

## Understanding China's Economic Slowdown after the Global Financial Crisis

The Chinese economy is so immense, and its connection to the economies of the rest of the world so entangled, that it is sometimes perceived more as a source of danger than as a contributor to global prosperity. From one perspective, the supposed threat emanates from China's slowing growth and buildup of domestic debt since the global financial crisis, creating a fear that these debt burdens could trigger a major financial crisis and drag down the global economy, which has become increasingly dependent on China as a locomotive of economic expansion. The underlying assumption of these anxieties, of course, is that the world needs China to continue its steady growth as a force for global economic health.

Ironically, from another perspective, a profound danger emanates from China's inexorable growth: the widespread concern that China's economic progress will embolden its political ambitions, threatening the security interests of the United States and its allies in Asia. These anxieties rest on the assumption that China will soon overtake the United States as the world's largest economy measured by exchange rates. The fears focus on China's aggressive industrial policies such as Made in China 2025, which could enable China to attain global dominance of artificial intelligence and other advanced technologies that are seen as the foundation of future economic growth. The Critics advocate tightened disclosure requirements for state-led acquisitions of foreign firms and more comprehensive national security screening to restrict access of Chinese firms to advanced technology in high-income economies (Wübbcke et al. 2016, 61–65). In the United States, the Foreign Investment

Risk Review Modernization Act and the Export Control Reform Act came into effect in August 2018. The former is designed to strengthen existing regulations against foreign investment that might put national security at risk and the latter authorizes the US Commerce Department to update controls on technology leakage through exports (Chorzempa 2018).

In short, there are two fears, based in polar opposite expectations of China's future growth performance. The first sees danger from the adverse effects of China's possibly slowing growth; the second sees danger from China's continuing rise. The evidence cited in this book provides a more balanced assessment of China's medium-run growth potential and the composition of that growth, to provide an analytical basis for understanding whether one or both concerns are misplaced and the implications of China's growth for the global economy over the medium term.

### **China's Global Economic Role**

In the decade prior to the global financial crisis China grew at an average rate of a little over 10 percent, in the process becoming the world's second largest economy, measured at market exchange rates. Its contribution to global economic growth was way more than the contribution of either the United States or the euro area. Since 2010, however, the pace of China's expansion has slowed, to under 7 percent in 2015, 2016, and 2017. Growth of only 6.7 percent in 2016 was the slowest pace in a quarter century (National Bureau of Statistics of China 2017a). Still, China in 2015 accounted for about one-third of global growth, an even larger share than in 2010 when it last achieved double-digit growth (IMF 2016a, 17), primarily because global growth had not recovered to its precrisis pace and because China's economy in 2015 was half again as large as in 2010. Its share of global growth in both 2016 and 2017 was similarly large. This is a remarkable role for an economy that accounts for only 15 percent of global GDP (Guo 2017b; National Bureau of Statistics of China, Comprehensive Office 2018).<sup>1</sup>

Despite its outsized positive contribution to global growth in recent years, in some periods since the global financial crisis, notably in the summer of 2015 and again in early 2016, gyrations in China's domestic stock market and uncertainty surrounding its exchange rate policy have made China a source of global financial market instability. These concerns emerged again, though less intensely, in 2018 when China's stock market and currency both weakened, at least partially in response to the fear that trade frictions between China and

1. Based on market exchange rates, China's share of global GDP expanded from 12.5 percent in 2013 to 15.3 percent in 2017.

the United States would slow China's growth. The correlation between the movement of asset prices and exchange rates in China and other countries has increased since 2015 and likely will strengthen further if China ultimately succeeds in further liberalizing its capital account (IMF 2016b, 179–81).

In addition, influential voices argue that China confronts numerous obstacles to sustaining growth over the medium term at even a much more modest pace than in recent years. These obstacles include potential political instability, weak governance indicators such as the rule of law and voice and accountability, and severe economic imbalances, including excessive reliance on investment, unsustainably fast growth of credit, and domestic savings that are far too large to be absorbed productively at home (Wolf 2016). Lant Pritchett and Larry Summers (2014) are more explicit, arguing that China is long overdue for an economic correction that would bring its growth rate more in line with the median global historic rate of 2 percent per capita. They challenge the view that they label *Asiaphoria*, the vision that continued rapid growth of China and India will shift the global economic center of gravity even more decisively to Asia.

The latter scenario would severely limit global economic growth, far beyond the transmission of financial market instability observed in mid-2015 and early 2016. China has become deeply integrated in global value chains and is a top ten export market for over 100 countries accounting for about 80 percent of world GDP (IMF 2016b, 171). Australia's large exports of iron ore, for example, go overwhelmingly to China and Chile sends a large share of its copper exports there. So the shock to the rest of the world resulting from a Chinese hard landing would be transmitted primarily by a drop in China's imports. The IMF, for example, estimates that a 1 percentage point negative shock to China's final demand growth would reduce global GDP growth of 0.25 percent after one year. Thus, the rapid slowing of China's growth by 4.65 percentage points, as postulated by Pritchett and Summers (2014), would reduce global GDP growth by more than a percentage point (IMF 2016b, 174).<sup>2</sup> Slower Chinese growth would inflict even greater economic damage on Asian countries more closely linked to China through global supply chains (World Bank 2016, 103). A study by the World Bank and a number of other organizations estimates that as much as 60 to 70 percent of global trade involves global production networks, parts, components, and semifinished goods that

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2. As discussed later in this chapter, Pritchett and Summers (2014) offer several alternative estimates of China's growth in the two-decade period 2013–33. One is based on their observation that the average growth deceleration after a period of super rapid economic growth in other countries was 4.65 percentage points.

cross international borders, sometimes many times, before they are assembled as final goods. China is the best example among a small number of developing countries that are deeply involved in these global value chains (World Bank et al. 2017, 1–2)

Even if China's growth remains relatively strong over the medium term, say 5 percent or more, and if this is achieved by a further rebalancing of the sources of growth—a smaller role for investment and a larger role for consumption—there would be important consequences for other economies, both beneficial and damaging. Already by the middle of the 2010s, China's overall slowdown and initial shifting away from investment and exports and toward internal domestic consumption had helped moderate global commodity prices, particularly for nonfuel commodities (IMF 2016b, 178). Should this rebalancing continue (other factors remaining unchanged), these prices could decline further, squeezing commodity exporters, such as Australia, Brazil, and Chile. On the other hand commodity importers, including the United States, would benefit from paying less for these commodities. Since investment in China is more import intensive than consumption, additional rebalancing of the sources of China's growth away from investment would probably hurt major suppliers of machinery and equipment and other investment goods (IMF 2016b, 175). Asian countries, except New Zealand, are more exposed to China's investment than they are to its consumption, so even a rebalancing that left China's growth unchanged would slow the growth of exports of these countries to China, impeding their growth prospects (IMF 2016d, 53).

### **Causes of the Slowdown**

China's growth slowed after the global financial crisis because of several factors, but there is no question that the decline was significant: from an average of 12 percent in 2005–08, prior to the global financial crisis, to an average of just under 7 percent in 2015–16 (National Bureau of Statistics of China 2016a, 24). Moreover, achieving even this greatly reduced pace of economic expansion required a massive increase in credit and a significant step up in the share of output devoted to investment. The decline in the efficiency of resource use implicit in these trends was also evident in a sharp drop in total factor productivity. Wu (2017, 17) estimates that total factor productivity declined by 2.1 percent per year in 2007–12, compared with annual gains of 1.2, 1.6, and 1.2 percent in 1980–91, 1991–2001, and 2001–07, respectively.<sup>3</sup>

3. The numbers cited are Wu's estimates of what he labels aggregate total factor productivity growth. His alternative Domar-weighted calculation generates somewhat slower total factor

**Table 1.1 Factors affecting China's growth**

Number	Factor	Effect on growth post-global financial crisis to 2016	Effect on potential growth, 2016–
1	Above potential growth before the global financial crisis	Negative	Neutral
2	Weak global recovery	Negative	Neutral
3	Infrastructure and housing investment	Positive	Neutral
4	Pace of reform	Negative	Potentially positive
5	Rising debt burden	Neutral	Negative
6	Demography Changing sectoral composition Shrinking labor force	Neutral Slightly negative	Neutral Slightly negative
7	Reversion to mean	Negative	Negative

This chapter examines seven contributors to China's economic slowdown and the simultaneous decline in total factor productivity since the global financial crisis. Some factors appear to be transitory, i.e., the product of specific circumstances that may not endure. If these transitory factors fade away, China's growth could strengthen slightly from its current pace of around 6 to 7 percent. Other factors are likely to persist and perhaps even strengthen, suggesting that China's potential growth is likely to be below its current pace. The first group of explanations of the slowdown is more positive for global economic growth, the second group obviously more negative. Table 1.1 provides a summary assessment of the effects of the seven factors on both growth since the global financial crisis and potential growth.

### **Above Potential Growth Prior to the Global Financial Crisis**

The first of the transitory factors contributing to China's slowdown, one that is frequently overlooked, is that prior to the global financial crisis China was growing above its medium-term potential rate, largely because a rising domestic saving-investment imbalance and a depreciating currency rapidly expanded the surplus in its goods and services trade with the rest of the world. This

productivity growth in 1980–2007, but the same –2.1 percent per annum for the most recent period. Wu's estimates of total factor productivity in China prior to the global financial crisis are substantially below the estimate of Perkins and Rawski (2008), cited later in this study, primarily because his estimates are based on an aggregate production possibility frontier framework, rather than the usual aggregate production function approach. I prefer the Perkins and Rawski methodology, but their estimates cover only through 2005 while Wu's estimates cover through 2012.

external surplus, which along with consumption and investment contributes to growth, more than doubled to 5.4 percent of GDP in 2005 compared with the prior year and then expanded further to reach a peak of 8.7 percent in 2007, an all-time record for any large trading economy. Although the surplus moderated slightly in 2008, on average in the four years 2005–08 the trade surplus added 1.3 percentage points to China's economic growth (National Bureau of Statistics of China 2016a, 37–38).

