A Study of the Capital Replenishment Tools in Chinese Commercial Banks: Current State and Some Suggestions for Countermeasures

Qinglong Zhang and Zhishen Wang(✉)

Department of Management Science, Institute of Science Innovation and Culture, Rajamangala University of Technology Krungthep, Sathorn, Bangkok 10120, Thailand
65824030008-2@mail.rmutk.ac.th.com

Abstract. The capital of a commercial bank is the capital that a bank must inject into its business activities. Its core function is to absorb losses, which can not only make up for losses in the course of business but also provide protection for creditors and depositors when the bank goes bankrupt and liquidates. According to Basel III, the previous minimum requirement of the core capital adequacy ratio of commercial banks was 4%, but now the minimum requirement is 7%. At the same time, a protective buffer is 2.5%, and a countercyclical reserve is no more than 2.5%. The general requirement is that commercial banks' core capital adequacy ratio will reach 8.5% to 11%. Commercial banks must use different capital replenishment tools to carry out capital replenishment reasonably. This paper will elaborate on the composition of regulatory capital of Chinese commercial banks and the tools used for capital replenishment and analyze the advantages and disadvantages of commercial banks' main capital replenishment tools. As well as the issue scale and interest rate, and put forward reasonable suggestions for the capital replenishment of Chinese commercial banks.

Keywords: Commercial bank · Capital replenishment tools · Basel III

1 Introduction

By the end of August 2022, China had more than 370 commercial banks, including 6 large state-owned commercial banks, 12 large joint-stock banks, and the rest small and medium-sized urban commercial banks and rural commercial banks. After fully implementing the Basel III capital agreement, commercial bank capital replenishment has become a compulsory course for commercial banks. In order to supplement capital commercial banks adopt various ways to supplement their capital, among which the essential means include equity and creditors' rights. Common equity supplementary capital means retained earnings to capital conversion, initial public offering, public secondary offering, private placement, preferred stock, and convertible bonds. Creditors' capital replenishment tools are unfixed maturity capital bonds and Tier 2 capital bonds. This paper intends to provide countermeasures and suggestions for the capital replenishment of commercial banks through the analysis of various capital replenishment tools.

Y. Liu and S. Chujuarjeen (Eds.): ICEHUM 2022, ASSEHR 741, pp. 364–375, 2023.
https://doi.org/10.2991/978-2-38476-040-4_30

1.1 Background

Basel III is the Basel Committee's primary global regulatory standard for bank capital and risk. The Basel Committee comprises banking regulators from each country and is one of the four standing committees of the BIS. The capital requirements set out in the guidelines published by the Basel Committee are known as risk-based capital requirements. The Basel Committee formulated the original Basel Accord in July 1988. At the time, it was also known as the 1988 Consistent Approach to Capital, which set capital standards for traditional credit risks. The Basel Accord supplemented capital requirements based on market risk in 1996. From 1998 to 2001, operational risk was formally added to the Basel Accord after a full discussion by the Basel Committee. Three years later, Basel commissioners set new guidelines for capital requirements, known as Basel III. In contrast to the previous Basel accord, Basel III is a forward-looking approach to capital regulation that requires businesses to identify current and expected risks. The three pillars of the Basel Accord include minimum risk capital requirements, capital adequacy regulation, and internal assessment processes market regulation.

Under Basel III, global commercial banks will be required to have a minimum tier 1 capital ratio of 6 percent by January 2015, up from the current 4 percent. In addition, the floor for core tier 1 capital, made up of common equity, will be raised to 4.5% of a bank's risky assets from the current 2%. Banks will also be required to add a "capital protection buffer" of less than 2.5 percent of their risky assets, raising the core tier 1 capital ratio for commercial banks to 7 percent. In recent years, the rapid development of China's banking industry has gradually improved from the relatively backward development level in the world, changing the development mode of a single business structure. China's banking regulator has required Chinese commercial banks to be in line with international standards, meet the Basel III capital adequacy standards, and gradually meet the capital adequacy standards of all commercial banks from January 2016 to January 2019. In this context, to meet the minimum capital adequacy requirements stipulated in Basel III, Chinese commercial banks began to use various capital replenishment tools.

