

# Channels of Base Money Issuance and Policy Responses in Monetary Supply

Linli Luo

East China University of Political Science and Law, China

**Abstract:** Since the People's Bank of China became the monetary authority and implemented the functions of the central bank in 1996, the regulation of the money supply is almost regulated by the channel of the base money supply. Therefore, the discussion on the historical changes of the channel of the base money supply in China and their impact is helpful to study how to adjust the money supply in the future, and then bring good guidance to the proposal of monetary policy. By analyzing the four channels of base money supply one by one, and based on the data from the People's Bank of China and the National Bureau of Statistics, this paper finds out the overall trend change and the impact of the analysis on the overall money supply, and finally puts forward constructive suggestions from the perspective of relatively deficiencies.

**Keywords:** Base money, Supply channels, Reloan funds, Outstanding for foreign exchange, Open market operation, Innovative channels for base money delivery.

## 1. Introduction

Base money, also known as monetary base, is referred to as high-powered money due to its ability to amplify or contract the total money supply by multiples. It is the most core and fundamental part of the money supply, consisting of currency in circulation and the total reserves of the banking system. Base money is a debt instrument issued by the central bank (or, in other words, an IOU), manifesting as the base money held by commercial banks and the cash in circulation held by the public (recently, there has been an addition of customer reserve funds held by third-party payment companies in the central bank, but the amount is relatively small and can be temporarily ignored) [1]. Generally, when we refer to base money, it usually refers to the cash in circulation issued by the central bank, including vault cash, reserve deposits (comprising both required reserves and excess reserves), and cash held by the general public.

In practice, the People's Bank of China (PBOC) generally injects base money through channels such as open market operations, rediscounting, and foreign exchange settlement. Base money can achieve the purpose of contracting or expanding the money supply through the deposit creation function of commercial banks. Therefore, changes in the channels of base money injection are one of the main ways for most countries in the world to change their monetary policies. In most countries, open market operations are the main monetary policy tools for central banks to absorb or release base money and regulate market liquidity. By conducting transactions in negotiable securities and foreign exchange with market counterparties, central banks can achieve the goals of monetary policy regulation. China's open market operations consist of two parts: RMB operations and foreign exchange operations. Foreign exchange open market operations were launched in March 1994, and RMB open market operations resumed trading on May 26, 1998, with the scale gradually expanding. Since 1999, open market operations have developed rapidly and have now become one of the main tools for the PBOC's routine monetary policy operations. They have played an active role in regulating the liquidity level of the banking system, guiding the trend of

money market interest rates, and promoting the reasonable growth of the money supply. The use of open market operations to regulate the injection of base money, thereby changing the money supply, is the most moderate and efficient way in monetary policy methods. Therefore, it is highly praised by economists and central banks of developed countries. However, the conditions for it to take effect are also relatively strict. It requires a more developed capital market to provide more sufficient securities trading information, and quickly convey the purpose that the central bank's open market operations intend to achieve, so as to realize the central bank's goal of contracting or releasing the money supply. Due to the underdevelopment of financial markets and the imperfection of relevant systems, China's early open market operations used central bank bills as the trading variety. In the nearly ten years, central bank bills have played an important role in absorbing liquidity, curbing inflation, and controlling the scale of money supply. However, as a transitional product under the background of China's long-term trade surplus, underdeveloped government bond market, and unreasonable structure of the central bank's balance sheet, central bank bills have gradually shown many limitations in their use. A large issuance not only produces a "crowding-out effect" on the government bond market, but also has a high issuance cost, which can easily lead to a significant increase in the central bank's interest expenditure. Therefore, central bank bills are a temporary tool design for monetary contraction, and they are not sustainable in operation. With the deepening development of financial markets, the targets of China's open market operations have gradually shifted from central bank bills to bonds, and the frequency and scope of operations have been significantly improved.

However, with the development of currency internationalization and digital currency, the channels for the injection of base money have also been innovated accordingly. There are four main innovative injection tools used in China, namely Standing Lending Facility (SLF), Medium-term Lending Facility (MLF), Pledged Supplementary Lending (PSL), and Structural Monetary Policy Tools. The SLF is a normal liquidity supply channel of the PBOC, mainly designed to meet the large-scale liquidity needs of financial

