

Rebalancing the Chinese Economy [†]

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Abstract: The Chinese economy experienced imbalances before the global financial crisis mainly because of its extraordinary export-led growth. It has been moving onto the path of rebalancing since 2010. The national saving rate is declining, current account surplus as a share of GDP has become small, and services are taking a larger share in the economy. Together with those changes, income distribution is improving. China's change is a good news for the world economy.

Keywords: Chinese Economy, global imbalances, rebalancing

JEL Classification Numbers: E21, F32, O53

1. Introduction

In the ten years before the global financial crisis (GFC), the world economy was characterized by so-called “global imbalances”, in which trade imbalances between China and the United States (US) were the most significant component. The two economies were mirror images of each other: China was experiencing increasing trade surplus and was exporting more capital to the US, whereas the US was faced with increasing trade deficit and was borrowing more from China. The most triggering assessment at the time, initially offered by Ben Bernanke in 2005 (Bernanke, 2005), who was then the US Federal Reserve's chairman, was that China's excessive savings were responsible for these imbalances. By definition, a country's trade surplus—the largest part of its current account—equals its domestic net savings, that is, the difference between its national savings and domestic investment. Therefore, a country has a large trade surplus if it accumulates excessive domestic savings. At its peak, more than 500% of China's trade surplus came from its exports to the US. Therefore, it was natural for people in the US to complain about excessive savings in China. Imbalances between the two countries not only became a contentious issue in the Sino-US bilateral relationship, but also ignited much academic research for a more nuanced understanding of the factors driving global imbalances.

However, the GFC has not changed the US trade situation much, with the country's trade deficit continuing to remain high, which motivated President Trump to start a trade war with China, Japan, and the European Union. As approximately half of the US trade deficit comes from its trade with China, from the US perspective, China is still a major source of its problems. However, within China, rebalancing has already been underway since 2010, with the share of domestic consumption increasing substantially and the current account surplus declining to less than 2% of the national GDP. China still contributes to a large

share of the US trade deficit only because the Chinese economy has become much larger, as China's GDP, measured by the current US dollar, grew by 1.31 times between 2010 and 2018. Moreover, the GFC has led to significant structural changes in the Chinese economy. The country has abandoned its previous export-led growth model, with exports no longer a driver of domestic growth. Additionally, industrialization reached its peak and deindustrialization began in 2010, with the service sector becoming the largest sector in terms of both employment and value-added. Within the industrial sector, the share of heavy industry has declined and innovation has become a prominent driver of industrial growth. Income distribution has also improved. The share of labour income began to increase in 2010, and after 20 years of decline, inland provinces have been growing faster than coastal provinces. Therefore, the income Gini coefficient has declined in the last decade.

This study will therefore first review the causes of China's pre-GFC imbalances, and then present data regarding the recent rebalancing within the Chinese economy. Global imbalances were a result of differential growth rates and demographic structures between emerging and advanced economies, as well as the significance attached to the financial sector in some of the advanced economies, noticeably the US and the United Kingdom, versus the development of the manufacturing sector in some other countries, noticeably China, Japan, and Germany. China's so-called imbalance problems can be explained from these three perspectives. When global imbalances were at a peak, China grew much faster than the US did, had a favourable demographic structure, and achieved industrialization rapidly. After the GFC, China's rebalancing had to happen because of the adjustment of the world market and the law of economic development, which states that deindustrialization is a natural consequence of a maturing economy.

2. Causes of China's imbalance problems before the GFC

To explain global imbalances, it is not sufficient to identify causes on only one side of the imbalances, as explaining why one country has large savings does not explain why the other country borrows those savings. A proper explanation should clarify the perspectives of both sides within a unified framework. In this regard, three lines of explanations are worth considering based on differential rates of growth, different demographic structures, and the international division of finance and manufacturing development. In this section, we follow those three lines to explain why the Chinese economy experienced the so-called imbalance problems before the GFC.

2.1 Different rates of growth

The standard international finance theory predicts that a fast-growing country will borrow from slowly growing countries (Engel and Rogers, 2006). This rationale can be best illustrated using the "intertemporal trade" framework (Deardorff, 2010). Assuming that country A grows faster than country B, in the intertemporal trade framework, country A then has a comparative advantage in generating future income and country B has a comparative advantage in generating current income. In a closed economy, country

A will have a higher interest rate than country B because capital is more productive in the future in country A compared to in country B. Consequently, when engaging in international trade, country B will export capital to country A. According to the international balance of payment, country B will have a current account surplus and country A will have a current account deficit.