1.2 Research Objectives

1. Study the advantages and disadvantages of various capital replenishment tools.
2. Analyze the issuance of various capital replenishment tools of Chinese commercial banks since 2021
3. To provide countermeasures and suggestions for Chinese commercial banks to replenish capital.

1.3 Research Benefits

The research can provide countermeasures and suggestions for the capital replenishment of Chinese commercial banks of different types and sizes, which is conducive to using the optimal capital replenishment tools for Chinese commercial banks. Prevent commercials, and as a result, prevent over-magnifying.

2 Literature Review

In 2020, Haitao Tang made a theoretical introduction to the capital composition of Chinese commercial banks in his article "Research on the Capital Supplement Mechanism of Chinese Commercial Banks" and made it clear that the capital of commercial banks is divided into two levels, namely, first-level capital and second-level capital. At the same time, it also analyzes the standard capital replenishment tools of commercial banks from the perspective of supervision.

In 2018, Qianqian Xia published an article, "Analysis of the challenges and countermeasures by the capital supplement of Chinese commercial banks".This paper analyzes the difficulties Chinese commercial banks face in capital replenishment and puts forward a series of targeted suggestions and measures.

In 2021, Xiaoyu Cao conducted a systematic analysis of the motivation and effect of capital replenishment of commercial banks. It is found that the purpose of capital replenishment is to improve the capital adequacy ratio of commercial banks. However, capital replenishment can only improve the capital adequacy ratio of commercial banks in the short term. This cannot completely reverse the dilemma that banks need constant financing to replenish blood, nor can it promote improving the bank's operation model and operating efficiency. Therefore, to eliminate the predicament of scale expansion and capital limitation of commercial banks, it is necessary to change the business mode of high expansion and high consumption, deeply adjust the business structure, and transform to "light operation".

3 Capital Structure and Replenishment Methods of Chineses Commercial Banks

3.1 Definition of Commercial Bank Capital

Commercial bank capital is the capital that the bank must inject into its business activities. It is a tool for financial authorities to implement control. The more future risks a bank faces and the faster its assets grow, the more capital it needs. According to the requirements of the China Banking and Insurance Regulatory Commission, the capital of Chinese commercial banks is divided into Tier 1 capital and Tier 2 capital, among which Tier 1 capital is divided into core Tier 1 capital and another tier 1 capital. The capital of commercial banks referred to in this paper refers to the capital structure setting of commercial banks that meets the requirements of the China Banking and Insurance Regulatory Commission.

3.2 Core Tier 1 Capital

First, core tier 1 capital. As the name implies, core tier 1 capital is the absolute core of the capital composition of commercial banks, which can unconditionally be used to absorb losses under the condition of going concerned of commercial banks. It is permanent, and the liquidation order comes after all other financing tools. On the balance sheet of commercial banks, paid-in capital or common stock, capital reserves to be accounted for, surplus reserves to be accounted for, general risk reserves, undistributed profits, and minority shareholders' capital to be accounted for are components of core Tier 1 capital. The replenishment of core tier 1 capital includes initial public offering (IPO), rights offering, additional public offering, additional private offering, and convertible bond issuance. In addition, surplus reserves, general risk reserves, and undistributed profits cannot be supplemented by external means and depend on commercial banks' operations.

3.3 Other Tiers 1 Capital

And then there is the other tier 1 capital. Other Tier 1 capital refers to the capital tools in which both principal and income should participate in absorbing losses under the condition of going concerned of the bank. Non-accumulation and permanence are essential characteristics of other Tier 1 capital. Other Tier 1 capital tools and their premium and consolidated statement of minority shareholder capital are the main components of another tier 1 capital. Other tiers 1 tools are preferred to core Tier 1 replenished tools but inferior to depositors, general creditors, and subordinated debt. Other than the above presentation, other Tier 1 capital does not carry interest rate jumps or redemption provisions. Commercial banks can supplement other Tier 1 capital by issuing preferred shares and capital bonds with no fixed maturity (perpetuities).

