates these off-budget units with the four budget accounts (see Zhang and Barnett [2014] and Mano and Stokoe [2017] for details). Using the broader IMF definition is crucial for a comprehensive view of recent fiscal trends in China.

RECENT FISCAL TRENDS: LARGE DEFICITS, RISING DEBT

The unique characteristics of China's fiscal framework have shaped policy choices and outcomes over time. The fiscal policy mix and financing channels have evolved through the major economic shocks since the onset of the Global Financial Crisis, with each episode adding a new layer to the augmented government debt stock.

An Evolving Fiscal Mix

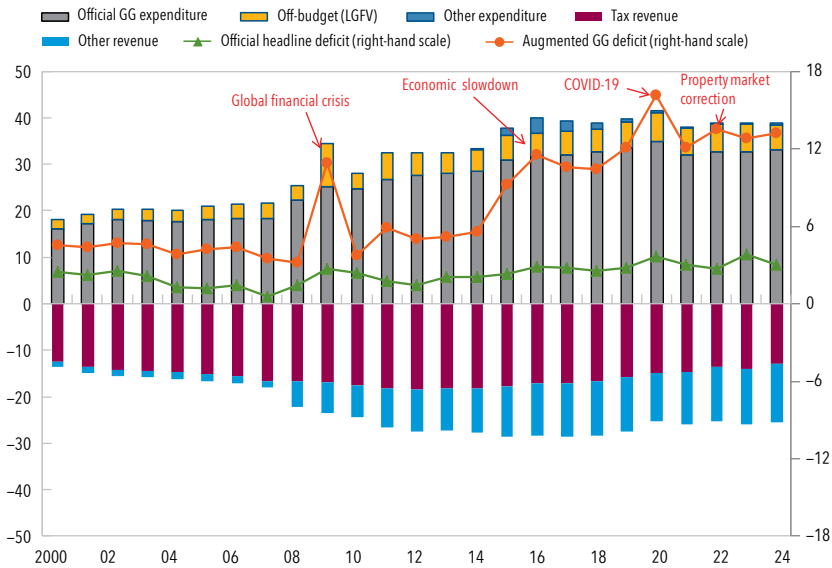
The global financial crisis prompted a momentous shift in China's growth model. Manufacturing-led growth, which had driven exports after China's accession to the World Trade Organization, gave way to a surge in public investment and real estate development as key sources of growth. This shift initiated an era of debt-funded growth with major implications for public finances.

The massive stimulus package after the global financial crisis focused on public investment and was mostly implemented and financed by LGFVs, which became a major funding source for the first time. The augmented deficit, including LGFV spending, rose sharply from just 3 percent of GDP in 2008 to 11 percent in 2009, whereas the official headline deficit increased only marginally (Figure 7.1). The public investment drive averted a growth downturn—a remarkable feat amid a global recession.

In the years after the global financial crisis, growth targets remained relatively high, whereas the pace of pro-growth reform slowed (see Chapter 1). Local governments

² Besides LGFVs, government-guided funds, and special construction funds, some of the onlending facilities run by the People's Bank of China could also be considered quasi-fiscal activities (see Chapter 9 for details).

Figure 7.1. Fiscal Deficit Breakdown
(Percent of GDP)



Sources: Ministry of Finance data; Wind Data Service; and IMF staff calculations.

Note: "Tax revenue" includes both central and local government taxes. "Other revenue" comprises nontax sources—including government-managed funds, profits from state-owned enterprises, and social security contributions—but excludes proceeds from land use rights sales. "Official GG expenditure" covers the four budget accounts and includes net spending financed by land sales, estimated by subtracting land acquisition costs. "Off-budget expenditures" are primarily carried out through local government financing vehicles and entities tied to special construction funds and government-guided funds. "Official headline deficit" is the gap between official general revenue and expenditure. "Augmented GG deficit" includes both on- and off-budget revenue and expenditure (see IMF [2024a] for more details). GG = general government; LGFV = local government financing vehicle.

depended on high public investment to achieve those targets (Chang, Wang, and Xiong 2025), even as they continued using LGFVs to circumvent official borrowing constraints. During the next economic slowdown in 2015–16, the authorities again relied on a similar approach, deploying infrastructure investment and urban redevelopment projects through LGFVs, which pushed the augmented deficit to another peak at 12 percent of GDP in 2016. General government revenue grew only gradually over the 2010s while the authorities expanded the social protection system. This expansion, combined with continued high LGFV investment, kept the augmented deficit elevated at an average of about 11 percent of GDP between 2017 and 2019, despite the economic recovery.

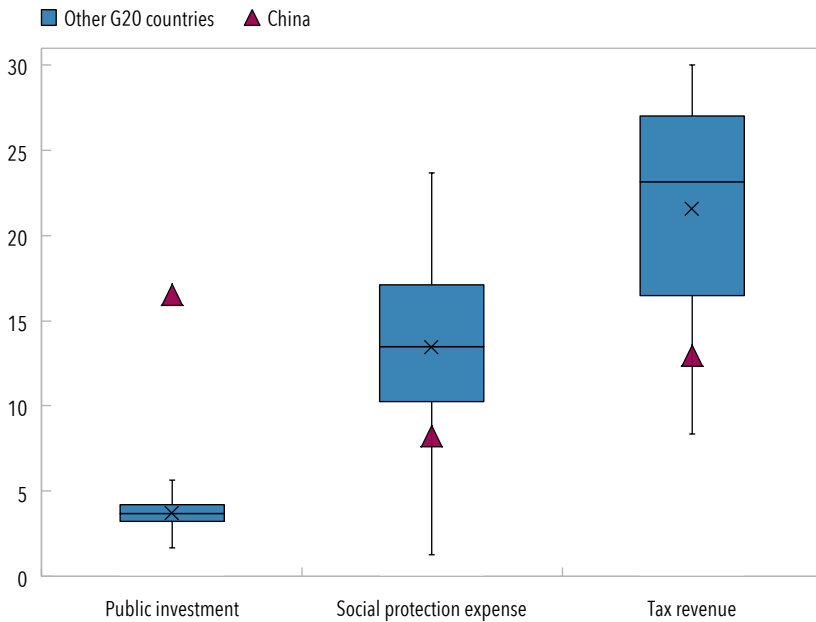
By the onset of the COVID-19 pandemic in 2019–20, the investment-led growth model was already yielding diminishing returns. The fiscal response to the pandemic included infrastructure-led stimulus, but the policy mix shifted toward emergency health and social spending and broad-based tax relief for firms, which caused a substantial decline in government revenue. Economic management of the pandemic was

successful in its initial stages, but a deep property market correction that began in late 2021 interrupted the recovery. The ensuing real estate crisis led to a collapse in land-related revenue—one of local governments' main funding sources—and constrained the role of highly indebted local governments as growth drivers. The authorities repeatedly extended tax relief measures to support the faltering recovery, but the overall fiscal response was relatively more contained than in other large economies. The augmented deficit still reached an unprecedented 16 percent of GDP in 2020 and remained at 13 percent in 2024, one of the highest worldwide.

The evolution of the fiscal policy mix since the Global Financial Crisis has rendered China an outlier across several dimensions compared with peers. The extraordinary focus on investment stands out among Group of Twenty (G20) economies, with China far exceeding all others in public investment as a share of GDP (Figure 7.2, first bar).³ By contrast, the social protection system is relatively

Figure 7.2. China versus G20: Key Fiscal Indicators, 2024

(Percent of GDP)



Sources: April 2025 World Economic Outlook database; IMF Government Finance Statistics database; and IMF staff calculations.

Note: The box-and-whisker plots show the lower bound, first quartile, median, third quartile, and upper bound across G20 countries, excluding China. Black crosses show the G20 mean. Public investment data include state-owned enterprises in China but exclude them for most G20 countries. Social protection expenditure data refer to 2022 or the latest year available and capture the general government for most countries.

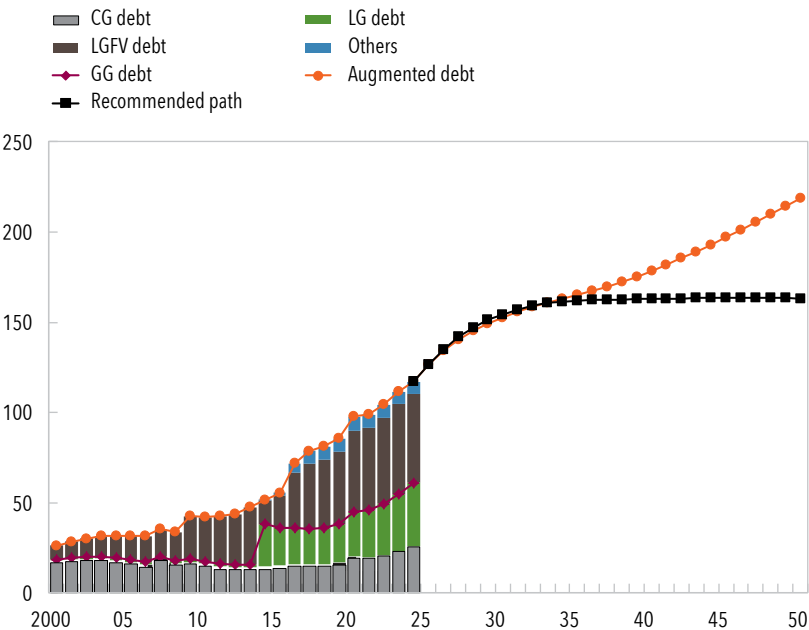
³ A key caveat is that China's national accounts data on public investment cover the entire public sector, while data for many G20 countries cover only the general government. China does not provide a breakdown of general government public investment.

less developed. Even though China has made welcome progress in this area, the country’s social spending still ranks in the bottom quartile of the G20 (Figure 7.2, second bar). Meanwhile, the availability of financing from debt and sales of land use rights has kept tax revenue low compared with peers (Figure 7.2, third bar).

Growing Debt Vulnerabilities

Continued large deficits drove a steep increase in total general government debt, which rose from less than 40 percent of GDP in 2007 to 117 percent of GDP in 2024 (Figure 7.3), despite robust GDP growth and moderate financing costs enabled by financial repression. From the global financial crisis to 2014, most of the debt buildup occurred through off-budget LGFVs. On-budget debt also surged after the 2014 budget law amendment allowed local governments to issue official debt.⁴ Portions of LGFV debt were swapped into official local government

Figure 7.3. Government Debt Breakdown
(Percent of GDP)



Sources: Wind database; Ministry of Finance; and IMF staff calculations.
Note: “LG debt” represents local government debt legally recognized since 2014. “GG debt” (red line) is the total of central government and local government debt. “Others” included debt associated with special construction funds and government guidance funds. “Augmented debt” (orange line) consolidates both on-budget and off-budget debt, providing a more comprehensive measure of the general government debt burden. Figures after 2024 are IMF projections as of April 2025. CG = central government; GG = general government; LG = local government; LGFV = local government financing vehicle.

⁴ 2014 Amendment of the Budget Law of the People’s Republic of China.

debt in successive waves, starting in 2015 with a 12 trillion renminbi (RMB) package (two-thirds of LGFV debt at the time) and continuing until 2028 with another package of 10 trillion RMB introduced in 2024 to be swapped over five years. These swaps increased transparency over government debt and lowered debt-servicing costs but left the augmented debt burden unchanged. The swaps could also reinforce the perception that LGFV debt is implicitly guaranteed, which weakens fiscal and market discipline regarding LGFV borrowing (see Chapter 8 for more details).

CHALLENGES AHEAD AND REFORM AGENDA

Fiscal vulnerabilities are expected to continue building from already high deficit and debt levels. Rapid population aging will raise pension and health care costs while weighing on output and the tax base. Without fiscal reforms, high primary deficits and slowing growth are projected to produce even higher debt ratios over the medium and long terms (Figure 7.3). Furthermore, diminishing returns on additional public investment, combined with the existing local government debt overhang, limits the investment-led growth model of past decades. Therefore, China's key fiscal challenges in the coming years are deploying fiscal policy to promote economic rebalancing from investment toward consumption, avoiding undue local government austerity, and ensuring fiscal sustainability.

Addressing these challenges will require wide-ranging structural fiscal reforms. Once deflationary pressures ease durably, the reform agenda should deliver a gradual fiscal consolidation over a decade to stabilize the debt-to-GDP ratio. Another priority will be to create space for more social spending to promote rebalancing toward consumption and enhance welfare. Policy measures will also be needed to resolve the local government debt overhang (see also Chapter 8).

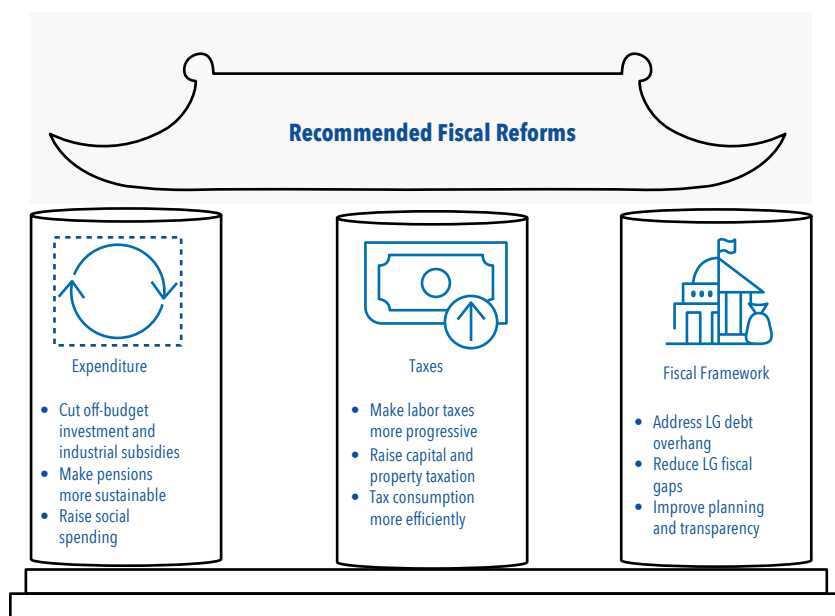
Figure 7.4 summarizes the recommended reforms, discussed in the next sections.

EXPENDITURE REFORMS

Expenditure reform will require reducing inefficient expenditures to achieve consolidation while expanding social spending where benefits are inadequate. Three key areas are reducing inefficient public investment (especially off-budget activities financed by LGFVs); strengthening the pension system amid rapid population aging; and enhancing broader social protection, including medical, unemployment, and social assistance programs. These reforms are essential to stimulate consumption, reduce inequality, and safeguard fiscal sustainability during the demographic and structural transitions ahead.

Reallocating Expenditure from Investment to Social Protection

China's growth model has long relied on high levels of public investment, often in large-scale infrastructure projects, underpinned by substantial domestic savings. This strategy delivered rapid capital accumulation, high output growth,

Figure 7.4. Recommended Fiscal Reforms

Source: Authors' illustration.

and fast urbanization, but the returns to additional investment have declined markedly over time. Public investment—especially off-budget investment—has increasingly flowed to lower-productivity areas such as real estate or remote infrastructure projects, which has raised fiscal and financial vulnerabilities. Reducing public investment would improve economic efficiency and fiscal sustainability, with potential fiscal savings of about 6 percent of GDP.

China also has room to scale back industrial policies. Extensive use of industrial policies, with an estimated equivalent fiscal cost of about 4 percent of GDP annually, has contributed to resource misallocation and domestic distortions (see Chapter 4). Reducing the scale of these measures by half over the medium term would improve economic efficiency, save about 2 percent of GDP in fiscal costs, and boost productivity and growth.

By contrast, the social protection system remains fragmented and inadequate in key areas, despite significant expansion over the past two decades. These shortfalls have created inequities and led households to save excessively to buffer against risks to their income, such as illness, unemployment, or retirement (see Chapter 2). Redirecting public resources from inefficient investment toward well-designed social spending would help lower precautionary saving, raise household consumption (especially for the most vulnerable groups), and enhance social cohesion.

Strengthening the Pension System

China's pension system has undergone waves of reforms over the past few decades, evolving from a framework that covered only employees of state-owned enterprises to a multitiered system with near-universal coverage. Two public pension programs form the core of the system, whereas voluntary or private pension programs remain limited. The public programs have different parameters, which create inequities in benefit adequacy and strong incentives for rural households to save.

The Urban Employees' Pension Program is mandatory for formal urban workers, and participation for self-employed individuals and small business owners is voluntary. It is funded mainly by contributions but also relies on government subsidies. The program covered 521 million people in 2024 and has relatively high contribution rates but also generous benefits compared with international peers' programs.

The Residents' Pension Program targets rural and informal sector workers and is funded largely through government subsidies. It also covered more than 500 million people in 2024 and aims to provide minimum old-age income security. However, at about 3 percent of average wages, benefit levels fall below the rural poverty line and lag lower-income countries with such programs in the region such as Sri Lanka, Thailand, and Vietnam.

China's public basic pension system faces growing pressure from population aging. The old-age dependency ratio is projected to more than double from 21 percent in 2024 to more than 40 percent by the early 2040s as the baby boom generation retires, raising pension spending needs. International comparisons provide a warning sign: countries with a old-age dependency ratio of about 40 tend to spend between 9 percent and 18 percent of GDP on pensions (Figure 7.5). Without reforms, China's public pension costs are estimated to rise from about 5 percent in 2024 to about 15 percent of GDP by mid-century, despite the low benefits of the Residents' Pension Program.

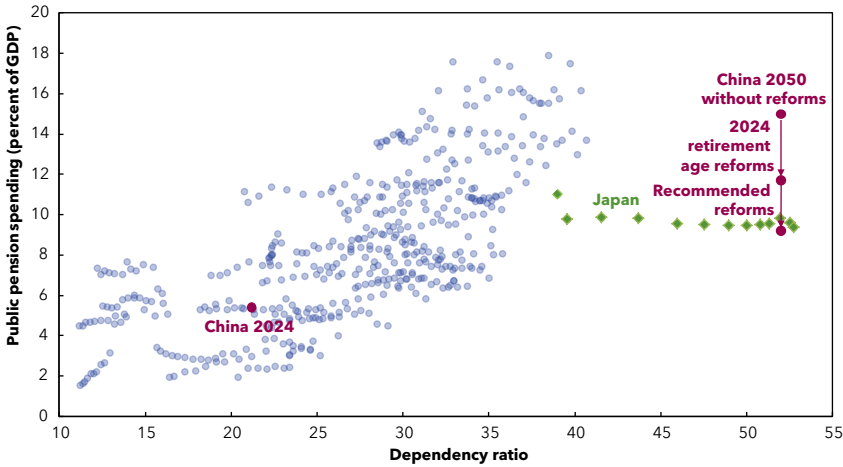
Addressing these cost pressures while reducing the inequities in the system will require a suite of policy reforms. The analysis in this section used a state-of-the-art overlapping generation model to assess the fiscal and economic impact of various reform options, based on Bonthuis, Cao, and Freudenberg (2026).

Further Raising the Retirement Age

China's retirement age before 2024 was among the lowest globally—60 for men and 50 to 55 for women, depending on their occupation. The authorities launched a reform in 2024 that will raise retirement ages gradually for most groups by three years over a 15-year period. By limiting the decline in the labor force, this reform is estimated to raise annual real GDP growth by 0.2 percentage point, resulting in a 5.6 percent increase in the level of GDP by 2050 compared with a scenario of no reforms. Public pension expenditures would also fall by about 3.4 percentage points of GDP compared with the no-reform scenario in 2050, easing long-term fiscal strains (Figure 7.5).

However, the pace of demographic change warrants more ambitious reform. Raising the retirement age to 65 for both men and women by 2040 could deliver

Figure 7.5. Dependency Ratio and Public Pension Spending



Sources: Bonthuis, Cao, and Freudenberg 2026; Ministry of Finance data for 2024; OECD Social Expenditure Database; and United Nations, World Population Prospects 2024 database.
 Note: The data on public pension spending estimates for 2050 are from Bonthuis, Cao, and Freudenberg (2026); China’s Ministry of Finance for 2024; and for OECD countries, the OECD Social Expenditure Database. The dependency ratio refers to the old-age dependency ratio and is based on projections from the UN World Population Prospects database (2024). “China 2024” reflects the latest available data. “China 2050 with demographic transition” projects pension spending under unchanged policies and baseline demographic trends. “Recommended reforms” reflect a broader package of parametric and structural pension adjustments, as outlined in Bonthuis, Cao, and Freudenberg (2026).

stronger macroeconomic gains. Under this scenario, the level of real GDP would rise by an additional 3 percent by 2050 compared with the current reform path, and pension expenditures could decline by an additional 1.8 percentage points of GDP, supporting fiscal sustainability.

Adjusting Benefits to Reflect Longevity

The Urban Employees’ Pension Program offers comparatively high income replacement rates, with pensions covering 50 to 60 percent of preretirement earnings after a full 35-year career—comparable to or exceeding many advanced economies. To preserve long-term sustainability, benefit parameters should reflect rising life expectancy. Simulations indicate that aligning pension benefit parameters with life expectancy trends could reduce public pension spending by up to 1.3 percentage points of GDP and boost real GDP by 2 percent by 2050, mainly through greater labor participation.

Increasing the Adequacy of the Residents’ Pension Program

The low benefit levels of the Residents’ Pension Program limit the system’s capacity to reduce poverty, reinforce rural-urban disparities, and dampen domestic

consumption by encouraging precautionary saving. Doubling benefits would cost only an additional 0.6 percent of GDP by 2050 but would deliver substantial gains. Model simulations suggest that this reform could raise rural household consumption by about 4 percent, increasing domestic demand significantly and reducing inequity.

Net fiscal savings from a pension reform package that incorporates the three elements described are estimated at 0.5 percentage point of GDP by 2035, after accounting for a 0.6 percentage point increase in the Residents' Pension Program's expenditures. By 2050, annual net fiscal savings are projected to reach 2.5 percentage points of GDP compared with a no-reform scenario (3.1 percentage points in savings minus 0.6 percentage point from additional pension program spending). The reform is also expected to address inequities within the current system.

Other Reforms

The pension system remains highly fragmented. There is limited pooling of funds or administrative resources across provinces, which creates inefficiencies and insufficient risk sharing across regions. Portability remains a key challenge, especially for migrant workers and informal sector participants who often struggle to maintain continuous coverage or consolidate entitlements as they change jobs or move across regions. To build on recent progress, China should accelerate the shift toward the long-term goal of full national pooling by improving portability through three measures: continue paring back the household registration system (*Hukou*), create a unified national database, and standardize procedures for cross-provincial transfers.

Other reform options include (1) introducing rules-based pension indexation to maintain benefit relevance over time, (2) applying actuarial adjustments for early retirement, (3) enhancing benefits for individuals with shorter contribution histories to improve coverage equity and (4) eliminating buy-in provisions, which allow individuals to join or resume participation in the social insurance system even if they missed required contribution periods.

Enhancing the Broader Social Protection System

The analysis in IMF (2022) shows that China should also prioritize reforms to other major components of its social protection system: medical insurance, unemployment insurance, and social assistance. These reforms would raise long-term fiscal spending by 3.1 percent of GDP, but they are critical to rebalancing the economy toward consumption and improving welfare.

Boosting Medical Insurance Adequacy

Coverage under China's basic medical insurance system has expanded dramatically, but benefit adequacy remains limited, especially under the Basic Medical Insurance Program for rural and urban nonworking individuals. Out-of-pocket

payments still account for a significant share of total health spending, discouraging service use and driving precautionary saving. Strengthening protection will require lifting caps on reimbursable medical costs, and creating a national supplementary medical insurance plan that provides affordable coverage for medical expenses now left uncovered, with subsidies for lower-income individuals. Allowing the use of individual medical account savings to help family members pay into basic medical insurance would also improve intergenerational risk sharing. Together, these measures would reduce households' exposure to financial risk and increase consumption.