institutions with a longer term. The main targets are policy banks and nationwide commercial banks, with a term of 13 months. The interest rate level is determined comprehensively according to the needs of monetary policy regulation and market interest rate guidance. The SLF is issued in the form of collateral, with qualified collateral including high-credit-rated bond assets and high-quality credit assets, etc. The MLF is a monetary policy tool provided by the central bank to supply medium-term base money. The targets are commercial banks and policy banks that meet the macro-prudential management requirements, and it can be carried out through a bidding process. The MLF is issued in the form of pledge, with financial institutions providing high-quality bonds such as government bonds, central bank bills, policy financial bonds, and high-grade credit bonds as qualified pledged collateral [4]. The MLF interest rate plays the role of a medium-term policy interest rate, influencing the balance sheets of financial institutions and market expectations by adjusting the cost of medium-term financing to financial institutions, guiding them to provide low-cost funds to the real economy sectors that conform to national policy orientations, and promoting the reduction of social financing costs. The PSL is designed to provide a long-term stable and appropriately costed source of funds for the development of financial support for shantytown renovation. The main function of the PSL is to provide long-term and large-scale financing to financial institutions to support key areas, weak links, and social undertakings of the national economy. The PSL is issued in the form of pledge, with qualified collateral including high-grade bond assets and high-quality credit assets. Structural Monetary Policy Tools are instruments used by the People's Bank of China to guide the credit direction of financial institutions and play a precise irrigation and leverage role. By providing rediscounting or financial incentives, they support financial institutions in increasing credit allocation to specific fields and industries and reducing corporate financing costs. In response to the economic situation in recent years, a series of specific tools have been issued accordingly.

## 2. Changes in the Channels of Base Money Injection

With the evolution of domestic and international economic conditions, the channels through which China injects base money have also undergone changes. In the process of base money injection by China's central bank, rediscounting, foreign exchange settlement, and RMB open market operations have each played a significant role in different historical periods. After 2013, the People's Bank of China (PBOC) expanded the channels of base money injection according to the economic development situation of different stages, that is, it creatively introduced some innovative base money injection tools. The specific channel changes over different periods are as follows:

### 2.1. Rediscounting

Since the establishment of the People's Bank of China (PBOC) as China's central bank in 1984, with primary functions such as currency issuance, relending has been a major channel for the injection of base money. According to historical data, from 1985 to 1993, relending accounted for

approximately 80% of the total base money supply, a situation that persisted until 1999. With the advent of the 21st century and the implementation of other monetary policies during the same period, the proportion of relending declined steadily from 1999 to 2007, indicating that the monetary authorities attempted to diversify the channels of base money injection and use more tools to influence the money supply.

The global financial crisis in 2008 had a significant impact on China's underdeveloped financial markets at that time. To stabilize interest rates, the monetary authorities increased credit injections into the market, resulting in a gradual increase in the proportion of relending after 2008, albeit with relatively small increments. After 2015, the scale of relending shrank, but it began to rise slowly again from 2016 due to policies such as poverty alleviation loans. During the COVID-19 pandemic in 2020, to counteract the economic stagnation caused by the pandemic, the scale of relending gradually returned to the levels seen at the beginning of the century.

As shown in Figure 1, despite the relatively large share of relending and the fluctuations in key years, the overall trend has been downward. This is attributed to the PBOC's creation of more targeted and innovative channels for money injection, which has diverted funds from relending. As a result, the PBOC has achieved a diversified approach to monetary injection and enhanced risk management in monetary policy.

**Table 1.** Relending Balances and Proportions from the End of 1999 to the End of 2022

Year	Relending Balance (in billion yuan)	Proportion (%)
1999	93734.3	76.06
2000	99371.07	74.53
2001	112314.7	73.15
2002	131293.93	71.35
2003	158996.23	70.57
2004	177363.49	67.72
2005	194690.39	64.46
2006	225285.28	61.69
2007	261690.88	57.61
2008	303394.64	56.35
2009	399684.82	58.62
2010	479195.55	59.46
2011	547946.69	60.00
2012	629909.64	61.51
2013	718961.46	61.21
2014	816770.01	61.72
2015	939540.16	60.96
2016	1066040.06	60.57
2017	1201320.99	62.18
2018	1362966.65	64.62
2019	1531123.2	66.08
2020	1727452.07	67.09
2021	1926902.81	68.06
2022	2139852.67	68.55

Source: Website of the People's Bank of China ([www.pbc.gov.cn](http://www.pbc.gov.cn))