3.4 Tier 2 Capital

Finally, the second-tier capital of commercial banks is introduced. The secondary capital of commercial banks is a capital tool that can be used to absorb losses in the case of bankruptcy and liquidation of commercial banks. The order of compensation is between common stock and general creditor's rights. No redemption mechanism, no interest rate jump clause, and no credit sensitivity of income are the main characteristics of Tier 2 capital. At the same time, write-down or equity conversion clauses are the necessary provisions of Tier 2 capital supplement tools. Tier 2 capital tools and premiums, excess loan loss provision, and minority shareholder capital are the main components of Tier 2 capital. In China, excess loan loss provisions are generally not used as a supplement to Tier 2 capital because Chinese regulators require that the amount that can be accounted for cannot exceed 1.25% of the total credit risk-weighted assets. The way of replenishing Tier 2 capital is relatively single. Commercial banks supplement Tier 2 capital by issuing tier 2 capital bonds.

4 Advantages and Disadvantages of the Capital Replenishment Tools

4.1 Core Tier 1 Capital

1. Retained earnings are the source of capital replenishment for commercial banks through internal means. Retained earnings are the part extracted or retained from the operating profits of commercial banks, which are mainly reflected in the surplus reserves

and undistributed profits in financial statements. Commercial banks with strong profitability will have the basis to increase retained earnings. The net interest margin mainly reflects the profitability of commercial banks, and the expansion of the net interest margin means the accumulation of potential risks, so it is not easy to calculate the equilibrium point of capital replenishment through retained earnings. In addition, return on equity (ROE) is the return on shareholder investment, which is the potential cost of retained earnings. Large and medium-sized Chinese banks' average return on equity remains above 12 percent, well above the cost of bond funding. Since the COVID-19 pandemic, the profitability of Chinese commercial banks has generally declined. When other capital replenishment tools expire, it is not easy to maintain the operation of Chinese commercial banks only by replenishing capital through retained earnings. Replenishing capital through retained earnings is suitable for commercial banks with stable assets and reasonable operating conditions, such as China's Big Four banks and large joint-stock banks with professional strength. For commercial banks with general or poor profitability, especially urban commercial banks with large operational fluctuations, it is unrealistic to supplement capital through retained earnings in a planned way because the original shareholders have high requirements on earnings and the loan provisions are high.

2. In China, IPO is the core tier 1 capital replenishment method that unlisted commercial banks are most inclined to use, with the lowest cost and higher additional amount. For accounting purposes, the issued capital is included in paid-in capital. If there is a premium on equity at a later stage, the premium portion is included in capital reserves. From 2019 to 2022, China had 14 commercial banks listed on domestic stock exchanges and six on the Hong Kong Stock Exchange. Among them, PSBC raised as much as 32.7 billion yuan in its IPO on the main domestic board, the largest IPO in the last decade. Because large commercial companies in China have completed IPO in the past 20 years, urban commercial banks and rural commercial banks have become the main force of IPO. However, IPO also has many disadvantages. First of all, the threshold requirement of IPO is relatively high. Commercial banks need to meet the IPO requirements before submitting applications. Secondly, commercial banks' IPO differs from that of other enterprises. The IPO of commercial banks needs to be reported to the regulatory authorities simultaneously for review, and the issuing process is very complex and requires much time and human resources.

3. Both public and private offerings supplement core Tier 1 capital by issuing additional common shares. A public secondary offering is similar to an IPO in that shares are issued to the public. The standard way is that the shares are first allocated to shareholders who already own the shares of commercial banks in a certain proportion, and the remaining unsubscribed shares are sold to social investors. The efficiency of public secondary offerings is generally established on the premise that commercial banks have good business performance because investors expect secondary offerings to have good listing performance. In addition, the public issue will change the original shareholder structure and dilute the original shareholders' equity. Directional placement is to point to specific investors to sell shares. The original shareholders can also participate in the subscription of directional placement. The private placement has the following advantages over public placement: First, because it is only issued to specific investors, the conditions of the private placement are relatively loose, and investors can use bonds or

equity and other financial tools instead of cash to subscribe. Second, listed banks can introduce high-quality strategic investors through private placement, realize the optimal allocation of resources, and even quickly complete the business transformation. Third, private placement is generally issued by discount, and capital replenishment is easier to implement. Currently, most of the listed banks in China have chosen private placement to supplement their core tier-1 capital.