China's exchange rate policy and macroeconomic developments drove these external surpluses. Beginning in the mid-1990s the authorities pegged the Chinese currency to the US dollar. The dollar appreciated from the mid-1990s through early 2002. Although the peg meant that the exchange rate of the renminbi vis-à-vis the dollar was unchanged, dollar appreciation led to a significant appreciation of the Chinese currency on a real effective basis, a measure that takes into account the value of the renminbi against the currencies of all of China's major trading partners, including the US dollar.<sup>4</sup> But China's trade surplus over this period was relatively small and stable. Usually currency appreciation would make a country's goods less competitive on global markets and imports into its domestic market more competitive, thus typically reducing an existing trade surplus or generating a larger trade deficit. This did not happen in the case of China, suggesting that productivity gains in the tradable sector, which lowered the domestic prices of both export goods and goods that compete with imports, roughly offset the real appreciation of the Chinese currency.

But starting in early 2002 the US dollar gradually depreciated. Given the continued peg of the yuan to the dollar, the exchange rate of the renminbi vis-à-vis the dollar was unchanged, but dollar depreciation caused the exchange rate of the renminbi to depreciate, again on a real effective basis. The combination of this depreciation and continued productivity improvements in the tradable sector led to a rapidly rising Chinese trade and current account surplus.

Thus, beginning in 2001, China's central bank had to begin purchasing foreign exchange to maintain the peg of the renminbi to the US dollar. In the absence of official exchange market intervention, the currency of a country with a trade surplus would tend to automatically appreciate. The supply of foreign currency in the exchange market would exceed the demand, causing the foreign currency to fall in value and the domestic currency to appreciate. But in China central bank purchases of foreign exchange cut off this adjustment mechanism. These purchases started modestly in 2001–02 but quickly

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4. The measure also considers inflation in China relative to its major trading partners.

rose to average almost 10 percent of GDP in 2004–06 and then peaked at 14 percent of GDP in 2007 (Goldstein and Lardy 2009, 21). The combination of the renminbi's peg to the US dollar and central bank intervention in the foreign exchange market resulted in an undervaluation of the renminbi, which pushed China's trade surplus to its record high share of GDP in 2007. The massive intervention by the central bank in the foreign exchange market to prevent the appreciation of the currency and the resulting unprecedented external surplus are the basis for the assessment that China engaged in currency manipulation (Goldstein and Lardy 2009).

From a macroeconomic perspective, the rising external surplus reflected a rise in national savings relative to investment. The share of national income devoted to investment was largely unchanged in 2005–08 but the national saving rate rose over the same period, largely because of a sharp increase in household savings.

China's saving-investment imbalance and its undervalued currency, in turn, both distorted the allocation of domestic resources among the various economic activities and led to widespread international criticism of its exchange rate policy. Thus, continuing trade's outsized contribution to economic growth was not sustainable, either economically or politically.

Starting in mid-2005 the authorities allowed the exchange rate to slowly appreciate and after 2008 China's saving-investment imbalance and trade surplus both gradually fell, the latter reaching only 2.2 percent of GDP by 2016, in the process reducing economic growth by an average of 0.8 percentage point in 2009–16 (State Administration of Foreign Exchange International Balance of Payments Analysis Small Group 2017, 17; National Bureau of Statistics of China 2017e, 79). Thus, moving from a growing and unsustainably high trade surplus in 2005–08 to a surplus in 2009–16 that was falling to a more sustainable level reduced China's growth by 2.1 percentage points, accounting for about half of China's growth slowdown since the global financial crisis.<sup>5</sup>

### **Weak Recovery of Global Economic and Trade Growth after the Global Financial Crisis**

A second potential contributor to the slowdown in China's growth, at least through 2016, was the weak global recovery from the global financial crisis. The pace of global GDP growth, especially in developed countries, was slower than precrisis growth, and global trade recovered very slowly: Global mer-

5. GDP growth in 2009–16 averaged 8.2 percent, 3.8 percentage points less than the average 12 percent pace recorded in 2005–08.

chandise trade volume expanded at only 2.6 and 1.3 percent in 2015 and 2016, respectively, well below the average annual 4.7 percent rate since 1980. Part of the trade slowdown, of course, reflects the slower growth of the global economy. But the ratio of world merchandise trade growth to world GDP growth also declined sharply. In the five years through 2016 this ratio was slightly less than 1, a clear break from the 1990s when merchandise trade grew at twice the pace of global GDP growth (WTO 2017, 18).

China was not immune to the weakening global economic environment. Indeed, slowing global trade reinforced the decline in China's net exports caused by the strengthening of the renminbi and the moderation in the saving-investment imbalance. In value terms measured in domestic currency China's exports more than tripled between 2003 and 2008. The cumulative expansion in 2010 through 2015 was only 44 percent (National Bureau of Statistics of China 2016a, 99). Accordingly, China's share of global exports peaked in 2015 before falling in 2016–17 for the first time in decades.<sup>6</sup>

Moreover, the slow pace of global growth also contributed to declining total factor productivity after the global financial crisis. For both China and emerging markets more generally in the short run there is a strong correlation between export growth and the growth of total factor productivity. Normally exports are the most volatile component of aggregate demand in emerging economies. Strongly rising exports increase employment and income, as underutilized capital comes on stream. This combination increases total factor productivity. When exports are weak or falling, demand and employment weaken against a fixed capital stock and thus total factor productivity growth slows or even falls (Anderson 2016). According to Anderson, when global trade growth improves, both productivity growth and GDP growth strengthen in emerging markets, including China.

Thus, part of the decline in total factor productivity in China since the global financial crisis is due to the slowing of its export growth.

Note that the contribution of slowing global trade to China's economic slowdown and declining total factor productivity probably is also transitory, as the IMF (2017c, 14) forecasts that the ratio of global trade expansion to global growth in 2017 will rise to 1.4, reversing the 2011–16 pattern when the ratio was less than 1. China benefited from this trend in 2017 as its goods and services surplus contributed 9 percent of China's growth (i.e., 0.63 percentage points of 6.9 percent GDP growth), the largest contribution of trade to growth since 2007 (National Bureau of Statistics of China 2018b).

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6. "China's share of global and Asian exports is falling," *Economist*, March 8, 2018, [www.economist.com](http://www.economist.com) (accessed on May 3, 2018).



## Rising Infrastructure and Housing Investment

The rapid growth of investment in real estate and infrastructure undoubtedly contributed to China's growth in the early stages of the global financial crisis but probably also contributed to the decline in both total factor productivity and some financial metrics. The contribution of housing, which accounts for the largest share of real estate investment, to the growth of GDP is understated in China's national accounts (Lardy 2012, 157–61). This understatement of growth underestimates total factor productivity, i.e., output per combined inputs of capital and labor. Similarly, the financial payoff from infrastructure investment, which creates very long-lived assets, typically occurs with a lag. The increase in infrastructure investment in China was large during the global financial crisis, but because of the lag official data on return on assets may overstate the decline in the efficiency of investment compared with precrisis years.

High-speed passenger rail is a good example of long-lived infrastructure investment that will generate returns for generations. High-speed rail also has important network effects, i.e., the gains are not entirely captured until the network is more fully developed, allowing increasing amounts of freight to move onto the preexisting rail system and move continuously over longer distances as a larger share of passenger traffic is carried on the dedicated high-speed rail network. The World Bank anticipated that additional freight revenues would largely cover the capital costs of the high-speed rail network (Lardy 2012, 28–31). In the early years of the development of China's high-speed rail network, revenues were modest and returns on large initial capital outlays inevitably were very low. But as the network was built out, reaching 23,000 kilometers by 2016, annual passenger traffic exploded to well over 1 billion, accounting for more than 40 percent of all railway passenger traffic (National Bureau of Statistics of China 2017e, 540). On the heavily traveled Beijing-Shanghai route, average daily passenger traffic on high-speed trains jumped from 132,000 to 505,000 between 2011 and mid-2017. Most of the increase in passenger traffic on this route has been accommodated by reducing the intervals between trains to three minutes during peak periods, making more efficient use of the high-speed rail network.<sup>7</sup> Operating profits as a result

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7. Zhao Lei, "New trains ease pressure off busy Beijing-Shanghai high-speed rail," *China Daily*, June 25, 2017, [www.chinadaily.com](http://www.chinadaily.com) (accessed on November 13, 2017); "The Beijing-Shanghai high-speed rail has overcome obstacles, operating for five years and conveying more than 450 million passengers," National Rail Administration, July 1, 2016, [www.nra.gov.cn](http://www.nra.gov.cn) (accessed on November 13, 2017); "The Beijing-Shanghai high-speed rail has operated safely for six years; carrying more than 630 million passengers," July 1, 2017, <http://travel.news.cn> (accessed on November 13, 2017).

have improved. The Beijing-Shanghai line lost RMB3.7 billion in 2012, its first full year of operation; it turned profitable in 2014 and earned profits of RMB6.66 billion in 2015.<sup>8</sup> A similar pattern may emerge on other high-speed rail routes, all of which were making losses through 2015. The leading candidate for an early turn to profitability is the heavily traveled Guangzhou-Wuhan line. Interest payments on the large debt of the China Railway Corporation have exceeded the company's operating profits since at least 2015. But the most recent World Bank analysis is that given the long life of the high-speed rail system, which distributes the fixed costs over a period of decades, the system should be able to cover its costs on a long-term basis.<sup>9</sup>

The contribution of this factor to China's declining factor productivity and weakening financial metrics should be largely transitory. The annual growth of real estate investment moderated from a peak of 31 percent in 2010 to a low of only 2 percent in 2015, before recovering slightly to a more sustainable level averaging 7 percent in 2016–17 (National Bureau of Statistics of China 2018b; 2017e, 309). Similarly, the growth of investment in infrastructure moderated after 2010.<sup>10</sup> As a result, the degree of understatement of GDP and the exaggerated weakness in some financial metrics should dissipate.