However, this explanation contradicts the observation that China, a fast-growing country, has current account surplus, and the US, a slowly growing country, has current account deficit. Evidently, it is found that fast-growing developing countries on average tend to export capital, with this phenomenon being dubbed as “the allocation puzzle” (Jeanne and Gourinchas, 2013). It is also worth noticing that major countries all tended to run current account surplus in their fast-growing periods such as The United Kingdom in the 19th century, the US in the 20th century before 1980, and West Germany and Japan in the decades after the Second World War.

The allocation puzzle qualifies as a puzzle only if the standard long-lived agent model is applied to the explanation. However, such a model probably inflicts too much rationality on the agents by requiring that they have perfect foresight about the future. It is a daily-life wisdom that people do not have good judgment about the future. One of the arguments for this assumption is that the market prices give insights into the future even if individuals do not have perfect foresight. However, this argument has already been proven wrong by the GFC, as the GFC happened because the market prices did not properly reflect the future risks.

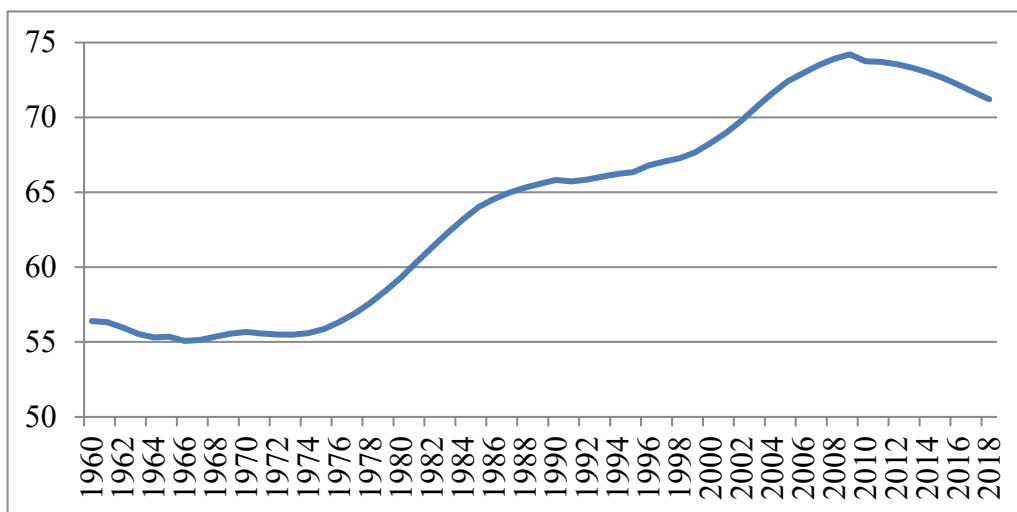
In a less perfect world, it is much easier to explain why a fast-growing country, such as China, runs surplus and a more slowly growing country, such as the US, runs deficit. In this case, Modigliani’s life-cycle hypothesis (LCH) can offer much help. According to the LCH, agents live for a finite number of periods, and in each period, agents at different life stages live together. The standard result of the LCH is that a country’s national saving rate is proportional to its GDP growth rate. That is, a fast-growing country tends to save more and its autarkic interest rate is lower than that of a more slowly growing country. Therefore, the former country tends to lend to the latter when engaging in bilateral trade. Yao and Zou (2016) show this in a three-period overlapping generation model and test the model’s implications using a panel dataset of developing and developed countries. Similar to Jeanne and Gourinchas (2013), they find that fast-growing developing countries tend to run current account surplus. For developed countries, they find that the types of trade partners and financial development are key factors. If a developed country trades more with fast-growing countries or has a more advanced financial market, the country tends to run deficit. After controlling for those two factors, the assessment still holds that a fast-growing country tends to run surplus.

