The Evolution of Money Creation Mechanism In China

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Abstract: This paper studies the evolution of money creation mechanism in China for the past decade. The evolution of the monetary base in the past two decades can be roughly divided into four periods. When the government increases their fiscal expenditure, the monetary base will increase as people will have more deposits in the commercial banks with more economic activities being promoted.

1. Introduction

The past decade witnessed the rapid evolution of the Chinese economy and financial system. One of the major changes is observed in the mechanism of money creation as displayed in Figure 1.

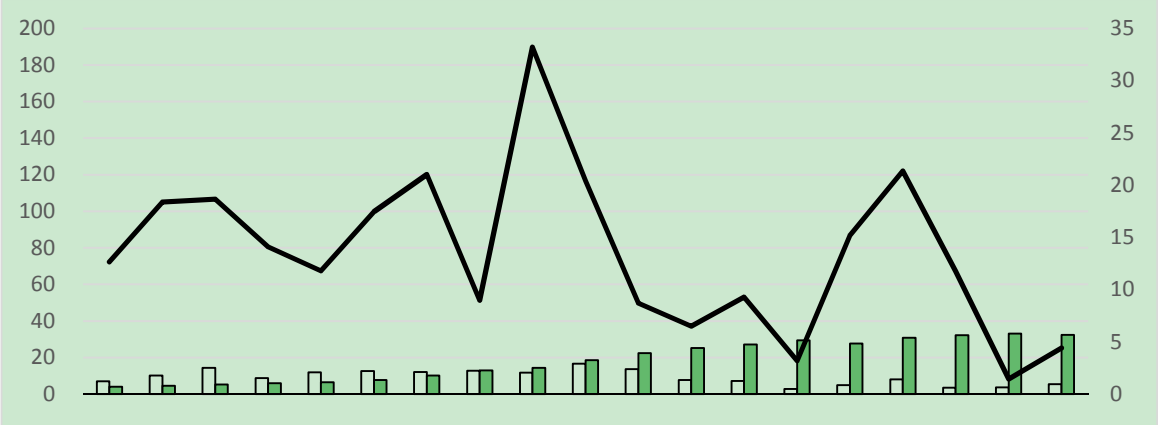

Figure 1. The monetary base, the broad money aggregate and the money multiplier (2001-2019)

The monetary base in China went from 2001 to 2019, grown by percent. The average annual growth rate stood during 2010-2014, which slowed down to 2014-2019. Similarly, the broad monetary aggregate measured by M2 is multiplied by? Times compared to that of 2010, amounting at 2019[1].

The evolution of the money creation mechanism is best reflected in the changes of money multiplier. These changing patterns give rises to some What are the drivers for these changes? How does the underlying mechanism of money creation evolve in the past two decade? Who are responsible for this evolution?

In order to analyze in-depth about the evolution of money creation mechanism in China, it's crucial to see the essence of money creation within contexts[2]. Before the catastrophe brought by the 2008 financial crisis, China's economy has an average annual growth of GDP for 8%, with matching level of private debts. With the hit of the crisis, most of the western backs suffered from the debt[3] overhang while Chinese banks resurged quickly after the destruction. However, China has its own problem: a deficiency in domestic consumptions. In order to boost the aggregate demand, Chinese government put forward a stimuli package, aiming to bring up the level of domestic investment through encouraging the borrowings.

These packages galvanized private sectors to borrow more and commercial banks to extend their loans massively, which was adopted by Credit Creation Theory as a main way to create new money. The advocate stated that by[4] crediting the borrower's account with deposits while lending out the

money, new broad money is being created out of thin air, which directly challenged the Fractional Reserve Theory, which argues that banks are only financial intermediaries that make loans from pre-existing deposits. According to Richard Werner's analysis on money creation theories, he testified each theory with empirical evidence, ending up finding that the empirical evidence upholds the credit creation theory, which had been least emphasized throughout the history of macroeconomics. Its implication is pivotal for people to understand the essence of financial system and for financial regulators to set policies based on multiple constraints of money creation to prevent the financial instability[5].

Analyzing the evolution of money creation mechanism in China, one is hardly possible to ignore the functioning of credit creation theory as it carries with clear merits. From the perspective of constraints commercial banks are subject to, CCT attests that the reserve requirement has no longer been placed at the major approach to restrict the money creation process, rather, it's the prudential regulations that play the key roles during the process. If one chooses not to utilize CCT to interpret the money creation mechanisms in China, it's more likely that he or she digress from the logical path of understanding the whole financial system. Besides, the money creation[6] capability of the commercial banks is also restrained by the market force, risk management, and the behaviors of the money holders. Most importantly, the ultimate constraint on money creation is monetary policy, the key for analyzing the interactions between different entities and mutual impacts during the process of money creation. Keeping the merits of CCT in mind, one can continue with analysis of money creation mechanisms in China through a series of data and methods which will give answers to the questions raised above. Also, the paper will enumerate its contribution and pragmatic value to the current system.