### **Slowing Pace of Economic Reform and Resurgence of the State**

A fourth factor contributing to China's slowdown, one emphasized in this book, is the slowing pace of economic reform, reflected in the growing role of the state in resource allocation and deteriorating financial performance of state companies. China's last big push on reform of state-owned enterprises came under the leadership of Premier Zhu Rongji, who led both a major downsizing and restructuring of state companies starting in 1997–98 and a significant opening of the economy to external competition, paying the way for

8. "The Beijing-Shanghai high-speed rail earned RMB6.5 billion last year, the only profitable high-speed rail line in China," *Xinhua News*, July 20, 2016, <http://news.xinhuanet.com/politics> (accessed on November 14, 2017).

9. Tom Mitchell and Xinning Liu, "China's high-speed rail network signals rapid expansion of debt," *Financial Times*, August 15, 2018, 3. This positive assessment is conditional on ticket prices of the high-speed rail system rising in line with inflation.

10. Official data on infrastructure investment are measured according to the concept of fixed asset investment, which, as explained in footnote 12 in this chapter, overstates capital investment in infrastructure. The analysis in the text is based on the assumption that annual infrastructure investment as a share of annual total fixed asset investment is a good proxy for the share of annual capital investment devoted to infrastructure. These annual shares are then multiplied by annual data on capital formation as a share of GDP to develop an annual series of estimated infrastructure investment as a share of GDP.

China's entry into the World Trade Organization (WTO) in 2001. As shown in chapter 2, this combination of reforms enhanced the role of the market, increasing competition and thus the return on assets of state firms, which boosted China's economic growth.

The subsequent decade-long administration of President Hu Jintao and Premier Wen Jiabao beginning in 2003 had much more modest economic reform ambitions, probably in part because China's economic performance during the first five years of their leadership was extremely strong, largely due to the market-oriented reforms of the Zhu Rongji era and the policies that led to an undervaluation of the renminbi, which pushed growth above its medium-term potential. Moreover, under President Hu China began turning away from the opening up policy of the Zhu era. In 2006 the government published the Medium-Term Plan for Science and Technology, which had a statist orientation; and in December 2007 the Ministry of Finance issued a policy on "indigenous innovation" restricting government purchase of certain products to those developed by domestic enterprises. Several circulars were later issued by government agencies spelling out in detail the new "buy China" policy (USTR 2011, 87–88). This explicit import substitution initiative was a marked departure from previous policy.

Moreover, the response of the Hu-Wen leadership to the global financial crisis was not a renewed effort at economic reform but rather a massive credit-financed stimulus program, which maintained growth at close to double digits in 2008–11. But subsequently, even though the ratio of credit outstanding to GDP continued to rise, growth slowed persistently through 2016. As argued in chapter 2, weakening economic performance of state companies was a major contributor to this slowdown. The Hu-Wen leadership did not respond with more reforms, choosing instead to run out the clock, probably on the calculation that the reforms necessary to boost growth would be disruptive in the short run and probably not improve economic performance in their remaining time in office.

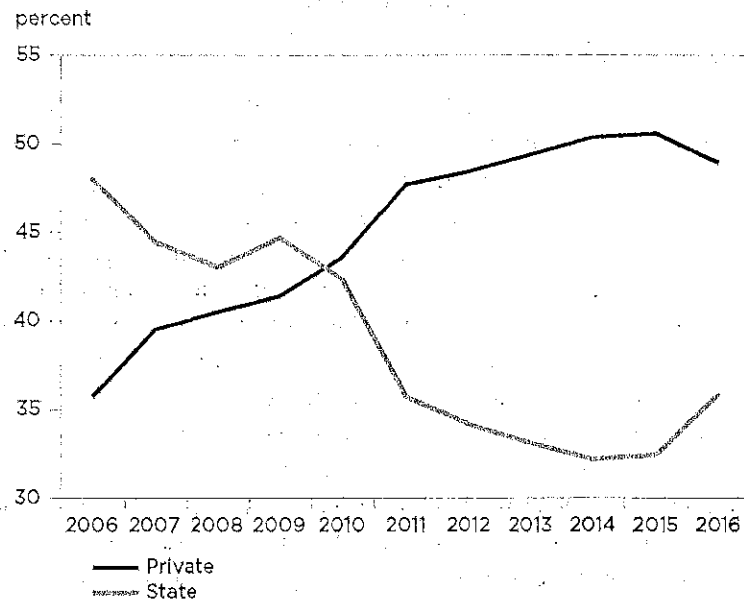
But slowing growth in the face of rapidly expanding credit seemed to be a wake-up call for China's next leadership. In the fall of 2013, about a year after Xi Jinping became the general secretary of the Chinese Communist Party and a little more than six months after he assumed the office of president, the Third Plenum of the 18th Chinese Communist Party Congress endorsed a far-reaching blueprint for economic reform. It is easy to get lost in the details, but the signal phrase it contained, "We must ensure that the market has a decisive role in the allocation of resources," had never appeared in an official document of the Chinese Communist Party (Chinese Communist Party Central Committee 2013). Less noticed at the time, perhaps because similar

language had appeared in many earlier party and government documents, was the call for “unswervingly consolidating and developing the public economy, persisting in the dominant position of public ownership, giving full play to the leading role of the state sector, continuously increasing its vitality, controlling force and influence.”

Indeed, under the leadership of President Xi, state industrial policy increasingly displaced the market-oriented economic reform program advanced in the Third Plenum document. China in effect doubled down on the indigenous innovation initiative launched under President Hu. In May 2015 China’s State Council launched the Made in China 2025 program, which called for breakthroughs in ten priority industries, including advanced information technology, robotics, new energy vehicles, new materials, pharmaceuticals, and advanced medical devices (State Council 2015a). The 13th Five-Year Plan (2016–20), approved the next year by the National People’s Congress, advanced more detailed objectives for six industry subsectors, including many in high-tech manufacturing (National Development and Reform Commission 2016). While the plan encouraged further opening up of the economy to private firms, the tide was turning in favor of state firms. The following year the highest administrative level of the government called for consolidating and strengthening a group of central state-owned enterprises, meaning that the state should exercise sole or absolute (i.e., greater than 50 percent) control of firms in many industries and sectors (State Council 2016a). Chairman Xi authoritatively reiterated this theme in his lengthy speech to the 19th Party Congress in October 2017, when he stated, “We will support state capital in becoming stronger, doing better, and growing bigger” (Xi 2017).

Rather than pushing the Third Plenum reforms, President Xi in his first five-year term focused on his signature anticorruption campaign; consolidated his own personal political power in the run-up to the 19th Party Congress in the fall of 2017; amended the constitution to eliminate the two-term limit on the offices of president and vice president at the 13th National People’s Congress in the spring of 2018; enhanced the role of the Chinese Communist Party; exerted tighter control over the internet; and emphasized state-owned enterprises as a major source of economic growth. These policies were pursued despite accumulating evidence showing a systematic decline in the economic performance of state-owned firms and slowing investment by more productive private firms. (Chapter 2 analyzes the declining performance of state firms in detail.) Thus, early optimism that the party’s Third Plenum document signaled a renewed commitment to further market-oriented reform ultimately gave way to the assessment that President Xi had little interest in “pushing through a complex and broadly market-oriented economic reform program,”

**Figure 1.1 State and private investment, 2006–16**



Sources: National Bureau of Statistics of China (2017e, 310–11); National Bureau of Statistics of China, [data.stats.gov.cn](http://data.stats.gov.cn) (accessed on September 5, 2017).

preferring instead “to build a bigger and more powerful state sector” (Kroeber 2016).

One important indicator of the enhanced role of state firms and the state more generally after Xi assumed office is the deceleration of private investment relative to state investment starting in 2012 (figure 1.1). The share of private investment in total investment showed a clear and sustained rapid rise, from 36 percent in 2006 (when this time series begins) to 48 percent in 2011. In this interval, private investment expanded at a pace equal to 2.6 times that of state investment.<sup>11</sup> As a result, the share of state investment fell from 48 to

11. Throughout this study data on state investment include investment by traditional state-owned enterprises and by state enterprises that have been corporatized (becoming limited liability companies or shareholding limited companies) in which the state is in control because it is the sole, majority, or dominant owner. In addition, all 50:50 joint ventures between state companies and foreign firms are considered to be state-controlled. The coverage of investment by private companies is similarly broad, including investment by registered private companies as well as investment by shareholding companies in which the sole, majority, or dominant owner is private. For details, see Lardy (2016, 38).

36 percent—the mirror image of the changed share of private investment.<sup>12</sup> Economic liberalization had opened more sectors to private investment and increased private firms' access to both bank loans and the domestic equity market (Lardy 2014).