2.2 Demographic structure

The LCH explanation can be enhanced if the demographic structure is incorporated into the analysis. It is usually the case that a country with a more favourable demographic structure—usually measured by the ratio of the working-age population (the ratio of people aged 15–64 years to the total population)—grows faster. According to the LCH, such a country also tends to save more because it has more people saving

and less people (i.e. children and the elderly) dissaving. This explanation fits well the case of China. Figure 1 shows the country's working-age ratios between 1960 and 2018. Between 1976 and 2010, which was also China's era of reform and opening-up, the ratio increased by about 20 percentage points, from 55% to almost 75%. In particular, China joined the World Trade Organization (WTO) in 2001 and then, in the next ten years, the country's working-age ratio experienced another significant increase after the first one in the 1980s. In the first decade of the 21st century, China's exports increased by a factor of 6.33 to reach 1.5 trillion dollars. It was also in this period that China registered large amounts of trade surplus. A favourable demographic structure definitely contributed to this phenomenon. Specifically, the contribution was made in two areas.

Figure 1. China's working-age ratio: 1960–2018 (%)



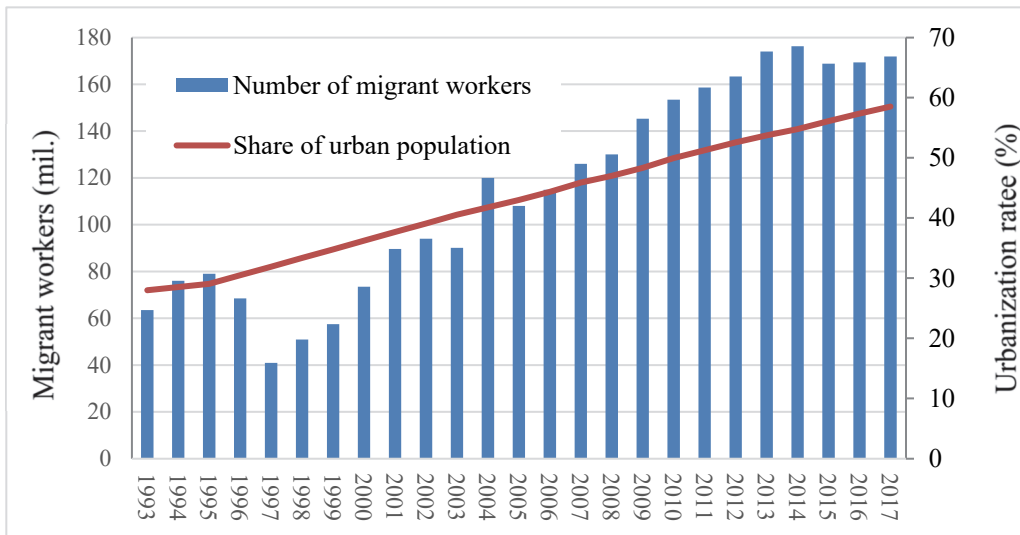
Source: Wind.

One was labour supply, as China's labour force was maintained at about 700 million for a long period. This number is larger than the sum of labour forces in all advanced economies. With such a large labour force serving an almost unlimited world market, China's economy grew at an accelerated rate during the 20 years before the GFC. In return, the world benefited from the cheap Chinese goods. The so-called Great Moderation in the US was not something managed by Alan Greenspan; rather, it was made possible by millions of workers in China, India, and other emerging economies who joined the international cycle of production.

The other was the suppressed wage rates. Labour was in surplus in China's countryside for a long time, and the export-led growth model drew many workers from the countryside, allowing China to enjoy

Lewisian development—a type of development in which wages do not increase rapidly, enabling industry to expand without much increase in its marginal cost. Notwithstanding the restrictions of the Hukou system (household registration system), the export-led growth model was robust enough to attract young migrants from the countryside. In addition, the effects of the Hukou system were eroded over time. Although it is still legally present today, the restrictions attached to it are minimal, with the remaining areas being in children’s education and home and car purchases in some mega cities. Figure 2 presents data regarding the growth in the number of migrant workers and the pace of urbanization in China. Except for the setback caused by the Asian Financial Crisis in 1997, the number of migrant workers increased steadily until 2014, by which time approximately 180 million rural residents were working outside their own counties (thus being called “migrant workers”). This large flow of workers had a decisive effect on the labour market, suppressing the real wage rate for a long time and allowing industry to accumulate large savings. Most of these savings were reinvested, but some of them became China’s net savings that were lent to other countries.