Expanding and Equalizing Unemployment Insurance

China's unemployment insurance system still has limited benefits and is primarily designed for workers with formal employment contracts. Coverage for migrant workers and informal employees is still inadequate, despite their substantial contributions to economic activity. Reforms should begin by aligning the bases used to calculate contributions and benefits to ensure that workers with different types of employment are treated more equally. At the same time, equalizing migrant worker benefits with those of registered urban employees would improve portability and reduce structural inequities. The authorities should also consider waiving or shortening minimum contribution periods, which now limit access for workers with intermittent employment. As the prospects for automation of labor tasks grow across the economy through the adoption of artificial intelligence and robots, a more inclusive and responsive unemployment insurance system would help cushion labor market risks and give displaced workers time to find better job matches.

Modernizing Social Assistance and Child Support

China's minimum income guarantee program (*Dibao*) provides a foundation for social assistance, but benefit levels are low, and targeting is uneven. Aligning benefits more closely with local consumption levels would improve adequacy. Linking transfers to economic triggers, such as increases in unemployment rates, would enable countercyclical support during downturns. China should build on successful pilots of digital delivery platforms to improve benefit targeting, timeliness, and administrative efficiency.

REVENUE REFORMS

China has implemented important tax reforms over the past decade that improved the efficiency of its system. Two notable measures were replacing the business tax with a value-added tax (VAT) in 2016 and a comprehensive reform of the personal income tax in 2018. More recent measures improved VAT efficiency by broadening eligibility for VAT refunds, expanding access to input tax credits, and consolidating registration thresholds. A new VAT law taking effect in 2026 aligns the VAT more closely with international best practice.

However, China's tax revenue is still lower than in peer countries, mainly because personal income tax revenue falls below international levels (Figure 7.2). Although tax ratios in other countries increased on average over the past decade, they declined in China. The drop reflects a series of tax policy measures that lowered consumption taxes. Substantial tax relief for firms introduced during the pandemic and then extended to support the postpandemic recovery added to the revenue decline.

Amid falling tax and land-related revenues and growing social spending needs, revenue-raising reforms are essential to ensuring debt sustainability. Tax reforms can also improve economic efficiency, reduce income inequality, support rebalancing, and address vertical imbalances. Drawing primarily on IMF (2024b), this section outlines a set of tax policy reforms that China could implement gradually over the coming years, along with estimates of their revenue potential and assessment of accompanying benefits. These measures could raise 5 percentage points of GDP in revenue.

Increasing Reliance on Personal Income Taxation

Despite the 2018 reform, the personal income tax remains complex and yields little revenue. By contrast, social security contributions are high relative to peers. Capital income is taxed lightly: the top marginal personal income tax rate is 45 percent, but capital income is taxed at a flat 20 percent rate. This creates a combined effective tax burden on labor and capital that is likely regressive.

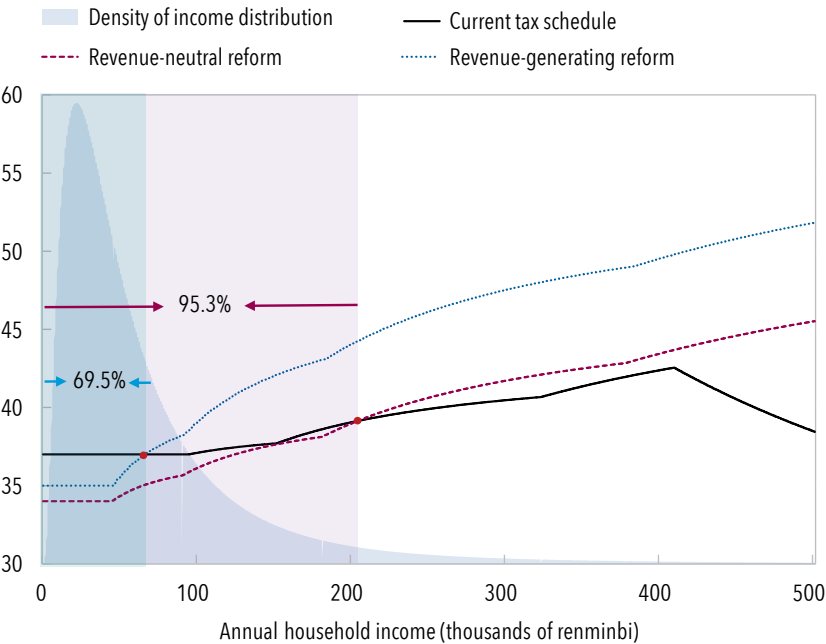
Updating the personal income tax system with higher average rates and a broader base while lowering social security contributions can reduce income inequality. It would also increase the take-home pay of lower-income people, who tend to consume a larger fraction of their income, supporting rebalancing toward consumption. A steeper income tax schedule would also strengthen the tax system's role as an automatic stabilizer of economic fluctuations.

Figure 7.6 illustrates the current tax schedule and income distribution, and presents two reform options that simultaneously adjust personal income tax and social security contributions schedules to increase posttax income for most of the population. A *revenue-neutral* reform (dashed purple line) would raise net income for the bottom 95 percent of households.⁵ A more ambitious *revenue-raising* reform (dotted blue line) could increase revenue by 1.4 percentage points of GDP and still lower the tax burden for more than two-thirds of the population.

In addition, the numerous personal income tax deductions should be streamlined and essential deductions replaced by refundable tax credits, which would

⁵ The reform would do so by reducing social security contributions by 3 percentage points and increasing their cap by 25 percent. To compensate for reduced social security contributions, the reform would halve the personal income tax standard deduction, increase the marginal tax rate applied in the first bracket to 5 percent, and reduce all thresholds somewhat, including the top threshold from more than RMB 1 million to RMB 750,000.

Figure 7.6. Average Tax Rate under Labor Tax Reform Options
(Percent)



Sources: IMF 2024b; International Bureau of Fiscal Documentation; and World Inequality Database.
Note: The average tax rate includes both personal income taxes and social security contributions. The shaded areas show the percentage of households that benefit from lower average tax rates under each reform option.

benefit the entire population instead of just the top one-third of higher-income households that currently pay personal income tax.

Strengthening the Taxation of Capital Income

Raising taxes on capital income would reduce opportunities for tax avoidance and increase the effective tax rate on high-income individuals. This change would improve equity and potentially support rebalancing by lowering the return on saving. It would also narrow the gap between the taxation of labor and capital income, which would help tax small businesses adequately where the distinction between the two income sources is often unclear. The reform is conservatively estimated to raise 0.3 percentage point of GDP in revenue.

Reducing the Tax-Favored Status of Housing

China’s real estate sector is a major store of household savings and has benefited from tax-favored treatment that contributed to the real estate boom of the 2010s. After the housing market reaches a new equilibrium and social protection improves,

the authorities should gradually reduce tax benefits for owner-occupied housing, such as deductions for mortgage interest and tax exemptions for contributions to the Housing Provident Fund.

Once the housing market has stabilized, a nationwide real property tax would contribute to increasing the tax system's efficiency and fairness. Recurrent property taxes are efficient because land and buildings are immobile. With an appropriate exemption threshold, property taxation is progressive and yields stable revenue—about 0.7 percent of GDP in the Asia and Pacific region and even more elsewhere. Greater property revenue would reduce reliance on distortive transfer taxes levied when properties change ownership. Combined with reforms to income-based concessions, a comprehensive property tax reform could improve capital allocation by narrowing differences in effective tax rates across asset types.

Improving the Efficiency and Coverage of Indirect Taxation

VAT remains China's largest revenue source. The new VAT law includes improvements that could align better with international best practice, but more reforms are needed to reduce distortions and administrative costs. Priorities include reducing the number of VAT rates and eliminating most exemptions, including those introduced during and after the pandemic, except for limited cases such as basic food items. Together, these measures could raise revenue by 1.4 percent of GDP.

Other indirect taxes could also yield more revenue. For example, excise taxes on tobacco are somewhat low by international standards. Raising the specific tax so that retail prices double would generate about 0.2 percent of GDP (Goodchild and Zheng 2018), improve public health, and reduce health costs. Similarly, scope exists to increase specific taxes on alcohol and fuel.

Carbon pricing is another key area. The current emissions trading system grants many free permits to emitting firms. Introducing partial auctioning of permits and gradually transitioning to a full cap-and-trade system covering more sectors would improve efficiency, reduce carbon emissions, and raise fiscal revenue by 0.3 percent of GDP (see Chapter 6).

Eliminating Corporate Income Tax Exemptions

China's corporate income tax is relatively efficient by international standards, but targeted tax incentives for certain firms and sectors are costly, could induce factor misallocation (see Chapter 4), and complicate tax administration. Authorities should assess the effectiveness of these incentives and aim to scale back industrial policy measures and adopt a domestic minimum tax. Reforming corporate income taxation could increase revenue by about 0.7 percent of GDP.

Addressing Gaps in Revenue Administration

China has implemented comprehensive reforms in revenue administration, such as centralizing the administration of social security contributions at the State

Taxation Administration, rolling out electronic invoicing, and simplifying tax procedures. The government has also expanded digital services using artificial intelligence to improve the taxpayer experience. Continuing progress will require the State Taxation Administration to adopt a functionally structured organizational model, stronger management of large taxpayers, and refined risk assessment strategies—tailored to specific taxpayer segments—to focus on high-risk cases.

A Well-Sequenced Reform Package

These reforms could raise substantial revenue, improve efficiency and equity, and support rebalancing. However, careful sequencing is critical to securing public support, especially amid subdued domestic demand, and weak consumer confidence. Near-term reform efforts should strengthen capital taxation, roll back pandemic-era relief measures, and remove corporate income tax exemptions. Over the medium term, China could introduce higher excise tax rates, adjust the personal income tax schedule to raise average rates while reducing social security contributions, simplify VAT rates and exemptions, and increase revenue from carbon emission permits. The authorities could consider a nationwide property tax after the real estate sector recovers.

A comprehensive package of these reforms could increase the tax-to-GDP ratio by an estimated 5 to 6 percentage points over the medium term. About half of the additional revenue would accrue to local governments—an important outcome, given their current fiscal gaps. Although some reform components, such as shifting the labor tax burden from social security contributions to personal income taxes, would reduce local government revenue shares, other taxes—such as property and specific taxes—would fully accrue to local governments. The reform measures would also boost economic efficiency, reduce inequality, support private consumption, and generate health and climate benefits.

FISCAL FRAMEWORK REFORMS

Ensuring fiscal sustainability and effective policy transmission to the real economy will ultimately require an overhaul of fiscal frameworks. A key priority is reforming local government fiscal frameworks to address vertical imbalances and debt overhang. Chapter 8 outlines framework reforms to curb local government debt accumulation, support their delivery of public services, and restructure their off-budget debt.

At the general government level, two reforms would improve fiscal planning, monitoring, and policy communication significantly. China should establish a medium-term fiscal framework, moving beyond annual budget planning. It should also close long-standing data gaps in fiscal accounts by providing general government expenditure broken down by economic type (for example, current and capital expenditure) and data on government-controlled off-budget entities (such as LGFVs) that conduct quasi-fiscal activity. Fiscal planning should be based on comprehensive measures of fiscal activity that capture all relevant entities, including those outside of the budget.

TABLE 7.1.

Fiscal Consolidation Measures and Budget Impact	
Recommended Measures and Other Drivers	Impact on Primary Deficit over 10 Years (Percent of GDP)
Social spending expansion	+6½
<i>of which mechanical effect of aging</i>	+3
Pension system reform	–1
Scaling back industrial policy	–2
<i>which is also included in tax reforms</i>	–½
Public investment reduction	–6
Tax reforms	–5½
Total	–7½

Sources: Bonthuis, Cao, and Freudenberg 2026; IMF 2022, 2024b; and IMF staff calculations.

Note: Negative values denote deficit reductions.

CONCLUSION

The proposed reform agenda for China to secure fiscal sustainability, accelerate economic rebalancing toward consumption, and improve welfare would deliver a stronger and more resilient economy. The recommended policy package includes reallocating expenditure from investment to social protection by expanding social spending, strengthening pension system sustainability, lowering the fiscal costs of industrial policies, and reducing public investment, particularly off-budget investment. The package also includes tax measures that raise revenue and support rebalancing, along with fiscal framework reforms that address local government debt overhang and improve fiscal planning.

Together, these reforms would reduce the primary deficit by about 7½ percentage points of GDP (Table 7.1) and stabilize the debt-to-GDP ratio in about 10 years.

Implementing this agenda will require the central government to take a strong catalytic role by aligning the multiple government agencies and the four layers of local governments involved. The task will be significant, given China's fragmented and decentralized fiscal system, but fiscal reforms are imperative as China confronts rapid demographic change and a more uncertain global economic landscape. Careful planning, sequencing, and public communication will be essential for the reforms' success.

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Addressing the Local Government Debt Overhang

Yingyuan Chen, Daniel Garcia-Macia, and Henry Hoyle

Local governments have been the main drivers of China's rapid accumulation of government debt since the global financial crisis. To meet ambitious growth targets and finance the gap between their broad expenditure mandates and limited revenue allocations, local governments resorted to off-budget borrowing through local government financing vehicles (LGFVs), taking advantage of lax control frameworks and implicit government guarantees. The decrease in local government land sales since the real estate downturn began in 2021 has reduced revenues and intensified the local government debt overhang, which has increased fiscal and macrofinancial risks. This chapter uses an intersectoral balance sheet approach to examine local government debt risks and assess alternative policy solutions. Restructuring unsustainable LGFV debt will be essential to addressing the debt overhang, but it must be part of a broader package of reforms to succeed.

INTRODUCTION

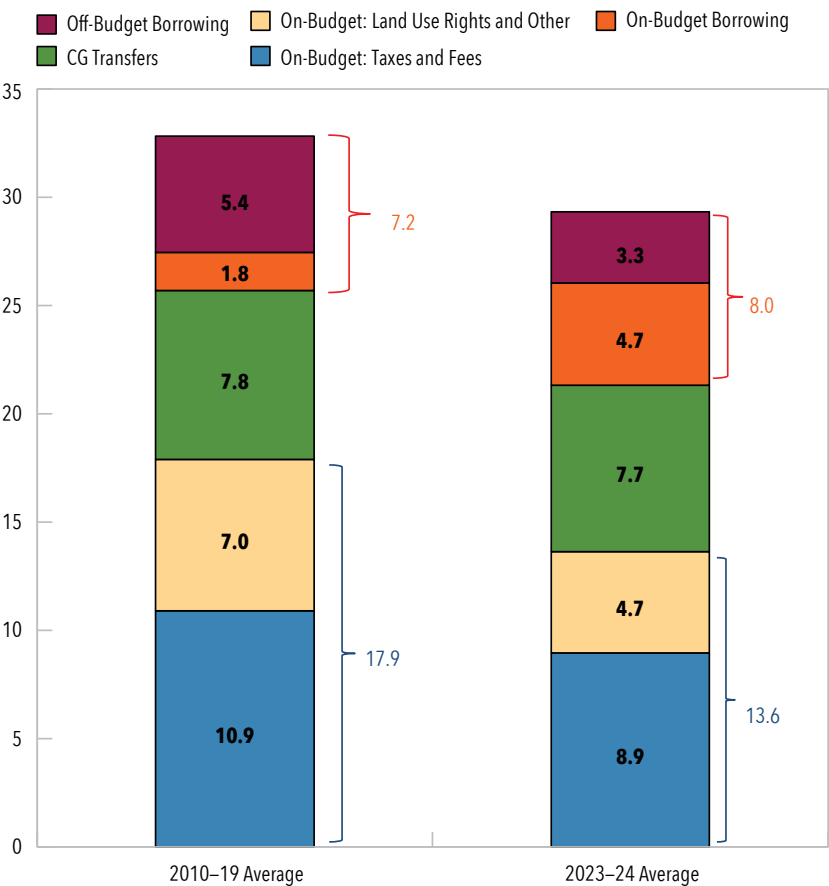
China's remarkable economic growth in the past two decades has been accompanied by a rapid buildup of government debt, primarily at the local government level. This debt built up is in large part because of heavy borrowing by off-budget financing units, known as local government financing vehicles (LGFVs). Local governments used LGFVs to fund infrastructure investment, land development, and other economic policy objectives. As of 2024, the sum of official on-budget local government debt and LGFV debt exceeded 80 percent of GDP, up from about 10 percent of GDP before the global financial crisis.

The increase in local government debt accelerated as their capacity to repay debt from their own revenue sources declined. LGFVs have weak balance sheets and limited cash flows, whereas on-budget local government revenues (including land sales) fell from 17.9 percent of GDP in the decade before the COVID-19 pandemic to an average of 13.6 percent in 2023 and 2024. About three-fifths of the decline was because of lower real estate-related revenues after the housing downturn (Figure 8.1).

Debt-servicing capacity deteriorated rapidly for most provinces. Total on- and off-budget debt-to-GDP ratios rose sharply from already elevated levels before the pandemic, and revenue-to-GDP ratios declined (Figure 8.2). Growing debt burdens created a local government debt overhang that limits those governments' role

Figure 8.1. Local Government Revenue and Financing Flows, 2010–19 and 2023–24

(Percent of GDP)



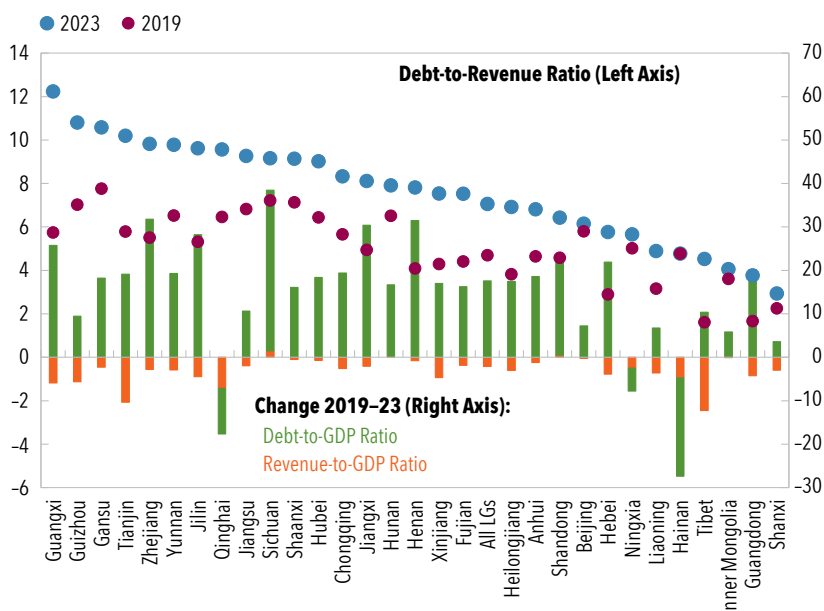
Sources: CEIC Data; S&P Capital IQ; and authors’ calculations.
Note: In official terminology, “on-budget: taxes and fees” refers to general budget revenues, whereas “on-budget: land use rights and other” refers to fund budget revenues. On- and off-budget borrowing show net incurrence of borrowing rather than gross.

as drivers and stabilizers of growth, in some cases weakening the provision of basic public services.

An intersectoral balance sheet analysis was used to examine the risks from elevated local government debt and assess alternative policy solutions. The analysis estimated cross-sector debt and equity claims for LGFVs, local governments, and other sectors (based on Garcia-Macia [2021] and IMF [2024]). The findings suggest that LGFVs are highly interconnected with local governments and other parts of the local economy, which increases the economy’s vulnerability to financing strains in LGFVs, including significant risks to macrofinancial stability.

Figure 8.2. Province-Level Debt-to-Revenue Ratios (2019 and 2023) and Change by Components

(Ratio [lhs]; percentage points [rhs])



Sources: CEIC Data; S&P Capital IQ; and authors' calculations.

Note: Debt includes on-budget and estimated off-budget (local government financing vehicle) debt. Revenues include public budget revenues, net transfers from land sales, and local government financing vehicle operating cash flows. LG = local government; lhs = left-hand scale; rhs = right-hand scale.

The analysis is then used to assess policy options to address unsustainable off-budget debt. The key finding is that using corporate insolvency frameworks to restructure LGFV debt is the most viable path to restoring local governments' fiscal sustainability. This approach would help rebuild fiscal and market discipline in LGFV borrowing and entail a more balanced distribution of costs across sectors.

Restructuring off-budget debt through corporate insolvency frameworks must fit into a broader reform package to prevent debt from building up again and to manage potential financial and macroeconomic spillovers (see Adams and others [forthcoming] for details). A comprehensive, well-sequenced effort is required that includes fiscal reforms to close local government revenue-expenditure imbalances, improve transparency of off-budget debt and investments, and control future debt flows. Stronger policy frameworks for managing fiscal and financial stress is also needed. Thorough diagnostic and planning work to help contain spillovers should precede the restructuring process. These policies will be an essential foundation for more sustainable, high-quality growth and help avoid larger costs in the future from rising government debt-to-GDP ratios.

THE RISE OF CHINA'S LOCAL GOVERNMENT DEBT OVERHANG

Long-standing vertical fiscal imbalances—gaps between local government expenditure mandates and revenue allocations—led local governments to rely heavily on off-budget debt and land revenues. Local governments account for about 85 percent of general government expenditure but only about 50 percent of general government revenues. These imbalances date back to a major fiscal reform in 1994 that reapportioned about 30 percent of local government revenues to the central government. Central government transfers to local governments have helped fill much of the resulting fiscal gap but not all of it. To close the remainder and fund expenditure in support of ambitious economic growth targets and other policy objectives, local governments made extensive use of off-budget borrowing through LGFVs and profits from auctions of land use rights, especially after the global financial crisis in 2008. In the decade before the pandemic, off-budget borrowing averaged 5.4 percent of GDP and sales of land use rights averaged 7 percent of GDP, but each has fallen to about two-thirds of those levels since 2023 (Figure 8.1).

Rapid growth in local government debt was possible partly because of prevalent implicit government guarantees. Although legal guarantees to off-budget debt were banned in 2014, local governments backstopped off-budget financing vehicles with injections of land, state-owned enterprise (SOE) shares, and cash, with cash alone averaging 1.2 percent of GDP annually in 2021–23. These actions supported investor confidence in LGFVs' repayment capacity despite their limited operating cash flows. The 2014 Budget Law approved the use of local government on-budget debt. Furthermore, the central government introduced policies under which part of the debt held by LGFVs was converted into legally recognized local government debt. The issuance mechanism for local government on-budget debt, based on central government–approved quotas, reinforced the perception that the central government would backstop local government on-budget debt, which was reflected in the very low credit risk premiums of local governments relative to the central government.

A decades-long housing boom also played a key role in enabling local government debt accumulation. Local governments effectively monetized and collateralized their land assets, and rapid land price appreciation increased their property-related revenues substantially to as high as 9.3 percent of GDP in 2020. These trends solidified lenders' perceptions that local governments could meet their debt obligations and stand behind off-budget borrowing units.

Local government finances became increasingly strained after the pandemic, which amplified debt risks and created a debt overhang. In 2020, expenditure surged as health spending rose sharply and revenues fell on COVID-19-related tax relief measures. Since late 2021, the property market downturn has shrunk real estate–related revenue. As a result, average total on-budget revenues in 2023–24 were 4.3 percentage points of GDP lower than the 2010–19 average

(Figure 8.1). In 2023 and 2024, off-budget borrowing slowed because of tighter administrative controls on LGFVs, refinancing of LGFV debt with on-budget debt, and declining credit availability in some regions. However, the renewed use of LGFV debt swaps led growth in on-budget debt to more than offset the decline in off-budget debt, lifting average local government net borrowing from 7.2 percent of GDP before the pandemic to 8 percent of GDP in 2023–24. Rapid increases in debt and falling revenues weakened local governments' debt-servicing capacity, prompting a reduction in expenditure of almost 2 percentage points of GDP relative to the pre-COVID-19 average. Even so, local governments failed to meaningfully close budget deficits.

