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Measurement of Risk-weighted Assets of Commercial Banks under the New Basel Accord and Capital Management Approach

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Abstract: The Basel Accord is the main worldwide regulatory standard for bank capital and risk set by the Basel Committee. It encourages banks to identify not only current risks but also future risks and to improve their existing risk management systems to manage economical risks. Since the promulgation of the Accord, the Basel Committee has issued a series of regulatory documents reforming the risk-weighted asset measurement framework. The core elements of the Accord include revisions to the Standardized Approach to Credit Risk, the Internal Ratings-based Approach to Credit Risk, the Operational Risk Capital Measurement Methodology, the Capital Floor, and the Leverage Ratio regulatory framework. In China, commercial banks, not only influence the transmission of the country's fiscal and monetary policies, but also indirectly affect the development of the country's real economy through credit investment. Therefore, the promotion and implementation of the Basel Accord's measurement index indicators and supervisory standards are conducive to the maintenance of China's financial industry's prosperous development and the steady expansion of the size of the real economy.

Keywords: financial risks, Risk Weighted Assets, capital regulation, New Basel Accord

1. Introduction

In response to the shortcomings of the original regulatory framework, the Basel Committee issued the "Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems" (referred to as "Basel"), which aims to strengthen micro-prudential requirements for financial institutions and macro-prudential supervision of the financial system. Commercial banks play an important role in the financial system and economic and social development. Effective risk

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management and supervision of commercial banks are conducive to the smooth operation of the financial system and the healthy development of the economy and society. As an important global bank capital and risk management standard, Basel Agreement provides certain criteria for banks to identify and manage risks, and also provides important standards and references for the supervision of financial institutions in various countries.

2. Basel Accords And Commercial Bank Risk Management

In 2010, in response to the inadequacies of the original regulatory framework, the Basel Committee issued Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems ("Basel"), which aims to strengthen micro-prudential requirements for financial institutions and macro-prudential supervision of the financial system. Commercial banks matter importantly in the whole financial system at home and broad, and effective risk management and supervision of commercial banks contribute to the improved operation of the financial system and organized development of the economy and society. As an important participant of the financial system, these commercial institutions not only influence the transmission of national fiscal policy and monetary policy, but also indirectly affect the advancement of China's real economy through credit investment [1]. The Basel Accord, as an important global standard for bank capital and risk management, provides certain guidelines for banks to identify and manage risks. At present, during the process of liquidity risk management, China's commercial banks still have problems such as excessive asset-liability ratio, downward trend of asset quality and low level of capital adequacy, and the integrated liquidity risk identification and early warning mechanism is the last line of defence for the internal control of commercial banks. A perfect financial risk identification and early warning mechanism enables commercial banks to identify and deal with financial risks caused by internal and external factors objectively and accurately, which in turn enables commercial banks to carry out financial services stably and reduce low liquidity risk exposure [2].

3. The Need for Capital Management Practices

In recent years, China's economy has shifted from growing at high speed to a new normal of growing at medium to high speed. And commercial banks, as the main financing channel of China's economy, must face new challenges, and have gradually entered the dead end of operation and management just by continuously expanding the scale of assets. The new challenges require banks to innovate their risk management from a crude model to a refined model.

Since the 21st century, China's banking industry has presented great advancement in the field of modern risk management, and many leading banks have established a more sound risk management system, with the corresponding comprehensive strength, but there is still a large gap in many small and medium-sized banks. Considering the current mixed risk management capabilities and levels in China's banking industry, it is not enough to rely solely on the endogenous drive of risk management in some banks, but rather requires the assistance and promotion of the regulators, and the introduction of the new capital regulations reflects this trend and regulatory intent.

Based on the above characteristics of the new standard method of the new capital regulations, the target positioning of commercial banks to implement the new capital regulations is not just compliance with the standards. Currently, the number of commercial banks belonging to the first tranche, as well as commercial banks close to the first tranche that have the intention to implement in accordance with the requirements of the first tranche, should number close to one hundred, and the implementation of the new capital rules by these banks needs to be considered as a multi-level targeting.

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3.1. The first tier of the objective is compliance

The aim is to "count" risk-weighted assets according to the capital measurement requirements of the new capital rules and to achieve compliance with the capital measurement target. To achieve this goal, commercial banks will have to meet the requirements for measuring various risk indicators, risk-weighted assets, capital, and capital adequacy ratio by the end of 2023, as well as the requirements for supporting management systems and processes, data governance and information system construction.

3.2. The second tier of objectives is capital saving

To comply with the capital measurement and supporting management requirements of the new capital regulations, to "count" risky assets, to satisfy the identification criteria of lower risk weights through the enhancement of risk management level and data quality, to reduce the capital weights under the standards recognized by the new regulations, so as to realize the capital saving of the current stock of assets, which is not available under the current Standardized Approach [3]. The current standardized approach does not provide such scope for capital savings. As discussed in the previous section of this paper, the new Standardized Approach has some of the characteristics of the advanced approach of "better risk management, more capital savings", and the capital measurement rules touch on a single customer, business, and product dimension to a certain extent, requiring a large amount of high-granularity, accurate, and timely data to support the lack of such data, and can only be measured in accordance with the most prudent weighting of capital. weightings for capital measurement. It follows that data becomes a key factor in capital measurement and savings. Some banks with poor data bases, whose capital adequacy ratios as measured by the new standardized approach are not as good as those under the current approach, have to rely on ways to improve data quality to achieve capital savings relative to the current approach. Therefore, in addition to meeting the goal of compliance with the standards, commercial banks should also target the bank's full range of assets, improve the support capacity of systems, processes, measurement and information systems around the basic data for capital measurement, accurately measure risks and achieve reasonable capital savings under the premise of meeting the requirements of the new regulations.