4. Finally, introduce the characteristics of convertible bonds. A convertible bond is a kind of bond with certain rights, bond characteristics, and specific equity attributes. The holders of convertible bonds can convert the bonds into shares at a specific price within the time limit of conversion. In accounting, when the convertible bond is initially issued, the commercial bank calculates the issued value of the convertible bond as liabilities, and the conversion right is calculated as equity and included in the capital reserve. In the event of equity conversion, the value of the creditor's rights shall be included in the equity account. Commercial banks have two advantages in issuing convertible bonds to supplement their capital. First, the quality of capital added by convertible bonds is high. Compared with preferred shares, capital bonds with no fixed maturity, and Tier 2 capital bonds, convertible bonds can supplement core Tier 1 capital. Second, the financing cost of convertible bonds is low. Because investors who buy convertible bonds aim to avoid the risk of falling stock prices and realize the capital gains brought by rising stock prices, the interest required to be paid by convertible bonds before the conversion is lower than the cost of financing bonds. The disadvantages of convertible bonds in the capital replenishment of commercial banks are also obvious. Whether bondholders decide to convert to equity entirely depends on the fluctuations of stock prices, and whether they can complete the capital replenishment of commercial banks is uncertain. In particular, after 2017, the prices of Chinese commercial stocks fell below net value, and the price-to-book ratio maintained between 0.7 to 0.8. Hence, there is little possibility for stock prices to increase significantly. In conclusion, if commercial banks have a plan for capital replenishment and require it to be completed at a certain time, the uncertainty of convertible bonds for equity will make it unsuitable.

4.2 Other Tier 1 Capital

As mentioned above, Chinese commercial banks replenish their core tier 1 capital through retained earnings, IPO, additional stock issuance, and convertible bond issuance. All kinds of ways to supplement tier 1 core capital are either highly correlated with commercial banks' business performance or have high thresholds or uncertainty. To meet the requirements of the Basel III Capital Accord, commercial banks must supplement tier 1 capital. Therefore, supplementing other tiers 1 capital is essential for developing Chinese commercial banks.

1. Preferred stock is the only way for commercial banks to supplement other Tier 1 capital until they can issue capital bonds with no fixed maturity. Like convertible bonds, preferred stock is a hybrid capital tool between debt and equity, which essentially belongs to equity. The attribute of creditor's rights is reflected in the fixed dividend, and the active degree of market trading is lower than that of common stock. In the event of liquidation, preferred shareholders are paid before common shareholders and are deprived of voting rights because they receive fixed dividends. In terms of issuing advantages, the preferred

stock will not change the control right of commercial banks because it has no voting rights. It can complete capital replenishment after issuing, and its efficiency is better than convertible bonds. Before the issuance of capital bonds with no fixed maturity, except for listed banks, other commercial banks in China did not have the authority to issue preferred shares. Many small and medium-sized commercial banks did not have capital replenishment tools under other Tier 1 capital accounts. To sum up, preferred stock is mainly suitable for state-owned and joint-stock banks, and part of the stable operation, the large scale has listed small and medium-sized banks.

2. China's financial regulator began allowing Chinese commercial banks to issue Capital bonds with no fixed maturity in 2018, further enriching the means for Chinese banks to supplement other Tier 1 capital. Capital bonds with no fixed maturity are also a hybrid capital tool between debt and equity, but it is essentially a debt. Although capital bonds with no fixed maturity is a bonds with no precise maturity date and are recorded as equity in accounting, they will be sold back in the fifth year because the mainstream issue term in the domestic market is 5 + N.In terms of the order of repayment, perpetual debt is inferior to depositors, general creditors, and subordinated debt prior to stockholders. In terms of issuing advantages, small and medium-sized commercial banks can issue capital bonds with no fixed term (perpetual bonds), which is an advantage over preferred stock. In addition, insurance funds can be invested in non-fixed maturity capital bonds (perpetual bonds) issued by commercial banks, and the source of subscription funds is broader. However, insurance funds also have a certain threshold to subscribe for perpetual bonds, requiring commercial banks to reach an AAA rating. For small and medium-sized banks below AAA, the issuance of capital bonds without fixed maturity (perpetual bonds) is mainly through the mutual investment of financial products between commercial banks and more to complete the beautification of statements. In addition to the above introduction, in most cases, Chinese commercial banks issue capital bonds with no fixed term and secondary capital bonds and choose to redeem them in the fifth year, which is consistent with the time of capital replenishment. However, Chinese commercial banks prefer capital bonds with no fixed maturity. The main reason is that capital bonds with no fixed maturity supplement tier 1 capital, and commercial banks urgently need to supplement tier 1 capital.