Figure 2. Migrant workers and the share of urban population



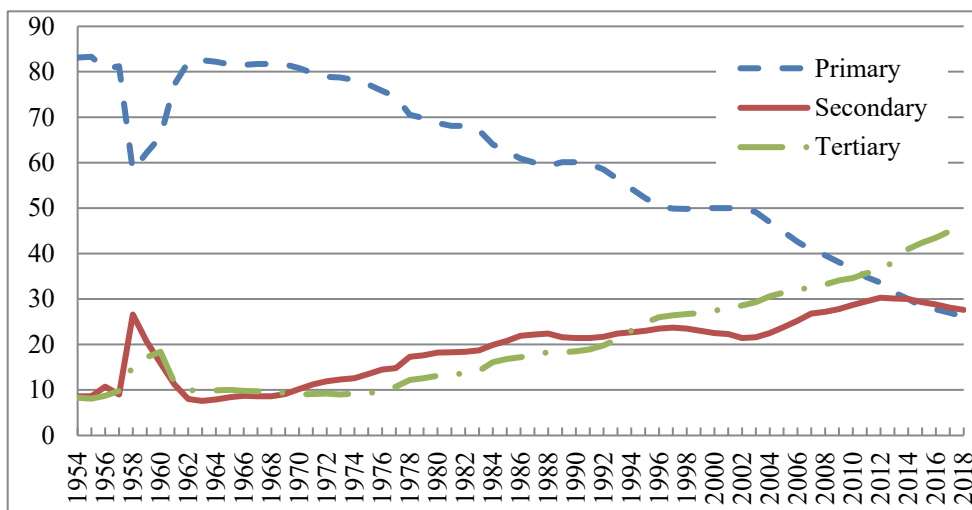
Source: Ministry of Labour and Social Security.

2.3 Industrialization

In advanced economies, finance has become a tradable good; for example, a fund manager in Wall Street can sell his/her financial service to clients worldwide. However, to obtain his service, his/her clients have to wire their funds to the US. Regarding the management of funds, lending funds is local because it requires local knowledge. Therefore, foreign funds are mostly lent to the US producers and consumers, with the

US ending with a net inflow of capital and a current account deficit. To sustain this imbalance, counterpart countries of the US have to be willing to export capital, with these countries having most likely a comparative advantage in producing tradable industrial goods. To maintain its overseas market, it is rational for a country specialized in producing industrial goods to save and lend to countries that do not specialize in producing these goods. Therefore, for a country that is specialized in finance and a country that is specialized in industry, the country providing the finance will run current account deficit whereas the industrial country will run surplus. The US and China represent a perfect example of such countries.

Figure 3. Sectoral shares of employment: 1953–2018 (%)



Source: NBS at www.stats.gov.cn.

Figure 3 presents China’s employment shares by sector. As observed in all the successful economies, with each passing year, the proportion of the labour force employed in the agricultural (primary) sector is decreasing, that in the service (tertiary) sector has been increasing, while the share of the industrial (secondary) sector first increased and then began to decline after reaching a peak of 30–35%.¹ Industrial expansion was particularly rapid between 2003 and 2012. In this period, industrial employment increased by 10 percentage points, matching the total achievement over the previous 40 years. It was also in this period that China’s exports grew by exponential rates, of which a large proportion consisted of exports to the US. It is not surprising to find that China’s official foreign reserves (OFRs) grew fast in this period. A significant portion of China’s stock of OFRs was recycled back to the US, fuelling speculation in Wall Street and the US housing market. However, Bernanke’s “global saving glut” theory only tells one side of the story. The other side of the story is that high growth in the 1990s induced false exuberance in the US,

making people as well as the market believe that the benefits from globalization would never stop flowing to the country.

3. Rebalancing since the GFC

3.1 The GFC and farewell to export-led growth

The 2000s were an extraordinary decade for the Chinese economy. A major reform was undertaken to transform the state-owned enterprises (SOEs) into private firms or joint ventures; thus, the efficiency of the Chinese economy was greatly improved. Another reform streamlined government administration of the market and drastically cut the cost of business operations. Additionally, the whole financial sector was reengineered after a thorough structural readjustment. Moreover, accession to the WTO helped China tap into a wider and deeper world market and benefit from the rise of globalization after the fall of the Berlin Wall. Finally, all these factors were aided by a quantum leap in demographic dividends that enabled China to mass produce cheap consumer goods for the whole world. China's success in the 2000s was made by a combination of deliberate reform, luck, and an amiable international environment.