3.3. The third tier of the objective is management empowerment

To comply with the requirements of the new regulations and adopt a series of measures, methods and tools to "manage" capital in the development of banking business, with a view to reducing capital consumption. Since the new capital regulations provide room for capital savings under both the advanced and standard approaches, banks can adopt proactive management to promote the optimisation of their asset and business structures in order to achieve the goal of capital savings. For example, commercial banks can comprehensively analyse capital consumption in various assets and businesses, formulate capital planning plans, set capital or risk weighting limits by business line and branch dimension, provide trial calculations of capital consumption for a single customer and a single business in advance, dynamically monitor capital consumption by using various types of risk-return indicators, and use some measurement techniques to predict future changes in risk weighting and capital consumption to provide "forward-looking" capital management. In addition, we provide "forward-looking" capital management capabilities, so that the implementation of the new regulations will be an opportunity to realize the goal of capital management empowering banks' operations and business development, and enhancing the return on capital.

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4. Developments And Comparisons of The New Requirements for Capital Management in The Basel Capital Accord

4.1. Evolution of the Basel Capital Accord

The overall objective of the reforms is to improve banking supervision, regulation and risk management systems, to increase the resilience of the banking sector to shocks from financial and economic stress and to mitigate adverse effects on the rest of the financial system, and to reduce the risk of financial sector spillovers to the real economy. The Accord mainly complements the minimum leverage ratio based on risk-based capital requirements and two liquidity requirements: the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR).

4.1.1. Basel I Accord

The Accord issued in 1988, also known as the Capital Accord, focuses on the regulation and enforcement of credit risk and establishes a minimum ratio of capital to risk-weighted assets, requiring banks to have a minimum ratio of capital to risk-weighted assets of 8 %.

4.1.1.1. Main contents

1) Definition of capital

The Basel Committee divides capital into two tiers: one is "core capital", which includes equity and public reserves, and which accounts for at least 50 percent of all capital, and the other is "subordinated capital", which contains undisclosed reserves, asset revaluation reserves, general or doubtful debt reserves, bonds with equity and subordinated bonds, another layer "subsidiary capital", which refers to unpublished reserves, asset revaluation reserves, general or doubtful debt reserves, bonds with an equity component and subordinated bonds.

2) Risk-weighted of assets

Risk-weighted calculation means that different types of assets and off-balance-sheet items are assigned different weights, i.e. 0%, 20%, 50% and 10%, depending on the relative riskiness of the assets and off-balance-sheet items, with the higher the riskiness, the higher the weight. A bank's off-balance-sheet items should be converted into the corresponding on-balance-sheet items using the "credit conversion factor" and then calculated using the same risk-weighting methodology.

3) Criteria for capital ratios

The Accord stipulates that by the end of 1992 the ratio of capital to risk-weighted assets for internationally active banks in all signatory countries should be 8%, with core capital of at least 4%.

4) Transitional Period and Implementation Arrangements

The Accord provides for a transitional period of implementation until the end of 1992, when the target of an 8% ratio of capital to risk-weighted assets must be achieved. This 1988 Accord requires "internationally active banks" in the G-10 to maintain a capital adequacy ratio of not less than 8 % in order to ensure the adequacy of capital in the international banking system and to create a level playing field to prevent banks from expanding without adequate capital. Increasing business without adequate capital.

4.1.1.2. Deficiencies

The biggest problem is that this type of operation mode renders it lack of risk sensitivity to the market. For instance, it is simplistic to categorize all corporate bonds together and apply the same risk weights indiscriminately. This would result in banks favoring riskier junk bonds in order to increase their return on capital, similar to the phenomenon of "bad currency expels out good

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currency" in economics, all things being equal. It plays an important role in improving the capital adequacy ratio and curbing unfair competition. However, the agreement fails to sufficiently recognize credit risk mitigation measures (e.g. collateral and guarantees).

4.1.2. Basel II

The New Basel Capital Accord, known as the Basel II Accord (or Basel II for short), was facilitated by the Basel Committee on Banking Supervision (BCBS) under the Bank for International Settlements (BIS) and substantially revised the content of the old Basel Capital Accord (Basel I) of 1988 with the aim of standardizing the international risk control system and enhancing the risk control capacity of international financial services. The new Accord expands risk to include credit risk. The new Accord expands risk to include credit risk, market risk, operational risk and interest rate risk, and proposes a "three-pillar" approach that requires capital regulation to more accurately reflect the risk profile of banks' activities and further enhance the safety and soundness of the financial system [4]. The new Accord consists of three pillars: first, minimum capital requirements; second, supervisory oversight and review of capital adequacy; and third, information disclosure.

4.1.2.1. Minimum Capital Requirements (MCR)

This reveals that the minimum capital adequacy ratio is 8 %, while the core capital adequacy ratio of banks should be 4 %. The aim is to make banks more risk-sensitive and their operations more efficient. The calculation of credit risk capital comprises the standardized approach, the basic internal ratings approach and the advanced internal ratings approach.

4.1.2.2. Supervisory Review Process

The supervisor decides whether the bank's internal operation is reasonable through monitoring, and proposes a plan to improve it.

Market Discipline: Banks are required to improve the transparency of information so that outsiders can have a better understanding of their finances and management.

4.1.3. Basel III

4.1.3.1. Pillar 1: Minimum Capital Requirements.

Minimum capital adequacy requirements remain the focus of the new capital accord. This component deals with the calculation of the minimum total capital requirements related to credit risk, market risk, and operational risk.

4.1.3.2. Pillar 2: Supervision and Inspection by Regulators

Supervisory oversight is designed to ensure that banks have in place sound and effective internal assessment processes for determining their risk profiles as a basis for assessing the adequacy of their capital. In carrying out supervision, the following four principles should be followed: firstly, banks should have in place a set of procedures for assessing total capital commensurate with their risks, as well as a strategy for maintaining the level of capital. Secondly, the supervisory authority should examine and evaluate the bank's internal capital adequacy assessment and its strategy, as well as the bank's ability to monitor and ensure that the regulatory capital ratios are met; if it is not satisfied with the final results, the supervisory authority should take appropriate, albeit unsatisfactory, measures. Third, supervisory authorities should expect banks to have capital above the minimum regulatory capital ratios and should have the ability to require banks to hold capital

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above the minimum standards. Fourth, the supervisory authority should seek to intervene early so that the bank's capital does not fall below the minimum level required to protect against risk, and take prompt remedial action if it is not protected or restored.