A CLOSER LOOK AT LGFV VULNERABILITIES AND INTERCONNECTEDNESS

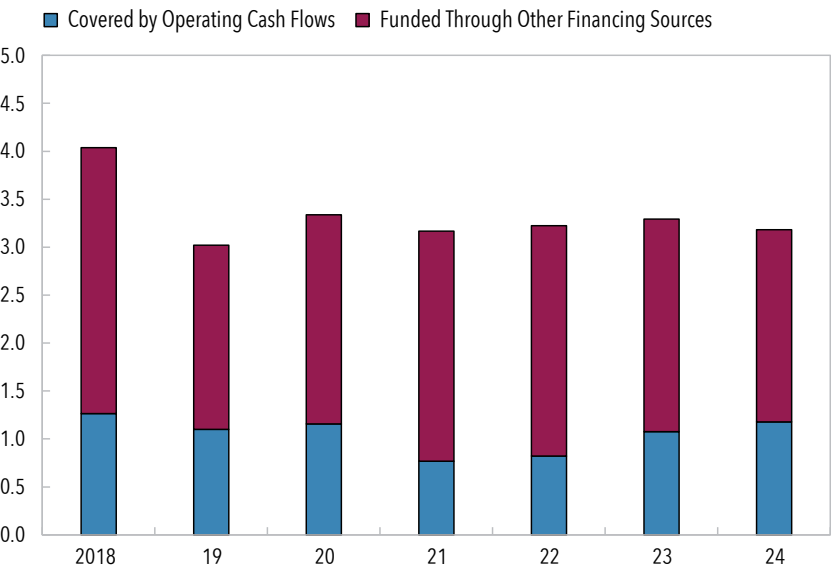
LGFVs' long-standing financial weaknesses have intensified over time, which combined with their high debt levels, pose significant risks to macrofinancial stability. LGFVs' stand-alone debt-servicing capacity is limited, with operating cash flows covering only about one-quarter to one-third of their interest costs, which underscores their lack of sustainability and their dependence on creditors rolling over maturing debt (Figure 8.3, panel 1). Liquidity risks have also worsened. As credit access tightened beginning in 2018, LGFVs have steadily drawn down their cash reserves, which pushed their liquid-assets-to-short-term-liabilities ratio to critically low levels of about 15 percent as of 2024 (Figure 8.3, panel 2). LGFVs sustained cash flows by delaying payments to suppliers and through direct injections from shareholders (local governments and SOEs).

The risks posed by LGFVs are increased by their direct financial linkages with other sectors. The analysis constructed a matrix of intersectoral balance sheet linkages to estimate cross-sector debt and equity claims among the government, households, nonfinancial corporations, financial institutions, and the rest of the world. It treated local governments and LGFVs as separate sectors to show their complicated interlinkages. Figure 8.4 summarizes the results:

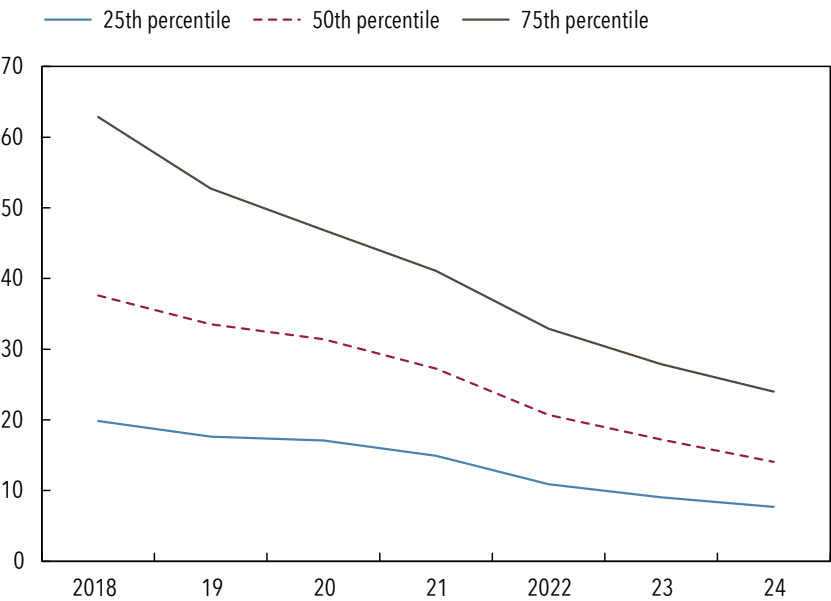
- Just under half of LGFVs' large assets (111 percent of GDP as of 2022) are claims on other sectors, including arrears and account receivables from local governments and nonfinancial firms, and significant equity in local firms and banks. Another 65 percent of GDP consists of physical assets, including real estate, land, and other physical capital.
- LGFVs' liabilities include sizable noninterest-bearing liabilities to local firms (largely account payables), bond liabilities to households (through asset management products), and significant equity owned by local governments (36 percent of GDP). Most importantly, LGFVs have additional liabilities to the financial system equivalent to 36 percent of GDP, which highlights the potential for macrofinancial spillovers. LGFVs also provide extensive guarantees for local firms, which creates additional contingent exposures.

Figure 8.3. LGFV Financial Performance Indicators

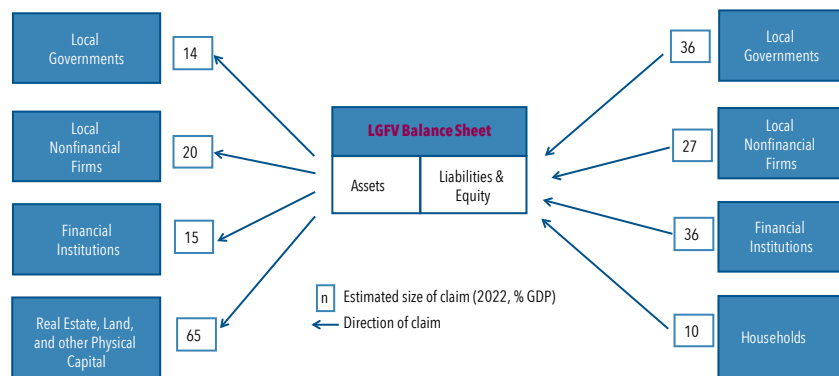
1. LGFV Interest Expenditure by Available Funding Sources
(Percent of GDP)



2. LGFV Liquidity: Cash-to-Short-Term-Liabilities Ratio
(Percent)



Sources: Bloomberg Finance L.P.; CEIC Data; Haver Analytics; S&P Capital IQ; and authors' calculations.
Note: LGFV = local government financing vehicle.

Figure 8.4. LGFV Financial Interlinkages**LGFVs are highly interconnected with local governments, financial system, and local economy**

Sources: CEIC Data; S&P Capital IQ; WIND; and IMF staff calculations.

This high degree of interconnectedness with local governments and other sectors implies that financial stress in LGFVs would likely transmit across the regional economy through balance sheet linkages (Box 8.1).

GROWING RISKS TO FISCAL AND MACROFINANCIAL STABILITY

The still-growing local government debt overhang and LGFVs' financial vulnerabilities pose significant risks for China's economy. High debt levels could limit local authorities' willingness to provide countercyclical support to the economy or their capacity to do so. Higher on-budget debt relative to GDP is associated with higher primary balances at the provincial level, which indicates fiscal drag (IMF 2024). LGFVs' rising liquidity strains and dependence on implicit guarantees also increase the risk that shocks to local government finances—such as a real estate slump—could force some LGFVs into procyclical tightening if creditors cut their credit exposure because of concerns about weakening LGFV backstops. The sharp reduction in LGFV credit and spending could amplify the initial economic shock and erode local government finances even more, creating a negative feedback loop.

State control of the financial system and strengthened implicit guarantees can help secure additional borrowing to roll over LGFV debts in the near term, but the stock of debt and interest payments would continue to grow relative to income. The longer these vulnerabilities accumulate, the more costly and disruptive an eventual adjustment—through either local government deficit cuts or nominal debt reductions—which would create risks for macrofinancial stability and the broader economy.

Box 8.1. Estimating the Financial Impact of a Real Estate Downturn on Local Governments and Local Government Financing Vehicles

An intersectoral balance sheet analysis shows how interconnectedness intensifies local governments' vulnerability to shocks. As the ultimate owners of local government financing vehicles (LGFVs) and many state-owned enterprises and state-owned banks exposed to LGFVs, local governments face potential balance sheet shocks through many different channels when LGFVs experience stress.

A stylized land market shock similar to the one at the start of the real estate downturn in 2021 illustrates these channels. Such a shock affects local government balance sheets through their claims on LGFVs and reduced land sale revenues. In a scenario in which both real estate prices and activity are 20 percent lower for three years, local governments are affected directly by a decline in land sale revenue, which lowers their financial net worth by 3.3 percent of GDP. The market value of LGFV real estate assets also declines, creating indirect impacts (Box Table 8.1.1). This channel lowers the value of LGFV debt by 0.4 percent of GDP and equity liabilities by 5.1 percent of GDP, which generates immediate losses for local governments, lenders, firms (through their accounts payable exposures), and households (the "first round" column in Box Table 8.1.1). These losses then trigger multiple rounds of equity spillovers across sectors (the "equity absorption" column). Ultimately, all losses flow through to sectors that are not owned by others, i.e. households, local governments, the central government, and foreigners, which are summed in the "ultimate loss absorption" column. Local governments absorb almost all of the loss because of their equity stakes in state-owned enterprises and banks.

BOX TABLE 8.1.1.

Balance Sheet Losses after a Real Estate Shock, by Sector (Percent of GDP)

Sector	Direct Channels	Indirect Impacts		Ultimate Loss Absorption
		First Round	Equity Absorption	
Local governments	3.29	5.12	0.12	8.54
Local government financing vehicles	5.53	-	-	-
Financial institutions	-	0.22	-	-
Nonfinancial corporations	-	0.12	-	-
Households	-	0.06	0.10	0.16
Central government	-	-	0.11	0.11
Rest of the world	-	0.00	0.01	0.01

Source: IMF 2024.

Note: The implied fall in land sale revenue of about 40 percent approximates the actual decline from October 2021 to October 2023 (year to date). This exercise did not measure the direct impact of land price declines on property developers and other nonfinancial corporations. It also assumes that no debt valuation impacts occur beyond local government financing vehicle debt, which means that losses for firms and banks are transmitted through the equity channel, rather than the debt channel. The ultimate loss absorption equals the sum of the first three columns for absorber sectors and zero for others (see details in IMF [2024]).

Rising debt ratios and servicing costs are likely to worsen LGFV financial stress and increase negative spillovers to both local government fiscal space and financial sector balance sheets. Debt-servicing strains at some LGFVs have already required local government bailouts and loan restructuring with losses for banks. Without deeper restructuring and reforms, partial defaults will likely increase in the future.

In the extreme case, outright defaults on LGFV debt could create regionally systemic credit shocks that affect macrofinancial stability. As implicit guarantees weaken, creditors would cut exposures to other LGFVs and financially weak SOEs that rely on the same local governments' implicit backstop, which would cause a rapid contraction in off-budget fiscal spending. Widespread LGFV defaults would also impair financial system balance sheets because banks have direct exposure to LGFVs through loans and other credit assets, with concentration risks particularly elevated at locally incorporated banks.

Policy options to address the local government debt overhang are needed urgently, given the significant and growing vulnerabilities and potential for macrofinancial spillovers.

APPROACHES TO ADDRESS THE LOCAL GOVERNMENT DEBT OVERHANG

Authorities' Approach

The authorities have introduced numerous policy interventions over the years to address the rapid accumulation of local government debt. In 2014 and again in 2023–24, they paired large-scale on-budget refinancing of off-budget local government debt (debt swaps) with renewed efforts to tighten control over off-budget debt issuance.

The central government initiated a major overhaul of local government finances in 2014, prohibiting local governments from providing debt guarantees to off-budget entities while allowing them to issue on-budget bonds with State Council approval. In 2023, the central government strengthened its direct control over local government investment projects in some high-risk provinces that had also benefited significantly from that year's round of debt swaps. This tightening built on administrative controls on LGFV debt issuance and investment project approvals introduced in 2018, including a system that set varying limits on bond market financing for provinces or LGFVs based on quasi-fiscal debt risk categories. Initiatives first launched in 2021 to boost local government asset sales and reclassify some LGFVs as commercialized platforms were also expanded.

Those efforts failed to stop the accumulation of off-budget debt, which continued to grow over the years, but they helped ease risks to macrofinancial stability. Authorities' policy steps in 2023 and 2024 contributed to notable progress in slowing growth in LGFV debt and easing near-term debt-servicing risks. The latest round of debt swaps introduced in 2024, totaling 10 trillion renminbi over five years, lowered debt-service costs and created space for more government spending. It also allowed LGFVs and local governments to clear some arrears, which averted corporate

credit risks and provided a modest boost to the economy. In 2024, the authorities published for the first time their own data on “hidden debt” (their classification of off-budget debt based on a legal definition), placing the total at 14.3 trillion renminbi at the end of 2023, or 10.6 percent of GDP. Although this figure is still much narrower than the IMF estimate of general government off-budget debt, it marked progress toward greater transparency on off-budget debt.

Despite these measures, local government debt risks remain elevated. Ongoing difficulties in containing local government debt reflect several entrenched institutional features, including continued vertical imbalances in China’s system of fiscal federalism, inadequate control frameworks, and prevalent implicit guarantees. For example, the State Council’s approval process for local government debt gives inadequate consideration to sustainability relative to local government revenues, which has led to rapid growth in on-budget debt. Despite legal prohibitions against providing binding guarantees to off-budget entities, local governments continued to subsidize LGFVs on a discretionary, typically off-budget basis. This financing is reflected in the large annual flow of cash injections and other asset transfers from local governments or affiliated firms to LGFV balance sheets—flows that are several times larger than retained earnings. The periodic use of debt swaps also reinforced borrowers’ perception of state backing for LGFVs, weakening fiscal and market discipline.

Comparing Options to Reduce LGFV Debt

LGFVs’ limited cash flow means that containing or reducing unsustainable off-budget debt requires imposing costs on other sectors. LGFVs are severely liquidity constrained and, in aggregate, lack internal cash flows to service their interest or debt payments. Repaying or reducing their debt—or even slowing the accumulation of debt for most LGFVs—will require another sector to absorb some of the cost. This cost absorption could occur through transfers or capital injections from other parts of the public sector, or through restructuring the debt, which transfers losses to creditors. In the intersectoral balance sheet framework, households, local governments, the central government, or foreigners ultimately own all nonfinancial and financial firms. This framework can highlight the cross-sectoral impact of different approaches to reducing LGFV debt. The analysis considered the implications of several representative LGFV debt-reduction scenarios for burden sharing, macrofinancial stability, and medium-term growth. The scenarios include:

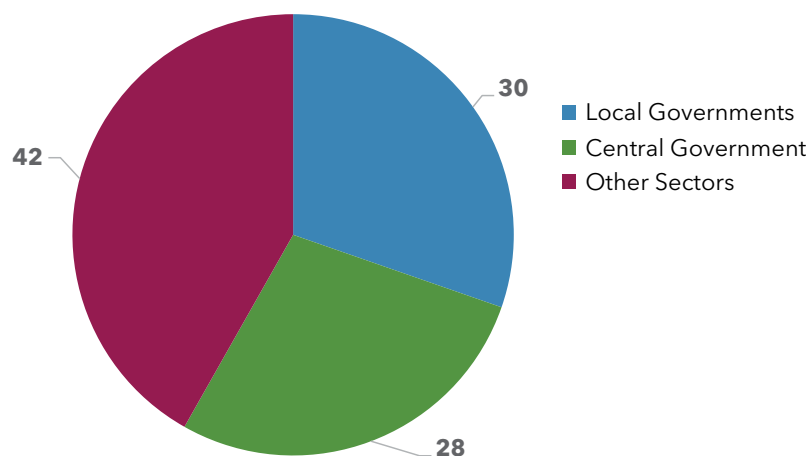
- **Refinancing by local governments:** Local government refinancing (or bailouts) can ease financial stability risks temporarily but is likely to increase local governments’ debt burdens. This scenario, similar to the authorities’ approach so far, was simulated as a one-time transfer of the local government sector’s liquid financial assets to the LGFV sector, funded by additional local government official debt. This approach reduces the immediate risk of default by troubled LGFVs and could ease the debt-service burden for the entire local government sector by lengthening the maturity structure.

Although off-budget debt is then serviced explicitly by local government on-budget revenues, this solution undermines on-budget debt sustainability and erodes local government fiscal space, which could require future cuts to social safety nets or public services. It also fails to materially improve the sector's consolidated net worth.¹ Initial financial stability benefits are likely to be partially or fully offset if local governments' worsening structural imbalances raise borrowing costs or weaken credit market access for subsidiary LGFVs. Using local government-owned SOEs and lenders to absorb LGFV debt would initially spare local government balance sheet but weaken those of the SOE sector, which would see an increase in corporate leverage. Ultimately, this solution is economically similar to a direct local government bailout because local governments bear the balance sheet cost through the declining equity value of their SOE claims.

- **Refinancing by the central government:** Using the central government's balance sheet presents benefits but also carries significant risks. Central government official debt is only about one-third of official local government debt, so if the central government refinances LGFV debt, local government liquidity problems would ease significantly. However, without fundamental reforms to address local government vertical fiscal imbalances and remove their incentives to increase investment to meet ambitious growth targets, this scenario would encourage additional local government debt accumulation, with LGFVs assuming that future costs will eventually shift to the central government.
- **LGFV debt restructuring:** Reducing the face value of LGFV debt through corporate insolvency mechanisms would improve burden sharing across sectors but create additional recapitalization needs. In this scenario, the same quantity of LGFV debt was assumed to be written down using insolvency mechanisms but without factoring in any offsetting asset sales. The market value of this debt was reduced proportionately for all claim holders and then in subsequent rounds for the equity owners of those claim holders. The official local government and central government sectors each absorbed about 30 percent of the total losses, and other sectors absorbed the remaining 40 percent (Figure 8.5).
- **LGFV debt reprofiling:** Financial institutions' reprofiling of LGFV debt is economically similar to a debt write-down, but it does less to improve local government finances and increases banking system risks. In this scenario, financial institutions absorbed initial losses because the longer maturity

¹ The only benefit to the consolidated local government sector's net worth would come from lower interest costs (not considered in this exercise), because interest rates on local governments' official debt typically trade close to central government rates, reflecting perceived central government backstops. These gains in interest costs could be offset if LGFV yields rise because of weaker local government debt sustainability.

Figure 8.5. Distribution of Balance Sheet Losses after an LGFV Write-Down, by Sector
(Percent)



Source: IMF 2024.

Note: The numbers shown are percentages of losses from one unit of LGFV credit losses. The calculation scales linearly to the size of the write-down. The assumption is that losses for deposit institutions are distributed such that no individual institution ends up with negative equity. Other sectors include households and the rest of the world. LGFV = local government financing vehicle.

profile and reduced interest payments increased LGFV debt duration significantly, thus lowering its market value. This reduced banks' economic capital and imposed a loss on bank equity owners, an outcome that spreads the burden across households, the central government, and local governments, as occurs with a debt write-down. However, this scenario is unlikely to restore LGFVs' long-term viability because most lack the income to repay their debts even over longer amortization horizons, which implies continued contingent liability risks for local governments. If banks are not required to recognize losses in regulatory capital and rebuild capital buffers, the significant unrecognized erosion in loss absorption buffers would also weaken banking system resilience and could undermine investor confidence.

Advantages of Debt Restructuring

Debt restructuring through insolvency mechanisms provides clear benefits by repairing balance sheets and strengthening market discipline. This option reduces local governments' debt and interest costs specifically and those of the general government overall—even when the central government increases debt to fund a bank equity recapitalization program. The approach would reduce the size of the fiscal consolidation needed to secure fiscal sustainability (see Chapter 7) and improve growth outcomes. Enforcing loss sharing among

bank shareholders and investors, together with capital injections, also imposes market discipline and improves governance in the financial sector, strengthening risk pricing and tightening the future availability of credit for LGFVs.

Insolvency-driven LGFV debt restructuring also improves burden sharing and supports asset sales. Losses distributed across local governments, the central government, and other sectors will help avoid the moral hazard implied in a central government bailout and the greater risk of disruptive fiscal consolidation and instability if local governments bear all off-budget debt-reduction costs. Corporate insolvency also provides a direct and timely legal mechanism for maximizing creditors' recovery of economic value through restructuring or liquidation, which helps minimize the ultimate cost of debt reduction relative to other approaches. Using insolvency mechanisms for LGFVs would also unwind implicit guarantees and strengthen market discipline.

Restructuring LGFV debt through insolvency procedures also supports needed reforms of local government fiscal frameworks, including a rules-based debt-control regime and improved risk sharing between the central government and local governments. A control regime for local government debt requires transparent on-budget recording of debt, which only the increased market discipline from insolvency-based debt reduction can enforce. Without market discipline, strong incentives to engage in off-budget borrowing will persist. Improved discipline will also be needed for increasing risk sharing between the central government and local governments and allocating more revenue to local governments. Without insolvency-driven debt restructuring, local governments might use additional financial resources from the central government to cover the costs of unsustainable off-budget debt, which would also undermine fiscal policy transmission and public services provision.

Risks from Debt Restructuring

Distributing losses to LGFV creditors and their equity owners could create spillovers to financial and macro-fiscal stability. Write-downs of unsustainable off-budget local government debt will create potentially large losses for banks and investors because of the size of such debt (48 percent of GDP) and LGFVs' limited cash flows. These losses and potential contagion risks will require a comprehensive strategy for crisis management and restructuring weak financial institutions. The contraction in off-budget fiscal spending is also likely to impose a potentially large negative drag on the local economy, which will in turn reduce fiscal revenues. Fiscal strains could worsen because of the realization of contingent liabilities and continued declines in land and real estate prices. These factors could jeopardize the continuity of public services and make compliance with fiscal consolidation targets more difficult.

A COORDINATED POLICY AGENDA OF REFORM AND RESTRUCTURING

Reducing nonviable LGFV debt through corporate insolvency is essential to addressing the interlinked challenges that have hindered past efforts to manage local government debt. However, given the risks, restructuring must be part of a

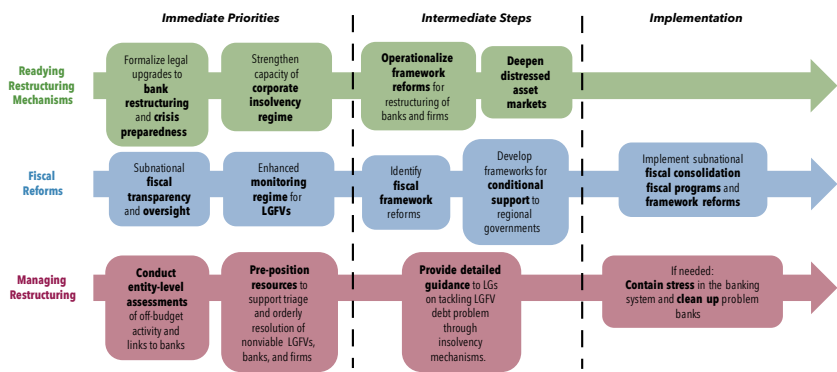
well-sequenced package of complementary policy reforms that minimize spillovers and prevent the reemergence of debt risks. Before restructuring LGFV debt, authorities need to establish policy frameworks for managing financial stress in line with recommendations from the 2025 Financial Sector Assessment Report and prepare to coordinate the restructuring process. They will also need to redesign fiscal frameworks to strengthen local government fiscal capacity, improve fiscal transparency, and control future debt flows. Financial and fiscal policy efforts need to proceed simultaneously because progress along one track will inform and support progress along the other. For example, parameters of the new local government fiscal regime will clarify local governments’ debt-carrying capacity, which provinces will need to anchor planning for LGFV debt reduction.

LGFV restructuring and related reforms should thus be part of a multiyear, cross-sector policy road map to reduce local government debt safely, which will require strong central government leadership and careful sequencing (Figure 8.6).

The necessary reform steps are as follows, with details on specific policies described in Adams and others (forthcoming).