But starting in 2012 through 2015 the pace of private investment slowed markedly, to only 1.3 times that of state investment, and in 2016 fell well below that of state investment. Several factors appear to underlie this change. First, by 2014 private firms already accounted for over three-quarters of investment in manufacturing. But, as outlined later in this chapter, when the service sector began to displace industry as the major source of growth starting in 2013, the growth of both manufacturing output and investment in manufacturing moderated, inevitably slowing the pace of private investment, which was concentrated in manufacturing. Second, the pace of opening the service sector to private investment slowed, reducing the potential growth of private investment. Third, in a stark reversal of the earlier trend, beginning in 2012 banks directed a larger share of credit to state firms, essentially crowding out private investment. Finally, starting in 2015, the increased role of both the state and the party in the economy and the illegal seizure of private enterprises by the state chilled the investment enthusiasm of private entrepreneurs. In speeches at the 19th Party Congress in the fall of 2017 and at the National People's Congress in the spring of 2018 President Xi called for an expanded role of the party, including enhancing the role of party committees, even in private enterprises. At the Third Plenum of the 19th Party Congress in March 2018, the central committee adopted a plan calling on "the party to exercise leadership over all areas of endeavor in every part of the country" (Chinese

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12. This analysis relies on data on fixed asset investment, the only Chinese published data on investment that are disaggregated by ownership. However, fixed asset investment data are flawed for at least two reasons. First, they include the value of purchases of land, existing buildings, and second-hand equipment, transactions that only change ownership of assets and do not add to productive capacity. Second, local officials tend to exaggerate the data. Moreover, the degree of overstatement has increased substantially over time; by 2016 the value of fixed asset investment was 90 percent larger than gross fixed capital formation, which is based on the national income accounts and is considered the best measure of investment (National Bureau of Statistics of China 2017e, 74, 294). Thus, the validity of the analysis in the text depends on the implicit assumption that the degree of exaggeration is similar across ownership categories. In 2018 the statistical authorities began to revise the compilation of fixed asset investment data to reduce the degree of overstatement of capital formation. They began this process focusing on larger investment projects, typically undertaken by state companies. This revision predictably led to a substantial decline in the reported pace of investment by state companies relative to private companies. Thus, the assumption that the degree of exaggeration of the data is similar across ownership categories appears to be no longer valid.

Communist Party Central Committee 2018). This plan too is likely to further erode the confidence of private businesses.

The resumption of state-led growth, in which a growing share of resources is flowing into investment by relatively low productivity state firms, and an increasingly omnipresent party are contributing to China's growth slowdown. The fast growth of investment by more productive private firms before, which was boosting China's growth, has now moderated due to a combination of political factors and "crowding out," inevitably slowing China's growth.

Whether this change is transitory or persistent will depend on policy. If President Xi embraces economic reform in his second five-year term (2018–23), along the lines endorsed by the Chinese Communist Party in the fall of 2013, it will be transitory. If the role of the market expands, particularly if the allocation of capital becomes more responsive to rates of return, and the property rights of private businesses are assured, the private sector likely will resume making an outsized contribution to economic growth. The difficulty the regime faces in guaranteeing property rights was reflected in the response of Premier Li Keqiang to a query on the slowing pace of private investment at his press conference marking the closing of the National People's Congress in March 2018. He acknowledged that private investment was weak and explained that it was due to "weak protection of property rights and some other factors."<sup>13</sup> This response suggests that a previous joint call of the Chinese Communist Party Central Committee and State Council (2016) to improve the protection of property rights had fallen short. That document candidly acknowledged that the state had illegally seized and frozen the property of private entrepreneurs. On the other hand, if President Xi continues to emphasize that the Chinese Communist Party must control all aspects of China and pursue policies that favor state firms and hinder the more productive private sector, private investment will remain weak, leading one to expect a further deterioration in the pace of growth over the medium term.

### **Rising Burden of China's Debt**

A fifth contributor to slowing growth, which is clearly persistent and thus may have important implications for China's potential growth, is a blend of the rising burden of domestic debt and the difficulty of rebalancing the sources of growth, views most closely associated with Michael Pettis. He has long argued that China's expansion had become structurally dependent on an unsustainable increase in debt and that its growth would soon slow by 1 to 1.5 percent-

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13. "Premier Li Keqiang meets the media after the NPC's annual session closes," *China Daily*, March 21, 2018, 6.

age points annually and as a result growth in 2012–22 “will average 3–4% at best” (Pettis 2016b). He correctly notes that credit has been growing more rapidly than GDP since the global financial crisis and believes that the resulting rise in the ratio of domestic debt to GDP increasingly constrains economic growth. He argues quite sensibly that in the long run China must reach the point where its debt servicing costs rise in line with debt servicing capacity. The latter, he believes, is no more than, and likely somewhat less than, the growth of GDP.

If debt is not paid down, Pettis anticipates that the debt constraint will reduce growth to less than half current levels. Given state ownership of most of the assets in the banking system, he does not anticipate a financial crisis. But he believes that China would be able to grow its way out of the debt burden only through either a massive increase in total factor productivity or a rapid transition to a growth model that relies primarily on private consumption expenditure, rather than exports and investment, as the primary source of demand. He argues that the former is unattainable and the latter would be possible only if the government transfers income equivalent to 1 to 4 percentage points of GDP to households annually to accelerate the growth of private consumption expenditure. Such transfers would decrease the share of output devoted to investment, thereby avoiding an unsustainable further increase in domestic debt but necessarily reducing China’s growth to between 3 and 4 percent annually (Pettis 2016a).

Pettis doubts the government will make the transfers necessary to boost consumption, so he anticipates that the rising burden of debt will lead to “a long, drawn-out grinding away of debt, with growth slowly dropping to very low levels” (Pettis 2017). The mechanism Pettis has in mind is that with debt servicing capacity growing more slowly than debt servicing costs, the debt burden “can rise until credit growth can no longer be forced up to the point where it can be used to roll over existing debt with enough margin fully to fund as much new economic activity that Beijing targets” (Pettis 2016c). The Pettis thesis is evaluated later in this chapter. To preview, he underestimates the progress China has made so far in rebalancing the sources of growth. Household income is already growing annually by close to 1 percentage point of GDP, without the direct government transfers that Pettis judges essential for rebalancing progress. And, as shown in chapter 2, China’s problem is not so much a high aggregate level of domestic debt but the misallocation of credit to a subset of least efficient, loss-making state firms.



### Demography as Destiny

A sixth potential contributor to China's slowing growth, clearly persistent, argues that the changing sectoral composition of the workforce and demographic factors already have begun to slow China's growth and will become more of a drag in coming years. The movement of workers from agriculture, where output per worker was very low, to urban jobs, where output per worker was much higher, was a major contributor to China's economic growth after economic reform began in the late 1970s, when the state, at least at the margin, started easing onerous restrictions on rural-urban migration. Output per worker in agriculture in 1978 was only about one-sixth that in nonagriculture. Given the huge gap in output per worker between the two sectors, the reallocation of labor out of agriculture accounted for about half of all growth in the first decade of reform (Brandt, Hsieh, and Zhu 2008, 690, 696–97). But once the surplus labor in agriculture has been absorbed, frequently called the Lewis turning point, this major source of growth disappears. Couldn't this factor have contributed to the slowdown in China's growth over the past decade?

Moreover, a more purely demographic factor may impede China's growth going forward. Fertility in China began to decline in the mid-1960s. The formal introduction of the one-child policy in 1980 reinforced the decline, creating a demographic dividend in the form of "rapid drops in youth dependency, and a corresponding increase in the growth of the labour force relative to that of the total population, and hence in the working-age to non-working age population ratio." This demographic dividend accounted for between one-sixth and one-quarter of per capita GDP growth between 1980 and 2010 (Golley, Tyers, and Zhou 2016, 243).

However, the ratio of the working age to non-working age population peaked in 2010 and is now declining and China's population is beginning to age. Moreover, since China's labor force participation rate is already relatively high, exceeding that of the United States, there is not much leeway to offset this demographic drag by raising the labor force participation rate.

It is not clear that changes in the sectoral composition of the workforce or demographic factors explain China's slowdown since the global financial crisis or will have a decisive effect on China's potential growth. First, the contribution of labor reallocation from agriculture to nonagriculture to GDP growth "occurred mainly near the start of China's reform process" (Brandt, Hsieh, and Zhu 2008, 696). In the next 16 years of reform, from 1988 through 2004, this reallocation accounted for only about a tenth of all growth.

Second, wage data also support the view that the Lewis turning point, when the surplus labor in agriculture has been largely absorbed and urban

wages are no longer held down by the so-called unlimited supply of rural labor, occurred two decades ago, not since the global financial crisis. Garnaut and Huang (2006) observed that real wages started rising in the late 1990s and remained high through the middle of the next decade, suggesting that the Lewis turning point had already passed and that the stimulus to growth from low-cost labor was waning. In short, neither the productivity analysis nor the trends in wages support the hypothesis that the exhaustion of surplus labor contributed to the slowdown in China's growth since the global financial crisis. This factor began weighing on China's growth starting in the late 1990s.

Looking ahead, what is the potential drag on growth from the shrinking working age population, a factor that has come into play since the global financial crisis? Perhaps much less than is sometimes assumed. Throughout the reform period the growth of labor productivity, i.e., output per worker, has been a far more important contributor to China's growth than the expanding size of the labor force. In 1978–2005, China's raw labor force expansion accounted for less than 10 percent of China's growth. Indeed, improvements in the quality of labor, as measured by increased educational attainment, were a more important contributor to growth than the simple expansion of the size of the workforce (Perkins and Rawski 2008, 839).

Moreover, in the coming two or more decades, two factors could potentially offset the shrinking size of China's working age population. The first, already suggested, is greater investment in human capital, which raises worker productivity. In 2005 the average worker in China had only a junior high school education (Perkins and Rawski 2008, 838). While educational attainment improved over the next decade, by 2015 less than 30 percent of the Chinese workforce had a high school education (Li et al. 2017, 27). This is well below the level of educational attainment in some other upper-middle-income countries—for example, Mexico (46 percent), South Africa (42 percent), and Malaysia (51 percent)—and far below the level in a few lower-middle-income countries, such as the Philippines (58 percent). China predictably lags the OECD average of 80 percent by an even larger margin (Li et al. 2017, 35–36). Thus, China has considerable potential to enhance productivity by improving the quality of labor.