By dissecting the issue from the stand of CCT, one is able to use the balance sheets from different agents such as the commercial bank, the central bank, and the individuals, as well as the stock-and-flow consistency analysis to comprehend the key mechanisms of money creation in China and their changes over years accurately. In addition, this paper will provide answers for the problems from the following two aspects. Theoretically, it not only clarifies the interactive relations between different agents of the money creation and their features through analyzing the balance sheets but also demonstrates the driving factors for the change of money supply through kinetic functions. Quantitatively, it reveals clearly the changes in money creation mechanism from 2000 to 2020 in China by poring over the data and statistics presented.

The contribution sand practical values of this paper should be stressed in the following perspectives. Firstly, it does not only provide readers with a comprehensive review of money creation mechanism in China but also an innovative perspective to understand the evolution of the financial institutions in China from a novel perspective with deep roots in balance sheet of individual agents and stock-flow consistency. Furthermore, it serves to contribute to the comprehension of Chinese financial system by reviewing the history of money creation in China and highlight its changes over the years.

In this section, we will mainly reveal how different behaviors will affect the change in monetary base, which is the Reserve Money, through analyzing the balance sheet of the People's Bank of China (PBoC) shown above. On the asset side of the balance sheet, we can identify three major items whose share in the total assets is higher than 1%, i.e. the Foreign Exchange (denoted as FE), the Claims on Government (denoted as CG), and the Claims on other Depository Corporations (denoted as CC). Among these three items, the Foreign Exchange takes the largest proportion of the total asset, amounting to 57%. On the liability side of the balance sheet, there are two three key items. The first item is the Currency Issue (denoted as C), referring to coins and banknotes issued by the PBOC circulating in the economy. The second item is the Deposits of Financial Corporations (denoted as R), which is mainly composed of deposits of depository institutions such as commercial banks with the PoBC. The Currency Issue together with the Deposits of Financial Corporations composes the monetary base (denoted as MB). In other words, MB=C+R. The monetary base is the major liability of the PBoC, taking up the largest share of 87% in the total liabilities. The third item

is the Deposits of Government with the PBoC (denoted as DG), making up 9% of the total liabilities.

Table 1. The balance sheet of the People's Bank of China

Item	Trillion RMB	Proportion in total assets/liabilities
1. Foreign Assets	22	59%
1.1 Foreign Exchange	21	57%
1.2 Monetary Gold	0	1%
1.3 Other Foreign Assets	0	1%
2. Claims on Government	1	4%
3. Claims on Other Depository Corporations	12	32%
4. Claims on Other Financial Corporations	0	1%
5. Claims on Non-financial Sector		0%
6. Other Assets	1	4%
Total Assets	37	100%
1. Reserve Money	32	87%
1.1 Currency Issue	8	22%
1.2 Deposits of Financial Corporations	23	61%
1.2.1 Deposits of Other Depository Corporations	23	61%
1.2.2 Deposits of Other Financial Corporations		0%
1.3 Deposits of Non-financial Institutions	2	4%
2. Deposits of financial corporations excluded from Reserve Money	0	1%
3. Bond Issue	0	0%
4. Foreign Liabilities	0	b0%
5. Deposits of Government	3	9%
6. Own Capital	0	0%
7. Other Liabilities	1	2%
Total Liabilities	37	100%

According to the balance sheet identity, the sum of the asset items should always equal to the sum of the liability items. Focusing on the most important asset and liability items mentioned above, we can derive at the following equation:

$$FE + CG + CC + OA = MB + DG + OL. \quad (1)$$

In the above equation, OA refers to all assets of the PBOC other than the Foreign Exchange (FE), the Claims on Government (CG), and the Claims on Other Depository Corporations (CC). Likewise, OL refers to all liabilities of the PBOC other than the Monetary Base (MB) and the Deposits of Government (DG). With a few simple manipulations, we can rewrite Equation (1) as follows:

$$MB = FE + CG + CC - DG + OA - OL. \quad (2)$$

From the above equation, we can identify four major channels that drives the evolution of the monetary base in China in the past decades.

2. The Foreign Exchange Channel of Base Money Creation

The first channel of base money creation is through the net inflow of foreign exchanges. The inflow of foreign exchanges rose dramatically after 2001 since China joined the WTO in 2001. With the comparative advantages of cheap labor and abundant resources, the export of China boosted, resulting in expanding trade surplus and growing inflow of foreign exchanges. When Chinese citizens obtain foreign currencies by means of trade, transfer, aid and others, they exchange them into RMB with the commercial bank since RMB is the only legitimate currency allowed in

domestic transactions in China. Then the commercial bank will make exchange settlement with the PBoC.