- **Local government fiscal framework reforms** must complement the expenditure and revenue reforms to achieve the gradual fiscal consolidation presented in Chapter 7. Immediate priorities include increasing transparency of local government finances and debt risks by enhancing the granularity, accuracy, and timeliness of fiscal reporting; extending coverage to off-budget entities; and strengthening central government oversight of local government financial health and compliance with fiscal rules. In a second phase, the authorities should develop a rules-based control regime for local government borrowing to proactively limit excessive accumulation of on- and off-budget debt. They should also pursue subnational fiscal framework reforms to close local government revenue-expenditure gaps, including through higher revenue allocations

Figure 8.6. Comprehensive Strategy for Managing Subnational Public Debt



Source: [DP, forthcoming].

Note: LG = local government; LGFV = local government financing vehicle.

for local governments and a system of central government transfers that provides greater insurance against local economic shocks.

- ***Policy frameworks for managing fiscal and financial stress*** will help limit the risks posed by LGFV defaults. Before restructuring, authorities will need frameworks in place to provide central government fiscal support to local governments to preserve public services during restructuring. This support should be conditional on adherence to fiscal consolidation and LGFV debt-reduction targets. Authorities should prepare combined fiscal support and consolidation packages in advance for vulnerable provinces. Bank resolution and crisis management frameworks will also require significant strengthening to handle potentially large bank losses and contain financial stability spillovers. Thorough bank diagnostic efforts and enhancements to bank resilience will help mitigate implementation risks during restructuring. Corporate insolvency frameworks are reasonably well-developed, but courts and insolvency representatives will need additional capacity to address technical issues specific to LGFVs (see Chapter 11). Deepening distressed asset markets will help smooth the restructuring process by maximizing recovery value of illiquid collateral.
- ***Advanced central government-led planning*** will be required to successfully restructure off-budget debt through corporate insolvency frameworks. Immediate priorities include central government financial and fiscal policy-makers conducting entity-level assessments of local government off-budget activity and links to banks, and providing guidance to local governments on debt-reduction targets. Next, local governments and the central government should jointly develop region-specific strategies for triaging LGFVs and banks, along with financial crisis management plans that reflect diagnostic findings. After policy frameworks and strategies are in place, nonviable LGFV debt can be restructured through corporate insolvency frameworks.

CONCLUSION

Restructuring the growing stock of nonviable LGFV debt through corporate insolvency is crucial for resolving local government debt overhang. Insolvency mechanisms, unlike other policy options, dismantle implicit guarantees, strengthen market discipline, and allocate losses more evenly, helping bring local government debt to more sustainable levels. However, restructuring must be part of a well-sequenced package of complementary policy reforms that mitigate spillovers and prevent renewed debt risks. These reforms include strengthening the fiscal framework, improving fiscal transparency, and establishing mechanisms to manage fiscal and financial stress. A coordinated and well-sequenced local government reform package, together with the medium-term fiscal consolidation measures presented in Chapter 7, would help restore fiscal sustainability and improve fiscal policy transmission to the economy across all levels of government.

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Reform Options to Upgrade the Monetary Policy Framework

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China's monetary policy framework has evolved significantly in the past three decades, moving from centralized credit planning to targeting credit growth and more recently toward a framework that emphasizes interest rates while retaining various quantity and structural policy tools. This chapter discusses how China's monetary policy framework has evolved, places it in the context of other central banks, and assesses the current framework. It presents evidence on monetary policy transmission to financial markets and the broader economy and concludes with reform opportunities that focus on streamlining the still complex policy framework, clarifying the monetary policy objectives, placing greater weight on interest rate policies, and increasing exchange rate flexibility.

INTRODUCTION

China's monetary policy framework places greater emphasis on short-term interest rates as the main policy tool, yet the People's Bank of China (PBOC) still operates an extensive set of policy instruments and a broader set of targets than most central banks in advanced economies or emerging markets. These instruments include several policy interest rates, tools that influence aggregate and sectoral credit extension, and asset purchase facilities. This chapter compares China's monetary policy framework with those of other central banks and examines how the PBOC's combination of tools affects financial markets and the broader economy, which forms the basis for proposing reforms.

The analysis used the multidimensional characterization of monetary policy frameworks in Unsal, Papageorgiou, and Garbers (2022) to show how China's framework has evolved compared with frameworks in advanced economies and emerging markets across three dimensions: independence and accountability, policy and operational strategy, and communications. The index shows that China has improved its policy and operational strategy during the past decade by adopting a broader range of tools that increasingly resemble those used by advanced economy and emerging market central banks at the frontier of monetary policy. However, peer central banks in other emerging markets have made more broad-based

improvements, especially in independence and communications, which suggests that substantial scope exists to strengthen China's monetary policy framework to the level of other emerging markets.

The analysis examined the monetary transmission mechanism in a system that is moving from quantity-based tools (such as those that influence credit) to more traditional price-based tools (interest rates). Using firm-level and aggregate data, the findings show that price-based policy tools influence aggregate demand more effectively than credit-based tools. Price-based tools also influence consumer prices more effectively, with larger and more persistent effects. Credit-based tools tend to support large and state-backed firms but support small and private firms less effectively. Aggregate credit targets also risk weakening banks' prudential standards and distorting efficient capital allocation. This evidence supports the recent shift toward a greater role for interest rate-based policy.

The analysis identified reform opportunities based on the evolution of the policy framework and the empirical evidence on the transmission mechanism. The reforms should focus on streamlining the still complex monetary policy framework, establishing price stability as the primary objective that guides monetary policy, paring back the various funding-for-lending programs, improving communication to aid transmission, and allowing greater two-sided exchange rate flexibility to create monetary policy space to focus on domestic conditions.

MONETARY POLICY FRAMEWORK

The monetary policy framework includes the central bank's institutional structure, goals, instruments, strategy, operating targets and procedures, and communications (IMF 2015). Unsal, Papageorgiou, and Garbers (2022) identified three dimensions to define and evaluate a country's monetary policy framework: independence and accountability, which capture the mandate and goals together with the degree of operational independence and public accountability; policy and operational strategy, which cover how the central bank sets or adjusts its monetary policy instruments to achieve policy objectives; and communications, which capture how the central bank rationalizes and conveys its policy stance to the public.¹

Independence and Accountability

The Law of the People's Republic of China on the People's Bank of China defines the PBOC's independence and accountability. Article 2 states the PBOC's three

¹ To construct an index for measuring each dimension, the criteria for each country were assessed manually by Unsal, Papageorgiou, and Garbers (2022) based on published central bank laws and the official central bank policies as found on their websites.

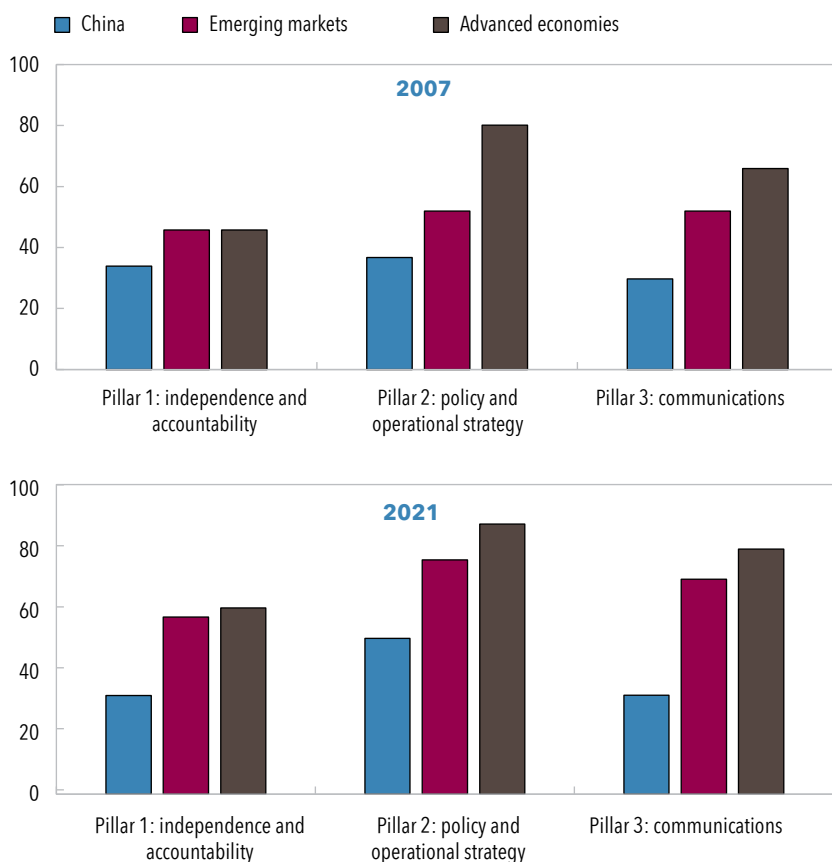
objectives: formulate and implement monetary policy, prevent and resolve financial crises, and maintain financial stability. The law defines the monetary policy objective as “maintain the stability of the value of the currency and thereby promote economic growth.”² The value of the renminbi (RMB) is interpreted to include a domestic component (inflation) and an external component to keep the exchange rate stable at an “adaptive and equilibrium level” (Yi 2018).

In practice, the PBOC highlights multiple objectives in its conduct of monetary policy, beyond the price and exchange rate stability goals in its statutory mandate. According to a number of its Monetary Policy Implementation Report, the PBOC aims to maintain stable credit growth, promote financial inclusion and sector-specific industrial policy goals, promote financial stability, and maintain stability in real estate and equity markets, among other objectives. The domestic price stability objective, which advanced economies and emerging markets traditionally express as a medium-term inflation goal, is not well specified in China. Peer countries usually state an appropriate medium-term domestic inflation level to guide monetary policy. The National People’s Congress instead sets an annual inflation goal, which has not functioned as a medium-term objective, and analysts have recently interpreted it as an inflation ceiling.

These overlapping objectives, without a clear primary objective, pose challenges for communication and policy transmission, as McMahon and others (2018) note. The emphasis on the exchange rate extends the mandate to align more with the mandates of other emerging market central banks that operate managed exchange rate regimes (see Box 9.1 for details). The simultaneous focus on both the exchange rate and inflation, and the use of various tools to influence them, introduces uncertainty and reduces clarity about the nominal anchor for monetary policy.

China also lags its peers in the operational independence of the PBOC. Central banks in other emerging markets have strengthened independence and accountability and now broadly resemble advanced economy central banks in those areas (Figure 9.1). In Asia, improvements have been particularly notable in mandating goals and targets and in greater independence from government, especially in India and Malaysia. This contrasts with the PBOC’s low ranking on independence and accountability, which indicates room for improvement. The PBOC has limited operational independence because the leadership of the State Council (the highest executive body of the central government) and the Central Committee of the Chinese Communist Party play roles in monetary policy formulation. The PBOC can also implement monetary policy in coordination with fiscal policy to support the State Council’s goals (Maher 2024). This arrangement creates multiple overlapping objectives across institutions, which can make communication and policy transmission challenging (McMahon and others 2018).

² *Law of the People’s Republic of China on the People’s Bank of China*, adopted March 18, 1995 (amended December 27, 2003), Article 3. <http://www.pbcc.gov.cn/english/130733/2894095/index.html>. 2,

Figure 9.1. Benchmarking the Monetary Policy Framework

Sources: Unsal, Papageorgiou, and Garbers 2022; and IMF staff calculations.

Policy and Operational Strategy

The core of the policy framework is how the central bank uses its monetary policy tools to achieve its stated objectives. Tool use should align with the communicated policy stance and be implemented in a predictable way. Unsal, Papageorgiou, and Garbers (2022) highlight several elements needed for effective monetary policy: numerical targets that reflect the mandated goals, tools that set the policy stance and have a clear relationship to the numerical targets, a policy formulation process that incorporates inputs from central bank staff and quantitative frameworks, a publicly transparent decision-making process that includes forward guidance (if used), and use of instruments, such as the policy rate, in a way that promotes a stable and predictable interbank market.

The PBOC has used both quantity and price instruments to meet its multiple objectives, along with other unconventional policy tools. It has achieved some of

its goals, such as financial stability and stability in credit growth and the exchange rate. However, use of some instruments has lacked transparency. The often simultaneous use of these tools has also constrained or reduced the effectiveness of traditional interest rate-based monetary policy operations, which has contributed to disinflationary pressures. The mix of tools, including the emphasis on quantity instruments, has also come with rapid increases in credit to GDP, which is affecting debt sustainability, especially in some fiscally weaker regions (see Chapter 8).

Quantity-Based Instruments

Before 1998, monetary policy targeted bank credit growth directly. After 1998, the PBOC moved to indirect control of money and credit growth through institution-specific guidance, specifically broad money growth (M2) and later on total social financing (TSF), which measures credit flowing to the real economy (see “Unconventional Policy Tools”).³ The emphasis shifted from M2 toward TSF in part because the correlation between M2 growth and economic activity declined with China’s development (Yi 2018). As a broad measure, M2 and TSF growth have been targeted at about the rate of nominal GDP growth (Li 2023) and,⁴ more recently, at the real GDP growth target plus the inflation target. The PBOC has met these targets in 2024 and 2025 and kept credit growth relatively stable but has noted that the correlation between credit growth and economic growth is weakening. Policies that induce credit supply in excess of real financing demand could lead to inefficient credit use (PBOC 2024a, 3–4, Box 1) and could be less effective at managing cyclical fluctuations (IMF 2023).

Quantity-based instruments include adjustments to reserve balances, foreign currency purchases, and lending to banks or the government. The reserve requirement ratio (RRR) has been the most actively used quantity-based tool. In the 2000s and early 2010s, it was used to offset the liquidity impact of foreign exchange flows and then later to support policy easing through price-based instruments (Maher 2024). This differs from the practice in advanced economies, where the RRR is used less frequently and mainly for financial stability purposes.

Price-Based Instruments

Using price-based instruments have been a long-standing practice in many countries but are relatively new in China (see Table 9.1). The PBOC first emphasized interest rate adjustments in its open market operations in 2015 (PBOC 2016, 19), when it adjusted the seven-day rate nine times and discontinued official adjustments to the benchmark deposit and lending rates. The seven-day repo open market operations (OMO) rate is now the key policy rate, and the target

³ TSF includes bank loans, nonbank financial institutions loans (shadow banking), net corporate bond issuance, nonfinancial equity issuance, asset-backed securities issuance, loan write-offs, and government bond issuance.

⁴ However, TSF growth has historically outpaced nominal GDP growth by 6 percentage points on average since 2008.

TABLE 9.1.

Key Interest Rates in China		
Interest Rate Type	Rate as of June 17, 2025	Description
Open market operations repo rate	1.4 percent	Short-term (seven-day) reverse repurchase rate
Medium-term lending facility		Rate at which PBOC lends to the market for the medium-term horizon. Fixed quantity, variable interest rate auction.
Standing lending facility	2.4 percent	Rate at which PBOC lends to financial institutions at the short-term horizon; rate is seven-day repo plus 100 basis points and is upper bound of policy rate corridor
Loan prime rate	One-year: 3.0 percent Five-year: 3.5 percent	One-year and five-year tenors; the average rate for customers with high credit ratings at LPR-quoting banks
Benchmark deposit rate	0.35 percent	PBOC guidance deposit rate for large banks
Interest rate on excess reserves	0.35 percent	Rate at which the PBOC makes interest payments on the required reserves deposited by financial institutions
Shanghai Interbank Offered Rate	Overnight: 1.47 percent One-month: 1.62 percent	The average of interbank offered rates quoted by banks with high credit ratings
Government bond yield: 10 years	1.68 percent	Reference rates for the market-based bond market

Sources: Haver Analytics; People's Bank of China; Yi 2021; and IMF staff calculations.

rate is the seven-day depository institution market repo rate. The PBOC operates an interest rate corridor system around this rate, with the lower bound set by the interest rate on excess reserves and the upper bound set by the standing lending facility. The PBOC also closely manages liquidity conditions for the overnight repo rate, where the interest rate corridor for the overnight rate is based on the seven-day repo rate.

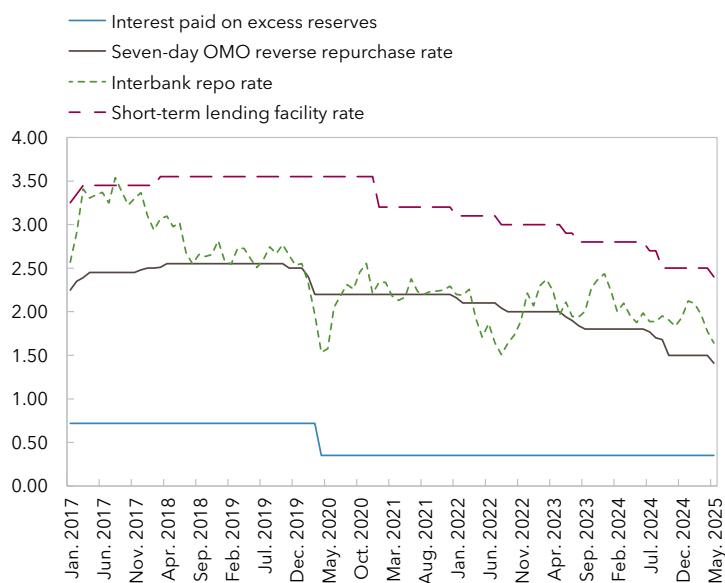
However, important gaps remain in the use of the seven-day policy repo rate. The standing lending facility rate is set at 100 basis points above the seven-day OMO rate and provides short-term funding to financial institutions. With the current interest rate on excess reserves at 35 basis points, the corridor is exceptionally wide (205 basis points as of end-2025), which creates several problems.⁵ Large deviations of the effective policy rate from the announced policy rate, and excessive volatility, are possible and occur in practice. These deviations are often persistently on the upside, which is consistent with unmet liquidity demand at some banks. Term spreads between different heavily transacted points on the money market yield curve (for example, one-day, seven-day, and three-month points) are also relatively large and volatile, which is consistent with ongoing weaknesses in control over short-term borrowing rates (see Figure 9.2). The PBOC has acknowledged these problems and, in June 2024, announced new

⁵ As of June 16, 2025, the policy rate interest rate corridors of the US Federal Reserve, the European Central Bank, and the Bank of Japan were 15, 30, and 25 basis points, respectively.

Figure 9.2. Short- and Medium-Term Policy Rates of the People's Bank of China

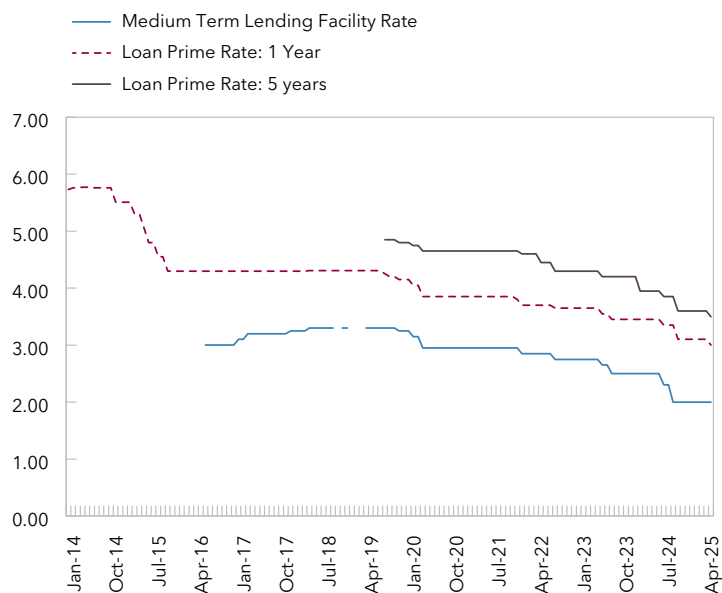
1. Short-Term Policy and Market Interest Rates

(Percent)



2. Medium-Term Lending Facility Rate and Loan Prime Rates

(Percent)



Sources: People's Bank of China; and IMF staff calculations.

Note: MLF = medium-term lending facility; OMO = open market operation.

facilities with rates at 20 basis points below and 50 basis points above the seven-day OMO reference rate, along with an overnight repo operation to influence the overnight repo rate for banks. In June 2026, the PBOC implemented open market operations for the overnight repo rate and in an effort to improve liquidity management for short term interbank rates and tightened the interest rate corridor for the overnight repo rate.

The PBOC also plays a key role in setting interest rates at longer horizons, though partly through administrative rather than market-based means. The medium-term lending facility (MLF) rates at one- and five-year horizons are the medium-term policy rates and have traditionally been used to inject longer-term liquidity into the system at a rate the PBOC sets directly. The MLF also affects the loan prime rate (LPR) directly. The LPR is quoted as a spread over the MLF rate since 2019 and thus tends to move in parallel with MLF rate adjustments. Loan and deposit rates are priced off the LPR (as loan regulations require), which enables the PBOC to retain de facto control over the lending and deposit rates by adjusting the MLF rate. Market interest rates for one-year lending—such as those in the deep and liquid negotiable certificate of deposit market—often deviate substantially from the MLF rate, which raised questions about the PBOC’s policy commitment to stabilizing rates at that tenor.

The PBOC has already implemented reforms to gradually de-emphasize the MLF as a policy rate and move toward a single policy rate in the seven-day repo rate (PBOC 2024b, 13, Box 2). In October 2024, the PBOC introduced an outright repo facility with tenors of up to one-year that would become its main tool for managing medium-term liquidity instead of the MLF. The auction mechanism for this facility works as a fixed quantity and variable rate, unlike the MLF’s fixed rate that influences both lending and deposit rates. This mechanism could manage liquidity more effectively and could strengthen the policy signal from the seven-day rate. At the same time, continuing to provide significant liquidity at longer tenors limits the scope for using liquidity operations to strengthen control over short-term market rates.⁶

The PBOC has achieved notable progress in introducing elements of a conventional interest rate-targeting framework, but its many objectives and instruments have limited the use and effectiveness of price-based tools. Limits on exchange rate flexibility have likely weakened efforts to counter disinflation through interest rate cuts. Concerns about compressing banks’ net interest margins have limited the use of conventional policy rate cuts. Using unconventional instruments has also created challenges for managing monetary conditions.

⁶ The People’s Bank of China used this facility significantly in late 2024 when it purchased local government and central government bonds (Feng and Wright 2025). The ORR does not require collateral (such as central government bonds) to be tradable while part of the repo operation—an important benefit over the MLF and the Pledged Supplementary Lending Facility, which avoids the associated reductions in central government bond liquidity under the MLF and the Pledged Supplementary Lending Facility.

PBOC's policy-induced increases in credit supply have been associated with rising bank funding costs as banks compete for funding, which constrained the effective space for interest rate cuts.

Unconventional Policy Tools

Along with conventional interest rate tools and the quantitative monetary operational targets (the money supply and the TSF), the PBOC has actively used several unconventional policy tools.

The PBOC has in the past used its macroprudential assessment tool to guide financial institutions in maintaining credit growth in line with its overall targets. While the role of the macroprudential assessment tool has evolved over time, the PBOC does not fully disclose the guidance it provides to banks through this system, which limits the transparency of the overall monetary policy stance.

The PBOC operates a wide range of funding-for-lending tools that channel credit to specific sectors it views as important for medium-term growth. These relending and rediscounting facilities, or structural monetary policy tools, in effect represent quasi-fiscal activities. Banks make the designated loans at a rate close to but possibly below the LPR, and the PBOC reimburses them. Many of these programs resemble a development bank portfolio because they encourage lending to support agriculture and rural development, small and medium businesses, infrastructure, logistics, construction, and green and other new technologies.

