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**South-South Integration and the SDGs:
Enhancing Structural Transformation in Key Partner
Countries of the Belt and Road Initiative**

UNCTAD/BRI PROJECT/RP6

The Macroeconomic Policy Framework for Structural Transformation: Experiences and Implications from China

Abstract

Macroeconomic policy framework has played a crucial role in the process of the structural transformation of the Chinese economy over the past four decades. It has done so through what can be summarized as a mix of (1) proactive macroeconomic management to maintain economic stability; (2) financial reform to promote financial deepening, channelling savings into investment and ensuring financial stability; and (3) carefully managed capital account liberalization to promote investment, trade, and industrial structural upgrading. This paper analyses such macroeconomic policies and their role in the process of China's economic transformation, hoping that they can be used as a reference for other developing countries seeking to embark on a similar journey and sustain rapid catch-up growth.

Key words: macroeconomic management; financial reform; capital account liberalization; China; developing country; structural transformation



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1. Introduction

China's experiences over the past four decades serve as a model for the economic transformation of other developing countries. Since reform and opening-up in 1978, the Chinese economy has maintained fast and relatively stable economic growth, with relatively low inflation, and without a financial crisis. Per capita GDP at constant prices increased more than 24 times between 1978 and 2018¹. Meanwhile, China has been transformed from a closed economy to an open economy, becoming one of the world's largest exporting and importing countries of goods and services, as well as one of the largest direct investment destination countries and countries of origin. The Chinese economy has become deeply embedded in the global value chain.

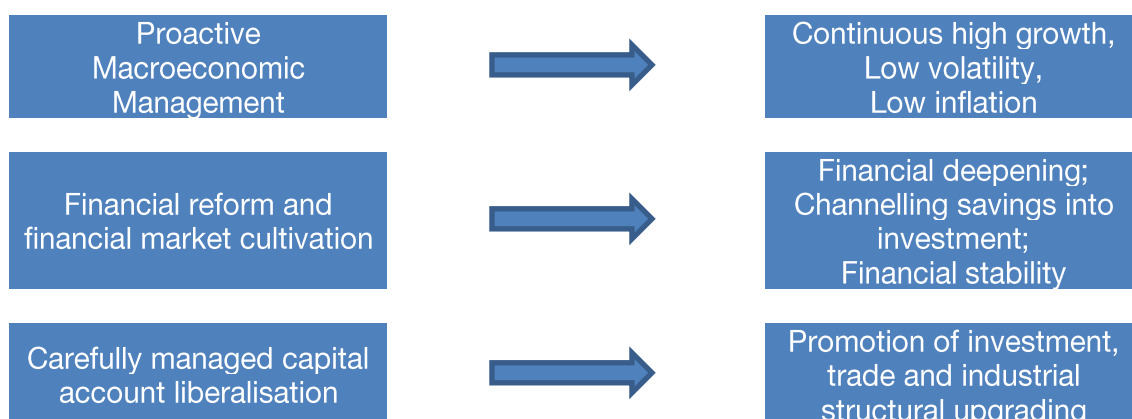
Macroeconomic policy framework has played a crucial role in the structural transformation of the Chinese economy through processes which can be summarized as a mix of proactive macroeconomic management, financial reform aimed at developing a mature financial market, and carefully-managed opening (Figure 1). Firstly, proactive macroeconomic management has helped to create a stable macro environment for economic development, thus avoiding excessive fluctuations in economic growth and high inflation. Secondly, financial reform has nurtured financial markets, promoted financial deepening dominated and denominated by the local currency, and effectively transformed savings into investment to expand production capacity. At the same time, during the process of economic transformation, the government has paid close attention to financial stability and used various means to prevent financial crises. Thirdly, the government has prudently promoted and managed the opening of its current and capital accounts, thus attracting direct investment and encouraging export while limiting cross-border flows of hot money.

In this paper, we analyze the role of macroeconomic policies in the process of China's economic transformation, which we hope can be used as reference for the macroeconomic management of other developing countries.

The rest of the paper is organized as follows: Section II examines the role of China's proactive macroeconomic management in the country's structural transformation, with an emphasis on monetary policy framework. Section III presents how China reformed its financial system to promote financial deepening and maintain financial stability. Section IV then discusses the aim, path, and influences of China's capital account liberalization. Next, section V illustrates the evolution of China's exchange rate policy and how it has helped promote investment, trade, and the transformation of China's economic infrastructure. Finally, Section VI concludes.

¹ Data source: National Bureau of Statistics of China and the authors' calculation.

Figure 1. The nexus of macroeconomic policy framework, financial reform, and capital account opening



2. An Overview: Proactive Macroeconomic Management

2.1 China has maintained a relatively stable macroeconomic environment during structural transformation

Maintaining a generally stable macroeconomic environment has been one of the most important factors in the success of China's economic transformation. This is specifically reflected in three aspects: first, relatively low fluctuation of economic growth; second, successful suppression of high inflation; and third, avoidance of an acute economic crisis and the ability to respond to external shocks.

(i) *Relatively low fluctuation of economic growth*

China's economy has achieved steady, high-speed growth since 1978. From 1978 to 2018, China's GDP grew from USD 293.6 billion to USD 10.8 trillion (constant 2010 USD)², with an average annual real growth rate of over 9.4% (Figure 2).

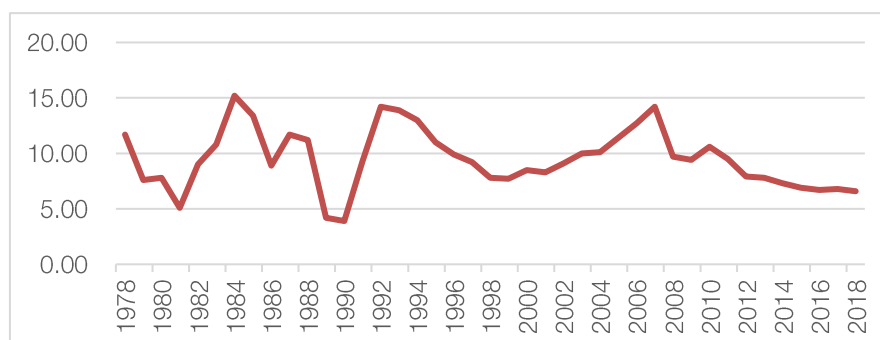
Moreover, China's real GDP growth volatility is significantly lower than that of other economies. Whether compared with other countries over the same time period or with other high-growth economies in history, the stability of China's economic growth over the past 40 years is very rare and might even be called a miracle in human economic history.

The volatility rate of real economic growth can be divided into two parts: (1) change in the potential economic growth rate, and (2) change of cyclical factors. We divide the economic growth rate of various countries from 1961 to 2017 into two parts—the trend and the residual—via the Hodrick-Prescott filter. The trend can be used as an estimate of the potential economic growth rate, and the residual corresponds to periodic economic fluctuations. We use the standard deviation of the cyclical fluctuation from 1961 to 2017 from the mean of the potential growth rate to represent the fluctuation of real economic growth, and find that the fluctuation of China's economy is significantly less than that of both developed countries and other developing countries (Table 1).

² Source: World Bank WDI database.

Furthermore, when we compare China's high-speed growth period (1978 - 2017) with that of Japan and South Korea (1961 - 1990) via the same approach, we find that the volatility of China's real GDP growth is also relatively low (Table 2). Especially considering that China experienced both the Asian financial crisis and the 2008 global financial crisis during this period, this is an even more remarkable achievement.

Figure 2. The real GDP growth rate of China:1978-2018 (%)



Data Source: NBS of China.

Table 1. The real GDP growth fluctuations of typical economies (1961-2017)

Country	Volatility of real GDP growth
China	0.19
Middle-income countries	0.25
World	0.34
India	0.36
OECD	0.43
South Korea	0.44
EU	0.60
UK	0.61
Japan	0.67
The US	0.68
Brazil	1.00
Argentina	2.21
Russia ³	4.54

Note: (1) Source: "Economic Lessons Learned from China's 40 Years of Reform and Opening Up", ACCEPT (2018). (2) The numerator of the real GDP volatility is the standard deviation of de-trend GDP growth rate calculated by HP filter ($\lambda=6.25$) while the denominator is the trend of GDP growth adjusted by HP filter ($\lambda=6.25$). (3) Russia data ranges from 1991 to 2017.

Table 2. The real GDP growth fluctuations of China, Japan and Korea during their high-speed growth periods

Country	Real GDP fluctuations
China 1978-2017	0.19
Korea 1961-1990	0.27
Japan 1961-1990	0.37

Note: Ibid.

(ii) *Successful suppression of high inflation*

Generally speaking, high growth in developing countries has historically been accompanied by high inflation. In the period of rapid economic growth, the investment growth rate is high, resulting in high demand for raw materials, which, to a certain extent, results in higher inflation pressure. Once inflation is too high, reflecting a real economy growth rate higher than the potential growth and an excessive use of production factors, a growth recession follows. As a result, high inflation is often associated with fluctuations in economic growth.

As for countries transitioning from a planned economy to a market economy, high inflation pressure is usually more severe, as it comes not only from investment growth, but from the complex system transition as well. In planned economies, there is usually a supply shortage, the government is making the allocations, and the economy as a whole does not have a price or the price is artificially lowered. When moving from a planned economy into a market economy, the prices once depressed by government policies tend to rise rapidly, which often results in higher inflation. High inflation leads to currency instability and is not conducive to economic growth. Moreover, the excessive changes in relative prices is likely to cause the distortion of social wealth allocation, and even serious social problems.

However, despite these challenges, China did a better job of controlling inflation when compared to other emerging economies and transforming countries (Figure 3). China's average annual CPI growth during 1978-2017 was 4.9%, lower than that of India and Brazil over the same period, and lower than the inflation rates of Japan and South Korea during their respective high-growth periods (Table 3).

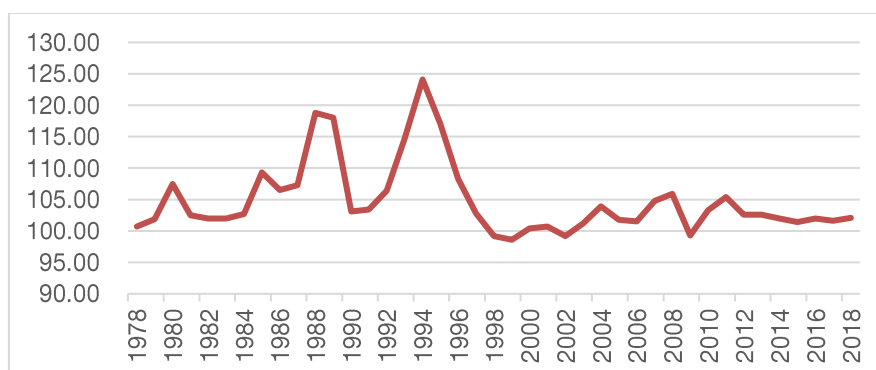
Furthermore, if we compare China with economies that have experienced price reform, such as Russia and Poland, we can see that China's economy grew at a much faster pace than these economies, while its inflation was significantly lower. Specifically, China's post-price reform CPI year-on-year growth between 1989 and 1993 was only 18%, 3.1%, 3.4%, 6.4% and 14.7%³ for each year respectively, while that of Russia over the 4 years after its price reform was over 100%⁴, and that of Poland was over 30%⁵.

To guarantee the general price does not rise too rapidly in the process of transition, the Chinese government carried out proactive macroeconomic management, which was a combination of three kinds of policy tools that we call the "three pillars:" (1) market approaches, like raising the interest rate; (2) administrative orders, like restricting the start of new infrastructure projects; and (3) institutional reforms, like relaxing market access and encouraging the development of township-enterprises to increase supply. This will be described in detail below.

³ Source: NBS of China.

⁴ Source: Haver database.

⁵ Source: Haver database.

Figure 3. The CPI of China:1978-2018 (last year = 100)

Data Source: NBS of China.

Table 3. Annual average CPI inflation across countries

	Simple average	Algebraic average
The US (1986-2016)	2.60%	2.70%
China (1978-2017)	4.90%	4.90%
China (1986-2017)	5.00%	5.30%
Japan (1960-1980)	7.30%	7.20%
India (1986-2016)	7.50%	7.70%
Korea (1967-1990)	11.40%	11.60%
Russia (1986-2016)	38.00%	73.00%
Poland (1988-2000)	58.50%	87.90%
Brazil (1986-2016)	99.40%	361.20%

Data Source: the source of data for China is the National Bureau of Statistics, and other countries' data are from the World Bank WDI database.