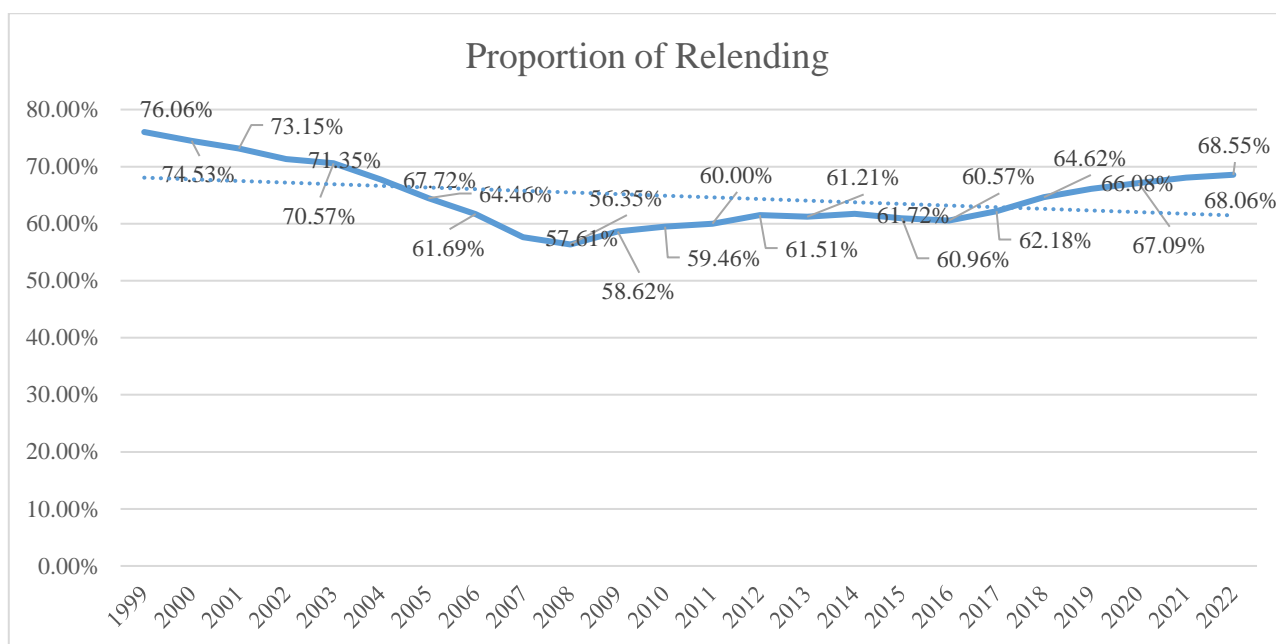


Figure 1. Proportion of Relending

## 2.2. Funds Outstanding for Foreign Exchange

Since 1994, China has implemented a unified exchange rate system and a mandatory foreign exchange settlement system, which requires non-financial institutions such as enterprises to sell their foreign exchange to banks. These banks then conduct foreign exchange transactions with the central bank through the State Administration of Foreign Exchange, thereby granting the central bank actual control over exchange rate fluctuations. As a result, China's monetary authority—the People's Bank of China (PBOC)—has utilized funds outstanding for foreign exchange (FOFFE) to inject base money in order to stabilize the exchange rate. As shown in Table 3, the proportion of FOFFE increased continuously from 1999 to 2011, a trend closely related to China's accession to the WTO in 2001. Following its entry into the international organization, China's trade volume surged, and its trade surplus expanded rapidly, leading to decades of high growth in the proportion of FOFFE. A large FOFFE proportion, however, causes the domestic money supply to become overly dependent on international exchange rates and trade volumes. Moreover, the base money injection through FOFFE places the central bank in a passive position, which is not conducive to the effective implementation of monetary policy.

Therefore, it is evident from the data in Table 2 that since 2012, the proportion of FOFFE has gradually declined, reaching single-digit levels during the COVID-19 pandemic in 2020. This trend aligns with the PBOC's policy shift beginning in 2012, aimed at effectively offsetting the excess liquidity caused by FOFFE through alternative means of money supply adjustment. Thanks to the central bank's timely policy adjustments, even during the challenging international trade conditions of 2020, there was no significant fluctuation in base money due to changes in FOFFE, thereby reducing uncertainties in economic volatility.

As illustrated in Figure 2, although the proportion of FOFFE exhibits a relatively volatile trend, it does not obscure the overall downward trajectory. This indicates that the monetary authorities are attempting to liberate themselves

from the passive nature of base money injection through FOFFE, shifting towards more proactive channels to avoid the numerous disadvantages associated with passivity.

Table 2. Balance and Proportion of Funds Outstanding for Foreign Exchange at the End of 1999–2022

Year	Balance of Funds Outstanding for Foreign Exchange (in billion yuan)	Proportion (%)
1999	14792.4	12.00
2000	14291.14	10.72
2001	17856.43	11.63
2002	23223.34	12.62
2003	34846.92	15.47
2004	52592.64	20.08
2005	71211.12	23.58
2006	98980.27	27.11
2007	128377.32	28.26
2008	168431.11	31.28
2009	193112.47	28.32
2010	225795.14	28.02
2011	253587.01	27.77
2012	258533.48	25.25
2013	286303.83	24.37
2014	294090.46	22.22
2015	265858.52	17.25
2016	219425.26	12.47
2017	214788.33	11.12
2018	212556.68	10.08
2019	212317.26	9.16
2020	211308.1	8.21
2021	212867.2	7.52
2022	214712.28	6.88

Source: Website of the People's Bank of China ([www.pbc.gov.cn](http://www.pbc.gov.cn))