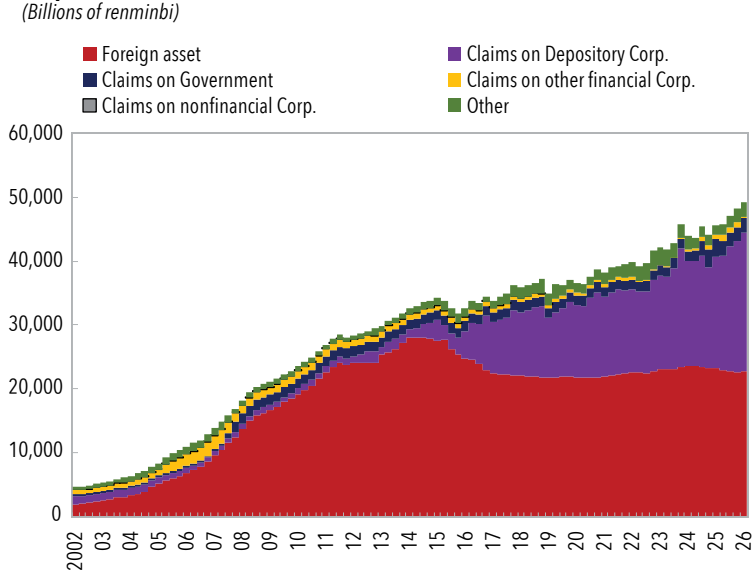
Structural lending tools have also supported a wide range of other policy goals, including providing cyclical support, strengthening capital markets, and deploying municipal finance (see Figure 9.3). Various PBOC lending facilities targeted the real estate sector after the sharp slowdown beginning in 2022 and aimed to address weak demand in lending, such as for equipment upgrading.⁷ In October 2024, the PBOC established a central bank lending facility for share buybacks and shareholding increases. The facility allows 21 nationwide financial institutions to make loans for purchasing shares in public companies or for share buybacks. A relending facility supports it with an initial quota of RMB 300 billion for a one-year maturity at 1.75 percent (25 basis points above the seven-day repurchase rate), aiming to “establish a long-term mechanism to effectively enhance the stability in the capital market.” The Pledged Supplementary Lending Facility has funded local governments' infrastructure, urban redevelopment projects, and investment in priority sectors. Overall, these structural lending tools amount to about 4.5 percent of GDP.

The PBOC also influences the mortgage market significantly through the LPR. From 2019 until May 2024, the LPR was the floor for first-time mortgages, and the LPR plus 60 basis points was the floor for second-time buyers. Banks or housing provident funds typically originate mortgages. Housing provident funds target low- and middle-income buyers and receive funding

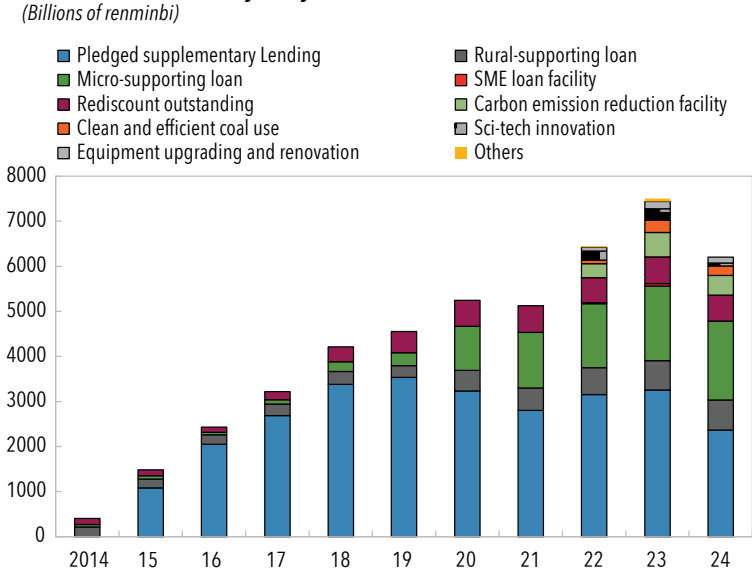
⁷ Annex 9.2 provides details on the PBC's structural monetary policy tools.

Figure 9.3. Balance Sheet of the People's Bank of China

1. People's Bank of China Balance Sheet: Assets



2. China: Structural Monetary Policy Balance Sheet



Sources: People's Bank of China; and IMF staff calculations.
Note: SME = small and medium enterprise.

through employee and employer contributions. Loans from these funds have lower interest rates than comparable bank loans. To address stress in the real estate market, the PBOC removed the universal floor on mortgages and allowed provincial PBOC branches and lending banks to set rates flexibly. The PBOC also increased mortgage holders' ability to refinance, allowing fixed rates to move to floating and floating rates to adjust more quickly when LPR changes.

To preserve bank net interest margins, the PBOC has in the past applied interest rate guidance policies to deposit rates. Since 2015, an industry regulatory body that is closely associated with the PBOC and operates under its oversight has set an upper limit, and the PBOC enforces compliance. The spreads vary by bank size and class and the deposit product type. This ceiling is widely viewed as below the market-clearing level for deposits, which has been linked to impediments in monetary policy transmission (Hoyle 2020). Though not disclosed officially, media reports indicate that authorities have lowered these spreads more frequently since 2022, which has allowed more room for the PBOC to cut its policy interest rate.

In August 2024, the PBOC announced a government bond trading program for the secondary market, which initially bought short-term bonds and sold long-term bonds—the opposite of the US Federal Reserve's Operation Twist program implemented after the 2008 crisis. The PBOC aimed to smooth volatility in 10-year central government bond rates.

Communications

Communications capture how the central bank communicates its policy stance, rationale, and decision-making process to markets and the public. Effective communication can reduce uncertainty and influence market expectations (Woodford 2005). Unsal, Papageorgiou, and Garbers (2022) highlight the importance of a regular communications cycle, announcements and explanations that accompany policy changes, regular monetary policy reports, timely and appropriate release of relevant data, and accessible material, including clarity of language, availability of translations, publication of research, and access to and guidance provided on its website.

The PBOC's communications cover the following:

- **Quarterly monetary policy reports.** Published in English with a delay of one quarter, the reports outline domestic and global developments, as well as key policy issues, often addressed in special box segments.
- **Press releases on monetary policy committee meetings.** The releases describe the current policy stance and its relation to economic developments discussed at the committee meeting.
- **Speeches and press releases.** The PBOC posts press conference discussions and oral communications (such as speeches by committee members) on its website.

Box 9.1. The Role of the Exchange Rate in China's Policy Framework

The role of the renminbi (RMB) has evolved over time. After China moved away from the fixed exchange rate in 2005, it gradually reformed its exchange rate regime, and the RMB became increasingly flexible, though authorities still manage the market through various tools. As China's role as a major global exporter has grown, authorities have promoted broader international use of the RMB, which led to the expansion of the offshore RMB market (CNH) and the onshore market (CNY).

In 2005, the PBOC abolished the fixed RMB-US dollar exchange rate regime and started moving toward greater exchange rate flexibility to gradually liberalize the foreign exchange market in line with economic and financial development. In July 2005, the exchange rate arrangement became a managed float. This system used a central parity or "fix" rate that the PBOC announced at the start of the trading day. The RMB-US dollar rate could fluctuate within 0.3 percent around the fix rate. The PBOC has widened the band for the US dollar over time to its current width of 2 percent in March 2014. During this period, the PBOC conducted significant foreign exchange intervention to stabilize the currency, which produced a large buildup of foreign exchange reserves that peaked at \$4 trillion in 2014.

In August 2015, after a period of prolonged real appreciation, the PBOC unexpectedly announced changes to the daily fixing mechanism to better reflect market conditions. The change produced a one-time 1.9 percent depreciation of the CNY to close the gap between the fix and the market rate. Market participants interpreted this as a devaluation and a shift toward a more flexible—or weaker—currency regime, which triggered capital outflows (Das 2019). A combination of foreign exchange intervention, capital flow measures, and the publication of the China Foreign Exchange Trading System's (CFETS) trade-weighted RMB index helped to reanchor expectations and guide market focus toward a broader currency basket. Authorities followed guidance in early 2016 to set the fix as the previous day's closing CFETS RMB-US dollar spot rate plus the required change to offset movements in the Foreign Exchange Trading System index caused by changes in other cross-rates. In 2017, banks added a countercyclical adjustment factor to quotes submitted for setting the fix. The current market operates with a daily fix announcement that in principle reflects the previous day's prevailing trading conditions potentially adjusted for a countercyclical factor, with a 2 percent trading band for all onshore interbank transactions.

CNY volatility has declined since the introduction of the countercyclical adjustment factor in 2017, and the spot rate has generally reflected market forces, such as the interest rate differential with other economies (Das 2019). The daily fix generally followed spot rate movements until mid-2023, when the fix became notably stable and deviated more persistently from both the spot rate and market expectations of the fix rate. This pattern suggests potentially more active and discretionary use of the countercyclical factor by banks. The exchange rate stability, despite the large interest rate differential with some advanced economies, might have constrained a key monetary policy transmission channel. Limiting exchange rate movements for extended periods can potentially also make the exchange rate the de facto nominal anchor and limit monetary policy effectiveness.

China expanded the offshore CNH market in 2010 to facilitate RMB use in offshore markets, broaden international participation, and ease currency conversion for trade and investment outside the Chinese mainland. Participation in the onshore foreign exchange market is controlled tightly and subject to a range of

Box 9.1. The Role of the Exchange Rate in China's Policy Framework (continued)

capital flow measures and macroprudential regulations, including quotas, licenses to participate, limits tied to domestic equity values and cross-border leverage ratios, and approval requirements for outward and inward direct investments. The CNH market is significantly more liberalized.

Although CNH and CNY are the same currency and are officially convertible at a rate of 1 to 1, the two markets are institutionally distinct and operate with segregated market infrastructure. Conversion requires quotas, licensing programs, and documentation tied to underlying trade transactions. Each market operates under its own clearing and settlement systems and serves different investor bases. The CNY market is embedded in China's broader financial regulatory framework, whereas CNH trading occurs mainly in offshore hubs such as Hong Kong Special Administrative Region, London, and Singapore. These structural features limit arbitrage and maintain segmentation, which can become salient during episodes of capital flow volatility.

The PBOC uses different policy tools to manage the two markets. Authorities manage the onshore CNY market more tightly and restrict access to domestic financial institutions and selected foreign participants through regulated programs such as the Qualified Foreign Institutional Investor and the Renminbi Qualified Foreign Institutional Investor programs. However, the offshore CNH market operates more independently, and the central bank relies on indirect tools (such as CNH bond issuance) to influence liquidity conditions and exchange rate expectations to prevent excessive divergence from the CNY. By separating the two markets and controlling conversions between CNH and CNY, the authorities monitor cross-border capital flows while promoting gradual RMB internationalization.

- **Open market operation notices.** The PBOC issues these notices on most days, and they often include a brief explanation of the OMO calibration.⁸

These communications resemble those used by central banks in advanced economies and have helped clarify policy goals and transmission of policy changes. McMahon and others (2018) found that quarterly monetary policy reports, press conferences, and speeches are associated with lower volatility in short-term note markets, but they also found limited evidence that communications influence the level of interest rates in the interbank market.

These findings indicate room to strengthen communication even more. Changes to the monetary policy stance typically originate from the December Central Economic Work Conferences (not the PBOC) and are reinforced by statements from the Politburo, State Council, and National Development and Reform Commission. Implementation details and timing of forward guidance can be unclear, which weakens transmission of communication into market rates. Vaguely defined policy goals (for example, “keeping liquidity adequate”) or goals that conflict with each other can also impede clear communication and market

⁸ See the PBOC announcements web page for examples of notices (<http://www.pbc.gov.cn/en/3688110/3688181/5734608/index.html>).

participants' understanding of the policy stance. Some policy announcements for new facilities have lacked clear links to monetary policy objectives, including the August 2024 operation that involved selling long-term bonds and buying short-term bonds. Other important elements of monetary policy transmission decisions remain undisclosed, such as the window guidance provided to banks and other financial institutions. These decisions have been used to guide credit growth, target specific sectors, and address interest rate transmission when deposit rates have been unresponsive to policy rates (PBOC 2024c, 6, Box 1). Although these can be useful tools, for example, to smooth periods of high volatility in bond markets, it also reduces transparency and weakens the role of interest rates as the main signal of the monetary policy stance.

MONETARY POLICY TRANSMISSION

Authorities are adjusting the monetary policy framework from quantity based to one centered on a single policy rate. The analysis in this section compared the merits of the single-rate system with the quantity-based system.

Analysis using firm-level data, drawing on IMF (2023), found that interest rate policies produced larger and broad-based demand-side effects, especially for small and more cyclically vulnerable firms. Credit-based policies tended to benefit large and lower-risk firms and could affect capital allocation and productivity growth negatively. Following Redl (forthcoming), the analysis examined the transmission of the seven-day repo rate and the RRR using aggregate quarterly macro data but identified monetary policy shocks using high-frequency identification based on the daily change in the one-year swap rate for the seven-day repo (Das and Song 2022). The analysis found that policy rate shocks had a larger effect on GDP and consumer prices than credit quantity shocks induced by shocks to the RRR.

Firm-Level Evidence

IMF (2023) notes an important asymmetry between the effects of interest rates and credit policy in easing monetary conditions: lower interest rates tend to reduce borrowing constraints, whereas credit policies tend to increase credit extension to larger and less-constrained firms. IMF (2023) investigated the evidence for this in China by analyzing how a panel of 14,000 Chinese firms adjusted investment spending in response to credit and interest rate shocks, using a local projections framework. Credit shocks were defined as the portion of private credit growth not explained by expected future interest rates—proxied by the Taylor rule in activity and inflation—and current interest rate shocks, defined following the high-frequency approach of Das and Song (2022).⁹

⁹ Controls for a wide range of firm-level variables such as revenue, liquidity, and leverage are included, along with lags of both interest rate and credit policy shocks.

The analysis found that both credit- and interest rate–based expansionary policies lead to a positive response in large firms’ investment, but interest rate shocks generate a more immediate and persistent response (Figure 9.4). The effect of credit easing on medium and small firms’ investment spending was statistically insignificant, whereas interest rate easing had a large and significant effect on small firms’ investment spending. Similar results held when firms were grouped by age and ownership: young firms were more responsive to interest rate shocks, while credit policies supported large and state-backed firms disproportionately.

These findings show that interest rate–based monetary easing affects a broader group of firms, but reliance on credit-based policies can bias support away from new, young, and private firms—those most likely to exhibit higher productivity (Haltiwanger and others 2017). This evidence supports the recent changes that the PBOC implemented in the monetary policy framework to pursue a greater role for interest rate–based policy. Well-designed, market-based credit policy instruments could still have a role, for example, when a zero lower bound constraint inhibits interest rate transmission. Even in such cases, credit policies that subsidize interest rates are more market based than aggregate credit growth targets, which could weaken banks’ risk-management practices and raise financial stability concerns.

Evidence from Aggregate Macroeconomic Data

To assess the impact of monetary policy on key quarterly macroeconomic aggregates, such as GDP and inflation, Redl (forthcoming) also used high-frequency identification of policy shocks from the one-year swap rate for the seven-day repo, following Das and Song (2022). That study found that this swap rate responded to a variety of policy shocks (seven-day repo, the RRR, and the MLF) to the extent that they influenced expectations of short-term funding conditions—a key transmission channel (Adrian 2023).

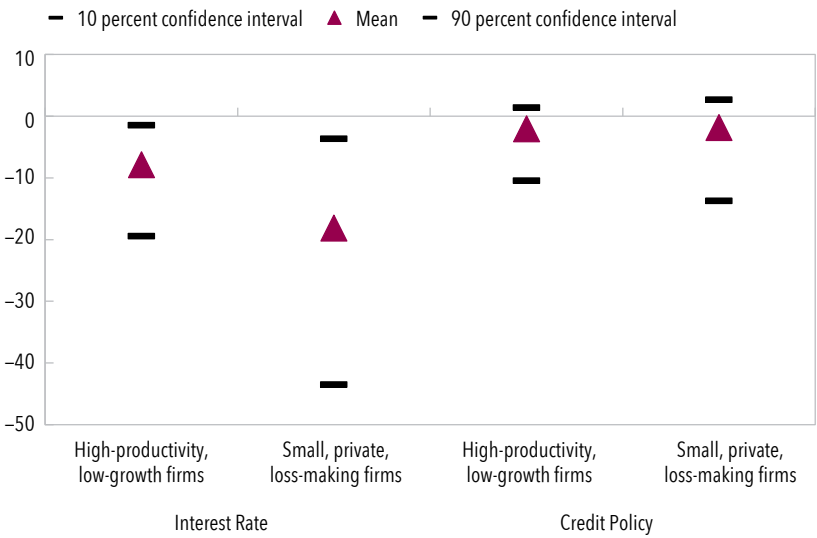
Redl (2025) focused on the transmission of the seven-day repo rate and the RRR, which are the PBOC’s primary price and quantity tools. The analysis identified policy shocks in two steps. First, it identified shocks under the assumption that they lower GDP growth and inflation (that is, they are aggregate demand shocks), implemented as a Bayesian sign-restricted factor-augmented structural vector autoregression model (Arias, Rubio-Ramírez, and Waggoner 2018; Uhlig 2005). Second, it incorporated narrative information from the swap market by requiring the shocks identified in step 1 to take on the sign consistent with the narrative evidence for episodes with large shocks (see Annex Table 9.1.1), following Antolín-Díaz and Rubio-Ramírez (2018). The data covered 2002–24 (see Annex 9.2 for a full description).

The analysis found that both output and prices responded more to the interest rate than to the RRR six months after a 25 basis points increase in either instrument. An increase in the repo rate had a stronger transmission into interbank

Figure 9.4. Transmission of Credit and Interest Rates to Firm Investment, GDP, and Inflation

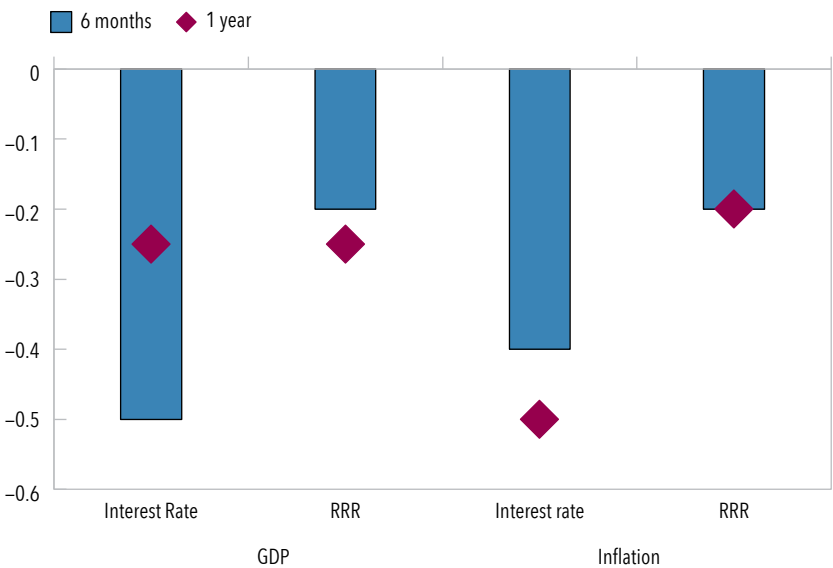
1. Response of Firm-Level Investment

(Percent)



2. Response of GDP and Inflation

(Percent)



Sources: Hoyle and others (2023); IMF 2023; Redl (forthcoming); and IMF staff calculations.
Note: Panel 1 shows the mean response of firm investment to a 25 basis point shock to the interest rate and a 12.5 percent increase in credit extension above trend. Panel 2 shows the median response of the level of GDP and the consumer price index to a 25 basis point shock to the interest (reverse repo) rate and the reserve requirement ratio of banks. RRR = reserve requirement ratio.

interest rates, while both RRR and the repo rate reduced credit growth (as measured by TSF), although the credit quantity response was statistically insignificant for both instruments. After one year, GDP responded similarly under both instruments, but repo rate shocks had more influence over inflation than the RRR. These findings are consistent with IMF (2023), indicating that the interest rate is a more effective tool for addressing aggregate demand shocks, especially when inflation is a primary concern.

Reform Opportunities

The PBOC continues to operate a complex monetary policy framework with multiple instruments, targets, and objectives. The reforms already underway to simplify the framework by organizing it around the seven-day reverse repo rate as the single policy rate are appropriate and should improve transmission to financial markets and the broader economy. Narrowing the set of de facto objectives—elevating price stability above others—and placing greater emphasis on price-based instruments instead of unconventional tools would strengthen the effectiveness of monetary policy as a macroeconomic management tool.

The following areas would complement the existing reform agenda:

- **Greater clarity on the nominal anchor for monetary policy** would aid transmission, especially through expectations. Periods of stability of the RMB–US dollar exchange rate (e.g., after mid-2023), despite the large interest rate differential with some advanced economies, might have constrained an important monetary policy transmission channel. Prolonged limits on exchange rate movements can potentially make the exchange rate the de facto nominal anchor and weaken monetary policy effectiveness. Greater two-way exchange rate flexibility would help shift the policy focus toward domestic conditions. The PBOC and the State Council should also clarify the primary objective of monetary policy and specify the domestic price stability objective clearly. In this context, the authorities should communicate the domestic inflation measure that the PBOC uses and state what the PBOC considers to be an appropriate steady-state inflation rate.
- **Credible implementation of a narrower interest rate corridor** would enhance the operational environment for monetary policy. It would allow greater market determination of medium-term interest rates and permit banks to liberalize how they set deposit rates. The short-term policy rate is the seven-day reverse repo rate, but the interest rate corridor remains relatively wide, which weakens transmission of the policy rate into interbank rates. The intention, as stated in Governor Pan’s June 2024 Lujiazui Forum speech, to tighten this band remains unimplemented. The PBOC should begin narrowing the corridor, taking a gradual approach in order to manage operational adjustments effectively (e.g. whether a broader set of participants in OMO operations is required to achieve a more narrow

band). The PBOC operates several other medium-term policy rates, including the standing lending facility, MLF, and LPRs. Coordination problems across these instruments can cause confusion, such as in July 2024, when the MLF moved by less than the LPR. The PBOC should streamline its toolkit by moving away from setting medium-term policy rates and instead allow the market to determine these rates—a process that has started.

- **Clear communication of the change and the rationale behind policy decisions** are an essential complement to any operational streamlining or toolkit adjustments. Several operational adjustments would benefit from clearer communication. For example, the central government bond buying program introduced in August 2024 initially involved selling long-term bonds during a period of monetary policy easing, which weakened transmission of short-term rates through the yield curve.
- **Discontinuing sectoral credit guidance policies** would reduce inefficient credit growth, improve communication of the policy stance, and enhance the effectiveness of countercyclical policy support. Credit policies that target strategic sectors are quasi-fiscal and would be better implemented by another agency, such as a development bank.

CONCLUSION

China's monetary policy framework remains complex, despite recent improvements. The authorities continue to pursue multiple but sometimes conflicting objectives using a mix of price and quantity instruments, which complicates policy formulation and communication.

To strengthen the framework, the PBOC should narrow its objectives and explicitly recognize domestic price stability as the primary goal of monetary policy. Doing so would clarify the nominal anchor and support more focused policy formulation.

The PBOC has taken several steps to improve its operational toolkit, including moving toward a single interest rate, which would align it with the frameworks of many advanced and emerging market central banks. This transition requires streamlining the toolkit—discontinuing routine use of quantity-based and unconventional policy tools—and communicating these changes clearly to support the transmission of interest rate-based policy. The evidence presented on the relative effectiveness of interest rate-based policy versus credit-based policy in China supports such reforms. Greater influence over interbank interest rates and less direct control on medium-term and deposit rates would complement the transition to an interest rate-based framework. The PBOC should de-emphasize credit growth targets and wind down structural monetary policies.

ANNEX 9.1. ADDITIONAL CHARTS AND TABLES

The structural vector autoregression model used data from the first quarter of 2002 to the third quarter of 2024. In addition to the policy rate data (repo rate, or reserve requirement ratio), the analysis included GDP, private investment, private consumption, consumer price index, the nominal effective exchange rate, total social financing, three-month Shanghai interbank offered rate, a Financial Conditions Index, and the trade balance as a share of GDP. The analysis also included the first two leading principal components from a panel of global data to control for global shocks—12 variables in total (see Annex 9.2 for a full description of the data). The global panel covers global growth and inflation, stock markets, shipping costs, global trade volumes, and financial conditions (the US policy rate and the Chicago Board Options Exchange Volatility Index).