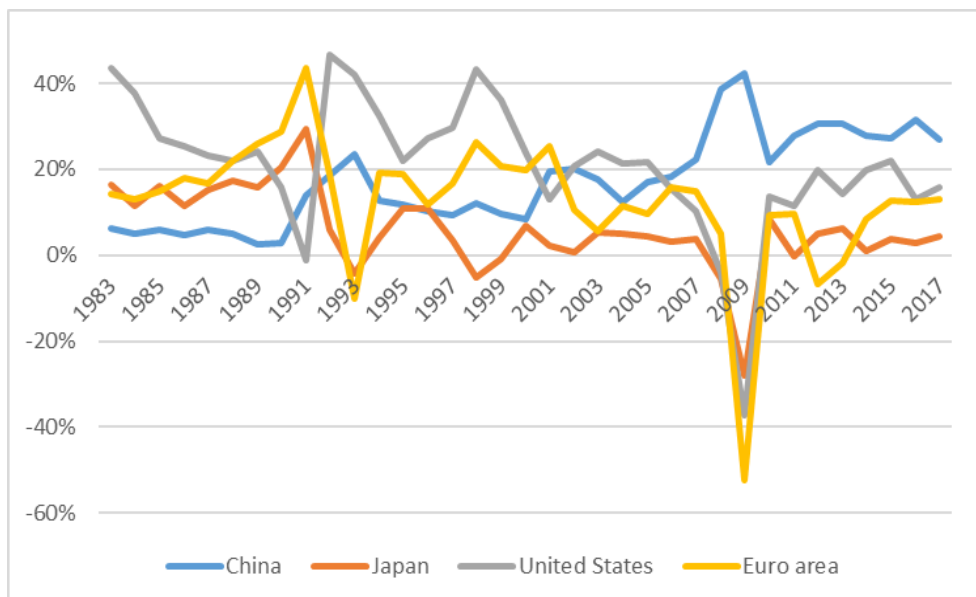
(iii) Avoidance of an acute economic crisis and the ability to respond to external shocks

Over its 40 years of reform and opening up, China has not experienced an acute economic crisis and has responded successfully to external shocks, which has been a great contribution to global economic stability. China's real GDP grew by 3.9% in 1990, the lowest since reform and opening up, but China has never suffered a total economic contraction. As a comparison, almost all other advanced and developing countries have gone through at least some instances of negative economic growth. For example, the real GDPs of Korea and Japan experienced negative year-on-year growth even during their high-speed growth periods over 1960-1980.

In addition to stabilizing its domestic economy, China has also made huge contributions to global economic stability. China's contribution to global economic growth has steadily increased since its reform and opening up, from 5.11% in 1980-1989, to 12.33% in 1990-1999, 24.83% in 2000-2009, and 28.75% in 2010-2017 (Figure 4). When looking at 1978-2017 as a single period, China's contribution was 18.35%. During the Asian financial crisis and global financial crisis, China's role as a "stabilizer" for global economic growth was particularly prominent. During the Asian financial crisis in 1998, China guided the recovery of total domestic demand through active fiscal policy and prudent monetary policy. During this time, the RMB did not depreciate with other currencies, thus making a great contribution to the stability of the Asian monetary system. In 2008, when the global economy was hit by the US subprime mortgage crisis, other major economies like the US, Eurozone, and Japan all experienced negative

growth. Against this backdrop, China's recovery in 2009 made an important contribution toward the stabilization of the world economy.

Figure 4. The contributions of US, Europe, China and Japan to the world economic growth



Data Source: The World Bank WDI database.

2.2 Proactive macroeconomic management is important during structural transformation

Pure market activities do not guarantee stable economic growth by themselves. Just as the famous economist Hyman Minsky said, “Stability leads to instability”. This is true especially in developing economies and countries in transition. An important reason why China has achieved long-term stable high-speed growth is the government's proactive macroeconomic management.

So why does the government need to manage the macroeconomy? What is the micro-foundation in economics? It is because the equilibrium of games played among enterprises catalyses and exacerbates macro-cycle fluctuations. From the microscopic perspective, the contest between decision-makers within enterprises may trigger and intensify the macroeconomic cycle, amplify economic fluctuations, and bring about the loss of benefits. To be specific, the “rush to the top” during market access and the “war of attrition” during the exit of enterprises—both microscopic acts—trigger and intensify cyclical economic fluctuations, thus causing macroeconomics to repeatedly swing between “overly cold” and “overly hot” (see Figure 5):

- (1) When the economy is trending upward (the “expansion” period) at the microscopic level, enterprises actively rush to the market, increase their investment and their capacity, hoping to seize the opportunity provided by market expansion. Though this is rational behavior from the perspective of any single enterprise, it tilts the economy off-balance at the macroscopic level, referred to here as the “rush to the top.” On the one hand, the “rush to the top” may cause the economy to “overheat” in the short-term and put the macroeconomy under the pressure of inflation; on the other hand, it may also cause the economy to rapidly accumulate capacity and thus sow the seeds of excessive competition, excessive capacity, and deflation, which will manifest in the subsequent economic downstream cycle. What's more, the

finance system usually exacerbates this process, just as the mechanism described in the "financial accelerator" theory proposed by Bernanke, Gertler & Gilchrist (1999).

- (2) When the economy is trending downward (the "recession" period), at the microscopic level, enterprises pursue the strategy of attrition, whereby they are not ready to exit the market despite the impending losses, but rather believe that their competitors will become bankrupt and they will get the last laugh as long as they keep going. Though this is rational behavior from the perspective of any single enterprise, it tilts the economy off-balance at the macroscopic level, referred to here as the "war of attrition." The "war of attrition" leads to incredibly excessive market capacity, aggravated vicious competition, a drop in profitability, and extensive loss spread, which then puts the macroeconomy under the pressure of deflation. Although microscopic theories have touched on the "war of attrition," (Fudenberg & Tirole, 1986; Bulow & Klemperer, 1999), such theories have unfortunately failed to draw the attention of macroeconomists.

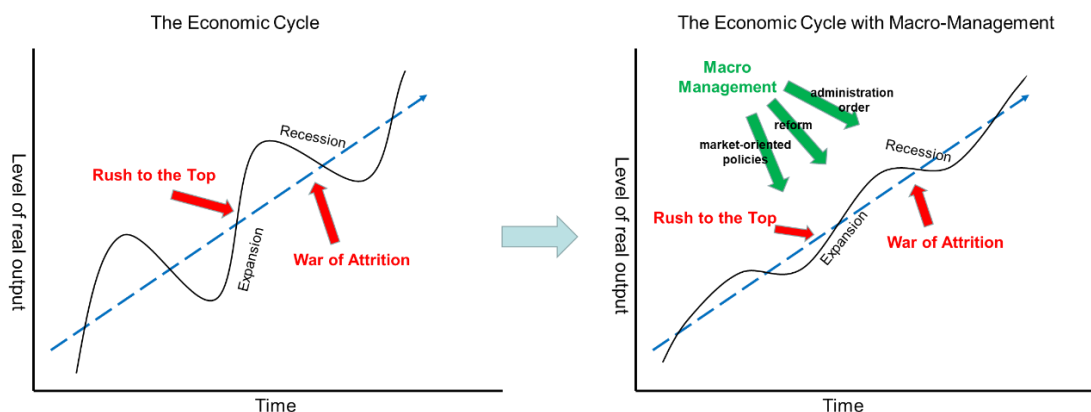
The performance of the Chinese economy after the 1998 Asian financial crisis, during the 2008 U.S. subprime crisis, and between the years 2014 and 2015 demonstrates typical characteristics of a downward economic cycle, while the Chinese economy's performance during the periods of 1985-1986, 1988-1989, 1993-1994 and 2003-2007 demonstrates typical features of an upward economic cycle. Generally speaking, developing countries may experience more intense hot and cold economic fluctuations when compared with mature developed countries, and China, being a developing country in the transition from a planned economy to a market economy, may encounter even more intense macroeconomic cyclical fluctuations. First, as a state-owned economy is typically subject to "soft budget restraint," (Kornai, 1986, 1998) it tends to make excessive investments when the economy is trending upward, which may intensify the tendency to "overheat." On the other hand, a state-owned economy may also be reluctant to exit the market voluntarily when the economy is trending downward and therefore will face excessive capacity and suffer loss, which may prolong the process of capacity clearing (Li & Liang, 1998; Qian & Roland, 1999). Second, competition between local governments, particularly visible in the "promotion championship"⁶ among local officials, is one of the most striking characteristics of China's economic development (Zhou Li'an, 2004, 2007). Local officials and governments are inclined to increase investment and protect local outdated capacity in exchange for GDP and tax income, which intensifies cyclical economic fluctuation.

However, it must be stressed that such institutional reasons are by no means specific to China. Rather, the root cause lies in a universal phenomenon of the market economy: The equilibria of "rush to the top" and "war of attrition," are socially costly, while in each equilibrium, the firms are individually rational. Such socially suboptimal equilibria make the macroeconomy fluctuate and inefficient. It is demonstrated by the past experience of the Chinese economy that SOEs are not the only participants of the "rush to the top" and "war of attrition"—so too are a large number of private businesses, which were among the causes that gave rise to severely excessive capacity in such sectors as cement, steel, coal, sheet glass, and photovoltaic in 2014 and 2015. In fact, even in economies which are widely recognized as having a higher level of marketization, it is also common for the "rush to the top" and "war of attrition" to cause economic cyclical

⁶ In China's bureaucracy, economic development is an important criterion for promoting government officials. The head and party secretary of counties with higher GDP growth rates are more likely to be promoted to mayors or municipal party committee secretaries, and the head and party secretary of cities with higher GDP growth rates also have a higher probability of being promoted to governors or provincial party committee secretary. For this reason, local officials have strong incentives to develop the local economy. This is called the government official "promotion championship".

fluctuation and loss of overall social welfare. The rise and fall of the “internet bubble” between 1995 and 2001 may be taken as a typical case of the “rush to the top,” and the long-term excessive competition and resource consumption of the U.S. airline industry can serve as an example of both the “rush to the top” and the “war of attrition” (see details in Feature 2).

Figure 5. Schematic diagram of economic cycle and Proactive Macroeconomic Management



Source: “Economic Lessons Learned from China’s 40 Years of Reform and Opening Up”, ACCEPT (2018).

2.3 China’s macroeconomic management framework: “The three pillars”

In the Chinese case, the “visible hand” of the government to a large extent helped the “invisible hand” of the market to stabilize cyclical fluctuations via proactive macroeconomic management and improve overall economic welfare, so as to diminish the loss of overall welfare due to individual rational behavior: when the economy was too “hot,” the government leveraged proactive macroeconomic management to limit excessive investment, control the size of infrastructure construction, and put a lid on inflation; when the economy was too “cold,” the government leveraged proactive macroeconomic management to accelerate the exit of outdated capacity, drove capacity clearing, and simultaneously expanded infrastructure construction, stimulated aggregate demand, and helped the economy emerge from deflation.

The Chinese government has adopted a combination of three kinds of policy tools in its proactive macroeconomic management, which we call the “three pillars:” (1) market approaches, (2) administrative orders, and (3) institutional reforms. These tool sets have been used to cool the market when the macro-economy is too “hot” and warm the market when the economy is too “cold,” so as to stabilize economic development in the short run, promote the optimized allocation of resources and improve social welfare in the long run. Each tool set is briefly summarized as follows:

Market approaches: (1) by using monetary policy tools such as adjustment of deposit and lending benchmark rates and Reserve Requirement Ratio in order to indirectly influence the investment and financing behavior of enterprises as well as the saving and consumption decision-making of households; (2) by utilizing tax rate adjustment (enterprise income tax rate, export rebate rate, VAT rate, tax incentive for car purchase), fiscal expenditure subsidies for supporting consumption (subsidy for rural appliance purchases), fiscal expenditure subsidies for supporting enterprise equipment upgrading, and such other fiscal expenditure tools to expand or tighten the overall demand.

Administrative orders, by: (1) strictly controlling the approval of newly added investment projects and preventing redundant construction in the overheating period⁷; (2) forcing outdated capacity out of the market via administrative orders in the “overly cold” economic period⁸; (3) expanding infrastructure construction and directly and indirectly supporting overall demand during the “overly cold” period⁹; (4) reducing land approvals, tightening credit granting, and raising the threshold through administrative orders to “restrict house purchases” in the real property markets of key cities.