During this process, the commercial bank The inflow of foreign exchanges can have a large impact on the monetary base, because when private corporations attained a large amount of foreign currency through international trade, they will exchange it to RMB with the commercial banks. Then, commercial banks will exchange the foreign currency it received from private sectors with the Central bank. Thus, for commercial bank, its foreign exchange will be offset by the amount of reserve, which is monetary base, offered by the central bank. Eventually, Central bank's foreign exchange will increase by the same amount of the reserve it uses for exchange settlement, which expands its balance sheet. In this process, the central bank passively increases the monetary base with rising demand for foreign exchange settlement[7].

However, foreign exchange began to decrease in 2014 and stabilized after 2016. The reason for the decrease is the change on foreign exchange policy beginning in 2015, which rendered the RMB to depreciate. As a result, The foreign exchange started to shift from inflows to outflows.

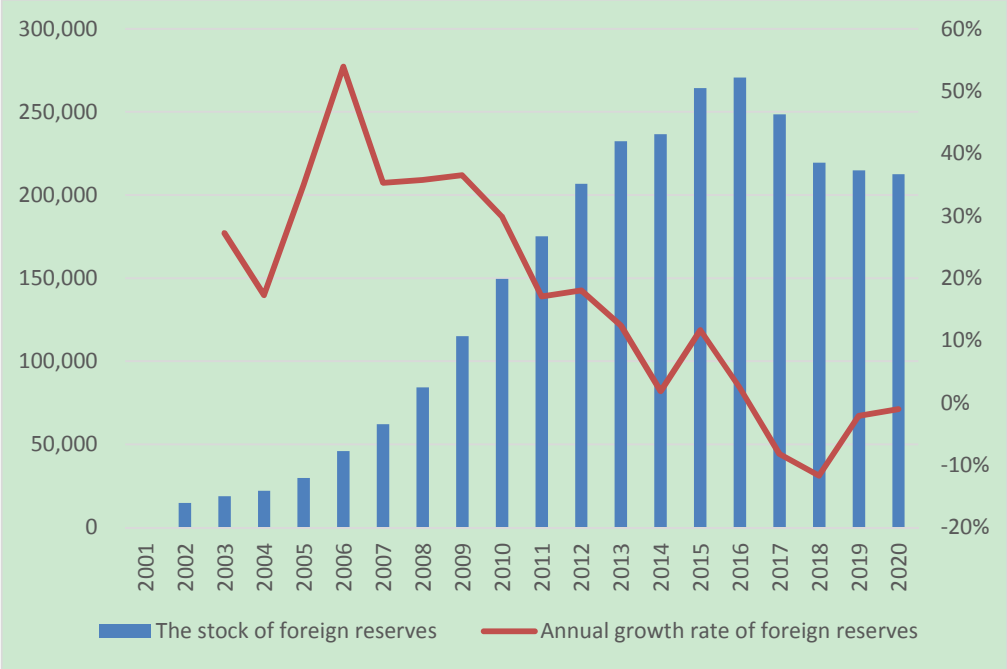

Figure 2. The evolution of the Foreign Exchange, 2000-2020

3. The Open Market Operation Channel of Base Money Creation

The second channel affecting the amount of monetary base is the Claims on government, which has been generally stable since 1998. Nevertheless, the claim on government bond rose suddenly in 2007 and then remained to be steady. The central bank sometimes purchased special government bonds in order to put more monetary base into the economy, which is a pivotal mean for stabilizing the economy.

4. The Relending Channel of Base Money Creation

The Claims on other Depository Corporations are mainly made up of the loans offered by the central bank to many commercial banks through relending. After 2014, this portion of the total assets has kept rising and generally replaced foreign exchange as the major channel for increasing the monetary base. When the central bank relends the money to the commercial banks, it expands its balance sheet as it balances its liability through increasing the same amount of reserve. Similarly, Commercial bank's balance sheet expands as both the asset, which is the reserve received, and the liability, which is the amount of re-loan it needs to pay back, increasely.

5. Conclusion

The Deposit of Government affects the amount of monetary base in a way that is different from the aforementioned three channels. The reason for the difference can be explained by its core mechanism. When the publics pay taxes to the government, they will finance their tax payments through their deposits in the commercial bank. Therefore, the balance sheet for commercial banks will shrink as there will be a simultaneous decrease in both deposit and monetary base in order to reach the balance state. As a result, the central bank's liability will not change since the decrease in monetary base will offset the increase in government deposit. On the contrary, when the government increases their fiscal expenditure, the monetary base will increase as people will have more deposits in the commercial banks with more economic activities being promoted.

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