ANNEX TABLE 9.1.1.

Narrative Sign Restrictions for Structural Vector Autoregression Model			
Reserve Requirement Ratio		Seven-Day Reverse Repurchase Rate (Repo)	
Date	Shock Sign	Date	Shock Sign
2008:Q3	–		
2011:Q1	+	2013:Q4	+
2011:Q2	+	2015:Q2	–
2012:Q2	–	2017:Q1	+
2015:Q3	–	2020:Q1	–
2018:Q2	–	2022:Q3	–

Source: RedI (forthcoming).

x.

Annex Figure 9.1.1. Monetary Policy Shocks in China
(Percent, year over year)



Source: Redl (forthcoming).
Note: RRR = reserve requirement ratio.

ANNEX 9.2. DATA SOURCES

ANNEX TABLE 9.2.1.

Data Used in Structural Vector Autoregression Model			
Variable	Description	Transformation	Source
REPO	Seven-day repurchase rate	Level	Refinitiv
RRR	Required reserve ratio	Average of large and small banks RRR	Haver Analytics; People's Bank of China
GDP	Real gross domestic product	Quarter-over-quarter log difference, level seasonally adjusted	IMF, World Economic Outlook database
PRINVEST	Real private investment	Quarter-over-quarter log difference, level seasonally adjusted	IMF, World Economic Outlook database
CONSUMPTION	Real consumption	Quarter-over-quarter log difference, level seasonally adjusted	IMF, World Economic Outlook database
CPI	Headline consumer price index	Quarter-over-quarter log difference, level seasonally adjusted	IMF, World Economic Outlook database
NEER	Nominal effective exchange rate	Quarter-over-quarter log difference	Haver Analytics; Bank for International Settlements
TSF	Stock of total social financing	Detrended quarter-over-quarter log difference, seasonally adjusted	Haver Analytics; People's Bank of China
SHIBOR	Three-month interbank Shanghai middle rate	Level	Refinitiv
FCI	Financial Conditions Index	Level	IMF
TB	Goods trade balance as percent of GDP	Level	IMF, World Economic Outlook Database
PC1	First leading principal component (see Annex Table 9.2.2)	Level	See Annex Table 9.2.2
PC2	Second leading principal component (see Annex Table 9.2.2)	Level	See Annex Table 9.2.2

Note: RRR = reserve requirement ratio.

ANNEX TABLE 9.2.2.

Global Data Used for Principal Components			
Variable	Description	Transformation	Source
S&P 500	S&P 500 Composite Price Index	Standardized	Refinitiv
FDEFUNDS	US federal funds target rate	Standardized	Refinitiv
USGDP	US real GDP level	Standardized	Refinitiv
USCPI	US consumer price index, all urban areas	Standardized	Refinitiv
BALTIC	Baltic Exchange Dry Price Index	Standardized	Refinitiv
GSCI	S&P GSCI Commodity Total Return	Standardized	Refinitiv
USNEER	US nominal effective exchange rate	Standardized	Refinitiv
WTRADE_BAL	CPB World Trade Balance as share of GDP	Standardized	As above
WTRADE	CPB World Trade Exports	Standardized	Refinitiv
MSCI	MSCI World Stock Market USD Index	Standardized	Refinitiv
VIX	Chicago Board Options Exchange Volatility Index	Standardized	Refinitiv

ANNEX 9.3. PEOPLE'S BANK OF CHINA STRUCTURAL MONETARY POLICIES

The following summarizes the structural monetary policy tools of the People's Bank of China (PBOC) as of November 2024, by sector targeted (PBOC 2024d).

1. Agriculture, rural development, and care services

- **Rural development lending (1999):** This instrument expands credit to the agricultural sector by providing funds to locally incorporated financial institutions. Eligible institutions include rural commercial banks, rural cooperative banks, and village banks. The PBOC offers funds equal to 100 percent of the principal for loans and treats this lending as a long-term initiative to reduce financing costs for agriculture and rural areas.
- **Central bank discounts (1986):** This facility allows the PBOC to discount bills held by financial institutions and focuses on increasing financing for rural development, micro and small businesses, and private enterprises. Eligible institutions include nationwide commercial banks and locally incorporated banks.
- **Inclusive elderly care services lending (2022):** This program supported nonprofit and inclusive elderly care institutions by providing funding for the construction of community elderly care systems. The PBOC offered low-cost funds equal to 100 percent of the principal and was effective until the end of 2024.

2. Micro and small businesses

- **Lending for micro and small businesses (2014):** This program guides financial institutions in increasing the credit supply to micro and small businesses and private enterprises, effectively reducing their financing costs. Eligible institutions include city commercial banks and rural cooperative banks. The PBOC provides 100 percent of the principal for these loans.
- **Inclusive micro and small business loans (2021):** This temporary instrument encouraged financial institutions to continuously increase their micro and small business lending. The PBOC provided incentive funds based on a percentage of the incremental balance of these loans. The instrument was implemented quarterly from 2022 through the end of 2024.
- **Interest rate cut support for micro and small business loans (2022):** This PBOC facility incentivizes financial institutions that reduce micro and small business loan interest rates by providing funds equal to the actual interest rate reduction amount.

3. Infrastructure, logistics, and construction

- **Pledged Supplementary Lending Facility (2014):** This instrument supports key infrastructure projects such as shantytown renovation and major water conservancy initiatives. Eligible institutions include the China Development Bank and Agricultural Development Bank of China. The PBOC provides 100 percent of the principal for loans.

- **Transport and logistics lending (2022):** This facility targets road freight operators and logistics companies, providing low-cost funds equal to 100 percent of the principal for loans to enhance the transport and logistics sectors.
- **Tollway Loan Facility (2022):** This initiative supports tollway loans by providing incentives for financial institutions that cut interest rates by 0.5 percentage point during the fourth quarter of 2022.

4. Technology, innovation, and environment

- **Sci-tech innovation lending (2022):** This lending facility supports enterprises focused on technological innovation, including small and medium enterprises with unique products and capabilities. The PBOC provides low-cost funds equal to 60 percent of the principal, implemented quarterly.
- **Sci-tech innovation and technological transformation lending (2024):** This initiative encourages financial institutions to increase support to tech-based small and medium enterprises and projects involving technological transformation. The PBOC provides low-cost funding equal to 60 percent of the principal.
- **Carbon emission reduction facility (2021):** This facility promotes investments in clean energy, energy conservation, and carbon reduction technologies. The PBOC offers low-cost funds equal to 60 percent of the principal for eligible loans, available to a range of licensed financial institutions.
- **Clean coal use lending (2021):** This initiative promotes clean and efficient use of coal through targeted support for large-scale clean production technologies. The PBOC offers low-cost funds equal to 100 percent of the principal.

5. Real estate

- **Lending for troubled property developers (2023):** This initiative assists five nationwide financial asset management companies in mitigating risks associated with troubled property developers. The PBOC provides funds equal to 50 percent of the actual investment amount for mergers and acquisitions.
- **Guaranteed residential building delivery loans (2022):** This program addressed overdue residential projects by supporting financial institutions in issuing loans for timely delivery of residential buildings. The PBOC provided funds equal to 100 percent of the principal and was effective until May 2024.

6. General economic support

- **Equipment upgrading lending (2022):** This program supports sectors such as manufacturing and social services by providing low-cost funds equal to 100 percent of the principal for equipment upgrades.

- **Private Enterprise Bond Financing Facility, Phase II (2022):** This facility was resumed to stabilize and promote bond financing for private enterprises. It supported market-oriented operations and was effective until October 2025.

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The Financial System: Reforms to Ensure Stability

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China's large, complex, and interconnected financial system has long supported the country's economic development. However, its rapid growth has been accompanied by the buildup of vulnerabilities—largely stemming from exposures to the property sector and local government financing vehicles (LGFVs), waning profitability, and steep rise in lending to small and medium-sized enterprises (SME). Given this, the authorities aim to strengthen the financial system's resilience to ensure its stability and bolster its capacity to facilitate the transition to high-quality and sustainable growth. This chapter takes a closer look at the Chinese financial sector and outlines key reforms that are essential to safeguarding financial stability and ensuring efficient support of the real economy. Strengthening systemic risk oversight and financial sector supervision are key priorities, closely followed by reforms to upgrade the bank resolution framework.

INTRODUCTION

After almost five decades of extraordinary economic growth and financial deepening, China's financial sector has grown into one of the largest in the world. Despite its rapid growth, it has remained broadly resilient during recent periods of global stress, including the COVID-19 pandemic. On aggregate, China's banking sector is well capitalized, albeit with smaller buffers than its international peers, with banks maintaining relatively high shares of liquid assets and low levels of nonperforming loans (NPLs). Capital markets have gained depth and liquidity, and the asset management and insurance sectors are among the largest in the world. Digital financial services have become ubiquitous, and retail payment infrastructures have matured.

Nevertheless, the financial sector is at a crossroads. The operating environment has grown more challenging in recent years, as major headwinds—including declining GDP growth, a significant and prolonged downturn of the property sector, and strains on highly leveraged LGFVs—have led to declining profitability and increasing asset quality concerns.

Building on the findings of the latest Financial Sector Assessment Program (FSAP) for China, this chapter provides an overview of the Chinese financial system and associated financial stability trends. While acknowledging the myriad of legal, regulatory, and supervisory reforms that the Chinese authorities have undertaken in recent years to bolster financial sector oversight, it identifies key areas in which further efforts remain necessary. Strengthening systemic risk oversight, enhancing supervisory capacity, and upgrading the bank resolution and corporate insolvency frameworks are key priorities to ensure that China's financial regulatory and supervisory framework remains appropriate for managing systemic risks and keeping vulnerabilities at bay.

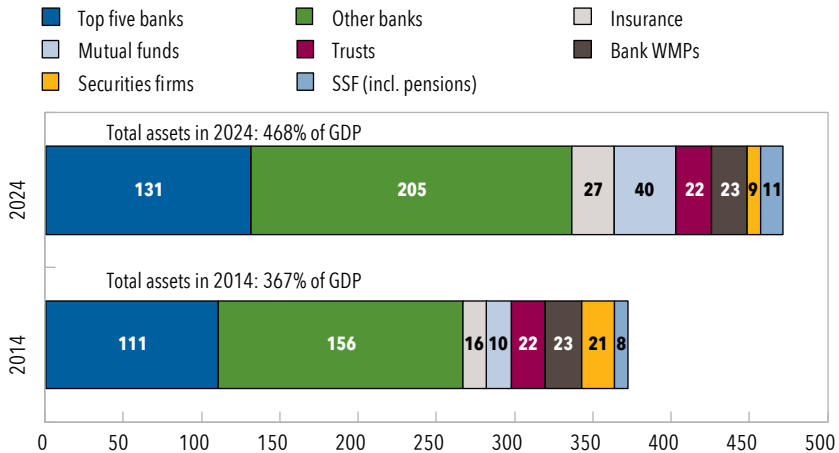
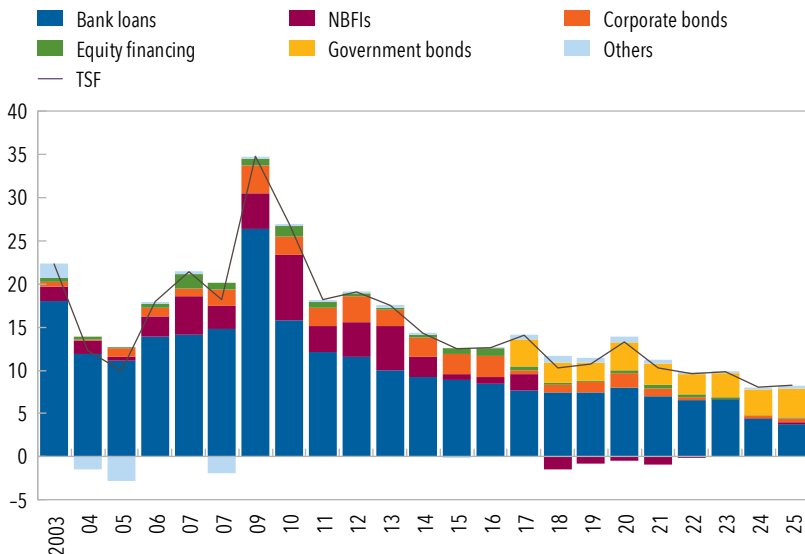
CHINA'S FINANCIAL SYSTEM: BIG, COMPLEX, AND INTERCONNECTED

China's financial system is one of the largest globally, with total assets reaching almost 470 percent of GDP as of the end of 2024. China represents about 17 percent of the global financial system (FSB 2025). Combined assets of Chinese banks reached about \$53 trillion, making it the largest banking system in the world, whereas the stock and corporate bond markets are the second largest globally. That said, the banking system is still domestically oriented, and the integration of the Chinese financial markets with the global financial system is still limited—in part because of controls on cross-border capital flows.

The bank-dominated financial sector has played a pivotal role in driving China's economic growth, whereas the nonbank sector has also expanded rapidly. For several years after the global financial crisis, the financial system was a major conduit for investment-focused stimulus (Maliszewski and others 2016; Chen and Kang 2018). Although bank lending remained the dominant source of funding, domestic financial liberalization, rapid credit growth, and a high saving rate created fertile ground for financial innovation. Some saving and lending activities shifted toward nonbank financial institutions (NBFIs) and the capital markets. Between 2010 and 2016, the financial system more than tripled in absolute terms (doubled as a share of GDP), with the growth largely being driven by the nonbank financial sectors.

Over the past decade, however, financial sector growth has moderated. The relative importance of banks, including mid-sized and smaller institutions, has increased as reforms and tighter regulations were put in place in 2016–17 to moderate the expansion of the NBFI sector in response to rising risks (Figure 10.1).¹ In parallel, technological advancements and expanding internet penetration further enabled the digitization of financial services. More recently, subdued credit demand after the COVID-19 pandemic and the ongoing correction in the property market have led to a moderation in the growth of financial system assets

¹ Also see the findings of the 2017 FSAP in IMF (2017a) for a discussion of nonbank financial institution–related risks.

Figure 10.1. China: Evolution of the Financial System**1. Financial System Structure***(In percent of GDP)***2. Contribution to Total Social Financing***(In percent, year-over-year growth)*

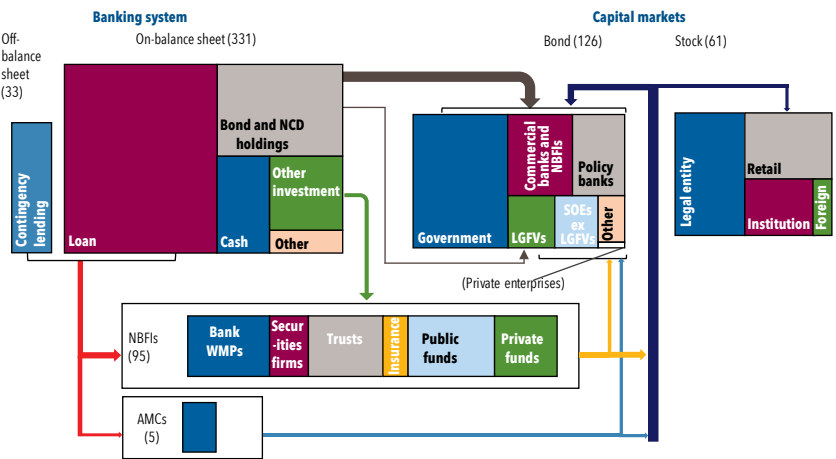
Sources: CEIC Data Company Limited; Haver Analytics; and IMF staff calculations.

Note: SSF = Social Security Funds; NBFIs = nonbank financial institutions; WMPs = wealth management products. NBFIs include entrusted loans, trust loans, and undiscounted bankers' acceptances. TSF = total social financing.

(Chapter 1). Nonetheless, the financial system has evolved into a complex and an increasingly interconnected system (Figure 10.2) with substantial linkages between banks and NBFIs, including through cross-ownership; common asset holdings (for example, bonds issued by financial institutions, LGFVs, and asset management companies); asset management products; and off-balance-sheet exposures.

Banks and banking groups range from global systemically important institutions with complex and wide-ranging businesses to very small cooperatives. Over 3,800 banks operated in China in 2024, offering diverse business models and accounting for about 70 percent of the financial sector. Many banks are part of large financial groups that also include insurance and asset management companies. Six large state-owned banks hold about 40 percent of total banking assets and operate nationwide. Five of these banks are designated as GSIBs with significant operations abroad.² The GSIBs and joint-stock commercial banks (some of which have been classified as systemically important at the domestic level) serve

Figure 10.2. China: Stylized Map of Financial System Linkages
(In percent of GDP, as of end-2023)¹



Source: IMF 2025.

Note: AMCs = asset management companies; LGFVs = local government financing vehicles; NBFIs = nonbank financial institutions; NCD = negotiable certificate of deposit; securities firms = securities companies, futures companies, fund companies, and their subsidiaries; SOEs = state-owned enterprises; WMPs = wealth management products.

¹ On-balance sheet "other investment" category includes bank investment in asset management products. Off-balance-sheet exposures include credit lines, guarantees, and wealth management products issued by banks that have not set up their wealth management product's subsidiaries. Note that the arrows represent flow of funds; their size is indicative of the relative magnitude of the flows but should not be compared directly.

² Chinese GSIBs include Bank of China, Industrial and Commercial Bank of China, Agricultural Bank of China, China Construction Bank, and Bank of Communication and are among the top 15

national markets, often with preferential access to state-owned enterprise clients. Joint-stock and city commercial banks (mid-sized banks that serve local markets) have grown substantially over the past decade. Some of these banks are systemically important at the domestic level, with a strong regional focus often giving rise to higher exposures to SMEs. Thousands of smaller banks serve local economies. The sector continues to evolve, with some ongoing consolidation efforts of smaller banks to achieve greater economies of scale.³

The nonbank financial sector, although large, is still maturing. NBFIs constitute about 120 percent of GDP and are strongly interconnected with banks through ownership, common asset holdings, and substantial funding linkages. Asset management is the largest NBFI segment, followed by insurance, with aggregate assets under management of 95 percent of GDP. The segment comprises bank-managed wealth management products that are held by retail investors, public and private investment funds, and trusts. The insurance sector, the world's second largest by value, is not fully developed, with non-life insurance penetration below international peers. By the end of 2023, total insurance premiums amounted to about 4 percent of GDP. Other important players in the NBFI sector include securities market intermediaries, credit intermediaries, asset management companies,⁴ and trust companies. Proactive measures taken by the authorities since the 2017 FSAP⁵ have helped to rein in concerns about regulatory arbitrage. However, banks remain exposed to redemption shocks in the NBFI sector, for example, through balance sheet deterioration owing to losses on impaired NBFI products and valuation declines of commonly held assets.

China's financial sector is highly digitalized, with widespread mobile financial services usage. Early digitization occurred in peer-to-peer transactions through digital wallets. Two large technology companies, or "Big Techs," have become systemically important as they account for 90–95 percent of all mobile payments, with 97 percent of account owners participating in digital transactions (IMF 2025). In addition, Big Techs have leveraged their large digital platforms to offer financial products and services such as credit, investment, and insurance. The e-CNY, launched by the PBOC in 2021 as a pilot retail central bank digital currency, expanded to 17 provinces and 26 regions by 2025 (G20 2025). However, given limited adoption beyond some public sector transactions, the PBOC

largest banks globally. Postal Savings Bank of China was classified as a large state-owned commercial bank in 2018.

³ The number of banks declined in 2025 as many small and medium-sized banks underwent mergers and restructuring.

⁴ Asset management companies' (AMCs) primary role is the acquisition and disposal of nonperforming assets from the banking system.

⁵ The 2018 asset management reforms, for example, were aimed at aligning the regulatory frameworks across different products with economic similarities and addressed several critical issues, including implicit guarantee on investment principal and investment returns, fund pooling practices, opacity resulting from multi-layer investment, and excessive maturity/liquidity transformation.

revised the e-CNY framework in 2026, transforming it from a liability of the central bank (that is, a conventional central bank digital currency) to a liability of banks and nonbanks operated on PBOC-owned digital infrastructure.

Equity and bond markets have both grown rapidly over the past decade, supported by various market-opening initiatives. The number of listed firms has increased by more than 50 percent since 2016,⁶ and equity market capitalization exceeded \$15 trillion in 2025 or about 77 percent of GDP.⁷ Recent reforms aim to improve corporate governance, increase the role of institutional investors with medium- and long-term horizons,⁸ and support financing for the strategic sectors such as technology.⁹ China's bond market exceeds 120 percent of GDP, second in size only to the United States. It offers a wide range of products and maturities, with public sector issuers—central and local governments, policy banks, state-owned enterprises—accounting for about three-quarters of the onshore market. LGFVs make up about 40 percent of corporate bonds outstanding and 9 percent of the total bond market.

The state's influence over the financial system remains significant, whereas linkages and exposure to global markets are limited. Most financial institutions, including the majority of the banks regardless of size and business model, are directly or indirectly owned by various levels of government. In addition, there are significant crossholdings among central and local governments, state-owned enterprises, and financial firms (Amstad, Sun, and Xiong 2020; IMF 2025). The launch of connect programs for bonds, swaps, repos, and equities enabled direct participation by qualified international investors in the mainland markets (Schipke, Rodlauer, and Zhang 2019; IMF 2025). Inclusion of Chinese stocks and bonds in global indices in 2018–19 has also boosted foreign ownership (Chen and others 2019; Arslanalp and others 2020), but overall foreign participation remains relatively low at about 3 percent for bonds and less than 4 percent for equities, in part reflecting regulatory hurdles and market access constraints. Strict capital controls persist, and domestic financial savings are largely channeled into domestic assets.

⁶ China's domestic stock exchanges (the "A-shares" market) include the Shanghai Stock Exchange (SSE), the Shenzhen Stock Exchange (SZSE), and the Beijing Stock Exchange, which was established in 2021 and caters to small- and medium-sized companies.

⁷ China's market capitalization ranks second globally, after the United States, where capitalization is estimated at about \$70 trillion in 2025. However, market capitalization as a share of GDP remains below levels observed in some advanced and emerging market economies.

⁸ As of Q3 2025, retail investors held about 33 percent of A-shares market capitalization as compared to about 17 percent held by professional institutional investors including insurance funds, various pension funds, and public funds.

⁹ For example, the Shanghai Stock Exchange's Science and Technology Innovation Board (STAR market), established in 2019, provides a listing venue for innovative, high-growth companies. Recent reforms to ChiNext, subsidiary of the Shenzhen Stock Exchange, also aim to further facilitate access to financing for high-tech enterprises.

KEY CHALLENGES: NAVIGATING CONJUNCTURAL SHOCKS AND ADDRESSING STRUCTURAL WEAKNESSES

China's financial sector is navigating a complex and fragile macrofinancial landscape. Its resilience is increasingly being tested amid the protracted property market correction and other economic headwinds (Chapter 1). In addition to direct impacts from real estate developer distress, banks and other financial institutions are also indirectly impacted by mounting strains on LGFVs, which have accumulated debt to the tune of 50 percent of GDP and have experienced a substantial deterioration in their debt-servicing capacity (IMF 2025, 2026).¹⁰ Official measures to reprofile LGFV debts—including bond swap programs, interest reduction, and maturity extensions—have helped prevent outright defaults, but such measures have also generated additional pressure on the interest income of financial institutions, at a time that profitability is already under pressure. Against this backdrop, this section takes a closer look at the challenges that the financial sector is facing.