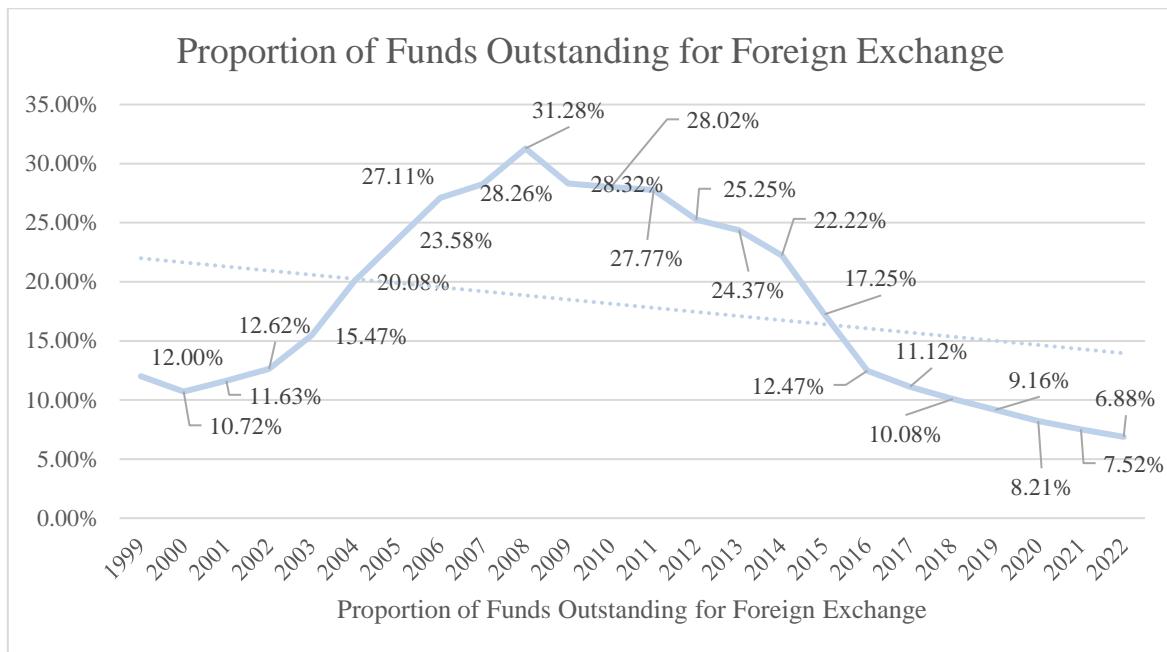


Figure 2. Proportion of Funds Outstanding for Foreign Exchange

### 2.3. Open Market Operations

Compared to developed countries, China's open market operations (OMOs) started relatively late, beginning in 1994. Due to the less developed and structurally incomplete capital market, the scale of operations was initially small and had a limited impact on the overall money supply. Initially, to stabilize the RMB exchange rate, the monetary authorities began OMOs in March 1994 and launched open market operations with short-term government bonds in April of the same year. At that time, the trading counterparties for government bond operations were limited to only 14 commercial banks, with a singular trading method and a single variety of transactions—reverse repurchase agreements. The auction volumes were small, with each operation ranging from 1 to 2 billion yuan. Affected by the Asian financial crisis, OMOs were essentially suspended in 1997. Between 1999 and 2000, the monetary authorities injected 440 billion yuan of base money through OMOs. In 2001, funds outstanding for foreign exchange increased by 381.3 billion yuan, and OMOs were conducted on 54 trading days throughout the year. From 2002 to 2005, as China's economy was in an upswing, the monetary authorities implemented a prudent monetary policy, significantly increasing the base money injection through foreign exchange operations. In 2003 and 2004, 1145.9 billion yuan and 1609.8 billion yuan of base money were injected, respectively. Affected by the global financial crisis, starting in the second half of 2008, China's monetary policy shifted from contractionary to moderately expansionary, with the monetary authorities flexibly adjusting the frequency and methods of OMOs according to macroeconomic control objectives. In 2008, the authorities increased the volume of short-term reverse repurchase operations and reduced the scale and frequency of central bank bills issuance, conducting 3.3 trillion yuan of short-term reverse repurchase operations and issuing 4.3 trillion yuan of central bank bills. In 2009, 870 billion yuan of reverse repurchase operations were conducted, and in 2010, 4.24 trillion yuan of central bank bills were issued. From 2009 to 2015, RMB OMOs resulted in a net injection of liquidity. During this period, in 2011 and 2012, the net injection of liquidity through RMB OMOs reached

1907 billion yuan and 1438 billion yuan, respectively, accounting for 48.5% and 51.9% of the newly added base money in those years.