Institutional reform: by pushing ahead institutional economic reforms and tactfully utilizing the turning point of an overly cold or hot economy. The typical case of proactive macroeconomic management through reform measures was after the outbreak of the Asian financial crisis, by: (1) seizing the appropriate opportunity to drive housing reform and turn the original welfare-oriented public housing distribution system into a market purchase system, which not only achieved the effect of short-term proactive macroeconomic management, but also added new momentum to marketization reform and long-term economic growth; (2) taking the “expansion of college enrollment” initiative, which started in 1999 and worked to expand domestic demand, relieve short-term employment pressure, and build up a rich talent pool reserve for long-term economic development; (3) seizing the opportunity to speed up WTO entry negotiations so that China was able to successfully join the organization in 2001 and thus further open the economy; (4) establishing the four asset-management companies to spin off the bad assets of the four state-owned commercial banks, which marked the start of the joint-stock reform of state-owned commercial banks. As another example of reform initiative but this time covering an upswing, the government seized the overheating opportunity between 1993 and 1994 to drive the “tax distribution system” reform¹⁰, which substantially transformed the basic framework of China’s financial and fiscal systems. In conclusion, a guiding principle of the Chinese government’s proactive macroeconomic management is: to drive system reform by tactfully utilizing the opportunity of proactive macroeconomic management, so as to use reform as a means of proactive macroeconomic management to stabilize economic fluctuation, and to use reform to release new vitality and add momentum to long-term economic development.

It is costly to deal with cyclical economic fluctuations purely by relying on the “invisible hand” of the market. Some believe that the power of the “invisible hand” will eventually

⁷ A typical case: in the 1990s, administrative orders were given to strictly control new projects to address the excessive admission to the industries of TV sets, washing machines, and refrigerators. See: Zhu Rongji On the Record (Book II), Pages 374 and 498.

⁸ Typical cases: “spindle reduction and capacity limitation” in the textile industry in the 1990s, and compulsory de-capacity by directly setting specific quantitative targets for the sectors of steel, cement, electrolytic aluminum, sheet glass, etc. after 2015⁸. For instance, *Opinions on Dissolving Excess Capacity and Realizing Profitable Development of the Steel Industry*, distributed by the State Council in February 2016, clearly set the targets to reduce crude steel capacity by 100-150 million tons in the five-year period from 2016-2020 and to demand compulsory exit of the enterprises that fail to reach the standard requirements of environmental protection, energy consumption, quality, safety, and technology. Such targets were communicated from the central government down to each province, city, and county.

⁹ Typical case: in order to address the shock of the Asian financial crisis, the central government issued an additional RMB100 billion in national bonds in 1998, and put in place RMB100 billion in loans solely for expanding infrastructure construction, including rural power grid upgrading, irrigation project construction, highway construction, granary construction, urban infrastructure construction, interest subsidies for technical transformation, etc.

¹⁰ In the “tax distribution system” reform, the fiscal and taxation relationship between the central government and local governments has been reshaped. Some kind of taxes are categorized as local taxes, such as business tax. Some kind of taxes are defined as central taxes, such as tariffs. Some kind of taxes are defined as shared taxes, whose income will be shared by the central and the local. For example, the value added tax (VAT) was defined as a major kind of shared tax. 75% of VAT income is attributed to the central, while the remaining 25% is attributed to the local.

clear the market. However, in practice, it often takes a long time to clear the market by relying on the markets alone, which can result in a substantial waste of social resources. Take the U.S. airline industry, for example: the market clearing process lasted over 30 years from the 1980s to the 2010s. Such a long waiting period and enormous waste of resources is simply unaffordable for a developing country like China. For a developed country, waiting around for the “invisible hand” of the market to take effect may only result in back-and-forth economic fluctuations or sporadic economic crises due to the above mentioned “rush to the top” and “war of attrition,” but for a developing country, this may mean the interruption or even suspension of economic development, social turbulence, and the “middle-income trap.” All of this has been proven by the experience of many Latin-American and Sub-Saharan African countries.

2.4 Investment and export friendly monetary policy

Monetary policy created a favorable environment for structural transformation in China, especially by supporting investment and export-led growth.

(i) *Low interest rate to support investment*

In the early stage of industrialization, insufficient capital stock and low production capacity are the main obstacles to a country's economic development. In 1978, China's capital stock per capita was only 2.8% of that of the United States. During this time, the capital-output ratio for China was only 1.6, while that of the US was 2.9¹¹. In order to achieve economic take-off and industrialization, investment at scale was required for rapid capital accumulation and the expansion of production capacity. Since reform and opening up, China has maintained a high investment ratio—the national investment ratio has remained between 32% and 48%. China's investment drive included both infrastructure investment in transportation, energy, and communications, and productive investment in agriculture and manufacturing.

Low interest rates are an incentive for investment because they allow governments and businesses to get financing at a lower cost. In the process of market-oriented reforms, China has adopted a gradual, rather than complete, liberalization of interest rates in order to prevent them from rising sharply. After 2000, the weighted average nominal interest rate of a 1-3-year general loan has been approximately 5.78%, and the corresponding real interest rate 3.59% (Figure 6). In the 1980s and 1990s, although the nominal lending rate sometimes exceeded 10%, the real lending rate was still low due to the relatively high inflation level.

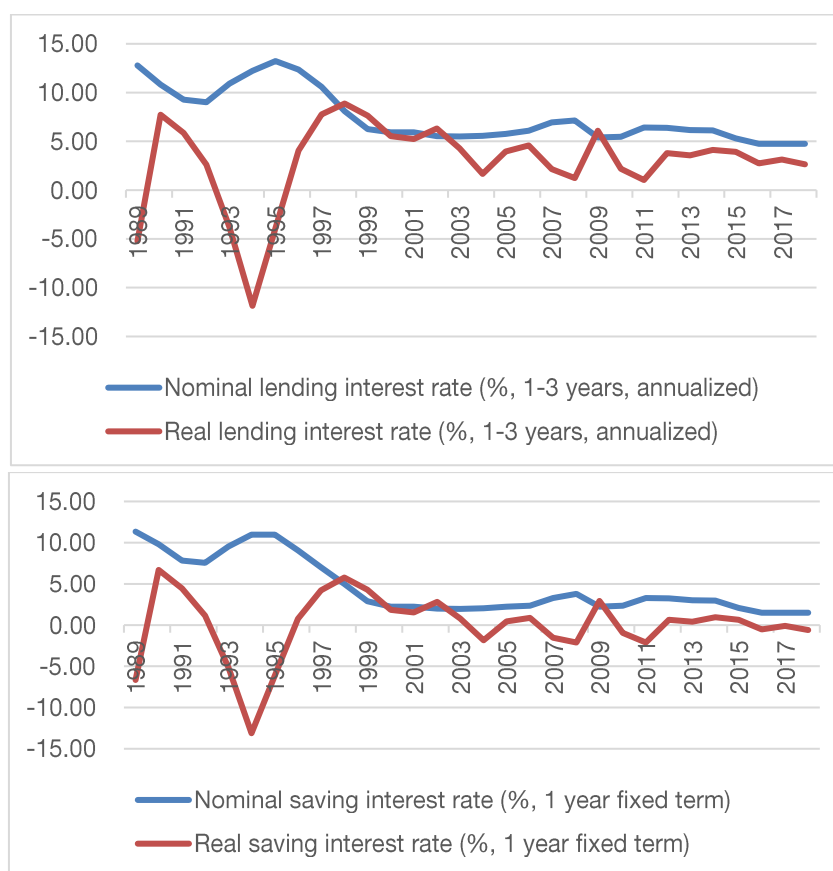
Low interest rate policy can be seen as a kind of financial repression. Although it is beneficial to enterprises and encourages investment and production, low interest rate policy sacrifices the interests of savers. From 1990 to 2018, the average real interest rate faced by Chinese savers was only 0.24%. In some years, the real interest rate was even negative. From a static point of view, low interest rate policy means that the savers subsidize the borrowers, and the household sector subsidizes the corporate and government sectors. However, from a medium- and long-term dynamic perspective, low interest rate policy has the potential to improve the welfare of the whole economy including the household sector, at least in the early stage of economic development.

It must be acknowledged that the investment-friendly low interest rate policy is biased to a certain extent. This means that the government and state-owned enterprises can obtain financing at a lower cost. In contrast, private enterprises—especially small and

¹¹ Source: Penn World Table (version 8.0) & authors' calculation.

medium-sized private enterprises—have continued to face the problem of financing difficulties.

Figure 6. The nominal and real interest rate faced by borrowers and savers



Data Source: PBoC, NBS of China.

(ii) *Stable exchange rate to improve international trade*

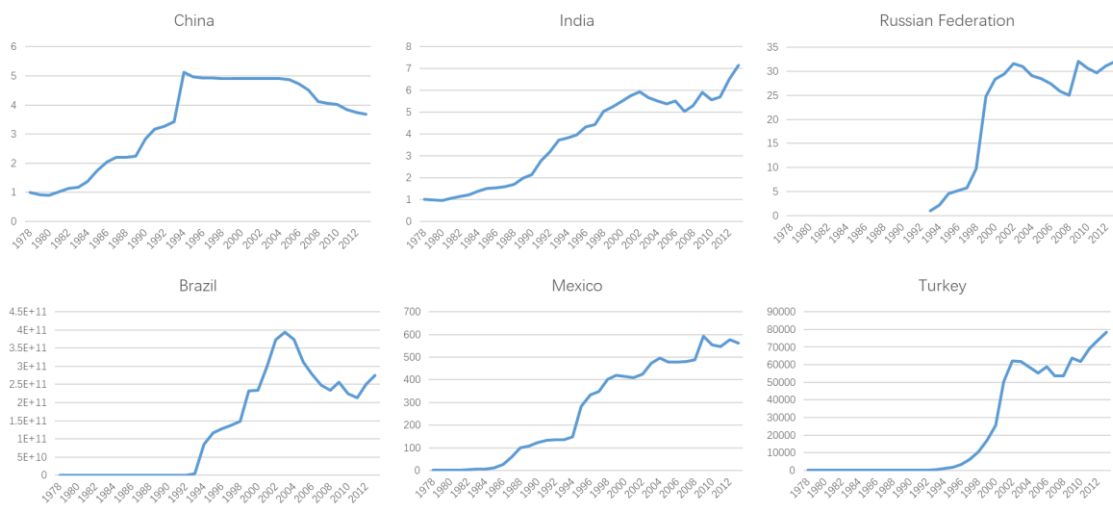
Driving economic growth and industrial upgrading through exports and imports is another lesson of China's economic success. A relatively stable exchange rate is crucial to the development of international trade. If the exchange rate fluctuates wildly, it will interfere with the expectations and behavior of importers and exporters, and will be harmful to export-led economic growth.

China's exchange rate reform went through four phases: the first phase was from 1978 to 1993, when the exchange rate of the RMB against the US dollar was generally depreciating, which was a correction of the overvalued RMB in the planned economy period before 1978. The second phase was from 1994 to July 2005, when the RMB exchange rate against the US dollar was basically pegged at 8.28:1, which can be regarded as an approximate fixed exchange rate regime. The third phase was from July 2005 to 2013, when a managed floating exchange rate system was implemented and the exchange rate of the RMB against the US dollar gradually appreciated. The fourth phase has been in effect since 2014, during which the RMB exchange rate has been fluctuating up and down.

As can be seen from Figure 7, in addition to the fixed exchange rate of the second phase, the annual fluctuations of the RMB exchange rate are also smooth overall during the majority of the first and third stages. This is more evident when compared with the currencies of other emerging market countries such as Brazil, Russia and Turkey.