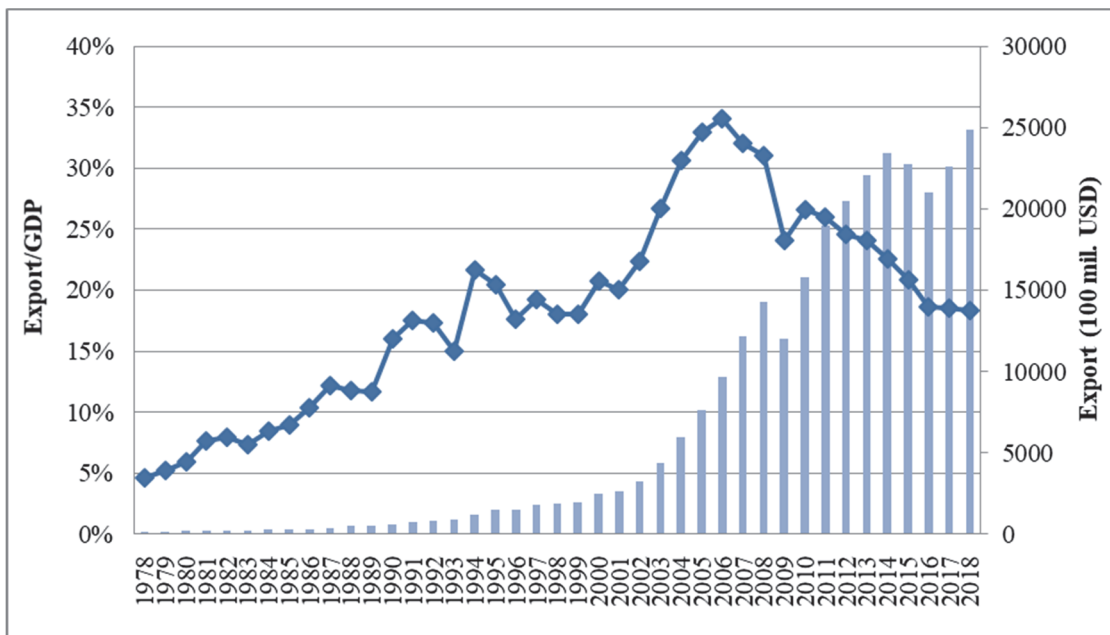
However, the GFC of 2008 forced a sudden turn onto the Chinese economy. It started with a setback to its export-led growth model, as the crisis forced major countries to undergo deep adjustments with international demand for Chinese exports substantially slowing down. For example, China's exports dropped by 16% in 2009. Despite the significant recovery in the following two years, the momentum did not last for long, as China's exports began to decline again since 2014 (Figure 4). Similar to Japan in the early 1970s, China was forced by a global crisis to give up its export-led growth model. However, in fact, this transition had already begun before the GFC. Using the export/GDP ratio as an indicator for a country's reliance on exports, Figure 4 shows that China's export-led growth reached its peak of 34% in 2006. In 2018, the ratio already declined to 18%, barely above the level of Japan (17%), but still much higher than that of the US (10%). It will continue to decrease in the future. One of the reasons is that China's demographic structure now works against its export model. As Figure 1 shows, the share of working-age population has begun to drop since 2010, eliminating the strongest driver of the country's export growth.

Nevertheless, China is a large country with tremendous regional disparities. Historically, there were two major waves of export-led growth. The first wave started from the Guangdong province in the early 1980s, and the second wave started from the Jiangsu province, particularly Suzhou Industrial Park, in the mid-1990s. By the early 2000s, coastal provinces still accounted for 90% of China's total export volume, while inland provinces shored up their contribution in the 2000s. After the GFC, they began to grow faster compared to their coastal counterparts. Therefore, the whole country has become more balanced. Overall, China's export-led growth lasted for about three decades, longer than that of Japan.

China's economy has undergone significant transformation since 2010: deindustrialization has begun, the economy has substantially slowed down, the share of domestic consumption has increased drastically, the national saving rate has declined accordingly, investment growth has dropped to single digits, the

economy has been moving from an investment-driven economy to one that relies more on innovation, the share of labour income has increased, and income distribution has improved.