4.1.3.3. Pillar 3: Market discipline

The core of market discipline is information disclosure, and the effectiveness of market discipline depends directly on the soundness of the information disclosure system. Only through the establishment of a sound banking disclosure system can market participants estimate the risk management status and solvency of banks. The new agreement points out that market discipline has the potential to strengthen capital regulation and enhance the safety and stability of the financial system, and sets out qualitative and quantitative disclosure requirements in four areas, including the scope of application, the composition of capital, the process of assessing and managing risk disclosure, and capital adequacy [5]. For banks in general, disclosure is required on a semi-annual basis; for large banks that are active in the financial markets, they are required to make quarterly disclosures; and for market risks, relevant disclosures are required after each major event.

4.2. Differences between Basel Capital Accord versions in terms of capital requirement ratios

4.2.1. The Reason for the Difference

Basel I was enacted in 1988, which only deals with credit risk and does not cover market risk. Basel I regulates the risk management of derivatives and securitisation products and introduces a credit risk conversion factor to convert off-balance-sheet derivative assets into equivalent on-balance-sheet credit assets according to a certain ratio, and then carry out the capital calculation. One of the core problems of Basel I is that there is no provision for risk sensitivity, and risk weights are not differentiated according to the creditworthiness of different institutions, which leads to a tendency for commercial banks to hold more risky junk bonds, thereby engaging in capital arbitrage and improving the return on capital. Basel II, which was drafted in 1999, is based on three pillars: capital requirements, verification of capital implementation and market discipline, and makes up for the lack of risk-sensitive regulation in Basel I. Basel II introduces the Internal Ratings-Based (IRB) approach and the use of a diversified set of risk parameters to calculate risk-weighted capital. Basel I was introduced in 1988, requiring banks to have a minimum capital adequacy ratio of 8 percent. Basel II was introduced in 2004 and continues to require a minimum capital adequacy ratio of 8 percent. Basel III was introduced in 2010, raising the minimum capital adequacy requirement to 7 percent of risk-weighted assets for the common equity centre of systemically important banks (SIBs) and 8.5-10.5 percent for Tier 1 capital. The Basel Accord was proposed for banking regulation. Basel I introduced credit risk, which was weighted and linked to assets; Basel II added market risk and operational risk and required a minimum capital ratio of 8 percent, while banks strengthened internal controls and emphasized disclosure. Bar III stresses that banks should hold a minimum core capital of 4.5% and savings capital of 8.5%, and introduces the requirement of leverage regulation and liquidity regulation.

4.2.2. Relevant Basel I provision

Basel I divides banks' sources of capital into two tiers.

Tier 1 (i.e., core capital) includes common stock and capital surplus, undistributed earnings (retained earnings), high-quality non-perpetual preferred stock, minority interests in subsidiaries, and certain recognizable intangibles (less goodwill and other intangibles); and Tier 2 (i.e.,

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supplemental capital) includes provisions for loan and lease losses, subordinated debt capital instruments, statutory convertible bonds, medium-term preferred stock, unpaid dividends on accumulated perpetual preferred stock, and equity commitments of accumulated perpetual preferred stock, as well as equity commitment notes and other long-term capital instruments with both debt and equity characteristics[6].

Basel I requires banks to be adequately capitalized, requiring core capital (Tier 1) to weighted risk assets of at least 4 percent; and total capital (the sum of Tier 1 and Tier 2) to total weighted risk assets of at least 8 percent, with the amount of Tier 2 up to 100 percent of Tier 1 capital.

The Basel I capital adequacy requirement that the ratio of a bank's capital to its weighted risk asset balance should not be less than 8 percent is the most important indicator of the soundness of individual banks and the banking system as a whole.

Table 1: Two comparisons of Regulatory indicators and standards between Basel I and Basel II

Styles	Regulatory indicators	Regulatory standards
Basel I	Ratio of total capital (sum of Tier 1 and Tier 2 capital) to total weighted risk assets	At least 8%
	Amount of secondary capital	Up to 100 percent of Tier 1 capital
	Core capital (Tier 1) to weighted risk assets ratio	At least 4%
	Capital adequacy ratio	No less than 8%
Basel II	Tier 1 capital adequacy ratio	Floor raised to 6%
	"Core" Tier 1 capital as a percentage of bank assets	Floor raised to 4.5%
	Capital retention Excess capital	2.5%
	Countercyclical excess capital requirements	Within 0-2.5 percent range
	Tier 1 capital adequacy ratio	Floor raised to 6%
	"Core" Tier 1 capital as a percentage of bank assets	Floor raised to 4.5%

4.2.3. Relevant provisions of Basel II

Basel II comprehensively reflects the capital requirements for credit risk, market risk and operational risk in the capital adequacy ratio formula, introduces the internal rating method for measuring credit risk and includes credit risk and market risk in the scope of capital constraints, and approves the use of internal modelling method by commercial banks to calculate market risk capital. Basel II made some adjustments to the content and ratios of subordinated capital in the composition of capital, established a "capital conservation buffer", raised the lower tier 1 capital adequacy ratio to 6 percent, and increased the "core" tier 1 capital, which consists of common equity, to 6 percent of risk assets. It also raised the floor of Tier 1 capital adequacy ratio to 6 percent, raised the floor of "core" Tier 1 capital comprising common equity to 4.5 percent of a bank's risky assets, and set the level of excess capital requirement for capital retention at 2.5 percent, and the level of excess capital requirement for countercyclicality at 0-2.5 percent. It will also reduce banks' leverage, which will undoubtedly reduce the level of shareholder returns and long-term sustainable asset growth.

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4.2.4. Relevant Basel III provisions

4.2.4.1. Multi-level classification of bank capital and improvement of capital adequacy ratio.

Asset regulation targets have been raised, with the minimum common equity (i.e., Core Tier 1 capital), which is used to cover asset losses, rising from 2% to 4.5%, and the Tier 1 capital requirement (which includes common equity and other qualifying financial instruments based on more stringent standards) rising from 4% to 6%, with the total capital adequacy ratio remaining at 8%, which will remain at 8% for the first phase of implementation, until 2015[6,7].