A second potential offset is later retirement. When the Chinese Communist Party came to power in 1949 life expectancy in China was only 35 years, and in the early 1950s the government set the statutory retirement ages at 60 for men and 55 for women (State Council Information Office 2017). Although average life expectancy in China more than doubled to 76 years by

2014, these retirement ages remain unchanged.<sup>14</sup> Moreover, a 2006 survey of almost 20 million retirees by China's Ministry of Human Resources and Social Security found that over half of all workers had retired early, before reaching the statutory minimum retirement age. That study placed the average retirement age at just 54. In short, "China's retirement pattern looks like that of a wealthy European welfare state" (Cui 2016, 45).

In 2016 the minister of human resources and social security revealed that his department was drafting a plan to gradually raise the official retirement ages for men and women to partially counter the drag on economic growth from the shrinking working age cohort of the population.<sup>15</sup> Whether politics will allow raising retirement ages, of course, remains to be seen.

The shrinkage in the working age population over the coming two decades is certain, but its adverse effect on growth can be partially offset through further investment in human capital and a higher retirement age. Thus, this factor is likely to have only a slightly negative effect on growth going forward.

### Reversion to the Mean

A final and perhaps the most powerful and pessimistic explanation of China's slowdown is the "reversion to the mean" view articulated by Pritchett and Summers (2014). Their approach is based on mining data on the growth experiences of more than 100 countries for which there are at least 25 years of data. It does not consider specific factors that many economists have used to try to explain cross-country variation in growth rates. Indeed, they argue that both relatively constant features of countries—such as climate, culture, geography, quality of institutions, and openness to the world—and short-term variables—like the outcome of policy reform—are irrelevant in explaining long-term growth. According Pritchett and Summers, any country's current growth has very little power to predict its future growth. In their view "regression to the mean is perhaps the single most robust and empirical relevant fact about cross-national growth rates" and "in developing countries the growth process is marked by sharp discontinuities, with very large accelerations or decelerations of growth being quite common."

14. World Bank, Life Expectancy at Birth, Total (Years), <https://data.worldbank.org> (accessed on August 3, 2016).

15. "Three Issues in Postponing Retirement," *Guangmingribao*, July 26, 2016, [www.mohrss.gov.cn/SYrlzyhshbzb/dongtaixinwen/buneyaowen/201607/t20160726\\_244221.html](http://www.mohrss.gov.cn/SYrlzyhshbzb/dongtaixinwen/buneyaowen/201607/t20160726_244221.html) (accessed on August 3, 2016).

They identify 28 countries that have experienced episodes of "super rapid" economic growth, defined as a period of eight or more years with per capita growth averaging above 6 percent. The median episode of super rapid economic growth is only nine years. "China's experience from 1977 to 2010 already holds the distinction of being the only instance, quite possibly in the history of mankind, but certainly in the data, with a sustained episode of super rapid ( $> 6$  ppa) growth for more than 32 years" (Pritchett and Summers 2014). By now China's super rapid growth extends 40 years. On their calculation, the two next longest periods of super rapid growth were Taiwan at 6.8 percent for 32 years from 1962 to 1994 and Korea at 7.0 percent for 29 years from 1962 until 1991.

Pritchett and Summers don't explain why China is a substantial outlier in terms of the duration of its super rapid growth. Why will China's growth slow, they ask? Their answer: "Mainly because that is what rapid growth does. Our confidence in the prediction that growth will slow is much larger than our confidence in being able to specify why or how or when exactly it will slow" (Pritchett and Summers 2014).

While Pritchett and Summers do not comment on China's growth slowdown, which was already evident at the time they wrote their paper, their analysis is consistent with the view that the current deceleration in China's growth is long overdue and likely to persist and deepen. They present three main estimates of China's likely per capita growth during the two-decade period 2013–33. For the first estimate they use regression analysis of the data for countries with super rapid growth, considering both their past decades' growth and their initial levels of income in purchasing power parity terms (to allow for convergence) to estimate coefficients that are then used to estimate China's future growth. This methodology, the so-called conditional approach, predicts that China's growth from 2013 through 2033 will be 3.9 percent. The second estimate is based on the observation that the median pace of expansion in countries after an episode of super rapid growth is 2 percent. So the second estimate, which Pritchett and Summers refer to as full convergence, is that China's average growth between 2013 and 2033 will be 2 percent. The third estimate is based on the observation that the average growth deceleration after a period of super rapid growth in other countries was 4.65 percentage points. Applying this deceleration metric to the Chinese case, where the pace of super rapid growth has been about 2 percentage points above the median of other countries that have experienced super rapid growth episodes, Pritchett and Summers opine that China's growth might average 4 percent per capita between 2013 and 2033. They do not offer any judgment as to which of these three estimates is most likely.

Evaluating the reversion to the mean forecast of China's future economic growth is more difficult since this hypothesis is based on a careful analysis of a huge dataset rather than an examination of specific factors that may apply in the Chinese case. Its greatest weakness, in my opinion, is that it does not appear to adequately recognize the extraordinarily low level of per capita economic development in China in 1978, on the eve of its extended period of super rapid economic growth—about 5 percent of the US level measured in terms of purchasing power parity.<sup>16</sup> From this initial low level, 35 years of growth averaging almost 9 percent per capita brought China's level of per capita income measured in purchasing power parity terms to only 25 percent of the US level. After Japan, Taiwan, Korea, and Singapore reached this level of development they continued to grow at rates between 7.7 and 9.3 percent annually over the next 20 years. If China replicates the experience of these countries it still will have another two decades of super rapid growth.

Table 1.1 summarizes the possible contribution of each of the seven factors to China's slowdown since the global financial crisis and, for the four factors that are judged to be persistent, assesses their contribution to China's potential growth. The first three explanations are transitory and thus not likely to weigh negatively on China's potential growth.

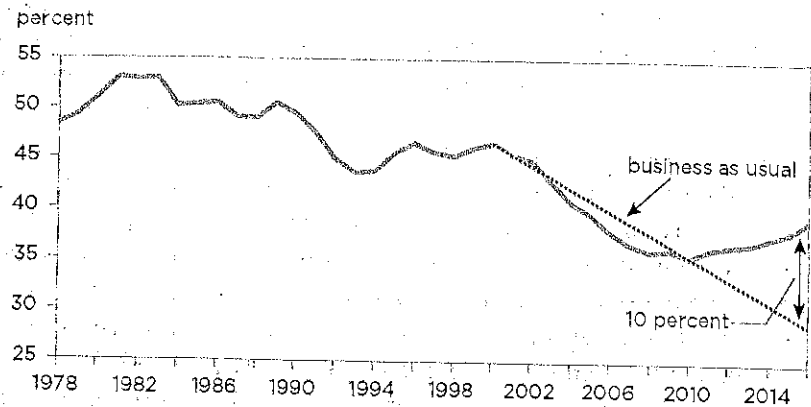
The fourth and fifth explanations of China's slowing growth—the slowing pace of economic reform and the rising burden of China's debt—are closely tied to domestic economic policy. If current policy emphasizing the role of the state and state-owned companies and diminishing the role of the market continues and no reforms improve productivity among state firms, growth is likely to slow further. Because state firms claim a disproportionately large share of bank credit and use the resources very inefficiently, these explanations are closely tied to the Michael Pettis argument that the rising burden of debt will further slow China's growth.

As already argued, it is easy to overstate the influence of demographic factors, but the shrinking labor force certainly is a slightly negative factor weighing on China's potential growth. Reversion to the mean, the seventh factor, is clearly a large negative in assessing China's potential growth.

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16. Given China's very low initial level of development, one would expect the conditional estimate of China's future growth, based on regression analysis that includes the initial level of development and thus allows for the effect of convergence, to be higher than the unconditional estimate. Instead the two estimates are quite close, indeed the conditional estimate, 3.9 percent, is slightly below the unconditional estimate of 4.0 percent.

**Figure 1.2 Private consumption as a share of GDP, 1978-2016**



Sources: National Bureau of Statistics of China (2017e, 73-74); National Bureau of Statistics of China, data.stats.gov.cn (accessed on September 5, 2017); National Bureau of Statistics of China via Wind Financial Information (accessed on August 1, 2018).

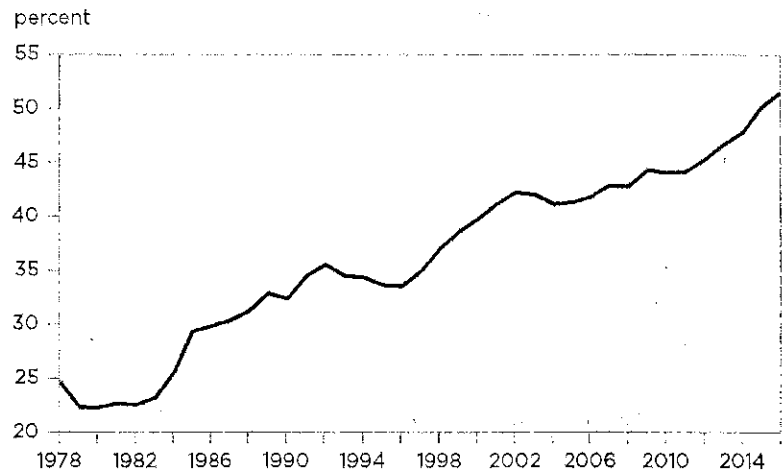
### **The Rebalancing Strategy**

The Pettis view that China is unlikely to rebalance its sources of growth and that continued reliance on debt-fueled expansion will soon drag down the pace of expansion to the low single digits requires a more extensive evaluation. The pessimists notwithstanding, the evidence shows that economic rebalancing has been under way since around 2010, and without this progress on rebalancing, growth would have slowed even more.

The progress can be judged from three perspectives. The first is the expenditure perspective, i.e., the relative importance of private consumption expenditure, government consumption expenditure, investment expenditure, and net exports in driving economic growth. The second is the production perspective, i.e., the relative contributions of the primary sector (agriculture, forestry, animal husbandry, and fisheries), secondary sector (mining, manufacturing, utilities, and construction), and tertiary sector (services) to GDP. The third perspective looks at the relative shares of national income accruing to labor and capital. As outlined below, on each of these perspectives rebalancing has made measurable, sustained progress starting in about 2010.