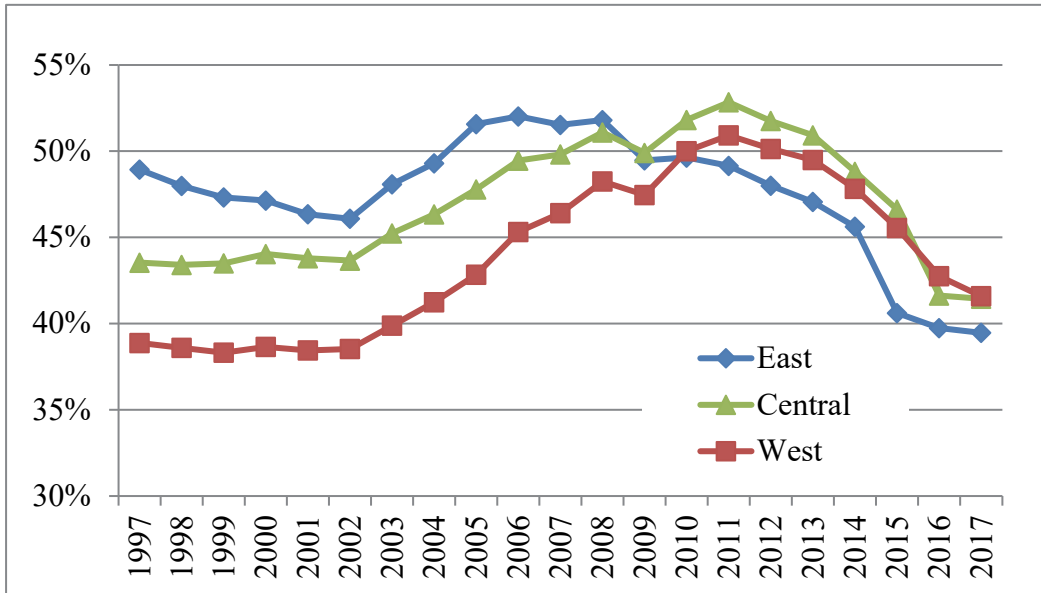
Figure 4. China's merchandise exports: 1978–2018



Source: National Bureau of Statistics and China Custom.

3.2 Structural changes

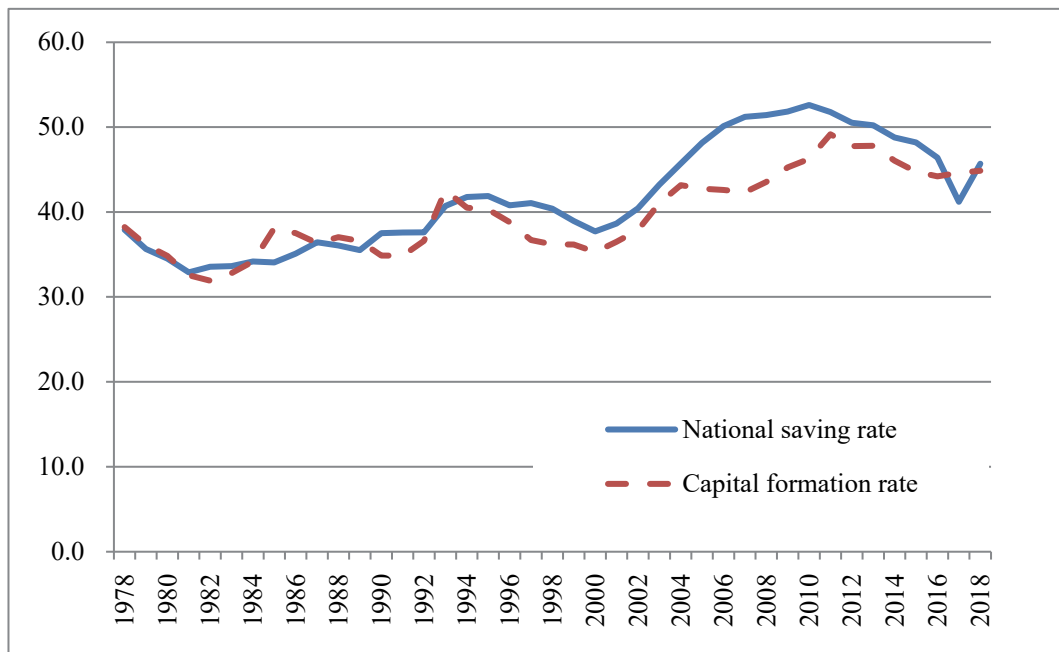
Deindustrialization is evidently shown by Figure 3. The share of industrial employment began to decline since 2010. Compared to its neighbours, China's deindustrialization happened slightly earlier in terms of per-capita income. For example, in the early 1970s when Japan's deindustrialization began, the average Japanese had already enjoyed a living standard that was more than 40% of his US counterpart. In contrast, the income of the average Chinese was barely 25% of his US counterpart in 2010. Although China's size has been a significant, deindustrialization has been universal across Chinese regions. Figure 5 presents the industrial share of value-added by region. Eastern provinces led the transformation, as their shares of industrial value-added peaked before the GFC and began to decline immediately after it. Meanwhile, Central and Western provinces lagged by five to six years, but by 2017, they almost converged with eastern provinces. In about ten years after the GFC, the share of industrial value-added in the national economy dropped by more than 10 percentage points. This drastic pace of deindustrialization probably is a correction to the country's extraordinary growth in the 2000s.