Aggregate Banking Sector Resilience but with Underlying Vulnerabilities

At the system-wide level, the banking sector is well capitalized and liquid. Capital buffers of the top banks tend to be larger than those for medium- and smaller-sized institutions—notwithstanding targeted support of some smaller banks by local governments in recent years. Capital augmentation measures implemented for the largest banks in 2025 helped to further enhance their resilience, while supporting continued credit provision amidst a slowdown of the economy.¹¹ Nonetheless, capital levels for the largest banks remain below regional peers (Table 10.1). The share of NPLs in banks' total loans has remained below 2 percent for several years. However, underlying asset quality trends are difficult to discern because of limited disclosure of NPL inflows, a recent spike in write-offs, loss-deferral practices, and regulatory forbearance. A relatively high provisioning requirement of 150 percent for NPLs may further discourage banks from reflecting changes in credit quality on a timely basis. Although the banking sector as a whole has ample liquidity, the FSAP found that joint-stock and city commercial banks face higher run risks, because of their reliance on costlier wholesale deposits and disproportionate exposure to

¹⁰ As of the end of 2023, about 75 percent of the outstanding local government financing vehicle debt was held by banks. Also see Chapter 8 for further analysis of the local government debt overhang.

¹¹ In June 2025, four major state-owned banks completed capital raisings through private placements, with RMB 500 billion coming from the Ministry of Finance (MoF) and additional RMB 20 billion invested by state-owned enterprises (IMF 2026). In 2026, MoF announced plans for addition RMB 300 billion capital injection into state-owned banks.

TABLE 10.1.

Financial Ratios of Select Large Asia-Pacific Banks												
No.	Bank Name	Country	CET1 Ratio			ROE			ROA			
			2025	2024	Difference	2025	2024	Difference	2025	2024	Difference	
1	Hong Kong and Shanghai Banking Corp Ltd.	Hong Kong	19.1	16.3	2.8	14.8	15.8	-1.0	1.1	1.2	-0.1	
2	Norinchukin Bank 1/	Japan	17.7	16.4	1.3	-39.2	1.3	-40.4	-2.0	0.1	-2.1	
3	DBS Group Holdings Ltd.	Singapore	17.0	17.0	0.0	16.2	17.9	-1.7	1.3	1.4	-0.2	
4	China Construction Bank*	Mainland China	14.6	14.5	0.2	10.1	10.9	-0.8	0.8	0.8	-0.1	
5	Mitsubishi UFJ Financial Group 1/	Japan	14.2	13.5	0.7	9.1	8.0	1.0	0.5	0.4	0.1	
6	KB Financial Group Inc.	South Korea	13.8	13.5	0.3	10.5	9.3	1.3	0.8	0.7	0.1	
7	Industrial and Commercial Bank of China	Mainland China	13.6	14.1	-0.5	9.8	10.4	-0.6	0.7	0.8	-0.1	
8	Shinhan Financial Group Co.Ltd.	South Korea	13.4	13.0	0.3	9.3	8.6	0.7	0.7	0.6	0.0	
9	Mizuho Financial Group Inc. 1/	Japan	13.2	12.7	0.5	8.5	7.0	1.4	0.3	0.3	0.1	
10	Bank of China*	Mainland China	12.5	12.2	0.3	9.5	10.4	-0.8	0.7	0.8	-0.1	
11	Westpac Banking Corp. 3/	Australia	12.5	12.5	0.0	9.6	9.7	-0.1	0.6	0.7	0.0	
12	Sumitomo Mitsui Financial Group, Inc. 1/	Japan	12.4	12.4	0.0	10.4	7.9	2.4	0.5	0.4	0.1	
13	Commonwealth Bank of Australia 3/	Australia	12.3	12.3	0.0	13.4	13.0	0.4	0.8	0.8	0.0	
14	State Bank of India 1/	India	12.3	10.8	1.5	15.9	17.1	-1.2	1.1	1.1	0.0	
15	ANZ Group Holdings Limited 2/	Australia	12.0	12.2	-0.2	8.4	9.4	-1.0	0.5	0.6	-0.1	
16	Japan Post Bank Co. Ltd. 1/	Japan	11.8	13.2	-1.5	4.5	3.7	0.8	0.2	0.2	0.0	
17	National Australia Bank Limited 2/	Australia	11.7	12.4	-0.7	10.8	11.3	-0.5	0.6	0.7	0.0	
18	Bank of Communications*	Mainland China	11.4	10.2	1.2	8.9	9.9	-1.0	0.6	0.7	0.0	
19	Agricultural Bank of China	Mainland China	11.1	11.4	-0.3	10.9	11.3	-0.4	0.6	0.7	0.0	
20	Postal Savings Bank of China*	Mainland China	10.5	9.6	1.0	9.3	10.7	-1.3	0.5	0.5	0.0	

Source: Fitch Ratings Pro. Retrieved in June 2026.
Note: CET1 = Common Equity Tier 1, ROE = return on equity, ROA = return on assets. Data is for the calendar year ending on December 31st of 2025 and 2024, except for 1/ Numbers for fiscal year ending on March 31, 2025; and March 31, 2024, respectively, 2/ Numbers for fiscal year ending on September 30 of 2025 and 2024, respectively, 3/ Numbers for fiscal year ending on June 30 of 2025 and 2024, respectively. The four Chinese banks marked with * received capital injections in 2025.

contingent liabilities (for example, off-balance-sheet credit and liquidity lines) that typically face higher drawdowns during periods of stress (IMF 2025).

Bank profitability remains weak, which limits banks' ability to strengthen capital buffers through retained earnings. As monetary policy has become more accommodative, banks' net interest margins have continued to contract (Figure 10.3). Although banks have sought to reduce their funding costs by trimming deposit rates as the 1-year loan prime rate continues to trend down, these steps have not fully compensated for the decline in interest income. At the same time, provisioning costs continue to increase. Any concerted efforts to continue to reprofile or restructure legacy exposures, for example, to alleviate LGFV debt-servicing burdens, would result in a further decline in profitability (IMF 2025; Jeasakul and Laliotis, forthcoming).¹² Given their more concentrated business models and larger (pre-existing) profitability pressures, regional banks would be particularly impacted.

The FSAP found that the banking sector appears resilient to hypothetical but severe macrofinancial shocks. The FSAP's solvency stress test—covering the 55 largest banks, together accounting for about 80 percent of banking sector assets—pointed to a gradual improvement of CET1 ratios in the baseline scenario, as credit impairments would gradually decline and net interest margins stabilize. In the adverse scenario, however, multiple banks would face modest shortfalls as impairments remain elevated. A separate analysis featuring a deflationary scenario showed milder credit losses but sharper declines in net interest income. Stress testing results varied widely across bank types, with mid-sized banks—which tend to have smaller capital buffers and riskier credit portfolios—faring worse and requiring more substantial recapitalization if modeled risks were to materialize. Liquidity stress tests for the largest 111 banks found that most institutions have sufficient buffers to withstand severe deposit runs. However, several joint-stock and city commercial banks would be significantly impacted by wholesale deposit outflows and sudden drawdowns of credit lines. Although the FSAP stress testing results should be interpreted with care, given data limitations, they underscore the importance of financial sector policies to safeguard financial stability.

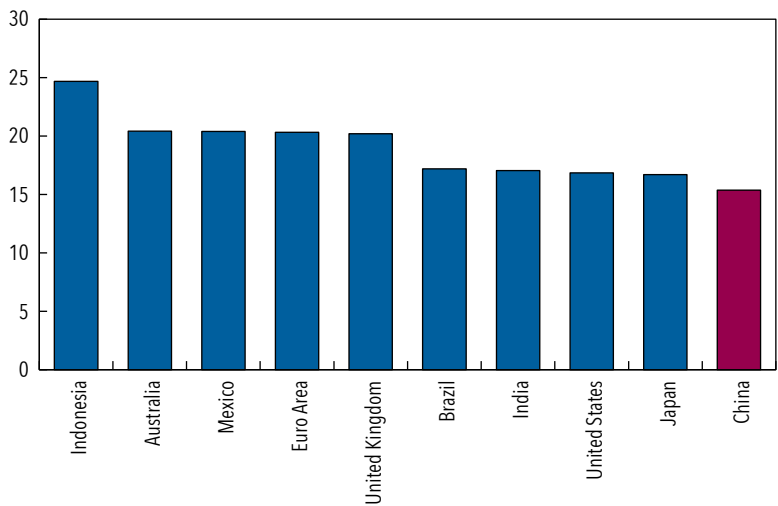
Mergers, acquisitions, and recapitalization efforts have helped to contain fragilities, but credit provision at the regional level remains vulnerable. Protracted conjunctural shocks could prompt banks to ration credit or deleverage, given limited scope to rebuild balance sheets organically (for example, through retained earnings). This macrofinancial feedback effect could be further exacerbated by weaker credit demand from Chinese households and businesses, reflecting wealth losses and diminished appetite for consumption and investment. Structural weaknesses are also emerging, as a rapidly aging population and slowing productivity growth are dampening long-term demand for financial services—with potentially lasting implications for banks' profit margins.

¹² China's FSAP found that if unsustainable debts—classified based on the inability of LGFVs to cover interest expenses from their earnings—were fully written off, capital depletion for the sampled banks could reach almost 3 percentage points.

Figure 10.3. China: Banking Sector Indicators

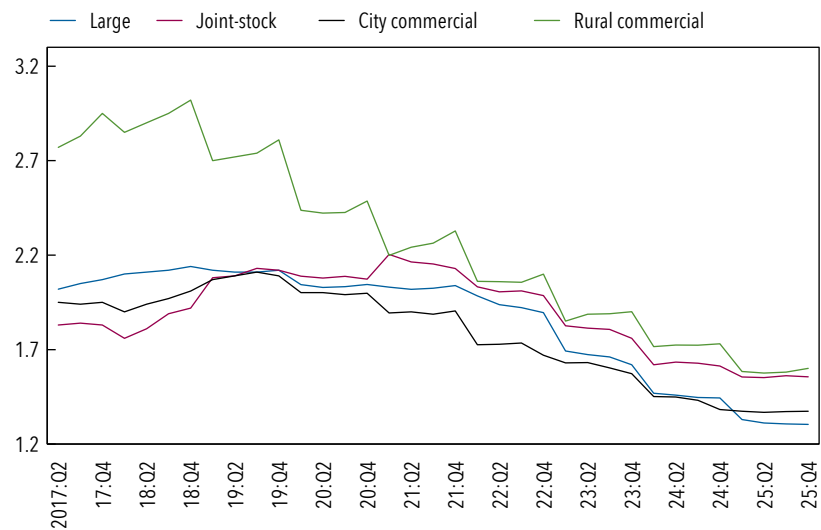
1. Regulatory Capital to Risk-Weighted Assets¹

(In percent)



2. Net Interest Margin by Bank Type

(In percent)



Sources: CEIC Data Company Limited; ECB's Supervisory Banking Statistics database; IMF FSI database; and IMF staff calculations.

¹ Data for Japan are as of 2025:Q1; data for Euro Area and Brazil are as of 2025:Q4; and for all others, data are as of 2025:Q3.

Challenges from Weak Local Government Finances and Rapid SME Loan Growth

The nexus between regional governments and financial institutions varies in form and strength across provinces. Regional governments play a critical role in investment, utilizing LGFVs and land sales to finance infrastructure and other projects. Empirical analysis (IMF 2025) shows that regional property and financial sectors are closely interconnected, and property prices play a key role in transmitting shocks. The analysis suggests that a stronger fiscal position of provincial governments supports cheaper LGFV funding—possibly because of perceived implicit guarantees. However, it also indicates that in provinces with weaker fiscal positions, related LGFVs face higher risk premiums on their borrowing. Similarly, stronger regional bank's balance sheets—proxied by lower NPL ratios—are associated with narrower LGFV spreads, potentially reflecting these banks' central role in LGFV financing and market perceptions of their capacity to maintain such exposure. Higher LGFV spreads, reflecting lower creditworthiness, translate into higher bank financing costs.

To support economic growth amid domestic demand weakness and the property downturn, a broad range of policy initiatives have been deployed to improve credit access for green, innovative, and SME sectors, with associated implications for financial risks. Measures include regulatory directives, targeted reserve requirement cuts, low-cost refinancing facilities, and partial credit guarantees. Although these initiatives have contributed to higher financial inclusion loans to micro and small businesses, which grew by over 20 percent annually between 2020 and 2023, this rapid expansion raises concerns about adequate risk pricing, especially in the absence of historical data and market-based benchmarks.¹³ The FSAP, for example, found that a shift of banks' corporate lending portfolios toward SME lending could materially alter their credit risk profile—because of weaker repayment capacity of SME borrowers—with cumulative credit losses as a proportion of risk-weighted assets potentially rising by 20 basis points for every 10 percent increase in SME lending in the baseline scenario, and by 1 percentage point for every 10 percent increase in the adverse scenario. The analysis, while merely illustrative in view of data gaps, highlights the significant sensitivity of banks' asset quality to changes in SME exposures, particularly in downturn conditions. Combined with delays in addressing legacy assets (including LGFV exposures) and sluggish loan growth that reflects both demand and supply constraints, these dynamics could ultimately undermine the efficiency of credit intermediation.

¹³ As of the end of 2024, the financial inclusion loans accounted for about 13 percent of total renminbi lending.

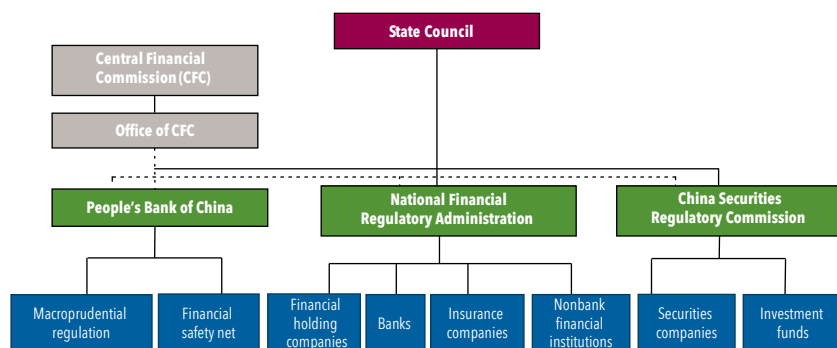
REFORM PRIORITIES TO FOSTER CONTINUED STABILITY

Acknowledging the increasing complexity of the financial system, the authorities have enhanced banking sector oversight. Importantly, the adoption of Basel III standards in 2023 (effective as of January 2024) has helped to increase the granularity and risk sensitivity of the regulatory framework. Among others, revisions to the capital framework introduced comprehensive updates to risk-weighted asset measurement rules; improved Pillar 3 disclosure; and established a tiered approach to bank capital requirements that is predicated on proportional applicability.¹⁴ In addition, supervisory systems and rules for managing credit risk have been significantly upgraded; a regulatory framework for financial holding companies was introduced; various Basel standards (for example, large exposures, liquidity requirements, operational risk, and interest rate risk in the banking book) were implemented; and the legal regime governing related party transactions was reinforced. The authorities also sought to improve alignment of asset classification rules with Basel guidelines on nonperforming exposures and forbearance. Finally, risk-based supervision has been strengthened, including through enhancements of the regulatory risk rating system and increased reliance on thematic, cross-cutting inspections; and various steps have been taken to enhance supervision and regulation of Big Tech and digital financial services.

Similarly, the oversight of nonbank financial sectors has improved. The adoption of the 2019 Securities Law and 2022 Futures and Derivatives Law has provided greater legal certainty, improved disclosure standards, and strengthened corporate governance requirements. Regulation and supervision of the insurance sector have also been enhanced, with the introduction of the second phase of the China Risk-Oriented Solvency System in 2022 being an important milestone. The 2018 reforms of the asset management sector—which sought to align the regulatory framework across different products and address other problems (for example, implicit guarantees on investment returns, asset pooling practices, and opaque multilayered investments)—have played a crucial role in reducing linkages between NBFIs and the banking sector.

The authorities' objective for the overhaul of the regulatory architecture, announced in March 2023, was to enhance supervisory effectiveness (Figure 10.4). At the heart of the overhaul was the establishment of the National Financial Regulatory Administration (NFRA), which replaced the China Banking and Insurance Regulatory Commission and took over specific responsibilities of the PBOC (notably financial holding company supervision and financial consumer protection) and the China Securities Regulatory Commission

¹⁴ Pursuant to the new tiered approach, Tier 1 banks (60 banks, accounting for about 82 percent of total banking assets) are required to fully comply with Basel III standards, whereas Tier 2 banks (1,300 banks, 17 percent of banking assets) can apply simplified requirements. Tier 3 banks (roughly 2,600, 1 percent of banking assets) are subject to a different framework for risk-weighted assets with lower capital adequacy requirements.

Figure 10.4. China: Financial Regulatory Structure

Source: State Council of the People's Republic of China
https://english.www.gov.cn/policies/latestreleases/202303/16/content_WS6413be82c6d0f528699db58e.html.

(investor protection). According to the reform announcement, the NFRA was established to (1) strengthen supervision and enforcement of prudential norms; (2) improve consumer protection; (3) enhance risk-management practices; and (4) intensify financial sector oversight by addressing regulatory overlaps and fostering consistency at the regional level. To enhance supervisory effectiveness and bolster resources, staff from the PBOC's regional offices were transferred to the NFRA, whose local branches were solely made responsible for financial sector supervision and regulation (that is, no affiliation with financial work bureaus that also have developmental mandates). In addition, a new Central Financial Commission was established to strengthen the centralized and unified leadership of the Party Central Committee over financial sector issues. The Central Financial Commission was tasked with the top-level design, overall coordination, and implementation of China's policies for fostering financial stability and development, while fully absorbing the previous responsibilities of the Financial Stability and Development Commission.¹⁵

Notwithstanding progress made in recent years, further steps remain necessary to ensure financial stability going forward. As discussed in Chapter 8, designing and implementing a medium-term comprehensive plan to address financial stability risks associated with LGFVs is a key priority. In addition, steps should be taken to strengthen systemic risk monitoring and financial sector oversight more generally.

¹⁵ Upon its creation in 2017, the Financial Stability and Development Commission was mandated to strengthen financial regulatory coordination, improve macroprudential regulation and systemic risk prevention, and ensure the safe and stable development of the Chinese financial sector.

Systemic Risk Monitoring

Enhancing the effectiveness of the authorities' financial stability framework hinges on further improving risk analytics and closing data gaps. Building on recommendations from the 2017 China FSAP, as well as international best practices, the authorities have undertaken considerable efforts to strengthen their stress testing framework. Both NFRA and the PBOC regularly conduct stress testing exercises to assess the resilience of the financial system, as well as the financial soundness of individual banks—with aggregate results of the PBOC's stress test being published on an annual basis in its Financial Stability Reports. To better inform potential policy responses, however, developing a more comprehensive stress testing framework—incorporating advanced modeling techniques and broader risk coverage—remains a key priority. The scalability of the existing stress testing infrastructure should be improved to allow for a significant increase in sample size, and additional attention should be given to second-round effects (for example, the impact of a solvency shock on banks' funding costs). More granular data collection (for example, segmentation of credit exposures and provisioning across loan book segments, collateralization and loan-to-value distributions, IFRS 9 staging data, and deposit breakdowns) is essential to enhance the effectiveness of stress testing exercises. Given the increasing complexity of the financial system, further investments in analytical capacity, specialist skills, and IT infrastructure are important for both the PBOC and the supervisory agencies.

Supervision and Regulation

Building on notable recent improvements, continued efforts are needed to ensure that financial sector supervision remains commensurate with the system's scale and complexity. Supervisors have limited autonomy, with evident tension between stability and growth objectives calling for a sharpening of mandates and greater interagency coordination. Moreover, there are notable weaknesses in supervisory headcount, and a significant increase in resources is needed to enable more in-depth inspections, intensify horizontal risk oversight, and meet the demands arising from new responsibilities and complex risk areas. A detailed analysis of current staffing levels and future needs will be important to guide hiring plans and identify necessary enhancements of supervisory skill sets to enable greater scrutiny of key risk areas. Vulnerabilities in NBFIs that could cascade across sectors as a result of strong interconnectedness, including increased redemptions in mutual funds, pressures on wealth management products, and real estate-related distress in the trust sector, illustrate the importance of developing a more comprehensive approach for NBFI oversight.

Steps taken to augment the capital of the largest Chinese banks should be combined with stronger risk-based supervision. Bank capital requirements should be more tailored to individual bank risk profiles, including through active use of the Basel Pillar 2 framework. A further refinement of the supervisory review process, with more detailed internal guidance for supervisors, would enable more consistent application across banks and allow for more informed discussions with

bank management on capital planning and risk appetite. For Tier 2 and Tier 3 banks, specifically, more intrusive monitoring of specific business activities is needed, particularly those that benefit from favorable regulatory treatment (for example, project finance and interbank exposures). Business models of smaller banks also warrant more supervisory scrutiny, amid pressures on credit quality and profitability, overreliance on specific funding sources, and fragilities in corporate governance frameworks. To curb a buildup of risks in banks' balance sheets, additional capital charges would be appropriate. To enable more informed decisions about broader cleanup strategies, the authorities should collect more granular information (for example, on restructured loans), conduct targeted stress tests and sensitivity analyses, and update contingency plans.

Transparency and Disclosure

Enhancing transparency by providing stakeholders with clear and accessible information will help underpin market confidence. Greater transparency of banks' financial conditions beyond the largest banks is needed to enhance stakeholders' ability to make well-informed assessments of banks. Measures that reduce transparency and delay loss recognition, such as regulatory forbearance, should be avoided, and asset classification exceptions (for example, applicable to retail and SME loans) should be removed to ensure more consistency and prudence across banks.¹⁶ Centralizing and making publicly available key information on banks' financial statements and regulatory indicators would bring China in line with international best practice, and improving disclosure, accounting, and auditing requirements can help increase market discipline.¹⁷

Safety Net Reforms

Establishing a modern bank resolution framework remains a priority. Efforts to strengthen the financial sector safety net have progressed, with the draft Financial Stability Law making its way through the legislative process. Total loss-absorbing capacity requirements have been introduced for the five Chinese GSIBs, and frameworks for recovery and resolution planning have been strengthened. Still, further progress is needed to provide the Chinese authorities with a credible toolkit for handling systemic distress. Key steps include further alignment of the draft

¹⁶ For example, the Financial Sector Assessment Program highlights that the Measures for the Risk Classification of Financial Assets of Commercial Bank, issued in 2023, enables banks to delayed classifications of collateralized SME exposures as nonperforming (for example, loans with overdue payments of up to 30 days can be classified as "normal" and loans with overdue payments between 91 and 180 days can be classified as special mention—allowing for reduced provisioning). To ensure alignment with international good practice, all loans with overdue payments of 90 days or more should be classified as nonperforming, regardless of the exposure type or collateralization.

¹⁷ Also see the Basel Committee on Banking Supervision's standard on disclosure requirements (Basel Committee on Banking Supervision 2018) and work conducted by the Financial Stability Board on improving risk disclosures (<https://www.fsb.org/work-of-the-fsb/market-and-institutional-resilience/post-2008-financial-crisis-reforms/improving-risk-disclosures/>).

Financial Stability Law with international best practices; designating a lead resolution authority with operational autonomy and adequate resourcing; and strengthening the framework for recovery and resolution planning. To allow for greater burden sharing and more effective use of the bail-in powers that will be introduced through the Financial Stability Law—and thus reduce the potential need for public sector resources if any shocks were to materialize—requirements for establishing loss-absorbing capacity should be extended to all domestic systemically important banks. The use of public support should be explicitly defined as a last resort, and the authorities should establish transparent rules on the governance; resourcing (for example, funding target and horizon, collection criteria, and backstops); and use of the Financial Stability Guarantee Fund.

Other components of the financial safety net should also be strengthened. After extensive utilization of the deposit insurance fund to address weak banks, reforms are needed to limit its involvement to insured deposit payouts and contributions to transfer strategies, subject to a least-cost test. Annual contributions should be increased to achieve its funding target, and an explicit government backstop is needed, in line with international good practices, to ensure that resource constraints do not jeopardize the deposit insurance fund's effectiveness. Moreover, the PBOC's role as lender of last resort, which currently involves easing reserve requirements upon request, should be strengthened by introducing a dedicated emergency liquidity assistance framework, incorporating robust risk mitigation measures.