As shown in figure 1.2, the share of private consumption expenditure in China's GDP in 2000 was only 2 percentage points lower than at the beginning of the reform era in 1978. After 2000 the share steadily declined for 10 years. By 2010 the share had fallen to an all-time low of only 36 percent, 11 percentage points lower than in 2000. But since 2010 growth of private consumption has consistently outpaced growth of GDP, so its share had risen

**Figure 1.3 Services share of GDP, 1978-2016**



Sources: National Bureau of Statistics of China (2017e, 58); National Bureau of Statistics of China, [data.stats.gov.cn](http://data.stats.gov.cn) (accessed on September 5, 2017); National Bureau of Statistics of China Via Wind Financial Information (accessed on August 1, 2018).

to 39 percent by 2016. While in absolute terms this is only a small increase, compared with the trend of the previous decade, labeled “business as usual” in the figure, private consumption expenditure has strengthened substantially.

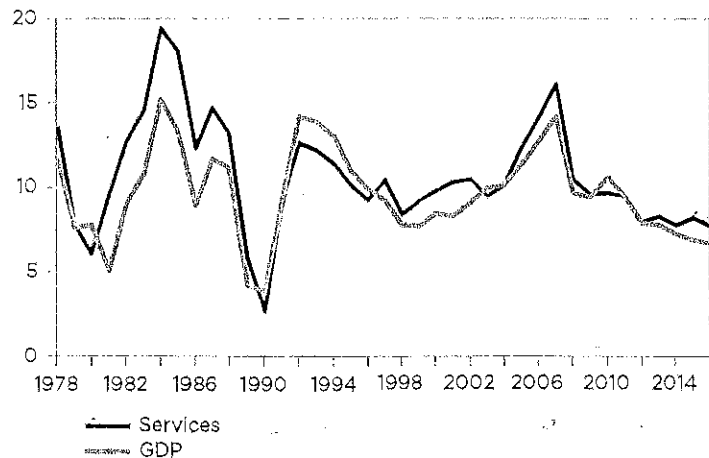
Government consumption also reached a peak in 2000 and then, like private consumption, weakened for the next decade. It too has strengthened since 2010, albeit by a smaller amount. On the other hand, the share of investment expenditure, which peaked in 2010 at 48 percent of GDP, had fallen to 44 percent by 2016 (National Bureau of Statistics of China 2017e, 73).<sup>17</sup> Net exports peaked at 8.7 percent of GDP in 2007 but since have fallen steadily, reaching a low of 2.2 percent in 2016. In short, all four components of expenditure have been moving in the right direction since 2010.

The production perspective also shows evidence that rebalancing is proceeding apace. One piece of evidence is in the recently expanding role of the service sector. As shown in figure 1.3, the share of services in China’s GDP almost doubled in the first two decades or so of reform, reaching a peak of 42 percent in 2002. This period of rapid services growth reflected recovery from the era of economic planning prior to 1978, which assigned a low priority to services. But after 2002, government policies hindered the growth of services so that its share of GDP rose only 2 percentage points between 2002 and

17. Investment here is measured by gross domestic capital formation, not fixed asset investment.

**Figure 1.4 GDP growth and services growth, 1978–2016**

percent (measured in constant prices)



Source: National Bureau of Statistics of China via Wind Financial Information (accessed on August 1, 2018).

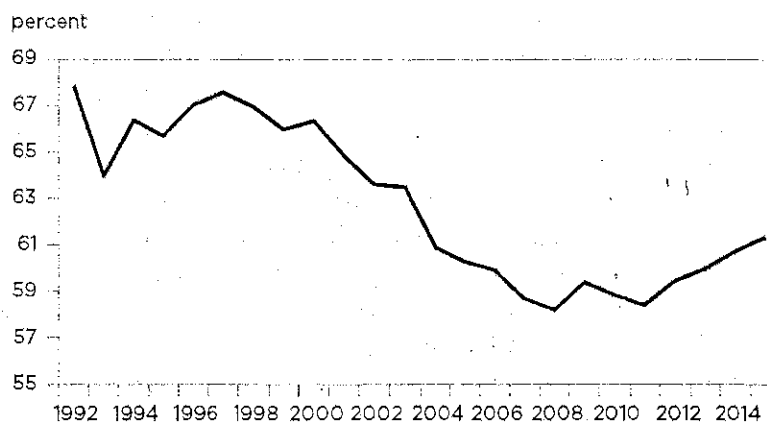
2010 (Lardy 2012, 54). Since then, services growth has revived and by 2016 its share had increased to 52 percent of GDP (National Bureau of Statistics of China 2017b). Part of this more robust recent performance is due to relative price trends; services inflation ran ahead of other indicators of inflation after 2010. But measured in real terms (i.e., constant prices), as shown in figure 1.4, on an annual basis, services growth has slightly but persistently outpaced the growth of GDP beginning in 2013.<sup>18</sup> Concomitantly, the share of industry in GDP has fallen since its peak of 42 percent in 2006, though some of this decline reflects deflation of industrial prices in 2012–16. Measuring both in real terms, the growth of industry began to persistently lag the growth of services starting in 2013 (National Bureau of Statistics of China 2017e, 62).

Data from the income perspective support the same conclusion—rebalancing has been underway for some time. During the decade of imbalanced growth labor compensation as a share of GDP fell from 54 percent in 2002 to 47 percent in 2011, when it bottomed out (National Bureau of Statistics of China 2012, 82–83; 2013, 80–81). By 2015 the share had recovered to 52 percent of GDP (National Bureau of Statistics of China 2017e, 81–82). This trend is quite unusual when compared with trends in industrialized econo-

18. This assessment is disputed by Naughton (2016b, 59–60), who believes that the National Bureau of Statistics of China uses flawed price indices that result in an overstatement of the growth of services in real terms.



**Figure 1.5 Household disposable income as a share of GDP, 1992-2015**



Sources: National Bureau of Statistics of China (2017e, 82); National Bureau of Statistics of China, [data.stats.gov.cn](http://data.stats.gov.cn) (accessed on September 5, 2017); National Bureau of Statistics of China via Wind Financial Information (accessed on August 1, 2018).

mies, where labor compensation as a share of GDP has been flat in recent years.<sup>19</sup>

As shown in figure 1.5, household disposable income as a share of GDP also has risen from a low of 58 percent in 2008 to 61 percent in 2015 (National Bureau of Statistics of China 2012, 88–89; 2017e, 81–82).<sup>20</sup>

Thus, all three approaches—expenditure, production, and income—show that rebalancing has been underway since 2010 or 2011 for all the metrics examined.

### **Explaining the Rebalancing Progress**

Several factors have contributed to the rebalancing process summarized above. They can be divided into those driving the transition from the demand side and those from the supply side.

19. The weighted average labor compensation as a share of GDP in OECD countries was unchanged between 2011 and 2015. OECD data are available at [www.oecd.org](http://www.oecd.org) (accessed on December 14, 2017).

20. Disposable income has risen less than wage income because the growth of income of household businesses has lagged the growth of wage income.

## Demand Side Factors

These factors include demographics, rapid economic growth that has propelled China into the ranks of upper-middle-income countries as defined by the World Bank, strengthening of the social safety net, reduced financial repression, and the relatively labor-intensive nature of services production. Each of these factors, which contribute to increased consumption demand, stronger service sector growth, and rising labor compensation as a share of GDP, is either structural, and thus will endure, or the result of government policy that is likely to persist. Thus, the conclusion is that demand side factors will continue to work to reinforce the rebalancing that is already underway.

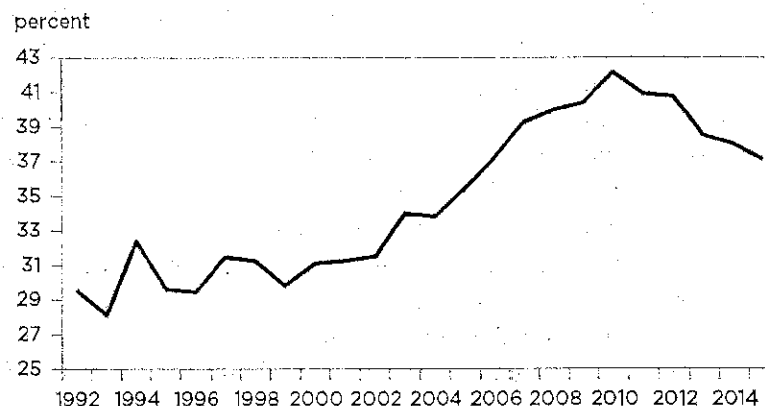
Demographics is almost certain to reinforce the trend of rising wages, which has been evident in China for many years, as well as to push down the household saving rate. China's working age population peaked in 2013, largely because of the one-child policy adopted in 1980. Although the government slightly adjusted this policy over the years and then eased it significantly in 2015, China's working age population will continue to decline for at least two decades and perhaps longer, depending on how much fertility responds to the 2015 policy change. Other things being equal, slower growth of the working age population will translate into a more rapid growth of real wages.

The World Bank reclassified China from the lower-middle-income to the upper-middle-income category in 2011. As countries approach this status and incomes continue to rise, households invariably begin to shift their consumption patterns in relative terms away from food, clothing, and many other goods and more toward services, a regularity first observed by statistician Charles Engel in the 19th century and thus known as Engel's law. This pattern is already evident in China, reflected in the relatively faster growth of household consumption expenditure on health care, education, entertainment, travel, and other services, while the share of expenditure on food, clothing, and most other goods is declining. The share of expenditure on services overall rose from 44 percent in 2002 to 49 percent by 2012 (National Bureau of Statistics of China 2006, 80; 2015, 88).<sup>21</sup> But this share is still far less than in high-income countries like the United States, where services account for two-thirds of household consumption expenditures.<sup>22</sup> As wages and incomes

21. The services share of household consumption is calculated using data from China's input-output table, which is updated every two or three years and then published with a lag of several additional years.