Figure 5. Industrial shares of value-added by region: 1997–2017

Source: NBS website at www.stats.gov.cn.

One of the significant consequences of deindustrialization and the abandonment of the export-led growth model is the decelerated growth. Japan maintained an average growth rate of 9.2% in the 20 years before 1973, but only 3.5% in the following 20 years.² China's drop has not been as dramatic as Japan's—mostly because China is a much larger country than Japan—but still substantial. In fact, the Chinese economy got into a recession between 2010 and 2016. Deceleration is natural following deindustrialization and a farewell to the export-led growth model. On the demand side, instead of almost unlimited expansion in the global market, now demand has to be generated from within the country. On the supply side, the service sector is now the largest sector and continues to draw labour, but its technical progress rate is much lower than that of the industrial sector, with both sides demonstrating slow growth rates.

Another consequence is the declining national saving rates. Figure 6 shows that China had two peaks of its national saving rate: one in the early 1990s, and the other around 2010. The growth in the 2000s was extraordinary, as in a matter of 10 years, China's national saving rate increased by 14 percentage points. However, its decline after 2010 has been equally remarkable with 12 percentage points lost by 2017 as compared to the level of 2010. While many theories are available for this decline, the one that can provide a consistent explanation for the periods before and after 2010 is probably still the LCH. The national saving rate increased in the 1980s and 2000s because China's GDP growth was accelerating in those two periods, and declined in the second half of the 1990s and 2010s because China's growth was decelerating in those two periods.

Figure 6. Shares of national savings and capital formation in GDP: 1978–2017 (%)

Source: NBS website at www.stats.gov.cn.

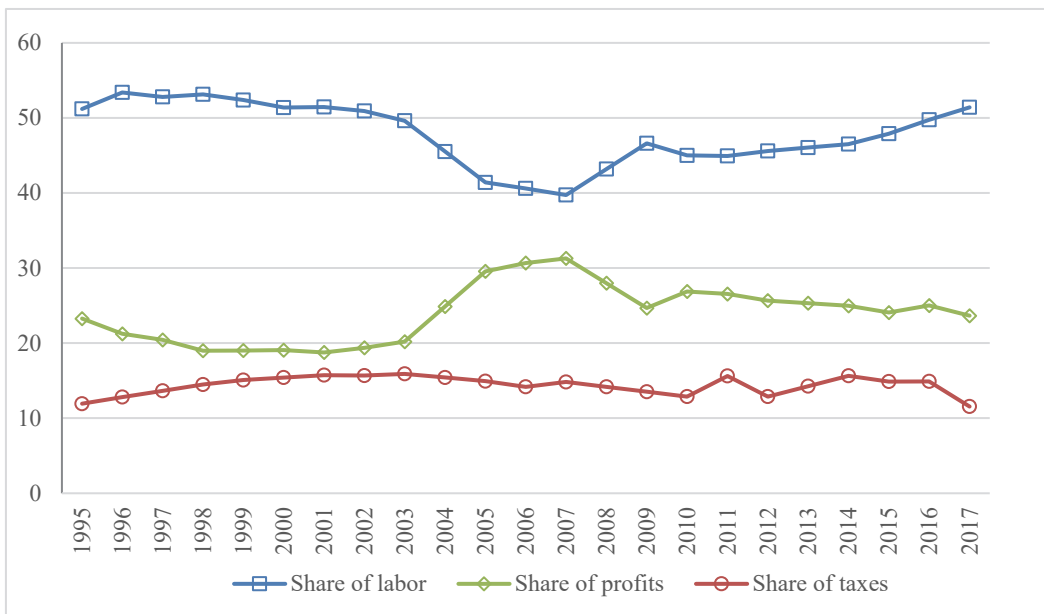
The declining national saving rate has led to declining investment rates. Figure 6 shows that the investment rate closely followed the saving rate, except for the period (2004–2010) when it was substantially smaller than the saving rate, resulting in large current account surpluses. By 2018, capital formation only accounted for 44.8% of GDP, 4.3 percentage points lower than its peak in 2011. China has embarked on a path to the abandonment of the investment-driven growth model. In the six years between 2012 and 2017, on average, consumption contributed to 72.4% of the GDP growth, a huge increase over the period (2001–2011) when the corresponding figure was only 42.4%.