4.2.4.2. Establishment of capital retention buffers and countercyclical capital buffers

Table 2: Basic requirement of different kinds of capital

	Common stock equity	Tier 1 capital	Total capital
Minimum Capital Requirements	4.5%	6.0%	8.0%
capital retention buffer		2.5%	
Minimum capital requirement +Capital retention buffer	7.0%	8.5%	10.5%
Countercyclical buffer capital		0-2.5%	

4.2.4.3. Transitional arrangements

(1) Implementation of the leverage ratio: the NBP was introduced at a leverage ratio of 3 percent at the beginning of 2011; there is a four-year transition period from the beginning of 2013 to the beginning of 2017, in which the leverage ratio needs to be disclosed at the beginning of 2015; the final adjustments and refinements to the leverage ratio are completed in the first half of 2017; and leverage is formally incorporated into the Pillar 1 ratio in 2018.

(2) Two major indicators of liquidity: Liquidity Coverage Ratio (LCR) was put under observation in 2011 and the indicator was introduced in 2015; Net Stable Funding Ratio (NSFR) was put under observation in 2012 and implemented in 2018.

5. Risk-Weighted Assets (RWA) of Chinese Commercial Banks

5.1. Current situation of RWA in Chinese commercial banks

5.1.1. The measurement and importance of weighted risk Assets (RWA)

Capital supervision focuses on the risk sensitivity of risk-weighted assets held by commercial banks to curb their excessive risk-taking behaviour, which can otherwise rely too much on the government's safety net. The calculation and management of the risk-associated collateral is pivotal in the routine operation of commercial banks. Risk Weighted Assets measurement of Chinese commercial banks includes credit risk, market risk, operational risk, internal model, data and technical support, and compliance with regulatory requirements. These measures have a significant impact on the bank's capital adequacy ratio and its ability to manage risks effectively. If the calculation of risk-associated collateral does not consider all the potential risks faced by the bank, it can incorrectly assess the actual risk level faced by the bank.

5.1.2. Cases related to weighted risk assets

Due to its poor implementation of internal control systems, which led to a lack of management of operational risks, the Tianjin branch of Industrial Bank was investigated by the China Banking Regulatory Commission in 2015 for illegal operations, illegal lending, and illegal taking of public

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deposits [7]. In 2017, the Guizhou branch of the Agricultural Bank of China was investigated for lending irregularities, primarily due to moral hazards causing weak internal controls and operational risks. All of the aforementioned cases demonstrate that commercial banks do not measure their risk-weighted assets perfectly, with the Industrial Bank case highlighting the information heterogeneity issue caused by the robust internal control system. The Agricultural Bank of China neglected to consider illegally obtained public deposits as risk assets. This resulted in the bank's risk-weighted assets being underestimated and biased assessments of actual risks. RWA could be underestimated because of operational risks.

5.1.3. Measures taken by commercial banks and state supervision

Hence, the commercial banks and national regulatory bodies must take corresponding measures. To mitigate RWA issues, commercial banks should develop detailed data collection standards and ensure clear information sources [8]. It is advisable to optimize the asset classification system, identify more hidden risks, establish risk levels with more flexibility, and take into account RWA related risks. Regular stress tests to analyse the changes in risk parameters under extreme circumstances can help the commercial banks deal with the risks associated with the weighting of the risk assets more effectively and avoid events like bankruptcy. Meanwhile, at the national supervision level, measures like improving internal model risks, enhancing risk parameters, formulating disclosure format for RWA information, increasing the details of disclosed projects and detecting the proportion of high-risk businesses in banks to identify hidden risk trends are effective in strengthening the weighted risk assets measurement.

5.1.4. New development of risk-weighted asset measurement in China

Since the implementation of the Measures for *the Management of the Capital Adequacy Ratio of Commercial Banks* in 2004 to the Measures for *the Management of the Capital of Commercial Banks (Trial Implementation)* in 2012, China's capital regulatory system has developed in accordance with the internal requirements of the banking industry's reform and development, and achieved the convergence of domestic capital regulatory rules and international standards at a higher level. The banking sector dominates China's financial market. Commercial banks play an important role in financial inter-mediation, serving as a link between macro policies and the real economy. Meanwhile, improving the stability of China's financial system has become a recurring topic in a series of meetings of the central government. In this context, it is of significant practical importance to focus on the critical problem of RWA risk sensitivity in China's banking sector. This approach could improve the policy framework of bank capital supervision and help in preventing and resolving systemic risks related to the banking sector.

The 2019 Annual Report of the China Banking and Insurance Regulatory Commission states that as regulators are proactively promoting the adoption of advanced capital supervision tools in the banking industry, more than 80% of commercial banks are using the internal rating method to measure credit risk RWA [9]. The regulatory authorities closely monitor each bank's internal evaluation model and encourage banks to enhance the model. *The Financial Stability Report for 2020* from the central bank indicates that the size of commercial bank assets continues to grow, but the average risk weight has decreased, indicating the optimization impact of the RWA measurement. The report reveals that the RWA density of joint-stock banks is lesser than that of state-owned banks. Commercial banks utilise financial technology to enhance the efficacy of internal evaluation models and increase the accuracy of RWA measurements. Regulatory authorities instruct commercial banks to reinforce data governance and model verification while continually optimizing and refining RWA measurements [10].

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5.2. Differences between Chinese RWA standards and international standards

The RWA standard of China exhibits the following significant features:

1. The domestic rating methods have inadequate coverage, and the measurement processes rely mostly on the basic approach, which uses the preset risk weight of the supervisory part as a measurement basis. Currently, only several significant banks in China implement the internal rating methodology.

2. Chinese disclosure requirements are less complex than international requirements, as China has not yet instituted a comprehensive information disclosure mechanism such as Pillar. Consequently, Chinese commercial banks are only required to regularly report their capital adequacy ratio.

3. China has yet to impose a buffer capital requirement. Despite Basel Agreement (III) necessitating the introduction of conservative capital buffer and other regulations, China has not imposed them at present [11].

4. There is no clear differentiation between Tier 1 capital and Tier 2 capital requirements in China, in contrast to international regulations. In contrast to international regulations: Firstly, there is greater international attention given to advanced internal model methods and operational risk management. Secondly, the international disclosure system has more stringent requirements than China which necessitate full data disclosure and impose stricter market controls. Thirdly, However, the international capital requirements for systemically important banks are lower than those in China. In fact, China has established a higher capital requirement of 10.5% for systemically important banks.