22. US Department of Commerce, Bureau of Economic Analysis, [www.bea.gov](http://www.bea.gov) (accessed on June 23, 2017).

**Figure 1.6 Household saving as a share of disposable income, 1992-2015**



Sources: National Bureau of Statistics of China (2017e, 82); National Bureau of Statistics of China, [data.stats.gov.cn](http://data.stats.gov.cn) (accessed on September 5, 2017); National Bureau of Statistics of China via Wind Financial Information (accessed on August 1, 2018).

in China continue to rise, the share of expenditure on services will gradually approach the level in high-income countries.

The strengthening of the social safety net will also increase household consumption because it will likely encourage the Chinese, who are prodigious savers, to save less. As shown in figure 1.6, household saving as a share of after-tax household income peaked at 42 percent in 2010 but since has gradually declined, reaching 37 percent by 2015.<sup>23</sup> Part of this decline is undoubtedly the result of a strengthened social safety net, which includes a rural cooperative medical insurance system, initiated on a trial basis in a few regions in 2003; an urban basic medical insurance scheme to cover urban residents without formal employment, launched in 2007;<sup>24</sup> a rural pension scheme, again initiated on a trial basis in a few locations starting in 2008; and a pension scheme for

23. Data on household saving come from the flow of funds, which is compiled by the National Bureau of Statistics of China but published with a considerable lag. The data for 2015 are in the *2017 Statistical Yearbook*, published in November 2017.

24. Medical insurance programs for employees of state enterprises and the government were established in the early 1950s. The scheme for enterprise employees was expanded to encompass firms other than state-owned. The two schemes were merged in the early 1990s to form the urban employee basic medical insurance scheme.

nonworking urban residents, launched a few years later.<sup>25</sup> The rural pension scheme was operating in one-fourth of all counties by 2010. The number of participants in the two pension schemes, which were merged in 2012, rose from about 100 million in 2010 to just over 500 million participants in 2015.

The longest-standing component of the strengthened social safety net, the rural cooperative medical insurance scheme, is worth examining in some detail. It began quite modestly, requiring individual contributions of only RMB10 annually, which the government matched with RMB40 per participant. These funds were pooled at the county level and used to partially reimburse rural residents for costs of significant medical expenses, typically associated with treatments requiring hospitalization. The program was voluntary for individuals but takeup was quite rapid as rural residents observed relatives and neighbors receiving significant reimbursement for hospital costs. Within five years the program had more than 800 million enrollees, more than 90 percent of the eligible population. By 2014 the enrollment rate reached 99 percent of the eligible population (National Bureau of Statistics of China 2015, 743).

Initially the program was able to reimburse only a modest share of hospital costs, an estimated 30 percent in 2007 (World Bank 2008, 89), which rose to 40 to 50 percent in most areas by around 2010 (World Bank 2012, 333). Higher reimbursement rates and, over time, increased coverage to include outpatient services were made possible by rising enrollment rates, increased individual premium payments, and much larger government financial contributions. By 2011 the government contributed RMB200 per participant, which rose further in annual increments to reach RMB450 per person in 2017 (Ministry of Finance 2011, State Council Information Office 2017). The government's white paper on public health anticipated the average inpatient and outpatient reimbursement rates to rise to 70 and 50 percent, respectively, in 2017 (State Council Information Office 2017).

As noted briefly above, demographics will also contribute to a declining household saving rate. A decline in fertility, starting in the 1960s and deepening after the one-child policy was adopted, led to an increase in the working age population relative to the total population. This trend is captured in the so-called dependency ratio, the ratio of the elderly and young population to the working age population, which fell from 0.8 as reform was getting underway in the early 1980s to a low of about 0.35 in 2010. This so-called demographic dividend is widely believed to have contributed to an increase

25. The latter scheme covered urban residents who were never employed in an urban work unit or were employed for such a short period that they were not eligible for the urban employee basic pension insurance program.

in the household saving rate.<sup>26</sup> The reason is simple: With fewer dependents a working age person typically saves a larger share of income. But as a population ages, a growing share starts drawing down their accumulated savings, thus reducing the household saving rate. China's dependency ratio has been rising since 2010 and, based on United Nations fertility projections, will continue to rise through at least 2050, further reducing the household saving rate (Golley, Tyers, and Zhou 2016). The International Monetary Fund (IMF 2017a, 14) estimates that the aging of the population will reduce the household saving rate by 6 percentage points between 2015 and 2030.

The medical and pension programs noted above have almost certainly contributed to the decline in the household saving rate observed since 2010. The government has been enhancing these programs for more than a decade and will continue to do so. Because of these programs, plus the aging of the population, the household saving rate will continue to decline for many years and the share of household income devoted to consumption will gradually rise further.

The fourth demand side factor that is favorable for the continued rebalancing of China's economic growth is an easing of financial repression. One important indicator of financial repression is low or negative real deposit rates paid on household savings. In China households faced substantial repression starting in 2004 as real bank deposit rates plunged. In 2004–13 the average real deposit rate was more than 300 basis points below the average deposit rate in 1997–2003 (Lardy 2014, 129–30). Financial repression reduced consumption through two channels. First, lower interest rates on deposits reduced household income below the levels it would have attained in a more liberal financial environment. For example, if real interest rates on household bank deposits in the first half of 2008 had been the same as in 2002, households would have earned RMB690 billion more in interest on their RMB18,680 billion in bank savings deposits. That was the equivalent of 5.3 percent of GDP in the first half of 2008 (Goldstein and Lardy 2009, 38).

In addition, evidence shows that the decline in the return to savings associated with financial repression in the second half of the 2000s led Chinese households to save more to have sufficient funds for retirement, to finance a child's education, or for medical emergencies (Chamon and Prasad 2008, 19; IMF 2011, 34; Nabar 2011). In China, the primary form of household savings

26. A contrary view is expressed in Chamon and Prasad (2008), who argue that demographic factors played only a limited role in the sharp rise in the household saving rate between 1990 and 2005. They point to sharply increased housing-related savings and increased precautionary savings because of uncertainty associated with the restructuring of state-owned enterprises.

is bank deposits. Households offset a decline in the return on these savings by saving more in order to reach their cumulative saving target as close as possible to the initially planned date. In short, financial repression both reduced household income and increased household savings from that lower income, creating a double-barreled negative effect on household consumption.

But in the last few years, financial repression from the perspective of households has moderated. Real bank deposit rates have consistently been positive since the first quarter of 2012.<sup>27</sup> Yu'eobao, a money market fund launched by Alibaba in mid-2013 and now the world's largest such fund, offers households higher interest rates than banks; banks, trust companies, and other nonbank financial institutions offer so-called wealth management products not subject to interest rate limitations; and in October 2015 the central bank eliminated the cap on bank deposit rates that had been in place for decades.

Banks also faced financial repression in the 2000s, as reflected in the sharp rise in the share of their deposits that they were required to hold at the central bank at a very low interest rate. This was a function of China's exchange rate policy at the time. As noted earlier in this chapter, the central bank was charged with intervening in the foreign exchange market, buying up huge quantities of foreign exchange to prevent the renminbi from appreciating. As a result of this intervention China's foreign exchange reserves, which were a modest US\$400 billion at the end of 2003, reached an annual year-end peak of \$3,843 billion in 2014 (China Banking Society 2013, 352; 2016, 399). The purchases of foreign exchange considerably increased the domestic money supply. To avoid inflation, the central bank largely offset this increase in money supply by requiring the banks to hand over a growing and ultimately unusually large share of the deposits that they took in. The central bank repeatedly raised the required reserve ratio that it imposes on commercial banks, from 7 percent in late 2003 to a peak of 21.5 percent starting in June 2011.<sup>28</sup> Starting in 2003 the central bank also sold its own renminbi-denominated central bank bills into the domestic money market as part of its sterilization

27. The average real deposit rate from the beginning of 2012, when real rates went above zero, to October 2015, when the cap on deposit rates was lifted by the central bank, was 1.1 percent, compared with -0.5 percent from 2004 through 2011. As previously noted, this assessment is based on the one-year benchmark bank deposit rate, with allowance when relevant for the flexibility banks had to pay a premium over the benchmark rate.

28. Wind Financial Information. The required reserve ratio was uniform across all financial institutions until September 2008, when the central bank instituted a lower rate for small and medium depository institutions. Initially the preferential rate was 1 percentage point less, but since December 2008 the preferential rate has been 2 percentage points less. The rates given in the text are for large depository institutions.

campaign. The stock of these outstanding bonds, which were allocated on a quota system to individual Chinese banks, reached a peak of RMB4.6 trillion at the end of 2008 (National Bureau of Statistics of China 2010a, 738).

Again, the current state of all these indicators suggests that financial repression has eased. The central bank is no longer buying up foreign exchange; indeed in 2015 it began to sell foreign exchange, leading to a drop in foreign exchange reserves to US\$3,011 billion by the end of 2016 (National Bureau of Statistics of China 2017e, 595). Selling foreign exchange reduces the domestic money supply, which the central bank has offset through two mechanisms. First, by the first quarter of 2016 it had lowered the required reserve ratio eight times, bringing the rate for major banks to 17 percent.<sup>29</sup> Second, after 2008 the magnitude of new central bank bill issuance was less than the magnitude of maturing bonds, allowing the stock outstanding to run off to only RMB776 billion by the end of 2013 (National Bureau of Statistics of China 2015, 638). This process accelerated after 2013 when the central bank stopped issuing new bonds, extinguishing the entire stock of these bonds in June 2017 (People's Bank of China 2017).