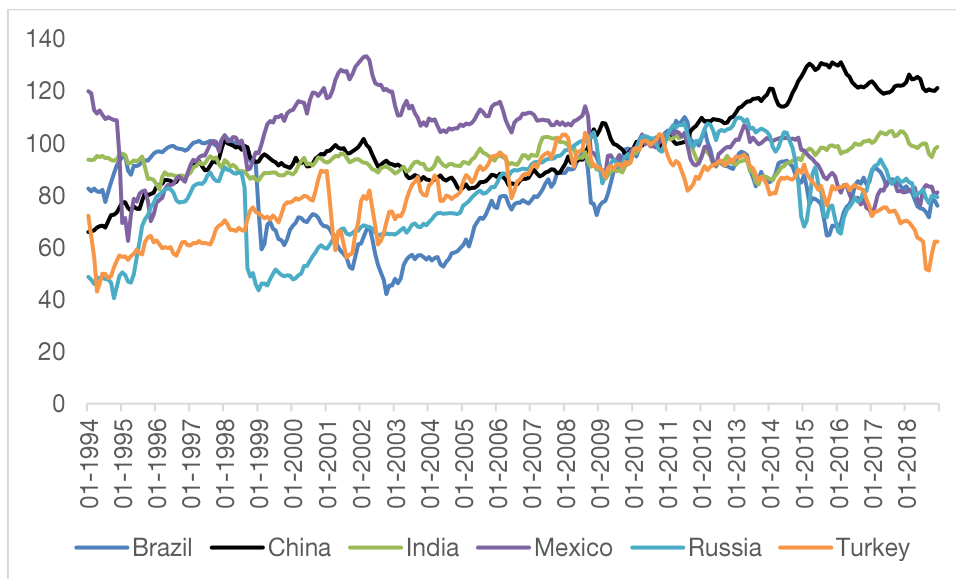
What about the real effective exchange rate (REER), which is a better indicator of a country's competitiveness in international trade than the nominal exchange rate? The REER of RMB showed a gradual appreciation trend from the mid-1990s until 2014. The accumulated appreciation was more than ninety percent. Although the REER did fluctuate around the long-term appreciation trend, the volatility of REER was obviously lower compared with Brazil, Russia, Mexico, Turkey and some other emerging economies as shown in Figure 8. This means that it has been relatively easier for the Chinese companies involved in international trade, as well as their foreign business partners, to better form exchange rate expectations. This shows that the RMB exchange rate risk faced by millions of microeconomic entities in international trade in China and around the world has been reduced systematically by macroeconomic management of the Chinese government.

Figure 7. The nominal exchange rate volatility of selected emerging economies (Local currency per USD)



Data Source: World Bank WDI.

Figure 8. The Real Effective Exchange Rate (REER) volatility of selected emerging economies (2010=100)



Data Source: BIS Statistics.

3. Financial Reform, Financial Deepening, and Financial Stability

3.1 A brief historical review of China's financial sector reform

In the planned economy before 1978, China had a highly centralized financial system, with only one financial institution in the whole country—the People's Bank of China (PBoC). The PBoC performed the role of a central bank, but also the functions of commercial banks. There was no stock and bond exchange market—even the issuance of government bonds was suspended.

Following opening up in 1978, the government began to reform the financial sector and cultivate financial markets. Some key steps of this financial reform were as follows:

Firstly, to re-establish and reform the commercial banking system. The functions of the central bank and commercial banks were separated officially in 1983. After that time, the Industrial and Commercial Bank of China, the China Construction Bank, the Bank of China, and the Agricultural Bank of China (the “Big Four”) were successively resumed or newly established, and began to develop gradually toward market-oriented modern commercial banks. These state-owned commercial banks went through shareholding reform, completed initial public offering (IPO), and became public companies in the 1990s and early 2000s. Meanwhile, the China Merchants Bank was established as the first joint-stock commercial bank in 1987. Since then, a dozen joint-stock commercial banks have been established. Simultaneously, the reform of credit cooperatives in urban and rural areas also progressed in an orderly manner. The number of banks grew step by step, which made the deposit and loan market increasingly competitive. By the end of 2018, China has basically formed a multi-tier banking system, consisting of one national development bank, two policy banks, six large commercial banks, 12 joint-stock commercial banks, 134 city commercial banks, 1427 rural commercial banks, 17 private banks, 39 foreign banks, 30 rural cooperative banks, and 1616 village banks¹².

Secondly, to establish and develop the capital market. During the planned economy period, China closed all stock exchanges and even stopped issuing government bonds. After reform and opening up, China began to re-establish and develop the capital market. As the first step, China resumed the issuance of government bonds in 1981. After that, the Shanghai Stock Exchange and the Shenzhen Stock Exchange were officially opened in 1990 and 1991, respectively. A multi-tier capital market has been taking shape quickly and playing a role in the reform of state-owned enterprises and the growth of the private sector.

Thirdly, to rebuild the regulatory system. While establishing and reforming China's financial institutions, the government has also strengthened its financial supervision to ensure the healthy development of the financial market. The China Securities Regulatory Commission (CSRC) and the China Insurance Regulatory Commission were set up in 1992 and 1998, respectively. The China Banking Regulatory Commission (CBRC) was established in 2003.

Especially worth mentioning is the centralization and strengthening of banking supervision. A common problem facing the banking systems of developing countries is that local governments interfere with the operation of banks. This is often reflected in local governments lobbying or ordering banks to issue loans to local enterprises, which

¹² Source: CBRC official website: <http://www.cbrc.gov.cn>.

may result in excessive loans, lead to an increase in the non-performing loan ratio, and threaten financial stability. In China, the financial system was once managed horizontally before the reform, and the local governments had the right to appoint executives to banks in the region. The local governments could not only intervene in the operation of local regional banks as the major shareholder, but also intervene in the operation of national banks and even the financial supervision and financial justice in their region. To reduce local governments' intervention in finance, the Zhu Rongji administration conducted vertical management reform and strengthened the central government's power in financial supervision departments at the end of the 1990s.

3.2 Finance plays a critical role in China's economic transformation

(i) The financial system is key for channeling savings into investment

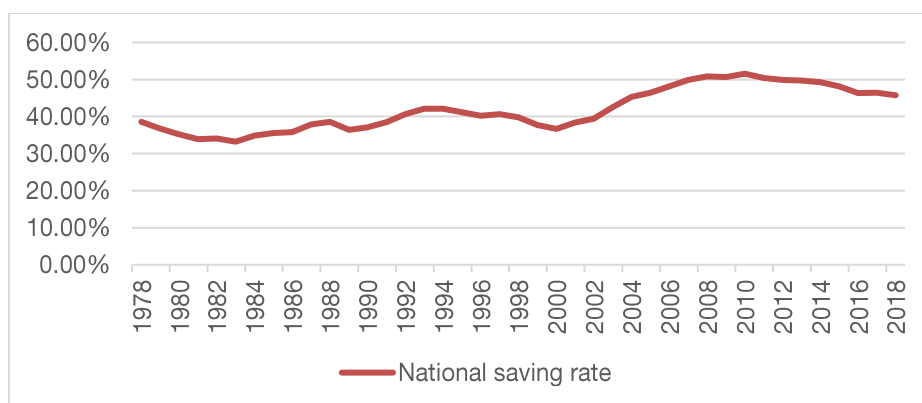
High saving and high investment are important factors in ensuring China's rapid economic growth. Over the past four decades, China's national savings ratio has remained at around 40%, and it has even exceeded 50% between 2008 and 2011 (Figure 9). The investment rate has also remained at around 40% for almost forty years (Figure 10).

The financial system is key for channeling savings into investment. At the early stage of economic development, the single most important goal of financial reform is to foster financial markets. Although China has a high savings rate, savings do not automatically become investments—the financial system must play a role. About half of the investment in China's real sector is financed through the financial system.

Banks should be given priority in the early stage of economic development, followed by capital markets. The healthy operation of the banking system, compared with that of capital markets, requires relatively low input from a country's institutional environment and the market rationality of its economic agents. The bank deposit and loan businesses are relatively simple, so that almost any individual and small and medium-sized enterprises can participate; however, only well-educated individuals and relatively mature enterprises can participate in the capital markets. Moreover, the regulation of banks is relatively easy, while the regulation of capital markets requires a series of institutional infrastructures, such as the securities law, the company law, the bankruptcy law, the rating system, and so on. In China, more than 70% of social financing is achieved through banks.

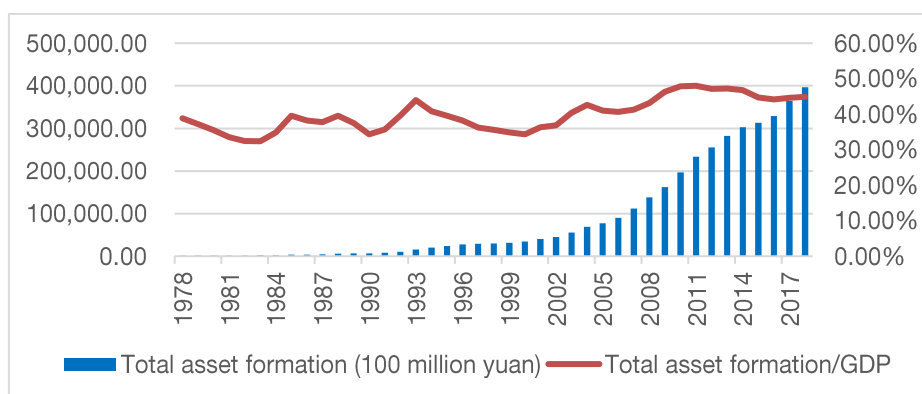
Moreover, it is necessary to emphasize that infrastructure investment requires special financial arrangements. Infrastructure projects are characterized by large capital requirements, long investment cycles, and externalities. Commercial banks usually find it difficult to meet the financing needs of infrastructure investment. The developmental financial model represented by the China Development Bank (CDB) serves as a reference for other developing countries in infrastructure construction. By 2018, the outstanding loans and advances given by the CDB amounted to USD 1701 billion, which is more than the sum of those given by the World Bank Group and the Asian Development Bank (Figure 11). About 70% of these loans are devoted to infrastructure construction, such as railways, highways, electric power, public infrastructure, etc. (Figure 12).

Figure 9. The national saving ratio of China



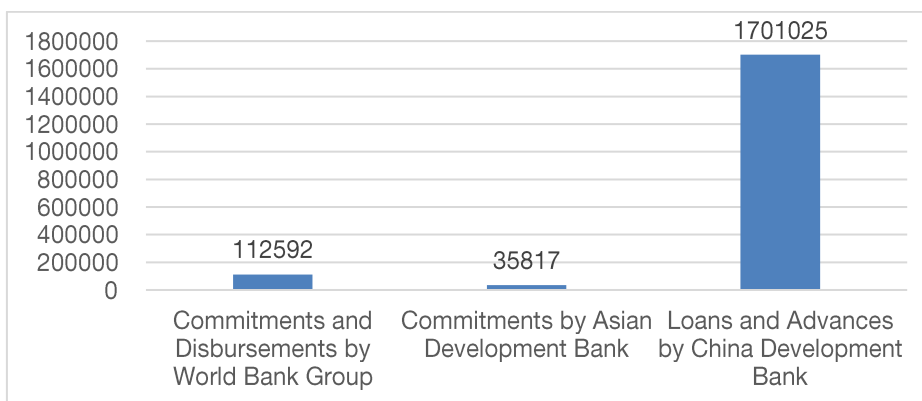
Data Source: NBS of China.

Figure 10. The total asset formation and investment ratio of China

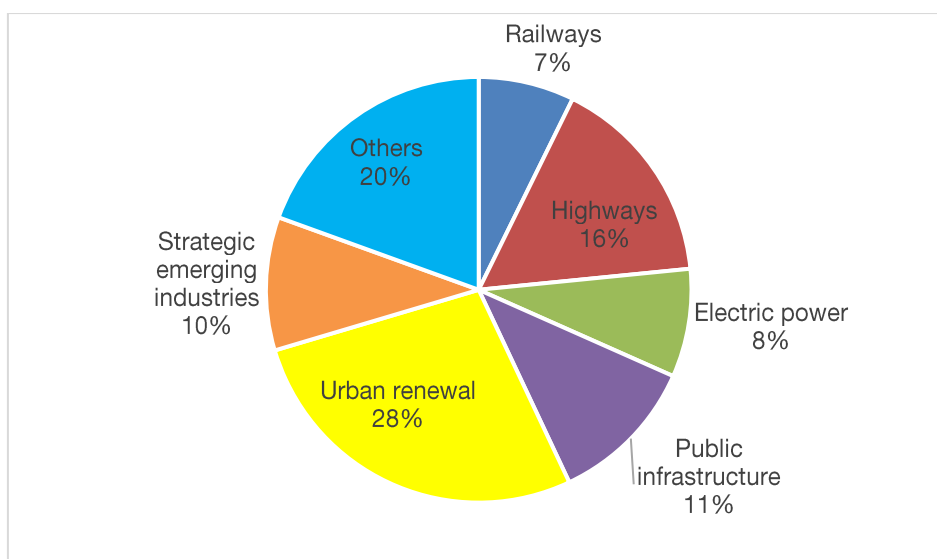


Data Source: NBS of China.