There are several reasons for these variations. To start with, the development of Chinese commercial banks on a large scale has been relatively short, and the overall risk management level is gradually improving. This has made it impossible to apply relatively complex models to practice in all fields, resulting in China's regulatory rules being reasonably easy to operate. Moreover, when it comes to regulatory thinking, China's regulatory system puts more emphasis on systemic risks, which strengthens its ability to handle significant risks through higher statutory capital requirements and stricter capital requirements for systemically important banks. Furthermore, China provides stronger guidance on the autonomy of banks, leading to a more rigorous internal examination and approval system. Finally, due to the imperfection of China's market development, and the limited liberalization of the capital market, information disclosure requirements tend to be less urgent and are conservative in nature. To summarize, there exists a variance between China's and international standards, impacting China's banking system in a certain measure. For instance, the internal-model application ability of Chinese commercial banks is relatively weak, and the transparency of regulatory data is inadequate. Nonetheless, taking the overall outlook into account, China's banking system appears notably stable currently. Meanwhile, China is enhancing the regulatory system of RWA.

6. Regulatory Requirements for Capital Adequacy Ratio of Commercial Banks.

6.1. Analysis of the capital supervision indicators of commercial banks

The capital regulatory indicators of commercial banks include capital adequacy ratio, leverage ratio, liquidity coverage ratio, and net stable funding ratio, etc. In this paper, capital adequacy ratio and leverage ratio will be the main analytical targets.

6.1.1. Capital Adequacy Ratio (CAR)

The capital adequacy ratio reflects the ratio between the net capital held by the bank and the risk-weighted assets in compliance with the regulations, which is the core indicator of the capital strength of the bank, in which the bank's capital can be divided into broad capital and narrow capital. In the narrow sense, bank capital refers to the bank's owners' equity as well as its own equity capital;

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while bank capital in the broad sense consists of both of these and a portion of debt capital [12]. In addition to understanding the basic concept of capital, it is also necessary to distinguish between economic capital, which is the operating capital required by a bank based on a uniform understanding of its own internal situation, for better development and the pursuit of profit maximisation, and regulatory capital, which is a mandatory target set by the supervisory authority, limiting the minimum value of capital that must be held by a bank. The capital discussed in this paper is regulatory capital, which is divided into three categories in the New Scheme: core tier 1, other tier 1 and tier 2 capital [13].

Capital adequacy ratios are also classified into core tier 1, tier 1 and total capital adequacy ratios.

Core Tier 1 Capital Adequacy Ratio = Core Tier 1 Capital / Risk-Weighted Assets * 100%, where Core Tier 1 Capital is the highest quality capital in terms of quantity and quality, including paid-in capital, provident fund, and unappropriated earnings;

Tier 1 Capital Adequacy Ratio = Tier 1 Capital / Risk-Weighted Assets * 100%, where Tier 1 Capital includes Core Tier 1 Capital as well as Preferred Stock, Perpetual Debt, and other loss-absorbing debt instruments;

Total Capital Adequacy Ratio (TCR) = Total Capital / Risk-Weighted Assets * 100, compared with Core Tier 1 and Tier 1 Capital Adequacy Ratios, the TCR takes into account all the capital of the bank with different strengths and weaknesses, and is a more comprehensive indicator for assessing the bank's overall capital.

6.1.2. Leverage ratio

The leverage ratio for commercial banks is the percentage of Tier 1 capital to the adjusted asset balance. The calculation formula is:

Leverage ratio = Tier 1 capital / adjusted asset balance x 100%

The leverage ratio shows the size of the adjusted assets that the bank's Tier 1 capital can support. As the bank's Tier 1 capital strengthens in relation to its assets, the leverage ratio increases, enabling it to bear higher leverage and risks. The Basel Committee mandates key banks in the global system to maintain a minimum leverage ratio of 3 percent [14]. Large banks in China are recommended to maintain a leverage limit of 4.5 percent. The applicable regulations stipulate that the balance of assets on and off the balance sheet should be calculated when processing the bank, except for collateral, guarantees, and credit derivatives [15].

6.2. The capital adequacy ratio of Chinese commercial banks

The Capital Adequacy Ratio (CAR) is a core indicator of capital regulation that is directly related to the safety and soundness of banks. The following data show the capital adequacy ratio of Chinese commercial banks from the end of 2018 to the present:

Table 3: Capital Adequacy Ratio Data of Chinese Commercial Banks

time	capital adequacy ratio /%	Tier 1 capital adequacy ratio /%	Core Tier 1 capital adequacy ratio /%
2023.6	14.66	11.78	10.28
2022.12	15.17	12.3	10.74
2022.6	14.87	12.08	10.52
2021.12	15.13	12.35	10.78
2021.6	14.48	11.91	10.5
2020.12	14.7	12.04	10.72

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Table 3: (continued).

2020.6	14.21	11.61	10.47
2019.12	14.64	11.95	10.92
2019.6	14.12	11.4	10.71
2018.12	14.2	11.58	11.03

6.3. Differences between Chinese and international standards

Table 4: Differences between China's Capital Adequacy Requirements and the Basel

	capital adequacy ratio	The Tier 1 capital adequacy ratio	Core Tier 1 capital adequacy ratio
Basel Agreement	8%	6%	4.50%
Capital management measures	8%	6%	5%

6.4. Case 3: CCB's operation is not standardized in the asset risk weight evaluation.

Details of the event:

In 2011, CCB needed to reassess the asset risk weighting under the implementation of the Basel II Accord. In the evaluation process, CCB did not fully assess the default risk of some corporate loans, but simply divided the size of enterprises and their industries, resulting in about 20% of corporate loans being undervalued to 50% risk weight. This operation leads to the undervalued risk weight of CCB's assets, and then the overvalued capital adequacy ratio[16]. After the incident was exposed, CCB was dealt with by the regulatory authorities and held the responsible person accountable. And reassessed the risk weighting of corporate loans, leading to a decline in the capital adequacy ratio in 2011.

Significance and Impact:

This incident reflects that banks should reasonably assess the risks of various assets according to the principle of prudence, and should not illegally increase the capital adequacy ratio by underestimating the risk weight. It is very important to take full account of the asset risk. This incident also prompted the regulators to further improve the capital supervision methods of commercial banks, and improved the prudential requirements of asset risk weight assessment.