The last of the demand side factors that have contributed to economic rebalancing is the relative labor intensity of services production. China's National Bureau of Statistics calculates that an RMB1 million increase in real value added in services creates 9.1 new jobs, while the same increase in value added in industry and construction creates only 7.5 new jobs (Guo 2017a). Thus, as the service sector expands faster than industry and construction, more jobs are created, further increasing household income and expenditure on services, which generates more jobs in services, and the cycle continues.

Three of the five demand side factors just analyzed—demographics, increasing share of services in household consumption expenditure, and labor intensity of services—are structural, meaning they are not subject to policy reversal and thus will persist. The two other demand side factors—expansion of the social safety net and reduced financial repression—reflect changes in Chinese government policy. The buildout of the social safety net started more than a decade ago and has progressed steadily since. Given the high level of voluntary participation in the various insurance and pension programs, the government will likely continue strengthening the social safety net. Even though China's leaders do not stand in popular elections, they are likely to continue policies that generate goodwill and popular support.

The easing of financial repression ultimately reflects China's abandonment of a mercantilist trade policy pursued via an undervalued currency. In 2015

29. Data are from Wind Financial Information.

the IMF came to the judgment that “substantial real effective appreciation has brought the renminbi to a level that is no longer undervalued” (IMF 2015, 1). The following year the Fund opined that “the renminbi remains broadly in line with fundamentals” (IMF 2016a). William Cline reached a similar conclusion somewhat earlier. His earliest estimate was that in mid-2008 the renminbi was undervalued in real effective terms by almost 20 percent (Cline and Williamson 2008). By April 2014 he estimated that the degree of undervaluation had fallen to only 1 percent (Cline 2014). China may return to a policy of significant undervaluation of the renminbi but it seems unlikely now that Chinese households are benefiting from higher real interest rates on bank deposits and have access to a range of new financial assets that generate even higher real returns.

### **Supply Side Factors**

In addition to the five demand side factors analyzed above, trends on the supply side are driving more balanced economic growth. These include an exchange rate that is no longer undervalued, tax reforms that are reducing long-standing discrimination against the tertiary sector, and the gradual opening of parts of the tertiary sector that had long been closed to private investment.

One aspect of the exchange rate factor has already been discussed above. Financial repression associated with an undervalued currency had a double-barreled negative effect on consumption—lower total household income and a higher saving rate from this reduced income. Supply-side effects of currency undervaluation are also important. An undervalued currency for most of the 2000s made exports more profitable than domestic sales—foreign currencies earned by selling goods abroad could be converted into renminbi at a more favorable rate. And since undervaluation made imports more expensive in domestic currency, domestic producers of goods competing with these imports were able to charge higher prices on their domestic sales. As a result, domestic goods that competed with imports were also more profitable. Because almost all of China’s exports and most of its imports are manufactured goods, an undervalued renminbi boosted the profitability of manufactures at the expense of services. An undervalued currency, in effect, was an implicit tax on the production of services. This was an important reason why industry growth was so high and service sector production was stagnating in the early 2000s, when the renminbi first became undervalued.

The appreciation of the renminbi, starting slowly in July 2005 and more rapidly beginning in 2010, has largely eliminated the implicit tax on services.



By October 2017 the currency had appreciated 45 percent on a real, trade-weighted basis.<sup>30</sup>

The tax piece of the story is very straightforward. In the 1980s China gradually replaced its product tax with a value-added tax (VAT) on manufactured goods and imports and introduced a business tax on services. China's business tax is levied on top-line income, whereas a VAT is levied only on the difference between a firm's sales and its cost of nonfactor inputs. For firms with a narrow profit margin, the effective burden of a 5 or 6 percent business tax can be huge. Even loss-making firms were required to pay the business tax on their sales revenue, increasing their pre-income tax losses.

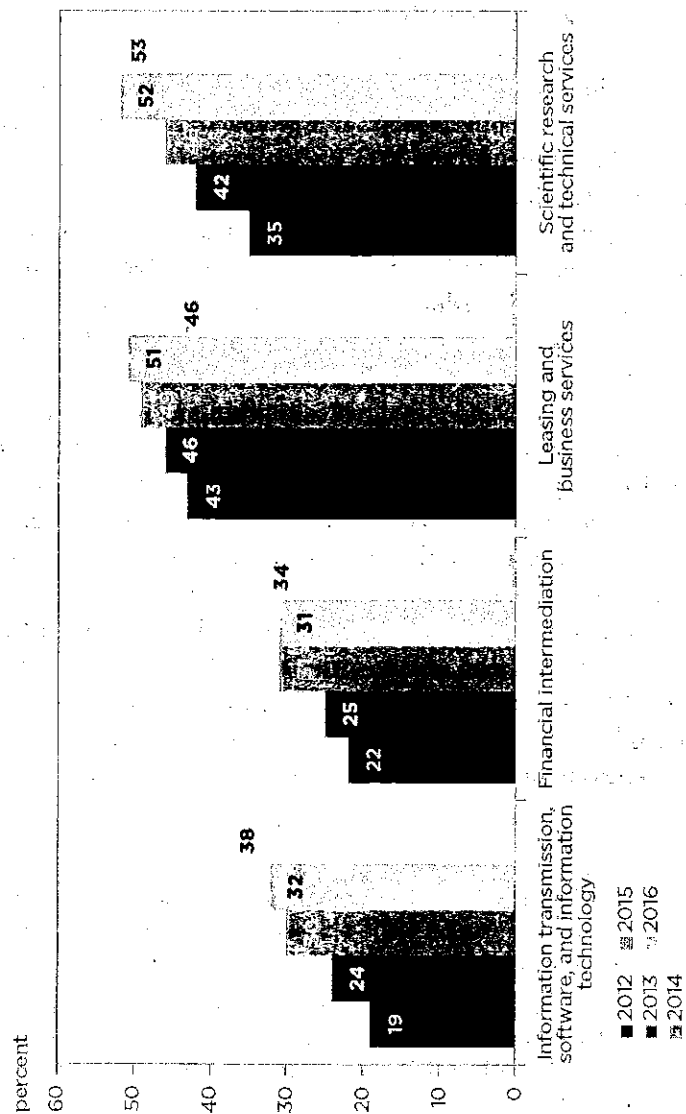
The government rolled out the VAT for services in January 2012. The pilot, which was initially limited to Shanghai and covered only a few services, was gradually expanded both in scope and geography. By August 2013 the government had implemented the VAT on some services nationwide and by May 2016 expanded the sectoral coverage to encompass all services. At the same time the government abolished the business tax on services throughout China, finally putting services production on a more equal footing with manufacturing. This reform reduced the tax burden on services firms by about RMB500 billion, an amount equal to 1.5 percent of value added in services in 2015 (State Administration of Taxation 2016).<sup>31</sup>

Finally, on the supply side, the gradual opening of parts of the service sector to private firms is contributing to the sector's expansion. As shown in the next chapter, private service firms in general are far more efficient, as measured by return on assets, than state firms. Thus, as the share of private investment in services rises, growth of the sector accelerates. Private firms were able to move into services such as retail and restaurants relatively early in the reform process. But the share of private investment in modern business services, long relatively closed to private firms, expanded significantly between 2012 and 2015 (figure 1.7). Nonetheless, the opening of the service sector to private firms is limited—investment in modern business services accounts for well under 10 percent of total investment in services.

30. The Bank for International Settlements (BIS) real effective exchange rate index rose from 83.5 in June 2007 to 121.4 in October 2017, a cumulative appreciation of 45 percent. See [www.bis.org/statistics/eer.htm](http://www.bis.org/statistics/eer.htm) (accessed on March 23, 2018).

31. The reported savings accumulated during the eight months from May, when the business tax on services was eliminated. If we assume that the value added in services was the same in every month of the year, the RMB500 billion in savings would represent 2.6 percent of value added during the eight-month period.

Figure 1.7 Share of private investment in modern business services, 2012-16



Sources: National Bureau of Statistics of China (2017a, 313); National Bureau of Statistics of China, data.stats.gov.cn (accessed on September 5, 2017); National Bureau of Statistics of China via Wind Financial Information (accessed on August 1, 2018).

China's slowing output growth and declining total factor productivity since the global financial crisis are not the inevitable slowing of a more mature, upper-middle-income country. As measured by exchange rates, in 2017 China ranked only 76th globally in terms of per capita income and, as measured by purchasing power parity, China's per capita income is only about a quarter of the level of the United States.<sup>32</sup> "There remains considerable room for China to continue catching up" (IMF 2018, 4). Rather, the single largest explanation of China's slowing growth is that before the global financial crisis growth was above potential because of an unprecedented surge in its trade surplus. The decline in that surplus to a much smaller, more sustainable level slowed China's growth, but this drag on growth has now waned.

The other most important factor, detailed in the next chapter, is the slowing pace of economic reform and the steadily deteriorating performance of state-owned enterprises since the global financial crisis. The resurgence of the role of the state in resource allocation, reflected in the creation of the State-Owned Assets Supervision and Administration Commission of the State Council (SASAC); the proliferation of industrial policies favoring state over private and foreign firms; and the increasing access of state firms to bank loans ironically have coincided with a marked weakening in the performance of state companies. The return on assets of state firms in industry and services fell by two-thirds and two-fifths, respectively, between 2007 and 2016. In addition, the combination of weak private property rights and the increasing propensity of banks to lend to state companies has discouraged entrepreneurs from investing, which reduced the pace of private relative to state investment after 2011 and led to the first ever decline in the share of private investment beginning in 2016. Progress in rebalancing the sources of China's growth, with services and private consumption assuming increasing roles as the growth of investment and exports moderates, has partially offset the drag on growth from the negative factors just summarized.

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32. As measured by purchasing power parity, China ranked 82nd (World GDP Per Capita Ranking 2017, <https://knoema.com/si/weyg/world-gdp-per-capita-ranking-2017-data-and-charts-forecast> [accessed on March 15, 2018]).