In 2019, significant progress was made in the risk disposal of key financial institutions, with targeted measures taken to address risks in some small and medium-sized banks. On the basis of maintaining a reasonably ample macro liquidity, the People's Bank of China established a "four-tier defense line" to prevent liquidity risks in small and medium-sized banks, which included rediscounting, standing lending facility (SLF), use of statutory reserve requirements, and liquidity relending. The central bank increased the rediscounting quota by 200 billion yuan and the SLF quota by 100 billion yuan to provide liquidity support to small and medium-sized banks. Timely monetary policy operations effectively stabilized market confidence and played a crucial role in maintaining the stable functioning of financial markets such as the money, bill, and bond markets. It is evident that OMOs have evolved from merely being a liquidity injection tool to one that enhances the benchmark status of policy interest rates and ensures that money market interest rates fluctuate around the policy rates. In the post-pandemic era, OMOs remain a powerful tool for regulating the money supply and are expected to continue as the optimal choice for China's monetary authorities in monetary policy implementation for the foreseeable future.

### 2.4. Innovative Channels for Base Currency Issuance

To break free from the constraints of a relatively singular channel for base money issuance, the People's Bank of China (PBOC) innovatively introduced a series of novel monetary policy instruments, thereby increasingly positioning the central bank in a more proactive stance. Since 2014, the PBOC's regulatory approach has gradually shifted from quantity-based to price-based, actively constructing a corridor for interest rate management. As a result, numerous innovative instruments emerged during this period. In 2013, the Standing Lending Facility (SLF) was introduced to meet the long-term, large-scale liquidity needs of financial institutions. In 2014, the Medium-term Lending Facility (MLF) was launched to address the long-standing funding gap

in the banking system. In December 2014, the PBOC also introduced the Pledged Supplementary Lending (PSL) to support financial projects related to urban housing renovation. In 2015, a series of structural monetary policy instruments were issued in response to the national poverty alleviation policy, including targeted agricultural relending, targeted small business relending, rediscounting, inclusive small and micro-enterprise loan support tools, Pledged Supplementary Lending, carbon emission reduction support tools, special relending for clean and efficient coal utilization, relending for scientific and technological innovation, inclusive elderly care special relending, transportation and logistics special relending, equipment upgrade and transformation special relending, interest rate reduction support tools for inclusive small and micro-enterprise loans, toll road loan support tools, private enterprise bond financing support tools, loan support plan for housing delivery, real estate relief special relending, and housing rental loan support plan, among other industry-specific monetary policy support tools (as of March 2023).

The mechanism for base money issuance in China has been continuously adjusted both before and after the outbreak of the COVID-19 pandemic. The overall shift in the PBOC's base money issuance methods signifies an enhanced level of control and proactivity over funds. This inevitably increases the impact on the implementation of monetary policy and the money supply, which is conducive to the central bank's grasp and regulation of the overall monetary supply required by the national economy.

### **3. The Impact of The Changes in The Channels of Monetary Issuance Is Precisely the Current Issues Being Faced**

Since the People's Bank of China (PBOC) began to exercise its functions as China's central bank in 1994, the primary channels for base money issuance have evolved in tandem with different stages of China's economic development. Along with these changes, not only has the monetary authority's control over the money supply been altered, but the entire macro-financial domain has also undergone corresponding transformations.

The current base money issuance mechanism in China has consistently adapted to the changing macroeconomic situation, forming a “trinity” policy framework: short-term issuance primarily through open market operations, medium-term issuance mainly via Medium-term Lending Facility (MLF) operations, and targeted issuance dominated by relending and rediscounting. This framework is supplemented by the distinctive “three-tier, two-advantage” reserve requirement policy as an effective regulatory tool. Overall, it has met the needs of economic development and supported the reform of interest rate liberalization.

It is evident that the changes in base money issuance channels have continuously enhanced the proactivity of the monetary authority. While these changes have brought benefits to the central bank, they have also given rise to certain issues.

### **3.1. The Administrative Intervention in Relending Is Relatively High, And the Implementation of Relending Is Not Sufficiently Flexible**

Since the inception of relending by the People's Bank of China (PBOC), relending has been characterized by significant administrative intervention, primarily due to its origin as a policy instrument issued through administrative directives to major commercial banks. This historical legacy has persisted to the present day, imbuing relending—one of the primary channels for base money issuance—with a strong administrative hue. Consequently, the implementation of relending lacks sufficient flexibility and does not readily adapt to market fluctuations. Instead of responding dynamically to market changes, relending rates and volumes are often determined by the PBOC's overall economic assessments and subsequent administrative instructions or mandatory guidance.

The impact of relending extends beyond mere changes in the money supply; it also affects the loan-to-deposit ratios of commercial banks. Variations in relending lead to changes in the reserve deposits of commercial banks held at the central bank, which in turn alter the volume of loans extended by these banks. For enterprises and other borrowers, changes in relending can also influence lending interest rates, thereby affecting the overall cost of social financing. These changes in social financing costs can have broader implications for economic development.