Corporate Insolvency

Further enhancements of the corporate insolvency framework are advisable. As outlined in Chapter 11, the Chinese insolvency regime has undergone significant evolution since the adoption of the Enterprise Bankruptcy Law in 2006—with recently issued draft revisions to the Enterprise Bankruptcy Law for public consultation being another welcome step forward. The proposed amendments have the potential to address several challenges that the current regime is facing, but consideration should be given to additional reforms and enhancements. Key priorities include further developing judicial expertise in all regions, raising the professionalism of insolvency administrators, and enhancing frameworks for tackling complex insolvencies, including enterprise group insolvencies and cross-border insolvencies.

CONCLUSION

After having served as an important engine for economic growth, China's financial system is at a crossroads. The majority government-controlled and highly interconnected system has grown considerably over the past two decades. Historically, financial resilience of the largest Chinese banks and the availability of fiscal buffers for targeted interventions have helped contain financial sector risks, but fragilities are emerging amid challenging

macrofinancial conditions—with declining bank profitability reducing the system’s ability to strengthen buffers and absorb shocks. Against this backdrop, and notwithstanding considerable reforms undertaken to strengthen financial sector oversight, further steps remain warranted to ensure that the financial stability framework remains commensurate with the system’s scale and complexity. As discussed in this chapter, further efforts to strengthen systemic risk oversight, financial sector supervision, and safety nets remain a key priority.

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Upgrading China's Insolvency Framework

Jose M. Garrido

Chinese insolvency practice has evolved significantly since the adoption of the 2006 Enterprise Bankruptcy Law. The protracted property sector adjustment, which has resulted in developer distress, has exposed gaps in the framework, particularly in reorganization procedures, and has stretched institutional capacity. Going forward, insolvency tools can play a key role in tackling corporate sector debt distress, including among local government financing vehicles. In this context, with an aim to modernize the legal framework, the National People's Congress issued comprehensive draft revisions to the Enterprise Bankruptcy Law in September 2025. Enacting these reforms and fully aligning the Chinese insolvency framework to international standards, complemented with adequate institutional support by courts and insolvency administrators, is necessary to ensure business dynamism, preserve enterprise value, manage orderly market exit, and improve resource allocation.

INTRODUCTION

A well-functioning insolvency framework is essential to ensure business dynamism, improve resource allocation, and tackle debt vulnerabilities. Smooth insolvency processes ensure that inefficient enterprises exit the market in an orderly fashion, credit and resources flow to more productive uses, and viable enterprises can be restructured to overcome economic distress.

In China, the protracted property sector adjustment and its spillovers, as well as multiple other shocks experienced over the past few years, have resulted in a remarkable rise in insolvency cases. Continued property sector weakness, high debt levels among firms, most notably local government financing vehicles (Chapter 8), and weak domestic demand suggest that enterprise insolvencies may increase further, putting a premium on a well-functioning insolvency framework.

Against this backdrop, this chapter provides an overview of the Chinese insolvency regime and recommendations for improving it. The current framework rests on the Enterprise Bankruptcy Law (EBL) of 2006. The application of the law over the years, as well as changing circumstances in the economy, has shown the strengths and limitations of the insolvency regime. On the one hand, the system has evolved, with the development of informal and hybrid restructuring

mechanisms and the establishment of specialized bankruptcy courts. At the same time, significant improvements are needed in the framework, particularly in financing distressed enterprises and in safeguarding creditor rights. The ability of the system to manage complex cases, notably involving large enterprise groups and cross-border aspects, also remains constrained.

To address these shortcomings, a comprehensive reform of the insolvency regime has become an imperative. In a welcome step, in September 2025, the National People's Congress issued draft revisions to the EBL for public comment (*the draft EBL reform*). The proposed amendments aim to address several key challenges facing the framework in restructuring and reorganization, and enhance enterprise group insolvency and cross-border insolvency frameworks. The legal reform should be complemented with additional efforts to strengthen the capacity of insolvency professionals and courts.

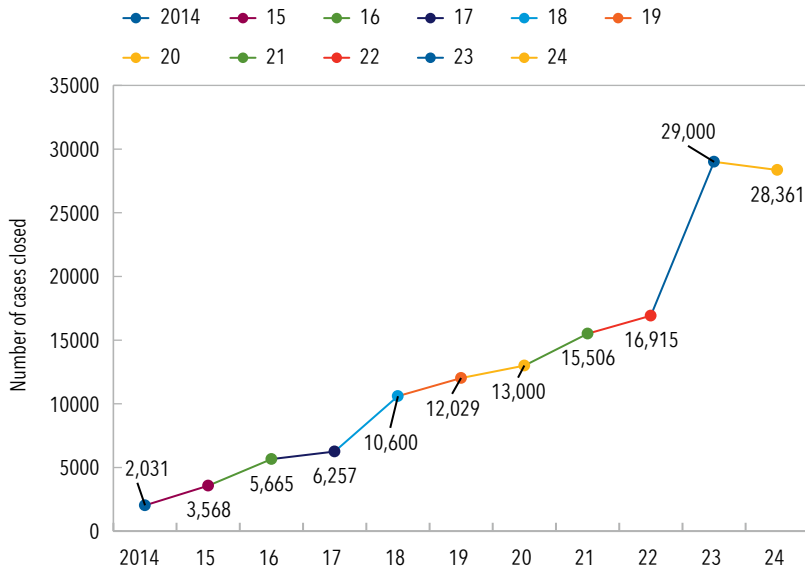
THE CURRENT LEGAL AND INSTITUTIONAL FRAMEWORK

China has seen a significant increase in insolvency cases in recent years, with the number of completed cases markedly increasing since 2015 (Figure 11.1). The increase is the consequence of deliberate policy choices, starting with the deleveraging policies of the State Council in 2014, that put more emphasis on the use of the insolvency regime for market exit. Recent increases in insolvency cases also reflect the real estate sector's adjustment and its interlinkages with the financial sector. Recent high-profile insolvency cases include large-scale property developers like *Evergrande* group and *Country Garden*.¹ Some shadow banks with connections to the real estate sector, as well as small and medium enterprises in manufacturing and services, have also been affected as the economy has been hit by multiple shocks. Insolvency cases have traditionally been concentrated in the most industrialized areas (Jiangsu, Zhejiang, and Guangdong provinces, see Steele and others 2018), and this geographical imbalance continues, reflecting larger enterprise populations and higher levels of insolvency expertise.

This surge in insolvencies has been managed under the current insolvency framework, which rests on the EBL of 2006. The law established a modern legal foundation aligned with international standards² and is applicable to both state-owned and private enterprises. Courts play a central role in case commencement,

¹ Evergrande group, whose liquidation started in Hong Kong SAR in 2024, involves around 100 companies in the group, and liabilities of RMB 2.39 trillion (\$330 billion), equivalent to roughly 2 percent of China's GDP. Country Garden, another large developer, is also involved in insolvency litigation and restructuring attempts.

² The standard on insolvency is composed of the United Nations Commission on International Trade Law recommendations included in the *Legislative Guide on Insolvency Law* (https://uncitral.un.org/en/texts/insolvency/legislativeguides/insolvency_law) and the World Bank Principles for Effective Creditor/Debtor Regimes (<https://documents1.worldbank.org/curated/en/391341619072648570/pdf/Principles-for-Effective-Insolvency-and-Creditor-and-Debtor-Regimes.pdf>).

Figure 11.1. Growth of Insolvency Cases in China (2014–24)

Source: Supreme People's Court.

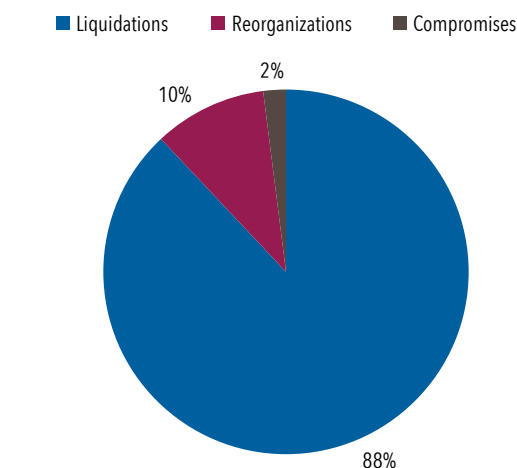
administrator appointment, claim admission, and plan approval. The law recognizes the priority of secured creditors, including over worker claims, while maintaining special protections for labor rights, especially through priority in the ranking of claims for salaries and social insurance. To manage the rising caseloads, specialized bankruptcy courts have expanded rapidly, growing from nine courts in 2019 to 17 by 2024. It is estimated that specialized courts have reduced case duration by 36 percent (Li and Ponticelli 2022).

The law provides for three main procedures for managing insolvencies—reorganization, liquidation, and compromise. Liquidation proceedings, which involve the closing down of the company and the sale of its assets, dominate the caseload (Figure 11.2). However, reorganization has gained prominence for larger enterprises (both private and state owned) for which preserving the organizational value of the enterprise, its jobs, and main outputs is critical. Reorganizations are increasingly concentrated in listed companies and enterprise groups with complex structures. Compromise—a simplified procedure for agreements between unsecured creditors and debtors requiring majority approval representing two-thirds of claims—remains a residual, accounting for 2 percent of cases.

THE REFORM PRIORITIES

Despite the continuing evolution of the insolvency framework, shortcomings remain. The 2006 EBL, although providing a good foundation, has several weaknesses. The law is extremely concise and does not adequately address increasingly

Figure 11.2. Insolvency Proceedings in China (2023)
(Percentages)



Source: Supreme People's Court.

complex problems (Rapisardi and Zhao 2010; Maliszewski and others 2016). The Supreme People's Court has sought to fill gaps through interpretations and other instruments, including conference minutes and leading cases. In addition, local courts have also provided guidance. However, this has resulted in a regime that lacks consistency, coherence, and predictability.

Distress in some sectors, particularly in real estate, has highlighted the limitations of the current regime: Reorganization has emerged as the preferred solution for the insolvency of complex enterprises, but the processes start too late, with diminished expectations of recovery, and difficulties in obtaining additional finance. Many large companies have complex structures with networks of subsidiary companies, and some of which may be located outside the Chinese mainland. This shows the importance of having clear and predictable rules for enterprise group insolvency and cross-border insolvency cooperation.

The ongoing reform of the EBL offers an important opportunity to consolidate and unify the insolvency regime. The reformed EBL can provide a more comprehensive and updated framework for corporate insolvency and can distill the experience and lessons of judicial guidance. The draft EBL reform aims to address fragmentation by incorporating previously court-developed practices into statutory provisions, including pre-reorganization procedures, post-commencement financing rules, and enterprise group coordination mechanisms.

The rest of the section elaborates on these key reform priorities, focusing on frameworks for restructuring, reorganization, and enterprise groups and cross-border insolvency. Finally, the section concludes by highlighting the importance of improving court capacity and the regime of insolvency administrators.

Restructuring

The toolbox for restructuring has been improved and expanded. Experience with restructuring has deepened considerably in the past few years as a response to increasing corporate distress (see Bauer and others 2021). The main developments have been the use of debt–equity swaps (see Daniel, Garrido, and Moretti 2016) and creditor committees for out-of-court restructuring. These developments have been supported by financial regulations. In addition, court practice has developed “pre-reorganization” as a hybrid restructuring procedure, as discussed later.

More widespread use of creditor committees has facilitated informal restructuring. Instead of resorting to the courts, informal restructuring relies on the cooperation between corporate debtors and financial creditors, particularly for cases of large, distressed enterprises. The setup and functioning of committees provide a framework for the exchange of information and the negotiation in good faith of restructuring agreements.

However, the regulation of creditor committees can be further improved to achieve timely resolution and restructuring. In some cases, committees delay resolution and create difficulties in achieving restructuring. Committees would be more effective if they operated under strict time limits and with the commitment that participating creditors cannot alter their positions. Creditors should have the duty to disclose conflicts of interest as soon as these manifest, and those creditors that provide financing to support restructuring should have some protection against losses and against having their financial transaction, with its guarantees or security, canceled if the company finally becomes insolvent.³

In addition to creditor committees, the emergence of pre-reorganization represents one of the most significant innovations in Chinese restructuring practice. Pre-reorganization has been developed by the courts, without a clear statutory basis, to create a bridge between informal restructuring and formal judicial reorganization proceedings. It combines informal negotiations at the creditors committee with limited court intervention (“hybrid restructuring”: see Araujo and others 2022; Albuquerque and others 2025).

In pre-reorganization, reorganization petitions are filed, but rather than immediately commencing formal proceedings, courts allow creditors to propose interim administrators. The interim administrators cooperate with creditor committees and debtors in developing restructuring plans. Courts can grant limited stays of creditor actions during negotiations. If plans receive necessary creditor support, they can be rapidly confirmed through reorganization proceedings as prepackaged plans. If plans are agreed with major creditors but lack the required voting margins, reorganization commences, and plans are submitted to creditor votes after usual

³ Typically, the creditor providing financing in a situation in which there is increased risk should be protected with collateral or by other mechanisms (for example, a guarantee provided by another company). The financing transaction is also at risk of being avoided if the situation deteriorates and the company becomes insolvent, and this requires rules that protect the transaction against challenges.

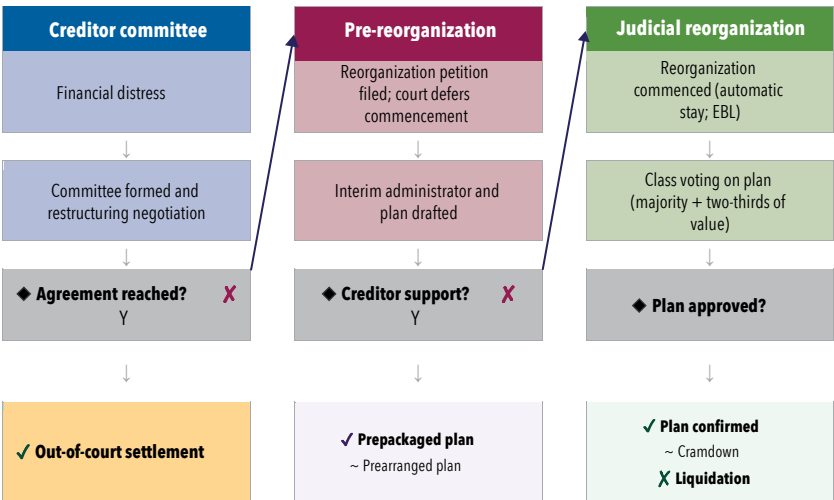
procedures, with favorable votes preserved from pre-reorganization negotiations (see Figure 11.3).

Pre-reorganization preserves the value of previous negotiations and accelerates the reorganization process. Pre-reorganization has proven valuable and has now received formal recognition in the draft EBL reform, specifying requirements and procedural steps, and ensuring that the effects of court decisions, like a stay of creditor actions, are recognized across China. Formalizing the pre-reorganization processes in the EBL will be a welcome step. Further enhancements to the pre-reorganization process that can be considered include a detailed regulation on the stay of creditor actions during the pre-reorganization phase and rules for the preservation of all actions completed during the pre-reorganization phase.

Reorganization

Reorganization has become the main insolvency procedure for large, distressed enterprises. Although small in number, most of the high-profile cases in China have recently been reorganizations. Reorganization is used to preserve high going-concern value and implement financial and operational restructuring under judicial control (see Zhang 2018). The 2006 EBL includes the fundamental elements of reorganization: a broad stay of creditor actions affecting both secured and unsecured creditors, rules for enterprise management during proceedings, claim submission and verification procedures, and mechanisms for the approval of reorganization plans.

Figure 11.3. Restructuring and Reorganization



Source: IMF staff's analysis.
Note: EBL = Enterprise Bankruptcy Law.

Several issues prevent reorganization from reaching its full potential, including complex commencement requirements, slow acceptance of cases, unclear division of responsibilities between the parties in the governance of the procedure, incomplete tools to deal with executory contracts and post-commencement financing, and insufficient safeguards for creditors in the approval of plans. Debtors lack strong incentives to commence reorganization voluntarily: In practice, most reorganizations are initiated by creditors rather than debtors. Special requirements burden debtor petitions, including plans for employment contract treatment and requests for general shareholder meetings. Managers fear potential liability, and debtor management is typically removed or placed under strict administrator control rather than remaining in possession of the enterprise.

Post-commencement financing is critical for reorganization success but has remained inadequately regulated. The 2006 EBL allows courts to authorize administrators to borrow funds for business continuation, with such financing receiving priority as common benefit debts. However, the law lacks detailed provisions on conditions for granting priority, safeguards for existing secured creditors, and protection of post-commencement financing in subsequent liquidations if reorganization fails.

The process for creditor approval of reorganization plans adds to the complexity of the process. Plans need to be approved on a class-by-class basis, with approval requiring a majority of creditors representing two-thirds of claim value in each class. The EBL creates classes reflecting claim ranking: secured creditors, labor creditors, tax claims, and unsecured creditors. If one class rejects a plan, negotiation opens. If unsuccessful, courts can confirm plans despite opposition if the plans are deemed fair and equitable and provide dissenting creditors with payments that at least equal what they would have received in the liquidation of the company. However, the system lacks a requirement that shareholders receive no payment unless dissenting creditors are fully paid (absolute priority rule). The system also allows that losses are allocated to unsecured creditors, whereas shareholders are able to preserve part of their investment.

The effectiveness of reorganization would benefit from legal reforms in line with the international standard. The reform of the EBL could substantially improve reorganization by streamlining the commencement standards (that is, eliminating any informal viability analysis and any other requirements beyond corporate distress), creating incentives for the use of reorganization, perfecting the rules for the treatment of contracts and post-commencement financing, and providing additional safeguards for creditors by enforcing the hierarchy of creditor claims in the approval process of plans. Debtors should have stronger incentives, including business protection and effective debtor-in-possession management.

The draft EBL reform aims to address some of these shortcomings. In particular:

- The draft addresses timing issues in commencing reorganizations through interim measures. After bankruptcy applications are filed and before the court makes a ruling, debtors and creditors can seek protective actions to halt

enforcement and prevent asset depletion or fraudulent transfer. These interim measures bridge the gap between application and formal commencement, protecting enterprise value during vulnerable periods. This is a useful reform, although there should be emphasis on a speedy decision on the commencement of reorganization.

- The draft proposal enhances plan approval procedures. The provisions detail criteria for court approval, requiring adherence to legitimate voting procedures, feasibility of business plans, and fairness, justice, and legality of plan content. When creditors do not approve plans, courts may conduct hearings prior to enforcing cramdown approvals. Interested parties dissatisfied with court decisions may apply for review by higher courts, providing additional safeguards. All these elements are useful, and they would be reinforced by a clearer commitment to respect the ranking of claims in the approval of plans, enforcing the hierarchy of claims in allocating losses.
- The draft EBL reform introduces comprehensive rules for post-commencement financing, representing major advances in this critical area. Draft provisions address key gaps identified through implementation experience. Clear priority standards, protection mechanisms for existing creditors, and explicit recognition of post-commencement financing priority in subsequent insolvency proceedings strengthen reorganization as a viable alternative and facilitate access to necessary working capital for distressed companies.

In addition to ensuring that these measures are approved and implemented, additional reforms should be considered. Strengthening provisions for independent supervision of plan implementation by insolvency professionals and plan amendments after approval procedures can further improve the effectiveness of reorganization.

Insolvency of Enterprise Groups and Cross-Border Insolvency

The 2006 EBL contains no provisions for enterprise group insolvency, yet large reorganizations typically involve enterprise groups (that is, collection of subsidiaries controlled by a parent company). These insolvencies—generally reorganizations, but also liquidations—require coordination mechanisms among proceedings affecting member enterprises of the same group. Under exceptional circumstances, proceedings may lead to substantive consolidation of assets and liabilities across the group.

Minutes from the 2018 meeting of the Supreme People's Court provide valuable guidance for group insolvencies. However, binding legislative rules are essential for legal certainty. In this context, the draft EBL reform introduces adequate rules for enterprise group insolvency. The draft reform outlines criteria for accepting enterprise group cases and introduces statutory mechanisms for procedural coordination, including single administrator appointments, coordinated hearings, and coherent reorganization plans. The draft reform also clarifies the legal implications of substantive consolidation, addresses avoidance of transactions, and coordinates the submission of claims.

For enterprise groups operating across borders, coordination needs are even more critical and complex. Cross-border insolvency provisions remain underdeveloped despite the 2006 EBL's approach, assuming Chinese proceedings affect debtors' global assets. The law only considers the extension of the effects of Chinese insolvency cases abroad and limits recognition of foreign insolvencies. There has been limited progress in cross-border cooperation: In 2023, Chinese courts recognized insolvency cases commenced in Germany and Japan under reciprocity conditions. The 2021 cooperation framework between the Chinese mainland and Hong Kong SAR courts enables coordination with the Shanghai, Xiamen, and Shenzhen courts (Shi 2023) and is being tested. In 2025, a Singapore court recognized a Chinese insolvency case.

The draft EBL reform would significantly enhance cross-border cooperation frameworks. The draft provides that courts have jurisdiction over debtors with foreign domicile when insolvency proceedings are in the creditors' best interests.⁴ Insolvency administrators may apply to foreign courts for recognition of insolvency proceedings and recognition of administrator status. The draft reform outlines conditions and effects of recognition and assistance for foreign bankruptcy proceedings. Recognition continues to require compliance with national laws and public policy, noninfringement on national sovereignty and social interests, protection of creditors' rights within China, and adherence to reciprocity principles.

These provisions represent substantial progress but are not fully consistent with the international standard (for example, United Nations Commission on International Trade Law Model Law on Cross-Border Insolvency), which prioritizes cooperation in cross-border cases without reciprocity requirements and is limited only by adequate creditor protection and a public policy exception.

Institutional Capacity

In addition to the legal framework, effective insolvency regimes depend critically on institutional capacity. The expansion of specialized bankruptcy courts has helped improve capacity; however, geographic concentration of specialized courts results in uneven quality. Courts without specialization, which are still dominant in most regions, function less efficiently.

Furthermore, insolvency administration can also be improved significantly. China has made efforts to professionalize insolvency administrators, but it still lacks comprehensive regulation in this area. The competence, integrity, impartiality, and independence of administrators are essential elements for regime effectiveness. The quality of administrators is uneven, as no mandatory national training or examination is currently required. There is a need for a national regulation that sets clear standards for access as well as establishes rules.

⁴ The international standard allows local courts to open an insolvency case against a foreign debtor when the debtor has an establishment in the jurisdiction. The Chinese draft law is more expansive.

Another key reform priority is to ensure that insolvency proceedings are independent and free from the influence of local governments, which can often have vested interests in the distressed companies. The Chinese regime establishes mechanisms whereby officials from the public administration may participate in the management of the insolvency of enterprises (liquidation teams), which could interfere with the professional role of the insolvency administrator. This requires a clear allocation of duties within the committee to avoid the influence on the court or insolvency administrator's functions. The Chinese regime also includes mechanisms for cooperation between the courts and the administration, and these are reflected in the draft EBL reform (bankruptcy coordination mechanism). It is essential that these mechanisms operate under strict protocols that preserve court independence.

CONCLUSION

China's insolvency regime stands at a critical juncture. The framework has evolved considerably since 2006, with increasing case volumes and growing sophistication. Yet substantial gaps have remained in the regime, most notably in restructuring and reorganization, that have limited its effectiveness (see Garrido and others 2020).

The draft EBL reform represents an opportunity to address many of the issues and can be further enhanced. The draft law includes provisions to recognize pre-reorganizations, clarify the regime for financing of reorganizations, and strengthen creditor protection in the approval of plans, including revocation and modification. It also envisages comprehensive rules for enterprise group insolvency and a closer alignment with the international standard on cross-border insolvency. Enacting these reforms, and further aligning some provisions with international standards, can help strengthen the insolvency framework. In addition, developing judicial expertise in all regions and achieving the same level of professionalism for insolvency administrators across China will result in further efficiency gains and increased confidence in the system.

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