Figure 11. The commitments by WBG, ADB, and CDB (million USD)



Data Source: Annual Reports 2018 of WBG, ADB, and CDB.

Figure 12. The outstanding loans of CDB by sectors

Data Source: Annual Reports 2018 of the China Development Bank.

(ii) Financial deepening is a dividend for developing countries

The creation of high-quality financial assets by the financial sector provides residents with reliable savings media, helps enterprises obtain funds and expand production capacity, and creates seigniorage revenues for the government. Beyond this, it also pushes the economy into a cycle of sustainable development. Therefore, financial deepening is a kind of dividend for developing countries. By 2018, the financial asset stock created by the financial sector in China amounted to about three times the GDP.

However, it is important to note that the financial deepening process should be managed with caution. Financial deepening should be denominated and dominated by local currency. Only in this way can developing countries reap the “financial deepening dividend.” Foreign currency borrowing should be carefully controlled, because it can not only erode financial deepening dividends, but also easily lead to financial risks in developing countries. Local currency value stability is the premise on which the promotion of financial deepening should be based. Therefore, maintaining the stability of local currency should be the first principle and bottom line of macroeconomic policies in developing countries.

(iii) Maintaining financial stability is a life-or-death issue for developing countries

Maintaining financial stability is a life-or-death issue for developing countries. Both economic growth and structural transformation depend on a stable financial environment. The experiences of some countries in Latin America and Southeast Asia show that economic development tends to be stagnant or even retrogressive for many years after a financial crisis breaks out.

China's macroeconomic managers attach great importance to financial stability. They believe that the key to ensuring financial stability is to ensure people's confidence in the financial system. Thus, the government takes various measures to maintain this confidence, primarily through three avenues: First, ensuring that the purchasing power of the RMB remains stable. The government pays close attention to the control of inflation and ensures that the growth rate of the Consumer Price Index does not exceed a certain level. The prices of basic living materials such as food and energy are especially monitored. Second, ensuring that the RMB exchange rate is basically stable and avoiding sharp depreciation of the RMB against the US dollar in the short-term.

Third, ensuring investors' confidence in the soundness of financial institutions, especially with regard to the safety of ordinary people's savings in banks.

3.3 Five principles followed by China's financial reforms

In short, China has followed the following five basic principles in the process of financial reform. Although other countries may not be able to blindly copy China's specific policies and practices, these five basic principles can be used for reference by other developing countries: First, at the early stage of economic development, the most important goal of financial reform is to develop financial markets, thereby channeling savings into investment and thus effectively into production capacity. Second, financial deepening denominated and dominated by local currency is a kind of dividend for developing countries. Third, maintaining financial stability is a life-or-death issue. Fourth, banks should be given priority in the early stage of economic development, followed by capital markets. Fifth, infrastructure investment requires special financial arrangements, such as development banks and funds.

4. China's Capital Account Liberalization

4.1 The aim and path of China's capital account liberalization

Since the initiation of reform and opening up, China has been taking a pragmatic attitude towards capital account liberalization. A balance is maintained between improving efficiency in allocating cross-border assets and maintaining financial stability. Overall, China has followed a gradual path toward a more open capital account. However, in some periods, the pace of reform has differed for various reasons. The sequencing of China's liberalization was also carefully managed to avoid adverse shocks to the domestic financial system.

In the 1990s, when China had minimal foreign exchange reserves, capital outflows were tightly restricted, and the policy focus was to relax the limits on foreign direct investment (FDI), because FDI was less volatile than short-term capital and was easier to manage under the surveillance framework at that time. Furthermore, the technologies and equipment that came with FDI could help China gain expertise in some core industries and significantly improve its productivity. Therefore, China's first step towards capital account openness reflected its intention to learn from the rest of the world, especially advanced countries.

After the complete convertibility of current accounts in 1996, China's balance of trade became a surplus, and its foreign exchange reserves continued to grow even faster after China joined the WTO in 2001. Against this backdrop, Chinese investors were encouraged to go out and make overseas direct investments (ODIs). In the reforms initiated in July 2004, enterprises were granted the right to make investment decisions by themselves, and the approval procedures were greatly simplified. Before that, all the overseas projects, including the private investments abroad, had to go through strict approval processes ranging from project design to budget funding. The ODI approval system was also reformed to delegate the authorization of less significant projects—those with an investment value of no more than USD 30 million in the resource development sector or with an investment value of less than USD 10 million in other sectors—to local governments. Before that, it was the central government that decided which overseas projects to invest in. Moreover, the government guided the ODI companies by introducing technical training programs and providing tax benefits to

them. All of these reforms considerably lowered administrative costs and promoted the expansion of ODIs. In the 2000s, China's flow of overseas direct investments surged from USD 2.7 billion in 2002 to USD 74.7 billion in 2011, and its position in the rank of overseas direct investment flows in the world jumped from 26th place to 6th place during the same period¹³.

In contrast to its proactive attitude toward loosening direct investment controls, the Chinese government was more cautious about liberalizing portfolio capital flows¹⁴. It was not until 2002, when the Qualified Foreign Institutional Investors (QFII) mechanism was implemented, that China's capital market was partially opened to global investors. The QFII system enabled foreign institutional investors who passed verification by China's supervision authorities to make investments in China's securities market. This mechanism was followed by a series of other attempts to liberalize portfolio investments.

In 2006, a similar program called Qualified Domestic Institutional Investors (QDII) made it possible for Chinese institutional investors to get involved in the global financial markets. The constraint that investors had to exchange their RMB holdings for US dollars to make cross-border portfolio investments was also relaxed after the introduction of the RMB Qualified Foreign Institutional Investors (RQFII) mechanism in 2011 and the RMB Qualified Domestic Institutional Investors (RQDII) mechanisms in 2014. In addition to the gradual liberalization of the exchange market, the interbank market also became more open to foreign investors as central banks and other qualified institutional investors from abroad were permitted to trade in China's bond market and foreign exchange market. By the end of 2018, the value of stock assets and bonds held by foreign investors were RMB 1.15 trillion and RMB 1.71 trillion respectively, compared to RMB 344.84 billion and RMB 398.98 billion five years before in 2013¹⁵.

In the process of China's capital account opening-up, Hong Kong's strategic role as the offshore RMB center was highlighted. Financial infrastructure was improved to make the connection between the mainland financial market and the Hong Kong market possible. In 2014, the Shanghai Stock Exchange was connected with the Hong Kong Stock Market, and qualified investors in either market were able to purchase stocks from the other market via their domestic dealers. This practice was followed by the connection between the Shenzhen and Hong Kong stock exchanges in 2016. The Hong Kong financial market is more open and efficient than the mainland market. It has a well-established economic infrastructure and institutions, and it provides an excellent platform for both domestic and foreign investors to make cross-border transactions. By connecting to the Hong Kong market, a window was opened, which enabled the domestic exchange market to reach the global financial market at a controllable pace.

4.2 FDI and technology innovation

The first step in the liberalization of China's capital account was to break the restrictions on foreign direct investment. This was seen as an essential step towards modernizing China's manufacturing industry. In May 1978, then-Vice Premier Gu Mu spent one-and-a-half months visiting five countries in Western Europe: Germany, Belgium, France,

¹³ Data source: a research by China's Ministry of Commerce, see: <http://history.mofcom.gov.cn/?specialfour=dwzjtzksfz>.

¹⁴ Zhang, Ming. (2013). The liberalization of capital account in China: retrospect and prospect. In: Stiglitz J.E., Gürkaynak R.S. (eds) *Taming Capital Flows: Capital Account Management in an Era of Globalization*. International Economic Association Series. Palgrave Macmillan, London.

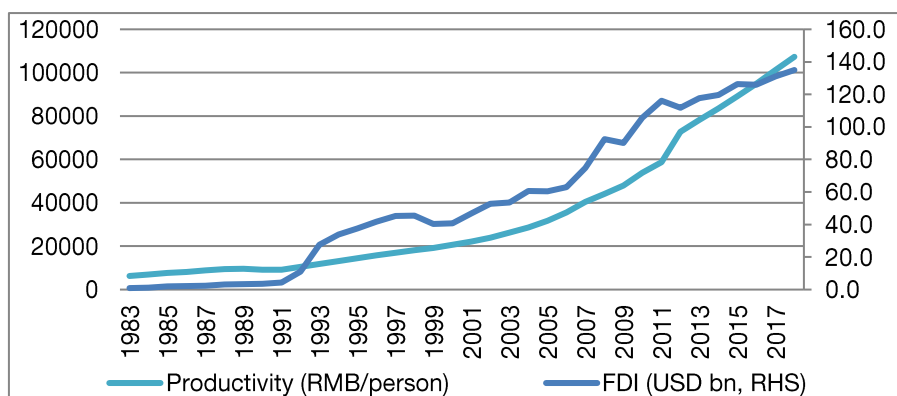
¹⁵ Data source: WIND databases.

Denmark, and Switzerland. This was the first time that a senior Chinese government official went abroad to see what the Western world was like. During his visit, Vice Premier Gu was astonished by the level of economic development he saw in European countries. As he wrote in his research report, due to automatic production lines, a brickyard in Germany with 28 workers could produce as much as 100,000 square meters of lightweight clay hollow bricks, while in China, over 300 workers would have to be involved in creating the same amount of bricks. Realizing that technology is a core input of economic growth, Vice Premier Gu suggested in his report that China should not only promote independent research and development but also learn from Western Europeans and attract investment from countries with advanced technology (Gu, 1978)¹⁶. China's desire to promote innovation by attracting foreign investment gained support from the rest of the world. During Gu's visit, government officials from the European countries, seeing the enormous potential of China's vast market, offered to lend to China to facilitate the export of machines and equipment. They also expressed their strong willingness to establish plants in China. This would help them develop their businesses within what would become the biggest consumer market in the world.

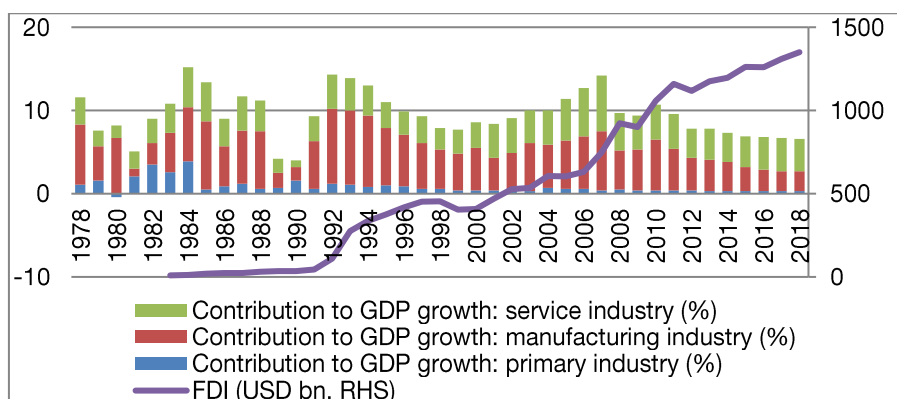
Soon after Vice Premier Gu's visit, China's top government officials reached a consensus that China should open itself to the rest of the world, and the reform and opening-up policies were announced as a fundamental task in the initial stages of China's unique socialist economy. After this decision, the growth of foreign direct investment in China began to accelerate. In April 1980, Beijing Air Catering Co, the first Sino-foreign joint venture, was established in Beijing. Later on, joint ventures in other sectors, including the automotive industry, boomed fast. Volkswagen was the pioneering car company to cooperate with the Shanghai Automotive Industry Corporation (SAIC), and they established the first car joint venture in 1984. This was followed by Volkswagen's cooperation with FAW in 1991, General Motors' collaboration with SAIC in 1997, and Toyota's collaboration with FAW in 2000. As a result of extensive foreign direct investment, China's automotive industry developed quickly and greatly promoted innovation, while foreign car companies including Volkswagen, General Motors, and Toyota also made significant profits by integrating into the Chinese market.