4.3 Tier 2 Capital

The urgency for Chinese commercial banks to supplement tier 2 capital is much weaker than that of tier 1 capital. The main reason is that the way for Chinese commercial banks to supplement tier 2 capital is relatively simple. Commercial banks issue to tier 2 capital bonds to supplement tier 2 capital. Meanwhile, for large state-owned commercial banks and large joint-stock banks in China, most of their tier-1 capital adequacy ratio exceeds the total capital adequacy ratio requirement. Therefore, the purpose of issuing Tier-2 capital bonds is to replenish capital and obtain lower-cost financing. The issuance of secondary capital bonds is relatively simple, the main channel of capital replenishment for small and medium-sized banks. It can be divided into two types: write-off type and equity conversion type. Chinese commercial banks issued secondary capital bonds written down. If a tier-2 capital tool issued by a commercial bank has a definite maturity date, the amount that can be included in tier-2 capital of the tier-2 capital tool in the last five years before the maturity date shall be deducted by 100%, 80%, 60%, 40% and 20% each year. Currently, tier-2 capital bonds in the market mainly adopt the form of "5 + 5". For Tier-2 capital bonds with a maturity of 10 years, the issuer is given the redemption option at the end of the fifth year. The exercise of the redemption option must be approved by the China Banking and Insurance Regulatory Commission and meet one of the following two conditions: first, the issuing bank can use capital tools of the same or higher grade to replace the redeemed tools, and the replacement of capital tools can only be implemented under the condition of sustainable income ability; Second, the capital adequacy ratio of issuing banks after exercising the redemption right is still significantly higher than the regulatory capital requirements stipulated by China Banking and Insurance Regulatory Commission. In general, to exercise the right of redemption requires the issuing bank to have a higher level of capital or a higher level of profitability and the ability to issue capital tools. Banks that meet the requirements and are approved by China Banking and Insurance Regulatory Commission will usually choose to exercise the redemption right. Banks generally choose to issue capital replacement tools simultaneously to maintain the stability of the capital adequacy ratio.

5 Issuance of Capital Replenishment Tools by Chinese Commercial Banks

5.1 Commercial Banks of China Capital Tools Issued Scale

After 2018, stimulated by strong demand for capital replenishment and encouraged by regulators, China's commercial banks' capital replenishment has developed rapidly. Under the policy's permitted scope, Chinese commercial banks have begun to use various capital replenishment tools. As a result, the channels and means of capital replenishment for commercial banks have been enriched, and the funds have rapidly flooded into the inter-bank capital replenishment market, which has provided favorable help for the healthy development of Chinese commercial banks. Wind data statistics show that last year, China's listed commercial banks issued three times as many capital replenishment tools as in 2020, adding 130 billion yuan to the capital of listed commercial banks. In addition, secondary capital bonds and perpetual bonds have been issued regularly. According to Wind statistics, China's commercial banks replenished their capital through tier-2 capital bonds worth more than 1.2 trillion yuan and issued 135 bonds last year. At the same time, the market for the issuance of capital bonds with no fixed term continued to boom, reaching 660 billion yuan last year.

Overall, in 2021, the bank's supplementary capital tools will be more diversified. Although the single amount of supplementary capital of small and medium-sized banks is low, the number of supplementary capital of small and medium-sized banks has increased significantly. Another important signal is that the capital adequacy ratio of small and medium-sized businesses in China continues to improve, and the capital replenishment channels are constantly abundant. Convertible bonds, second-tier capital bonds, and perpetual bonds have all provided substantial help for small and medium-sized banks to supplement their capital.