7. Existing Regulatory Requirements and Effectiveness in China

7.1. Introduction to key regulatory indicators such as capital requirements and asset size requirements

7.1.1. Background

China as the second largest country in the economy of the current banking industry regulatory reference to the European and American regulatory rules, and for China's national conditions to make appropriate adjustments, has always been more developed in Europe and the United States in the banking industry, the market regulatory industry is more perfect and leading, in 2004 by the Basel

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Committee on Banking Supervision put forward the "Basel Accord 3" to the beginning of the gradual implementation of the 2010, The quality of capital and the weight of risky assets have been greatly improved, strengthening the ability to withstand risks, and liquidity regulation has been strengthened, and the addition of the net stable asset ratio requirement has improved medium and long-term solvency, and for China, we have strengthened our financial prevention and control of risks, and promoted the convergence of regulation with the international community. After joining the WTO, China has gradually opened up its banking market and signed more bilateral financial regulatory cooperation agreements, and the capital requirements are based on China's national conditions [17]. Taking into account the balance between risk control and support the development needs of the banking industry, compared with the international standard appropriate to reduce the commercial banks set a minimum registered capital standard (1 billion yuan) This requirement applies to all types of commercial banks, improve the overall business scale of commercial banks is conducive to the stability of the operation of the inhibition of the banking industry, if the small and medium-sized banks of excessive competition to promote the industry's degree of concentration, this standard unifies the threshold for the market This standard has unified the market threshold and ensured the necessary scale of business operation. With the rapid growth of the asset size of commercial banks in China's banking industry, credit risk is relatively lagging behind, non-performing loans have increased, and individual banks act in pursuit of profit maximisation, investment in high-risk assets is more profit-seeking, and there are problems of risk over-concentration, and the standard of non-performing loan ratio takes into account the current economic and financial conditions and risk level, sets the limit of the proportion of various types of risky assets, such as non-standardised debt assets not exceeding a certain percentage of net capital, and so on. The NPL ratio standard takes into account current economic and financial conditions and risk levels and sets limits on the proportion of various types of risky assets, such as non-standardised debt assets, not to exceed a certain percentage of net capital. At the same time, the NPL ratio has been set at 5%, which optimises the asset and business structure of commercial banks, effectively prevents and controls the outbreak of credit risks, and ensures the safety and quality of assets. In terms of liquidity risk management, China's regulators have proposed asset-liability matching in the short-term LCR (high-quality liquid assets must cover at least 100 % of total net cash outflows in a 30-day liquidity stress scenario) and stable funding sources in the medium- to long-term NSFR (banks must have stable funding sources to cover at least 100 % of required stable funding uses in a one-year time horizon), which have continued to improve in China. China's LCR indicators have been improving, with the average of 130.5%, 130.1%, 148.2% and 158.1% for the five largest banks, joint-stock banks, agricultural and commercial banks and urban commercial banks in 2020 meeting regulatory requirements, so it is clear that liquidity risk is manageable and there is sufficient capacity to cope with liquidity pressures in the short and medium to long term.

7.1.2. Regulatory indicators

Table 5: Major regulatory indicators of commercial banks in 2023 (quarterly)

Item	First quarter	Second quarter
(I) Credit risk indicators		
Loans in normal category	1852724	1895363
Loans of concern	41624	42240
Balance of non-performing loans	31170	32001
Of which: Subprime loans	14897	15074
Doubtful loans	11874	11998
Loss loans	4399	4930

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Table 5: (continued).

Percentage of normal loans	96.22%	96.23%
Concerned Loans	2.16%	2.14%
Non-performing Loan Ratio	1.62%	1.62%
Of which: Sub-prime loans	0.77%	0.77%
Doubtful Loans	0.62%	0.61%
Loans in loss category	0.23%	0.25%
Provision for loan losses	63974	65963
Provisioning coverage ratio	205.24%	206.13%
Loan Provisioning Ratio	3.32%	3.35%
(II) Liquidity indicators		
Liquidity Ratio	62.97%	64.37%
Deposit-to-loan ratio (RMB)	77.57%	77.69%
Renminbi over-provisioning ratio	1.95%	1.78%
Liquidity Coverage Ratio	149.46%	150.86%
(III) Efficiency Indicators		
Net profit (accumulated for the year)	6679	12529
Profit margin on assets	0.81%	0.75%
Capital Profit Margin	10.32%	9.67%
Net Interest Margin	1.74%	1.74%
Non-interest income ratio	22.41%	21.80%
Cost-to-income ratio	29.05%	30.28%
(IV) Capital Adequacy Indicators		
Net core tier 1 capital	216332	216704
Net Tier 1 capital	246954	248211
Net capital	306091	309036
Credit risk-weighted assets	1906928	1954946
Market risk-weighted assets	26012	25515
Operational risk-weighted assets	121541	121550
Total risk-weighted assets after application of capital floor	2059535	2107539
Core Tier 1 capital adequacy ratio	10.50%	10.28%
Tier 1 capital adequacy ratio	11.99%	11.78%
Capital adequacy ratio	14.86%	14.66%
Leverage ratio	6.74%	6.63%
(v) Market risk indicators		
Percentage of cumulative foreign exchange exposure position	1.39%	1.44%

The above table shows the main regulation of commercial banks:

7.1.2.1. Credit risk

This is the risk that the counterparty may default on its obligations.2023 In the first half of the year, against the backdrop of increasing downward pressure on the macroeconomy, commercial banks increased their credit investments to support the real economy. This led to an increase in normal loan balances. At the same time, under the influence of the recurrence of epidemics, the complex external environment, and other factors, the business pressure on enterprises increased, and the bank's non-performing loans increased. However, the increase was still manageable. Banks have actively resolved risks and strengthened post-lending management. By identifying problem loans in advance and taking measures to control the further deterioration of non-performing loans. Banks strictly implemented prudent provisioning policies to ensure adequate provisioning coverage. Provisioning standards were well above the minimum regulatory requirements.