Moreover, when used as a channel for base money issuance, relending typically represents a short-term policy measure (the maximum term for base money issued through relending is one year). This short-term nature introduces significant volatility in the money supply provided through this channel. Such volatility can, in turn, lead to corresponding issues in the overall implementation of monetary policy.

### **3.2. Foreign Exchange Purchases Have Diminished the Proactivity of The Monetary Authorities and Impacted the Cost of Social Financing**

Foreign exchange purchases once constituted a primary channel for base money issuance in China. However, their presence has significantly weakened the proactivity of monetary authorities, a feature that has long been criticized in the economics community. Therefore, when any country's base money issuance is dominated by foreign exchange purchases, it inevitably considers a transition. Consequently, China began to guide the decline of the proportion of foreign exchange purchases in 2011, which helped the economy navigate through the pandemic years more smoothly.

The impact of foreign exchange purchases on proactivity is particularly evident in the context of China's growing international trade. As enterprises' foreign exchange reserves increase, they exchange these reserves for base money through commercial banks. This process places the banking system in a passive position regarding this channel of base money issuance. Moreover, foreign exchange purchases also affect the loan-to-deposit ratios of commercial banks. When enterprises or residents purchase foreign exchange through commercial banks, the latter's deposit ratios increase, which in turn affects the money multiplier and ultimately influences the issuance of base money.

Foreign exchange purchases also impact the cost of social financing. When enterprises or residents purchase foreign exchange through commercial banks, the exchange rate changes, adding an additional cost to their financing. This effectively increases the financing costs for enterprises and residents. Additionally, changes in loan-to-deposit ratios lead to an increase in the broad money supply, which in turn affects interest rates. As the channels for base money issuance change, interest rates also fluctuate, further raising the financing costs for enterprises and individuals.

The long-term nature of base money issued through foreign exchange purchases means that their impact on the overall money supply is enduring. This long-term influence complicates both the central bank's efforts to adjust the current economic situation and the more profound effects of the original foreign exchange purchase channels. Therefore, the impact on the time cost of social financing is also significant.

### **3.3. Open Market Operations Are Constrained by The Imperfections in The Capital Market Structure**

Compared to developed countries, China's development of open market operations (OMOs) began relatively late. In the early stages, China's OMOs primarily focused on government bonds, which were constrained by the limited scale of these securities. This limitation, in turn, affected the effectiveness of OMOs. In the current context where OMOs are more feasible, the People's Bank of China (PBOC) has relied on central bank bills as a tool for base money issuance. While the PBOC has a high degree of control over the issuance of these bills, the underdeveloped nature of China's financial markets and the imperfect capital structure restrict the effective implementation of OMOs. This, in turn, impacts the efficacy of monetary supply regulation.

Central bank bills are not only costly but also create significant redemption pressure for the central bank upon maturity. Therefore, in addition to bills, other instruments that are more conducive to the implementation of OMOs should be further developed to enhance the effectiveness of these operations.

### **3.4. The Intensity of Base Money Issuance Through Innovative Channels Is Insufficient**

Innovative channels for base money issuance are relatively novel compared to traditional channels and are more targeted. They are designed to adjust base money issuance for specific sectors or periods to regulate the money supply. The introduction of these new policy tools has indeed maintained the stable growth of the total base money supply. However, structurally, these new tools have shown significant biases in their distribution. This is because, on the one hand, the central bank explicitly requires banks to provide high-quality collateral or pledged assets, including government bonds, central bank bills, policy bank bonds, high-grade credit bonds, and high-quality credit assets. Large national banks are more capable of providing such collateral compared to smaller regional commercial banks. On the other hand, the central bank also specifies that certain tools are only available to national commercial banks or policy banks, directly excluding regional banks and smaller institutions. For example, the Short-term Liquidity Operations (SLO) are only

available to some banks among the central bank's open market primary dealers, excluding non-primary dealer banks. The Standing Lending Facility (SLF) is limited to national banks and policy banks, excluding regional city commercial banks or rural commercial banks. The Pledged Supplementary Lending (PSL) is restricted to policy banks, making it inaccessible to non-policy banks. This discriminatory treatment is direct and rigid, and the excluded banks find it difficult to gain access to these new channels through competitive efforts in the short term. Therefore, under the framework of new monetary policy tools, large banks are more likely to obtain low-cost liquidity directly through loans from the central bank. It is worth noting that open market primary dealers are typical representatives of these benefiting large banks. In essence, tools such as SLO, SLF, MLF, and TMLF are broad forms of open market operations. A bank listed as a primary dealer has the qualification to trade directly with the central bank and can more easily obtain low-cost funds. To break through the current limitations of innovative base money issuance channels, the monetary authorities have proposed additional requirements.

## **4. Monetary Supply Policy Response**

This section addresses the issues currently faced by channels of base money issuance and draws on existing solutions (experiences from developed and developing countries) to propose suggestions from various dimensions for each type of channel. These proposals are aimed at providing better insights for the improvement of monetary supply policy.