Since 2012, the Chinese government has implemented a structural adjustment program, which later was named the “supply-side structural reform”. The premise of this program was the recognition that export- and investment-led expansion was no longer a viable path for the Chinese economy. Its purpose was to eliminate redundant production capacity, digest piled inventory in the housing market, and deleverage the financial sector. On the international front, China launched the Belt and Road Initiative (BRI) whose major aim is to connect countries along the Silk Road with better infrastructure. China’s exports to these countries have increased along with Chinese investments. However, exports overall are no longer a strong driver for China’s growth, as it barely contributes one percentage point to its annual growth rate.

3.3 Improving income distribution

The Chinese economy is undoubtedly moving toward being a consumption-driven economy. Accompanying this change, income distribution has improved. Figure 7 presents the composition of national income in the period (1995–2017). The share of labour income dropped substantially before 2007, but regained ground in the subsequent years. Conversely, the share of government income did not change much over the 20 years, with the mirror changes almost coming from the share of corporate income. Consequently, income was concentrated in the hands of capital owners before 2007, but has spread more evenly to ordinary people afterwards.

Figure 7. Composition of national income: 1995–2017 (%)



Source: *The Flow of Funds Table*. NBS.

Among the factors that have brought about this change, two factors are the most important. One is the increasing wages, as fast industrialization and the expansion of services depleted surplus labour, bidding up wage rates. Since 2015, China has led developing Asian countries in terms of wage rates. According to the Japan External Trade Organization (JETRO)'s 2018 Survey on Business Conditions of Japanese Companies in Asia and Oceania, the annual salary of a manufacturing worker in mainland China was 10,520 dollars, already 56.7% of that in Taiwan and 34.1% higher than that in Thailand, the second most expensive country in developing Asia (JETRO, 2018). The other factor is the composition effect brought

about by deindustrialization. Industry is more capital-intensive than other sectors. In the process of industrialization, when labour moves into this sector, the share of labour income declines, with the reverse process happening when deindustrialization occurs. In a multisectoral and dynamic general equilibrium model, Liu, Mao, and Yao (2018) calibrate the Chinese data and find that this composition effect can well explain the changes in the labour income share over the last 20 years.

4. Conclusions

China's industrialization started in 1953 when the People's Republic of China (PRC) launched its first five-year plan. In its first 25 years, PRC adopted an import substitution strategy to develop its heavy industrial sector first. Although there were many mistakes and failed investment projects, this strategy paid off in the reform era. By building a solid industrial base, this strategy laid the foundation for China's export-led growth model in the first 30 years of the reform era. Exports allowed China to adopt state-of-the-art technologies from the global market. Additionally, this learning-by-doing process allowed China to build the most comprehensive industrial network in the world. However, China's economy today is at a critical juncture of transformation. Unlike what many international observers have assumed, the country has already started to move toward a more balanced economic structure.

China's economic growth has slowed down, and its growth potential will gradually diminish as the country narrows its income gap with the US. However, as long as it maintains an average growth rate of 3.7%, by the year 2049, its per-capita income will reach at least 45% of that of the US, and its GDP will be twice that of the US and more than one third of the world economy, allowing China to match the achievement of Japan since the Meiji Restoration, that is, to become a high-income country in one hundred years.

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Notes

¹ In the figure, the peak of China's industrial share of employment was 30%. However, this was because the share of agriculture was over-reported. Since most farmers only work part time in farms, it is difficult to record their time allocation accurately.

² Data were obtained from the World Bank's World Development Index.

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