In recent decades, China has become a favorite destination of foreign direct investment, and China has managed to catch up in many areas by learning from its foreign partners. Figure 13 shows that while annual FDI increased from USD 0.9 billion in 1983 to USD 135 billion in 2018, China's productivity surged 17 times from RMB 6,275 to RMB 107,327. The manufacturing industry also saw booming development as the most popular destination for foreign capital, with its contribution to GDP growth expanding significantly up until economic rebalancing towards a service-led economy began in recent years.

¹⁶ Gu Mu, Report on the visit to five countries in Europe (June 22, 1978), Literature of Chinese Communist Party, 2009(1): 28-36.

Figure 13. China's productivity and FDI after reform and opening-up¹⁷

Source: Wind database.

Figure 14. The contribution of value added in different sectors to GDP growth in China

Source: Wind database.

4.3 Capital account liberalization and financial stability

Although China has been liberalizing its capital account since 1978, most of its accounts remain partly convertible. For example, there are still tight restrictions on FDI in the financial sector, and cross-border portfolio investments are under stricter supervision and controls. Chinese residents are not allowed to make personal capital transactions, and transactions on capital market securities, money market instruments, and derivatives are only available among some qualified institutional investors.

¹⁷ The productivity is calculated by dividing the GDP (at constant prices in 2010) with the amount of employment.

Table 4. Regulatory frameworks for capital transactions in selected countries

	China	Japan	Germany	Switzerland	United States	United Kingdom
On capital market securities	√	√	√	√	√	√
On money market instruments	√		√	√	√	√
On collective investment securities	√		√	√	√	√
Controls on derivatives and other instruments	√		√	√	√	
Commercial credits	√			√		
Financial credits	√		√	√		
Guarantees, sureties, and financial backup facilities	√				√	
Controls on direct investment	√	√	√	√	√	√
Controls on liquidation of direct investment	√					
Controls on real estate transactions	√		√	√	√	√
Controls on personal capital transactions	√					

Note: √ indicates that the specified practice is a feature of the exchange system

Source: IMF (2018), Annual report on exchange arrangements and exchange restrictions

A certain level of capital controls is perceived to be an essential measure to maintain the stability of the financial market. It is common practice for advanced countries, including global and regional financial centers like the United States, Japan, and the United Kingdom, countries that practice financial repression like Germany, and the tax havens like Switzerland, to put controls on some capital accounts. In the US, a nation which is widely acknowledged to have a fully convertible capital account, there are still controls on capital market securities, money market instruments, real estate transactions, and other types of financial transactions. After the 9/11 terrorist attacks, the US enhanced the supervision framework for anti-terrorist financing and money laundering. All capital transfers that are suspected to be terrorism-related are under strict controls. The US even applies long-arm jurisdiction to the overseas capital account of US residents to restrict tax evasion (Zhou, 2018)¹⁸.

As an emerging economy, China has a less developed financial market and is more vulnerable to financial crises. As such, it was very cautious and adopted a gradual strategy in opening its capital account. The timing and sequencing of capital account liberalization were carefully managed to avoid shocks to the financial markets. For example, China relaxed the controls on overseas portfolio investment by introducing the program of QDII in the late 2000s when there was an appreciation pressure of renminbi and much hot money flooded in, while in the years after the Asian financial crisis and global financial crisis, the pace of capital account liberalization slowed down due to financial stability concerns. For emerging market economies, opening capital accounts rashly without a careful assessment of economic conditions has the potential to be disastrous. We should take a lesson from Thailand's experience in the Asian

¹⁸ Zhou, Xiaochuan (2018). The concepts and contents of capital accounts convertibility: Speech in the Sanya Forum in December 2012. China Forex. vol 1, pp. 6-13.

financial crisis: countries with currency mismatch problems in the banking sector should be extraordinarily prudent in liberalizing their capital account, for large capital outflows will quickly deplete their foreign exchange reserves, devalue their currency, and lead to turmoil in the domestic and regional financial markets.

Capital account reforms must also match a country's monetary policies, and the Chinese government intends to adopt an independent monetary policy. Thus, it also has a crawling peg-like arrangement regarding the exchange rate to maintain financial stability. According to the impossible trinity in international economics, the capital account must be partially closed to help the central bank gain more independence in implementing monetary policies which are applicable to China's specific economic cycle.

5. Foreign Exchange Policies During Economic Transition

5.1 The evolution of China's exchange rate regime

Over the past 70 years, China has been proactively adjusting its exchange rate regime at a gradual pace. The purpose of this evolution has been to allow China to adapt to the changing international environment and support its internal structural transformation. From the founding of the People's Republic in 1949 until 1979 when the reform and opening up policies were introduced, the official exchange rate of the RMB against the US dollar was set by the Chinese government at a range of 1.5 to 2.8. The RMB was significantly overvalued at that time to encourage the import of goods, mitigate supply shortage problems, and stabilize domestic prices. Besides the official rates, there were also different internal exchange rates, which were set according to the cost of foreign exchange earnings. Currency exchanges within the private sector were strictly prohibited at that time, and exporting companies had to convert all their foreign exchange earnings in designated foreign exchange banks.

In 1979, as a part of the reform and opening-up scheme, a new arrangement called the "foreign exchange retention system" was introduced. This system enabled exporters to retain a certain share of their foreign exchange earnings. In order to promote exports, the government introduced an internal settlement rate of RMB 2.8 per US dollar in 1981. This compared to a cheaper official exchange rate of RMB 1.5 per US dollar. Starting from 1985, as the trade volume grew, exporters were also allowed to trade their foreign exchange holdings in a newly established market called the foreign exchange swap center. This practice gave foreign trade enterprises more flexibility, and the market started to play an adjusting role in the supply and demand of foreign exchanges.

In the late 1980s, the Chinese government devalued the official exchange rate of the RMB in a crawling peg manner to prepare for the merge of the formal and retention markets. The official crawling peg rates and the free float rates in the foreign exchange swap center drew closer until 1994 when the dual exchange rates were unified. On 1 January 1994, the official rate dropped from RMB 5.8 per US dollar to RMB 8.7, while the swap market rates were not significantly affected. Under the new mechanism, a managed floating exchange rate regime based on market supply and demand was adopted, and the exchange rate of RMB against the US dollar remained on an upward trend, reflecting the role of the foreign exchange market in adjusting China's current account surplus with the US. The Asian financial crisis disrupted the appreciation potential of RMB in 1997 when the Asian currencies, including the Japanese yen, Korean won, and Malaysian Ringgit, all depreciated violently against the US dollar. At

that time, the Chinese government decided to tighten capital controls and shift the exchange rate regime from managed floating to a hard peg to the US dollar, making commitments of no devaluation against the dollar to maintain regional economic stability.

The exchange rate of the renminbi was pegged at RMB 8.28 per US dollar until 2005. As the Chinese and regional economy recovered from the financial crisis, the Chinese government de-pegged the renminbi from the US dollar. The exchange rate was revalued and one-off adjusted from 8.28 to 8.11 on 21 July 2005. According to the PBoC, under the new regime, the exchange rate was determined with reference to a basket of currencies. However, the fact was that the renminbi reference rate was set at the closing rate of the renminbi against the US dollar on the previous trading day, and the renminbi was allowed to fluctuate up to ± 0.3 percent around the reference rate throughout the trading day. This mechanism was slightly modified by setting the reference rate as the dealers' weighted average bid price before the interbank market opens. This less transparent arrangement added to the PBoC's control of renminbi exchange rate and prevented the sharp market fluctuations. Against the backdrop of strong economic growth and a large trade surplus, the renminbi appreciated smoothly against the US dollar for the next ten years, and the PBoC widened the fluctuation band from ± 0.3 percent to ± 2 percent in 2014.

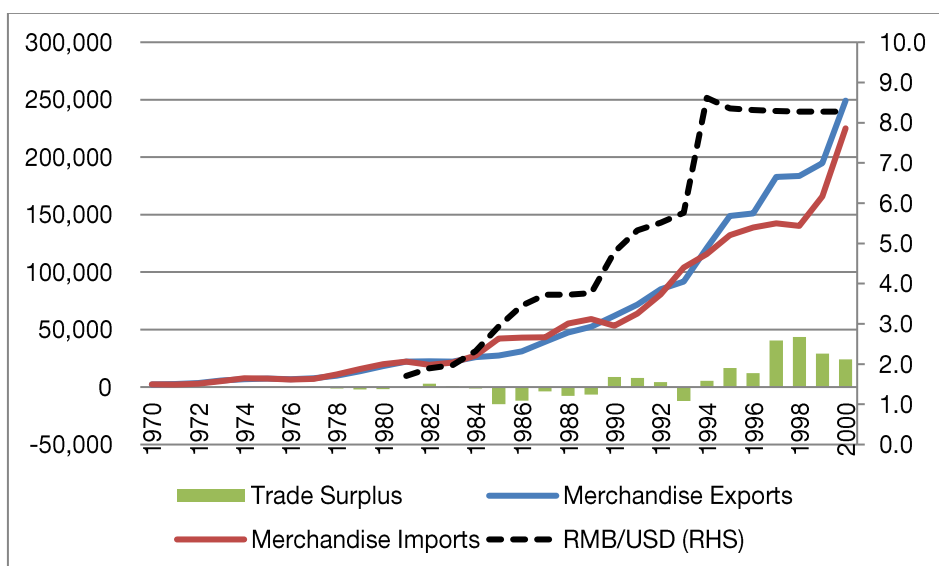
The appreciation momentum of the renminbi was broken when the PBoC introduced a new mechanism on 11 August 2015. According to the new rule, the RMB/USD reference rate was set based on the closing rate of the interbank foreign exchange market on the previous trading day. Moreover, the central bank announced a one-off depreciation of renminbi reference rate by 1.82 percent on the same day. The market responded intensely to the new arrangement—the exchange rate of RMB decreased by 4.4 percent, from 6.12 on August 10 to 6.4 on August 13. For fear that exchange rate volatilities would trigger cross-border capital outflows and undermine the domestic financial market, the PBoC suspended capital account reforms and instead focused on stabilizing renminbi exchange rates and restricting capital outflows. Under such circumstances, the adjustment of expectations came at a much higher cost than decades before when China had closed current and capital accounts. The intervention of the PBoC in the foreign exchange market cost billions of foreign exchange reserves, as the foreign exchange reserves fell significantly from USD 3.557 trillion in August 2015 to the lowest value of USD 2.998 trillion in January 2017.

Realizing that its intervention was too costly and that it would lead to the further depletion of foreign exchange reserves, the PBoC introduced a new rule in January 2016. Under the new rule, the foreign exchange rate of RMB was determined by both the closing rate of the RMB against the USD on the previous day and an exchange rate to maintain an index of trade-weighted, basket-fixed currency. This new exchange rate mechanism was more transparent and market based. Moreover, it stabilized the RMB exchange rate and alleviated the burden on the PBoC to intervene in the foreign exchange market. This new regime worked quite well—the depreciation of the renminbi slowed down, and China's foreign exchange reserves rebounded at the beginning of 2017. As the renminbi returned to the appreciation track in the second quarter of 2017, the PBoC made some modifications to the exchange rate mechanism by introducing a countercyclical factor in the reference rate formula. Although no one knows for sure what the countercyclical factor was exactly, from then until January 2018, the exchange rate of the renminbi against the US dollar was determined by three factors: the closing market rate of the previous day, the rate to stabilize the basket index, and the countercyclical factor. Afterwards, the countercyclical factor that made the rule less transparent was no longer used, and the exchange rate mechanism returned to its previous iteration.

5.2 How did the exchange rate reforms promote investment and trade?

China liberalized its foreign exchange rates at a gradual pace to encourage trade and investments. In the late 1970s, when China introduced the reform and opening-up policies, pilot programs were initiated to give exporters more freedom to retain some foreign exchange earnings. The retention ratio varied among industries and locations of enterprises—exporters in the coastal regions were allowed to keep 50% of their foreign exchange earnings, while exporters in the special economic zones had a retention ratio of 100%. This complicated system was later replaced by a uniform retention quota of 80% for all enterprises, except for 100% for mechanical and electronic products (Zhang, 1999). The invention of the foreign exchange retention mechanism made it easier for international trade companies to allocate foreign exchange resources. They were able to use their private holdings of foreign exchange reserves to make strategic investments and to import foreign equipment and facilities that were essential for expanding their production. Furthermore, in the earlier stages of opening-up, the government introduced an internal rate, which was only about half of the official exchange rate, for trade settlements. Although the official exchange rates depreciated significantly in the 1980s, the internal rates remained stable. This discriminatory exchange rate was like a devaluation of the RMB for exporters—it significantly promoted exports by improving their terms of trade. With stable internal prices, trade companies were also sheltered from foreign exchange volatilities. All of these policy arrangements helped trade companies gain a competitive advantage over their global counterparts in their early stage of development.