It is worth noting that after entering the fourth quarter of 2021, the list of debt issuance has repeatedly appeared in the state-owned big banks and share banks, and the amount is significant. For example, ICBC, CCB, BOC, and Industrial Bank have a minimum issuance quota of more than 30 billion yuan for Tier 2 capital bonds. The highest ICBC is allowed to issue no more than 190 billion yuan. For some large and medium-sized banks, the reason for the acceleration of bond issuance in the fourth quarter is related to the publication of the list of systemically important banks in mid-October 2021. The financial regulatory authorities required 19 systemically important banks to meet certain additional capital requirements. As a result, the TLAC capital gap of China's four largest industrial and rural banks in the next three years is about 3 trillion yuan.

5.2 Chinese Commercial Bank Capital Replenishment Tool Issue in 2022

Commercial bank managers have gone through many stages of substantial development and are now fully aware of the importance of adequate capital. Capital adequacy is not only the focus of the managers of commercial banks but also the vital concern of the regulators in the prudential supervision of the banking industry. Under the policy support of China's banking regulator, Chinese commercial banks have made capital replenishment through multiple channels. At present, the capital adequacy level of China's banking industry is generally higher than the regulatory requirements. According to the data released by China Banking and Insurance Regulatory Commission, the core Tier 1 capital adequacy ratio of China's commercial banks is 10.67%, the tier 1 capital adequacy ratio is 12.12%, and the capital adequacy ratio is 14.80%. Increasing bank capital can effectively support bank lending to recover the real economy. At present, China is comprehensively promoting the liberalization of interest rates. Under the background of financial services to the real economy, the profitability of commercial banks' credit business is weakened, and small and medium-sized banks will have a strong demand for capital replenishment. At the same time, since unlisted banks cannot issue shares in the open market, they will have a greater demand for capital replenishment through secondary capital bonds and perpetual bonds.

This year, as China's economy develops, full-year credit lending is expected to be higher than the previous year. China's small and medium-sized banks face problems such as narrow financing channels, low market recognition, and weak risk tolerance. Therefore, small and medium-sized banks have a more robust demand for capital replenishment. For national banks, the policy level will pay more attention to the policy support in tier 1 capital replenishment, such as perpetual debt, private placement, and preferred stock. For small and medium-sized banks, the policy level will pay more attention to support in perpetual and second-tier capital bonds. In particular, local special bonds can also be used to replenish the capital of small and medium-sized banks whose market-oriented financing ability is weak. Moreover, their total assets have been hovering around 300 billion Yuan for a long time.

6 Countermeasures and Suggestion on Capital Replenishment of Chinese Commercial Banks

At present, China's economic growth has slowed under the pressure of falling internal demand and exports due to the COVID-19 pandemic. In addition, in recent 10 years, China has made great efforts to build infrastructure, and local government debt remains high. As the main body of the implicit debt of local governments, the debt of local state-owned enterprises has been severely challenged for sustainable operation. This leads to the enormous risk pressure faced by commercial banks, especially local small and medium-sized commercial banks. However, commercial banks can reasonably and effectively replenish capital in this context. Therefore, it is related to the survival of commercial banks. Considering the characteristics of various capital replenishment tools, combined with the urgent need for capital replenishment of Chinese commercial banks in recent years, this paper puts forward the following three measures and suggestions for capital replenishment of Chinese commercial banks.

6.1. Commercial banks should make long-term capital plans according to their business objectives and fully use external funds to supplement capital

Since the global outbreak of COVID-19, China has taken the most stringent prevention and control measures in the world. However, the current regular prevention and control measures may require provinces or cities with outbreaks to achieve static management. This makes it even more necessary for Chinese commercial banks to make long-term plans for capital replenishment to cope with business interruptions in core cities caused by extraordinary circumstances such as the epidemic. In particular, small and medium-sized commercial banks have limited means of capital replenishment and a weak ability to raise funds. If there is a lack of long-term planning, capital replenishment work will lack guiding documents, and the compatibility between capital replenishment work and operation work will be adversely affected. To be specific, commercial banks should forecast their main businesses' long-term development and calculate the long-term capital demand according to the business development. Then, formulate capital replenishment plans, allocate specific capital replenishment tools according to the plans, and supervise the progress of capital replenishment work. Under normal circumstances, the board of directors of Chinese commercial banks or the Asset-liability management Department is specifically responsible for capital replenishment. Therefore, it is necessary to roughly estimate the total amount of risk-weighted assets and capital shortfall in the future. In addition, when commercial banks choose capital replenishment tools, they should fully allocate all kinds of tools and choose to issue capital replenishment methods that are more suitable for their development stage and have a lower cost-benefit ratio.