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1) The proportion of normal loans was over 96 percent in both quarters, indicating that the quality of bank assets was high and large loans remained normal. This is mainly due to the overall stable macroeconomic operation, good business conditions in various industries, stable operation of borrowing enterprises, and strong debt repayment ability, resulting in excellent quality of normal loans. At the same time, the Bank's strict credit policy and risk management, prudent underwriting to avoid excessive lending, to ensure the quality of loan assets. 2) concern loans and non-performing loans are small in size, accounting for only about 2% of total loans, the risk is controllable. 3) The non-performing loan ratio is only about 1.6%, which is at a relatively low level, and the quality of loans is good. This is mainly due to the regulatory requirements for banks to strengthen risk classification and post-loan management. Banks have taken measures such as proactive early warning and early resolution to control non-performing loans. In addition, the steady development of the economy has also prevented the emergence of large-scale nonperforming loans. Favourable business conditions for firms have reduced the risk of default. Among them, the rate of loss-type loans increased by 0.02 %, and the repayment ability of customers with heavy loan burdens decreased. The default probability and risk level of different types of loans are different, for example: personal consumption loans are relatively low risk, but the risk of business loans is higher; the borrower's credit history, income level and the purpose of borrowing factors also lead to changes in the loan loss rate, so financial institutions in the approval of loans is more due to the consideration of the level of risk, and significantly increase the capital of the transaction business and the counterparty credit risk. Basel III proposes that in terms of credit risk management, banks should calculate the capital occupied by default risk due to counterparty credit risk, increase the regulatory capital to cope with the expected counterparty credit risk futures market loss of over-the-counter (OTC) derivatives transactions, and change the deduction of some equity exposures from Tier 1 and Tier 2 capital by 50 % each for some equity exposures under Basel II by using the PD/LGD method to calculate risk-weighted assets according to the 1,250 % risk weights. weighted assets. 4) The provision coverage ratio is over 200 % and the banks have made adequate provision for loan losses to cover non-performing loans. The Bank has made full provisions based on expected losses to adequately cover possible future losses. This reflects the Bank's principle of sound operations and prudent profitability. The high coverage ratio is also in line with regulatory requirements and helps to ensure that the Bank has sufficient capacity to manage credit risk. With a loan-loss provisioning ratio of about 3.3 %, the banks have a strong buffer to absorb losses. Overall, the quality of commercial banks' credit assets remains high and the risk of non-performing loans is manageable. However, we need to pay close attention to possible business risks and maintain a prudent management policy. Commercial banks have excellent asset quality, low non-performing loan ratios and adequate provisioning. This indicates that credit risk is manageable and asset quality is sound. Good credit risk indicators are conducive to the stable development of the banking sector.

7.1.2.2. Liquidity indicators

The liquidity risk indicator measures the liquidity and volatility of commercial banks, and the liquidity indicator of commercial banks should not be less than 25%, which can be seen from the above table that China's commercial banks are much higher than 25%, reflecting that commercial banks have enough liquid assets to meet liquidity demand, and the deposit to loan ratio is 77%, indicating that China's commercial banks' profitability is high, and the scale of loans is moderate and there is no flood, which is in line with the economic deleveraging before the film. This is in line with the general background of deleveraging of the economy before the film, avoiding the liquidity risk caused by excessive credit expansion, and in line with the current moderate and stable monetary policy stance. The reason for the low reserve requirement ratio is that the PBoC maintains reasonably ample liquidity in the banking system through open market operations and other means, without

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relying too much on excess reserves. Thus, reducing the cost of reserves indirectly eases banks' funding burden and encourages banks to manage liquidity through rational allocation and adjustment of loan structure. According to Basel III, liquidity risk supervision is a key element in the supervision of commercial banks. (2022) Ye Haoran. Liquidity risk management of Chinese commercial banks under Basel III framework[J]. proposed to optimise the idle asset disposal model, while Basel III requires financial institutions to have a ratio of core capital to risk-weighted assets of not less than 4% and a ratio of total capital to risk-weighted assets of not less than 8%. At present, China's commercial banks mainly use the traditional mode to dispose of idle assets, and should use modern means to deal with idle assets; diversified asset-liability management. Continued downward pressure on the economy and declining repayment ability of enterprises and individuals may lead to increased liquidity risk. There is still room for improvement in the liquidity of China's banking sector by continuously optimising the liability structure, improving the level of liquidity management and strengthening the monitoring of liquidity risk, and the regulator also needs to adopt a policy of prudent analysis. To prevent banks from relying on high leverage in pursuit of scale expansion, the China Banking Regulatory Commission (CBRC) has introduced leverage ratio management supervision to set leverage ratio limits in a graduated manner, strengthen risk management and prudent operation, and effectively control the leverage level of commercial banks to ensure the safe and sound operation of commercial banks.

7.1.2.3. Beneficial indicators

In terms of net profit, it stood at 6,679 in the first quarter and rose sharply to 12,529 in the second quarter, indicating that the Bank's overall profitability improved significantly in the second quarter. Return on assets (ROA) fell slightly from 0.81% in the first quarter to 0.75% in the second quarter, indicating a slight improvement in the efficiency of the Bank's use of assets. Return on equity (ROE) fell from 10.32% in the first quarter to 9.67% in the second quarter, with a return on shareholders' invested capital. Analysis of the net interest margin (NIM) shows a flat 1.74% in both quarters, with stable core operating profitability. Non-interest income (NII) declined slightly from 22.41 % in the first quarter to 21.80 % in the second quarter, with a lower contribution from non-interest income. The cost-income ratio (CIR) rose from 29.05 % in the first quarter to 30.28 % in the second quarter, as banks' operating costs increased and efficiency improved. Overall, banks' efficiency ratios rose sharply in the second quarter, but core operating profitability was relatively high. Cost control still needs to be strengthened.

7.1.2.4. Capital adequacy indicators

(1) Core Tier 1 capital ratio:

10.50 % in the first quarter and a slight decline to 10.28 % in the second quarter, but still above the minimum requirement. This indicates that the Bank's core Tier 1 capital position remains strong.

(2) Tier 1 capital ratio:

11.99 % in the first quarter and 11.78 % in the second quarter, also meeting the minimum requirement, and the ability of Tier 1 capital to absorb losses is sufficient.Reasons for the slight decline in the core and tier 1 capital ratios This was mainly due to the increase in the Bank's credit risk-weighted assets in the second quarter, while the increase in core Tier 1 and net Tier 1 capital was relatively small. The increase in credit risk-weighted assets was probably related to the expansion of lending in the second quarter. Although the core Tier 1 and net Tier 1 capital ratios declined slightly, the decline was not significant and the adequacy levels remained above the regulatory minimum. This indicates that the Bank's capital strength to withstand risks remains strong.