From the perspective of the overall market environment and interbank supervision, it is necessary to re-examine the strict capital adequacy regulatory standards for banks. China's financial regulatory authorities have closely followed Basel III, imposing relatively high capital adequacy requirements on commercial banks. Under China's indirect financial system, commercial banks serve as the primary conduit for funds to flow into the real economy, with traditional bank loans being the core channel that can effectively balance risk and return. Against the backdrop of steady growth in the central bank's base money supply, newly added liquidity ultimately flows into the commercial banking system, becoming either explicit or implicit liabilities for banks. Faced with the expansion of liabilities and the resulting increased costs, rational banks must consider how to create high-yield assets based on these liabilities to cover their costs. However, overly stringent capital adequacy requirements directly limit banks' ability to allocate newly added liquidity to traditional on-balance-sheet loans.

To formally meet capital regulatory standards, banks have had to create a new off-balance-sheet asset allocation channel parallel to the traditional lending channel. Furthermore, due to the off-balance-sheet operation of wealth management funds, the risk management mechanisms that banks have developed around traditional lending processes—such as asset screening, disbursement, and supervision—are not directly applicable to the allocation of off-balance-sheet wealth management funds. This exacerbates the risk associated with off-balance-sheet wealth management asset allocation, making its overall risk higher than that of traditional bank lending projects. Under the implicit guarantee of rigid redemptions, this further intensifies systemic financial risks.

If capital adequacy standards could be moderately relaxed,

banks' incentives to create shadow banking activities would be significantly weakened. Only then could off-balance-sheet credit assets truly return to the balance sheet, allowing for more effective risk control. Conversely, if capital adequacy requirements are not reduced and banks are forced to bring off-balance-sheet wealth management assets back onto the balance sheet, banks may face new uncertainties and increased systemic financial risks. In the absence of sufficient capital to quickly replenish their own capital base, banks may continue to innovate other off-balance-sheet asset allocation channels, further exacerbating systemic financial risks.

From the perspective of the financial market structure, the imperfections of the bond market have hindered the implementation of open market operations and other channels for base money issuance. Drawing on the experience of developed countries' monetary policy transitions, as interest rate liberalization deepens and financial innovation accelerates, base money is increasingly issued through open market operations. However, in China, the channels for base money issuance through open market operations are not yet smooth. In this regard, China's bond market is still in its early stages of development, with various forms still emerging. Therefore, China's policy focus should be more oriented towards the bond market, continuously developing and improving it to enhance the overall financial structure and facilitate the effectiveness of open market operations.

Developing the bond market is not only aimed at improving the channels for base money issuance but also requires expanding the scale and variety of bond market transactions, while relaxing market access restrictions to promote investor diversification. This approach will help enhance the liquidity and efficiency of the bond market, making it more resilient and supportive of broader financial stability.

In the context of changes in base money issuance channels, the central bank needs to moderately consider fairness when determining the loan banks as channels for base money issuance. Amid the overall downward trend of foreign exchange purchases, to ensure the stability of money supply, the central bank has chosen to use various collateralized loans to banks as new channels for base money issuance. However, since the central bank's loans are actually biased towards large banks represented by open market primary dealers, smaller banks are discriminated against and unable to fairly obtain new liquidity from the central bank. This has driven smaller banks to issue high-yield off-balance-sheet wealth management products to compete with large banks for existing funds. Therefore, when changing the channels for base money issuance, it is necessary to consider not only the impact on the money supply but also the development of the entire banking system and its broader impact on the financial system.

On the basis of existing innovative channels for base money issuance, it is essential to further strengthen the innovation of base money issuance mechanisms. Due to the term constraints of relending, the central bank is unable to provide long-term base money to society. Therefore, to further meet the monetary needs of economic development, it is necessary to continue improving channels for long-term base money issuance. In the short term, unconventional policy tools can be actively explored to increase channels for long-term base money supply. In the medium term, relevant regulations should be further revised and improved to issue long-term base money through relending or rediscounting. In the long term, drawing on the experience of developed

countries, open market operations can be explored as a means of base money issuance. By fully learning from international base money tools and combining them with China's actual situation, the existing channels for base money issuance in China can be enriched.

As China's balance of payments tends towards equilibrium and foreign exchange purchases return to low growth, the innovation of base money issuance models faces a favorable opportunity. The central bank should draw on the liquidity provision models of developed countries, proactively strengthen asset operations, enhance the targeting of base money issuance, and enrich liquidity management tools. For example, the central bank can reasonably adjust the term of relending based on the operation of the economy and the supply and demand of funds, thereby regulating bank liquidity. The scope of collateral for relending can also be adjusted to indirectly control the total amount of bank financing. Financial institutions can organize the establishment of Special Purpose Vehicles (SPVs) to purchase specific bank credit assets or bills during crises, using these purchased assets as collateral to obtain financing from the central bank.