6.2. Control the issuing process of capital replenishment tools to ensure smooth issuing channels and improve the efficiency of capital replenishment. In terms of internal decision-making, the decision-making process of the issuance of capital replenishment tools should be compressed as much as possible to avoid internal approval consuming much time

When communicating with the regulatory authorities, the commercial authorities should strengthen the reporting of the business situation and the issuance plan of capital replenishment tools to the regulatory authorities, improve the efficiency of the issuance of capital tools of commercial banks, and relieve the pressure of capital replenishment of commercial banks. Currently, the scale of capital replenishment tools issued by Chinese commercial banks is increasing yearly. However, compared with advanced countries, the types of capital replenishment work are still less. Therefore, Chinese commercial banks should work with regulators to promote the innovation of new capital replenishment tools and develop effective and cost-controllable ones. For example, commercial banks can actively promote introducing hybrid capital replenishment tools, such as equity-converted second-tier capital bonds and equity-converted perpetual bonds, to provide more abundant and flexible capital replenishment methods for commercial banks in different development stages, especially unlisted small and medium-sized banks. The capital adequacy level of small and medium-sized banks is generally under pressure, and the capital replenishment mainly comes from the original local state-owned enterprises. The regulatory authorities can provide suitable measures for small and medium-sized banks to issue capital replenishment tools to ensure the capital adequacy of small and medium-sized banks and realize a virtuous business development cycle.

6.3. Commercial banks should pay attention to cost-benefit management, incorporate the capital planning scheme into corporate strategic management, carry out dynamic management of capital scale and structure according to market changes and policy changes, and realize the maximum benefit while effectively managing capital

To put it simply, the first thing commercial banks need to expand their scale is capital replenishment, and their profits mainly come from the net interest margin. When the net interest margin shrinks or the systemic risk increases significantly, commercial banks should reasonably plan the capital scale, realize the indirect management of the total assets scale, and finally realize the management of costs and benefits. At the same time, in terms of the leading business, commercial banks should vigorously develop off-balance sheet businesses or asset-light businesses to reduce the loss of capital caused by the expansion of asset business. In terms of performance appraisal, the commercial bank profit center should strengthen the assessment of the cost of capital to take up, provide the baton for product development, and form capital using saving consciousness. Commercial bank asset liability management department should lead to establish and perfect the evaluation system, special direct funds to flow in the high returns on capital business, rationalization of risk-adjusted return on capital (RAROC) and economic value added (EVA), and other indicators of use, drive the business structure adjustment, improve the level of comprehensive income, and increase the endogenous capital accumulation.

References

1. Haitao, T. (2020). Research on capital supplement mechanism of Chinese commercial banks. *The western financial*, 1(5), 43-47.
2. Hongyuran, W., & Denise, J. (2019). *China's Regulator Revises Rules on Banks' Capital Replenishment Tools.* Retrieved from https://www.caixinglobal.com/2019-11-30/chinas-regulator-revises-rules-on-banks-ccapital-replenishment-tools-101489026.html.
3. Jiawen.Z. (2014). *Research on Chinese Commercial Banks' Capital Structure Optimization.* Atlantis Press. https://www.atlantis-press.com/proceedings/icetis-14/13892.
4. Qianqian, X. (2018). Analysis of the challenges and countermeasures faced by the capital supplement of Chinese commercial banks. *China's prices*, 3(11), 57-58.
5. Xiaoyu, C. (2021). Research on the Motivation and Effect of commercial bank capital supplement. *North China financial*, 110(12), 103–105.
6. Yuezhen, L. (2020). A preliminary study on the capital replenishment path of commercial banks under the new situation. *Bond*, 6(9), 26-31.