Figure 15. China's merchandise trade (in million USD) and the official exchange rate of RMB against USD



Source: CEIC database.

China's foreign trade companies accumulated substantial foreign exchange earnings after a surge in merchandise exports, whereas there was a growing need for domestic companies to acquire foreign currencies in order to import productive equipment from abroad. The establishment of the foreign exchange swap centers in 1986 made it possible for Chinese enterprises to allocate foreign exchange resources in a much larger market. Importers who could not acquire foreign currencies from the official channel were able to make transactions in the foreign exchange swap centers and obtain the

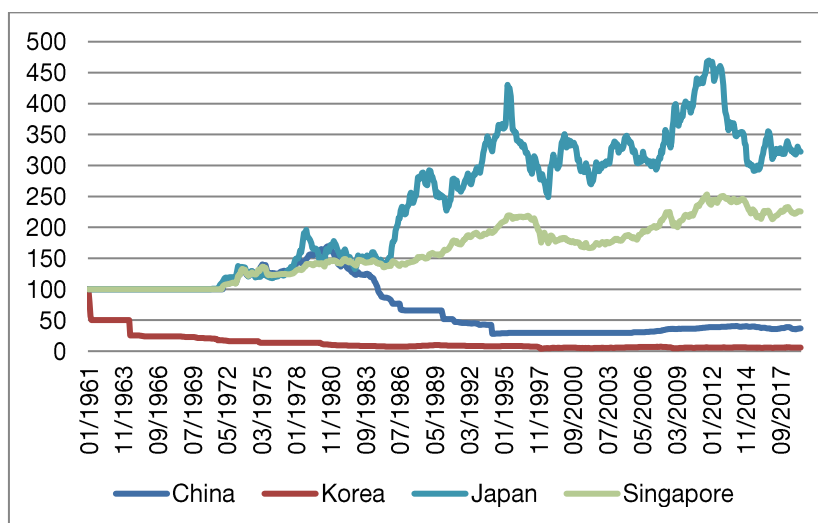
international transfers they needed, although at a much higher price than the official rate. What's more, exporters had an incentive to make more exports, selling their extra foreign exchange earnings in the swap market and earning a premium on foreign exchange rates. Therefore, this dual exchange rate system encouraged both exports and imports in the early years of China's reform and opening-up.

Apart from the domestic trade enterprises that benefited from China's foreign exchange reforms, international companies also enjoyed favorable policies when they made investments in China. Take Bavarian Motor Work (BMW) as an example: after the establishment of its largest overseas production base in Shenyang, BMW China enjoyed a favorable business environment due to a wide range of specialized arrangements. The State Administration of Foreign Exchange (SAFE) in Liaoning province provided technical assistance to BMW in terms of foreign exchange transactions for its daily operations. Beyond that, to solve the unique problems that BMW faced in its cross-border business, SAFE Liaoning opened a green channel for their foreign exchange purchases and sales. For example, in 2011 when the European sovereign debt crisis broke out and the Euro fluctuated violently, BMW suffered from significant foreign exchange risks under the rule that trade enterprises had to purchase foreign currency at spot rates and make immediate payments. To solve this problem, a pilot program which opened a dedicated foreign exchange account for BMW Shenyang was initiated. This account had an annual limit of Euro 150 million. BMW was able to purchase Euros in advance and make payments for trade services later in the year. This special arrangement gave BMW more flexibility in current account exchanges and shielded it from foreign exchange risks. According to financial experts in BMW Shenyang, the financial costs associated with currency conversion were reduced by RMB 6.34 million in 2012¹⁹.

In the past 40 years – thus since reform and opening-up, China has continued to liberalize its current account and make its foreign exchange regime more flexible. Meanwhile, the Chinese government has always placed high importance on the stability of the foreign exchange rate. Although the renminbi was de-pegged from the US dollar in the 2005 foreign exchange reform, it was re-pegged during the global financial crisis in 2008. The exchange rate reforms after 2015 were meant to change the exchange rate regime to a market-based one. However, as the market fluctuated significantly due to the policy changes, the Chinese government adjusted the exchange rate regime to guarantee stable exchange rates. The policy intentions of these arrangements were to maintain optimistic expectations in the private sector and to prevent a cross-border financial crisis. At the same time, the stable exchange rate of the renminbi cut the financial costs of trade companies and foreign investors by reducing their foreign exchange risks. Exchange rate stability is of high importance to countries in their early stages of development, especially export-driven economies. Figure 16 shows that the currencies of Korea, Japan, and Singapore were all hard or soft-pegged to the US dollar in the 1960s when their economies took off.

¹⁹ Data retrieved from Zhang W. (2012) "Creative foreign exchange management helps the development of BMW" in Financial News 2012 Jan 17, section 012.

Figure 16. Foreign exchange index of emerging countries
(December 1960=100; Upward trend indicates appreciation)



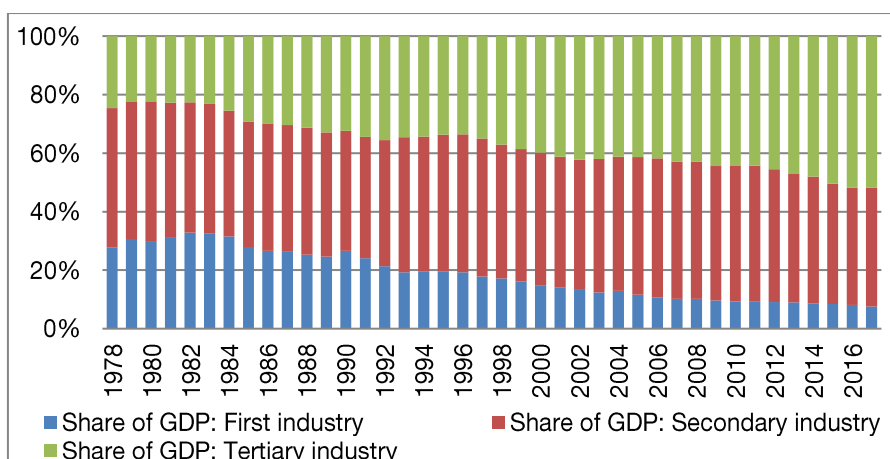
Source: CEIC database.

5.3 How did exchange rate reforms improve economic structure?

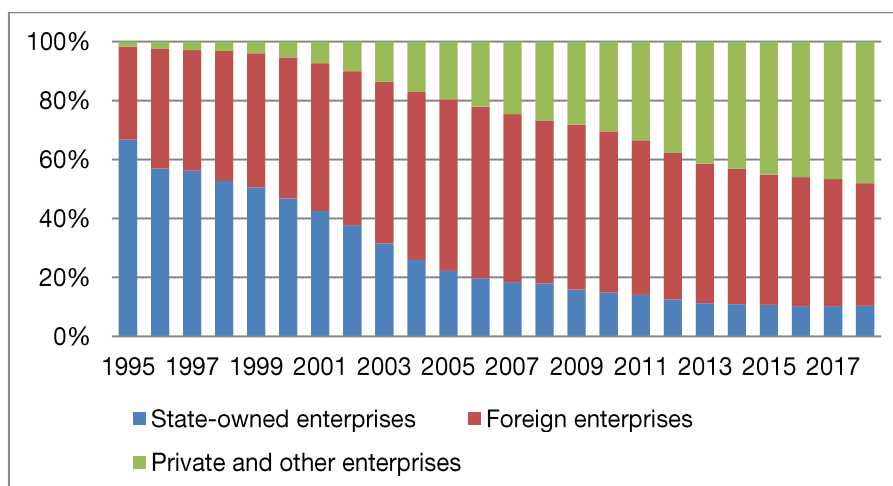
China's exchange rate reforms kept adapting to changes in economic conditions. They also played a significant role in improving China's macroeconomic structure.

At the beginning of the reform and opening-up policies, China was a poor closed country with a less developed manufacturing and service sector. Rural industries accounted for almost one-third of GDP, while manufacturing and service sectors added up to only around 70% (Figure 17). Moreover, the economy was dominated by state-owned enterprises run under the strict central planning system. Under those circumstances, the most crucial task was to stimulate economic growth by liberalizing the economy and promoting trade. By introducing the "foreign exchange retention system," exporters were allowed to retain a particular share of their foreign exchange earnings. They were also allowed to make foreign exchange settlements at an internal rate, which was much cheaper than the official exchange rate. This dual foreign exchange rate system helped Chinese exporters gain a competitive advantage when trading with the rest of the world, and China's manufacturing industries along the coast quickly boomed. The development of coastal areas was supported by the government and followed by manufacturing enterprises in the inland regions of China.

Furthermore, the exchange rate reforms that encouraged foreign trade also promoted the development of private enterprises. As Figure 18 shows, in 1995, the share of merchandise exports by state-owned enterprises (SOEs) accounted for 67% of total exports, while this ratio has steadily decreased and even dropped to around 10 percent in recent years. At the same time, the share of exports made by private enterprises increased from 1.8 percent in 1995 to 48 percent in 2018. The sharpest changes in the structure of exports occurred in the 2000s, when the renminbi was pegged to the US dollar and the exchange rate remained stable.

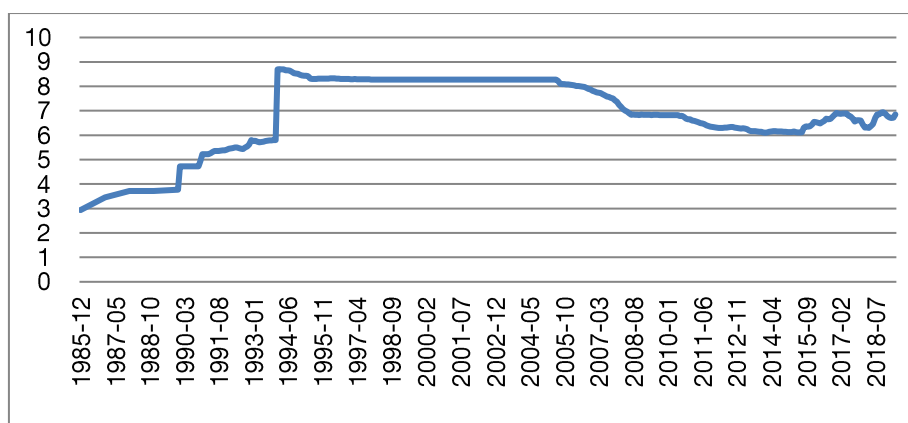
Figure 17. The structure of China's GDP by sector

Source: CEIC database.

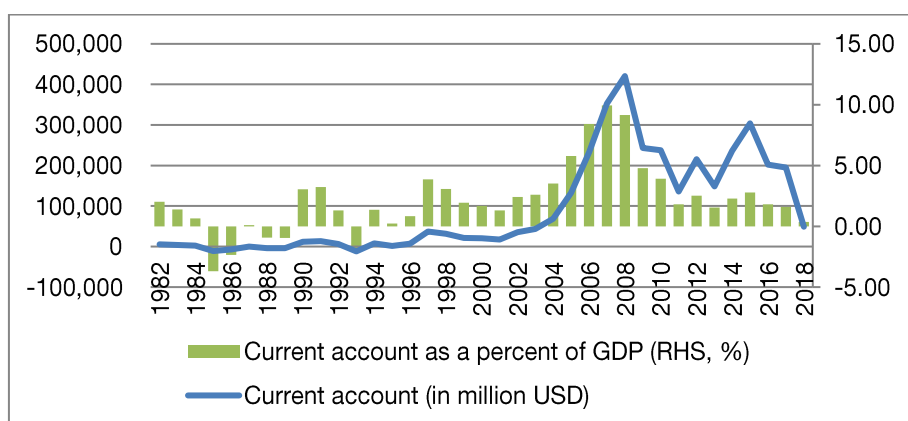
Figure 18. Breakdown of China's merchandise exports by the corporate type of exporters

Source: CEIC database.