Overall, China's current base money issuance mechanism, after continuous adjustments, is well-suited to the requirements of the current macroeconomic operations. In the future, as macroeconomic objectives evolve, it is appropriate to make fine-tuned adjustments to the existing monetary policy tools. It is neither necessary nor suitable to directly replicate foreign monetary policies, especially those involving quantitative easing. Moreover, with the advancement of market-oriented reforms, it is essential to further clarify the target range of policy interest rates to the market, enhance communication with market participants, and increase the transparency of monetary policy. This will help form a more mature and stable monetary policy operation mechanism.

## References

- [1] Wang, Jian. 2018. "Understanding Base Money Is Key to Understanding Commercial Banks." *Wealth Management*, No. 233(01): 12-13. (in Chinese)
- [2] Zhang, Huaqiang, Wang Jiangbo, and Shi Haifeng. 2016. "A Review of China's Base Money Issuance Methods and Exploration of Innovative Paths." *Regional Financial Research*, No. 524(07): 19-23. (in Chinese)
- [3] Shao, Xinjian, Wang Xingchun, Xiao Lisheng, et al. 2020. "The Evolution of Base Money Issuance Channels, Funding Source Competition, and the Rise of Bank Wealth Management Products." *China Industrial Economics*, No. 388(07): 2020.07.020. (in Chinese)
- [4] Yin, Jizhi. 2015. "An Analysis of the Phased Changes in China's Central Bank Base Money Issuance Channels." *Shanghai Finance*, No. 422(09): 2015.09.006. (in Chinese)
- [5] Yuan, Haixia, and Wang Chen. 2022. "The Evolution and New Developments of Base Money Issuance Mechanisms." *Financial Market Research*, No. 120(05): 60-66. (in Chinese)
- [6] Zhang, Jiqiang, and Wang Wanting. 2021. "Base Money Issuance Methods: A Discussion on How the Central Bank Can Stabilize Liquidity." *China Money Market*, No. 234(04): 58-63. (in Chinese)
- [7] Chen, Kuihong, Wang Chenxuan, Wang Yuxuan, et al. 2019. "Base Money, Indirect Credit Financing, and Money Supply." *National Circulation Economy*, No. 2213(17): 1009-5292.2019.17.069. (in Chinese)

- [8] Xi, Jing. 2022. "An Analysis of the Development of Open Market Operations." *New Economy*, No. 551(03): 72-73. (in Chinese)
- [9] Yan, Se. 2020. "The Development and Improvement of Base Money Issuance Mechanisms." *China Finance*, No. 926(08): 79-80. (in Chinese)
- [10] Sun, Guoshen, and Zhou Aimin. 2014. "The Historical Evolution of the Loan-to-Deposit Ratio and the Next Steps for Reform." *Banker*, No. 8. (in Chinese)
- [11] Li, Bin, and Wu Ge. 2014. *Credit Creation, Money Supply and Economic Structure*. Beijing: China Financial & Economic Publishing House. (in Chinese)
- [12] Sun, Zuo, Luo Zhaodong, Zhu Zecheng, et al. 2022. "The Role Mechanism, Effectiveness, and Policy Recommendations of Relending by Local Central Banks: An Analysis Based on the Theory of Money Creation." *Western Finance*, No. 579(11): 48-53.2022.11.016. (in Chinese)
- [13] Liang, Feizhe, and Song Xugang. 2021. "Foreign Exchange Reserves, Bank Credit, and Real Estate Prices." *Financial Development Review*, No. 144(12): 35-50.2021.12.004. (in Chinese)
- [14] Chen, Cong, and Lan Xiaomei. 2022. "Open Market Operations, Expectation Effects, and Interest Rate Fluctuations." *Statistics & Information Forum*, 37(03): 54-63. (in Chinese)
- [15] Yuan, Huiping, Wu Mingzhou, and Liu Tangyong. 2018. "The Impact of Standing Lending Facility and Reverse Repo Operations on Money Market Interest Rates." *Finance & Trade Economics*, 39(07): 65-80. (in Chinese)
- [16] Zhang, Xueying, and He Feiping. 2014. "The Impact of Central Bank Repurchase Operations on Money Market Interest Rates: A Theoretical Model and Empirical Test." *Journal of Finance*, No. 03: 41-53. (in Chinese)
- [17] Huang, Zhigang, and Liu Guofang. 2019. "Open Market Operations, Interest Rate Corridors, and Market Interbank Lending Rates." *Journal of Finance & Economics*, 45(07): 31-44. (in Chinese)
- [18] Zhang, Qiongjie. 2022. "The Central Bank's Open Market Operations Become More Refined, Ensuring Stable End-of-Quarter Interest Rates." *Shanghai Securities News*, September 29, 2022, p. 004. (in Chinese)