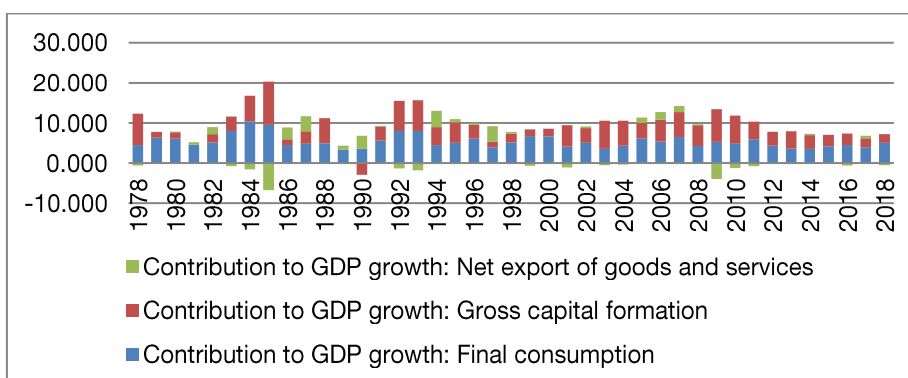
In the aftermath of the global financial crisis, global trade slumped, and China's exchange rate reforms played an essential role in the country's economic restructuring. The renminbi was de-pegged from the US dollar in 2010, and the new rule was to refer the exchange rate to a basket of currencies. Starting from 2014, the fluctuation band of exchange rate was widened from $\pm 0.3\%$ to $\pm 2\%$ in the interbank market during the trading day. In 2015, the PBoC announced that it would set the RMB reference rate according to the closing rate of the renminbi in the interbank foreign exchange rate market on the previous day. These reforms made the renminbi exchange rates more market-based. The less distorted exchange rates contributed to the improvement of China's balance of payment. Today, China's economic growth is becoming less dependent on foreign trade, and consumption is becoming the new engine of the economy. In the last decade, the current account as a percent of GDP dropped from 9.95 percent in 2007 to 0.36 percent in 2018. The contribution of net export of goods and services to GDP declined from 1.53 percent in 2007 to -0.57 percent in 2018, while consumption is gaining importance in the stabilization of economic growth, with its share in total GDP growth rising from 45.3 percent to 76.2 percent during the same period.

Figure 19. The exchange rate of renminbi against the US dollar

Source: Wind database.

Figure 20. China's current account and its share in GDP

Source: CEIC database.

Figure 21. Contribution to GDP growth by expenditure

Source: CEIC database.

5.4 China's foreign exchange reserve management

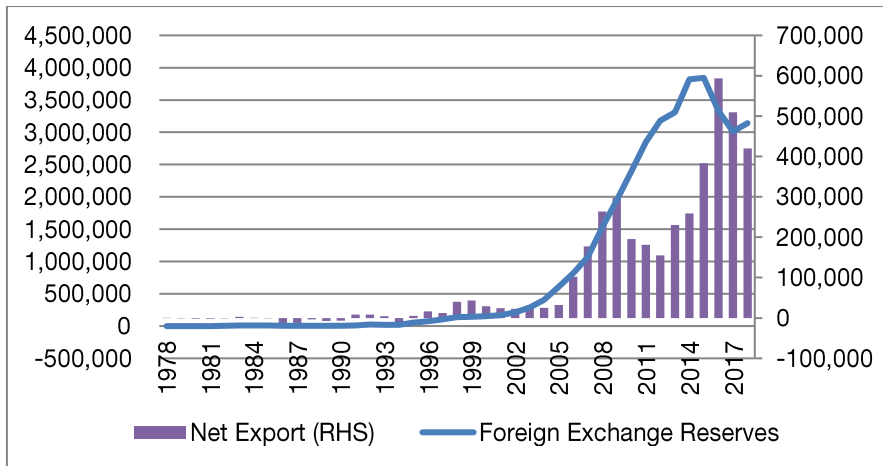
Foreign exchange reserves are essential for countries, especially developing countries, to tackle financial crises and maintain economic stability. In the initial stages of economic development, countries are in urgent need of crucial technology and equipment to develop their industries, and foreign exchange reserves can be used to

purchase necessary productive capital from advanced countries. Furthermore, emerging economies are more vulnerable to external financial shocks, and foreign exchange reserves provide them with more policy tools in the face of financial crises. An important lesson from the Asian financial crisis is that emerging countries should accumulate abundant foreign exchange reserves which can be utilized to stabilize asset prices and exchange rates in the event of a cross-border financial crisis.

China has tried for decades to accumulate and make full use of foreign exchange reserves for various aims. In the first few years after reform and opening-up, Chinese leaders emphasized the importance of introducing technology and equipment from advanced countries. This provided a short-cut for China to gain productivity and develop its manufacturing industry. To import from Western nations, China required foreign exchange reserves, but China lacked the capacity to make exports and accumulate foreign exchange reserves at this time. Thus, there was a consensus among state leaders to restrict the use of foreign exchange assets by establishing a centralized control system. In this system, a foreign exchange fund had to be used to import goods in some selected sectors such as advanced technology, essential equipment, and materials for production and construction which were absolutely necessary and in short supply (WTO, 1987). This import licensing system was introduced as an administrative measure to accomplish the state goal of import utilization. Apart from quantitative tools including trade licenses and quotas on consumption goods, there were also high tariffs on restricted products such as cars, but import subsidies on chemical materials, productive equipment, and some essential components and parts. Although the trade companies were allowed to retain a portion of their foreign exchange earnings in the foreign exchange retention system, there remained substantial limits on how they could use these retentions. All of these efforts helped China to make the most use of its foreign exchange resources when there was a short supply of reserves.

After joining the WTO in 2001, China saw a tremendous increase in its trade with the rest of the world. As such, the massive expansion of China's net exports contributed to the rapid build-up of foreign exchange reserves. From 2001 to 2018, China's foreign exchange reserves rose from USD 165.6 billion to US 3.14 trillion. The reserves reached their peak at USD 3.84 trillion in 2015. As a reserve shortage was no longer a problem for China, tight controls on import structure and foreign exchange conversions were relaxed. A series of policies were also announced to encourage firms to hold foreign exchange earnings abroad. For example, the qualifications for domestic firms to retain foreign exchange earnings in bank accounts were lowered, and the ceiling on such accounts was raised (PBoC, 2008). The export verification system which forced the conversion of foreign exchange revenues by exporting enterprises was also abolished in 2012. Enterprises and individuals were both allowed to keep their foreign exchange earnings as they wished.

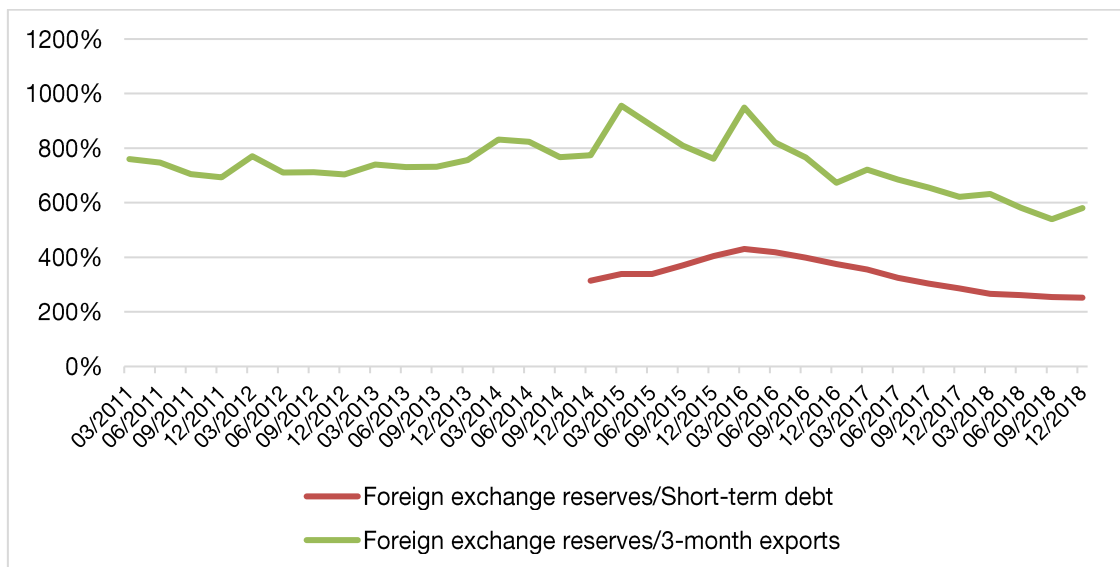
Figure 22. China’s foreign exchange reserves (USD million)



Source: Wind database

Although China has accumulated adequate foreign exchange reserves according to various standards—China’s foreign reserves as a percent of external debt exceed 200 percent, and cover about 6 rounds of 3-month imports—Chinese authorities still attach a high importance to maintaining the stability of foreign exchange reserves in order to provide a safe buffer for the economy. After the exchange rate reforms in August 2015, depreciation expectations on the renminbi led to massive capital outflows, and China’s foreign exchange reserves fell sharply from USD 3.99 trillion in June 2014 to USD 2.99 trillion in January 2017. As a response to the capital outflows and decline of its foreign exchange reserves, China imposed tighter restrictions on currency exchange and cash withdrawals. For example, the amount of annual cash withdrawals abroad was limited to no more than RMB 100,000, with a daily limit of RMB 10,000 on a single card. Furthermore, the supervision of cross-border transactions became stricter, with the requirement of banks to report all cash transactions over RMB 50,000.

Figure 23. The adequacy of China’s foreign exchange reserves

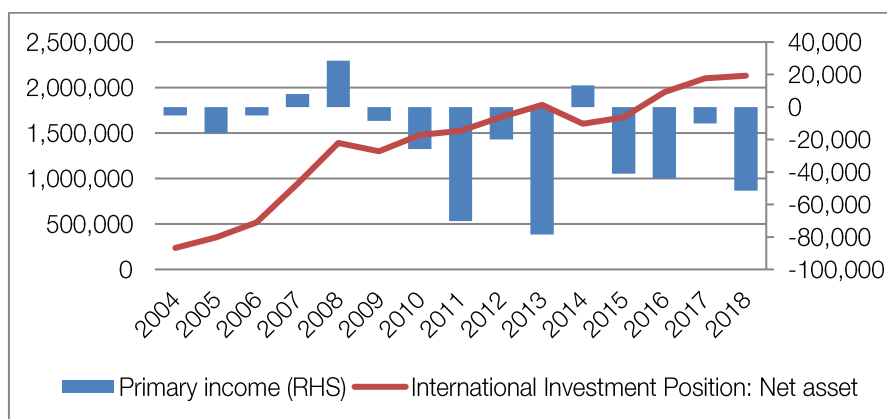


Source: CEIC database.

The shift in foreign exchange reserve management practices in recent decades shows that China’s policy focus has switched from stimulating economic growth to maintaining

financial stability. Although much opportunity cost is associated with holding foreign exchange reserves—the financial profit of net financial assets remains negative for many years (Figure 24)—China still chooses to be the largest creditor in the world due to stability concerns. When financial turbulence occurs, Chinese authorities use the country’s mass reserves as a powerful tool to stabilize foreign exchange rates. In the future, some controls on the capital account could also be introduced to stop the loss of foreign exchange reserves and to ensure that the reserves are adequate according to China’s standards.

Figure 24. China’s net foreign assets and primary income (USD million)



Source: CEIC database.

6. Summary and Policy Implications

Macroeconomic policy framework has played a crucial role in the successful structural transformation of the Chinese economy over the past four decades. Although we do not advise other developing countries to blindly copy China's policy choices without considering various national conditions and different stages of development, we believe that China’s experience can act as an important reference point.

In this paper, we have summarized three key strategies from China’s experience with macroeconomic management for other developing countries seeking to embark on a similar journey and sustain rapid catch-up growth: first, proactive macroeconomic management to maintain economic stability; second, financial reform to promote financial deepening, encourage channelling savings into investment, and ensure financial stability; and third, carefully managed capital account liberalization to promote investment, trade, and industrial structural upgrading.

Underdeveloped markets and the lack of experience and capabilities of enterprises and other market players are major obstacles preventing many developing countries from economic take-off. Therefore, governments’ macroeconomic management for the purpose of creating and maintaining a favorable environment is indispensable for developing countries as they seek to develop mature market players and establish a mature market economy. Only when the government and the markets cooperate well with one another can developing countries achieve structural transformation and steady economic progress.

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