(3) Capital adequacy ratio:

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The capital adequacy ratio for the two quarters was 14.86 percent and 14.66 percent respectively, both above the minimum requirement. Banks have a strong balance of available capital and are able to withstand various types of risks. Reasons for the higher capital adequacy ratio: This is mainly due to banks' increased awareness in preventing various types of risks and more prudent capital management. The regulator requires banks to build up an adequate level of capital reserves to cope with possible operating losses. At the same time, commercial banks have maintained high capital adequacy ratios through active capital replenishment and endogenous capital increases. This gives banks the ability to withstand all kinds of anticipated and unanticipated risks.

(4) Leverage ratio

The leverage ratio was 6.74% and 6.63% in the two quarters respectively, in line with the leverage ratio control requirements. The Bank's asset-liability structure is relatively healthy. The reason for keeping the leverage ratio at a low level is to prevent systemic risks that may arise from excessive leverage. Limiting the leverage ratio helps to avoid over-borrowing and over-indebtedness in the banking sector. Overall, commercial banks are prudent in their capital management and have a strong capital base, which contributes to the safe and sound operation of the banking sector. Overall, the capital adequacy of commercial banks has been maintained at a favourable level, with an adequate balance of available capital and a strong buffer against risks. The asset-liability structure is sound and moderate.

7.1.2.5. Market risk indicators

The risk of loss arising from the Bank's on- and off-balance-sheet transactions due to the magnitude of adverse changes in market prices. A cumulative foreign exchange exposure of less than 1.5 % is in line with regulatory requirements and indicates a manageable market risk. Strengthening the regulatory requirements for banks' foreign exchange exposure in line with Basel III requirements and limiting foreign exchange exposure can reduce losses due to large exchange rate fluctuations and is an important step towards sound operations. In the first half of 2023, the exchange rate volatility of the human life currency was high, which brought some exchange rate risk, but commercial banks effectively managed this risk through standard operations. The construction of risk early warning indicator system of China's commercial banks under Su Cheng Basel III. It is proposed that since banks in China currently have limited equity and commodity business, market risk is mainly concentrated in interest rate risk and foreign exchange risk [18]. The indicators such as interest rate risk sensitivity and cumulative foreign exchange exposure position ratio are used to measure market risk. Expressed as the ratio of the cumulative foreign exchange exposure position to net capital, it reflects the risk in the foreign exchange market. The cumulative foreign exchange exposure position is the balance of the bank's exchange rate sensitive foreign exchange assets minus exchange rate sensitive foreign exchange liabilities. The higher the ratio of the cumulative foreign exchange exposure position, the higher the ratio of foreign exchange assets to foreign exchange liabilities, the bank will lose; if the exchange rate falls, the bank will make a profit. Commercial banks strictly adhere to the requirements of prudent market risk management, control foreign exchange exposure within the prescribed limits, and effectively prevent and control foreign exchange risk. The central bank flexibly uses foreign exchange policy instruments to guide market participants to adjust and respond to changes in the foreign exchange balance, thereby reducing the pressure on the exchange rate of commercial banks [19]. The current global economic uncertainty has increased, and volatility in the foreign exchange market may continue. Commercial banks need to strengthen foreign exchange risk monitoring and adjust positions in a timely manner. Reasonable foreign exchange exposure helps banks to trade and hedge, but should not be excessive pursuit of speculative transactions, should guard against hedging the basis difference risk. Banks' foreign exchange risk

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management should be consistent with the direction of economic and financial policies and contribute to maintaining financial market stability.

7.2. Farmers Bank's capital account irregularities directly affected the measurement of risky assets

Basel III significantly strengthens the quality of capital instruments and recalibrates capital requirements, requiring the Basel Committee to promote reform of the risk-weighted asset framework in three areas: measurement rules, credit disclosure and ongoing monitoring.

RWA = (Tier 1 capital + Tier 2 capital)/Capital adequacy ratio

RWA = Credit Risk-Weighted Assets + Market Risk-Weighted Assets + Operational Risk-Weighted Assets

Figure 1: Risk-weighted assets

-Tier 1 capital is the core capital of a bank, which is used for urgent financial needs without affecting day-to-day operations.

-Tier 2 capital is the supplementary capital of a bank, which is used to absorb losses in the event of liquidation of assets.

The amount of risk-weighted assets relative to the amount of capital determines the lower bound of the amount of capital of a bank. If risk-weighted measures underestimate the risk of a portfolio, it can lead to an overestimation of capital adequacy ratios, which ultimately affects the bank's solvency. The use of supervisory RWAs improves the risk sensitivity of regulatory capital requirements and helps banks to improve their risk management capabilities.

From the perspective of systemic risk prevention and control, the current regulation has certain constraints on risk, the current regulation sets risk control requirements such as bank leverage, with clear constraints on high-risk businesses, and the capital regulation and liquidity regulation requirements also make it impossible for banks to have unlimited leverage, and in the case of the Agricultural Bank of China's capital account violation case, the existence of violations in Agricultural Bank of China's capital account may lead to the underestimation of its risk-weighted asset ratio, which cannot accurately reflect the true risk profile. Specifically, if the Agricultural Bank uses the inflated net capital as the denominator for calculating the risk-weighted assets, it will undercalculate the ratio of various types of risky assets, such as credit risk, market risk and operational risk. When the economic down cycle hits, agricultural banks may find their available capital unable to cover the increased demand for risk assets. This suggests that the regulator needs to reassess the bank's risk profile, and the bank itself needs to ensure that it accurately measures all types of risks by strengthening its internal controls and other measures, so as to formulate capital management countermeasures to cope with the economic cycle and improve its ability to withstand risks. The fact that its non-compliance did not result in a systemic crisis shows that the current regulation has played a role in risk prevention and control. From the perspective of regulating business behaviour, the current regulation promotes industry compliance and plays a disciplinary role. However, from the perspective of preventing violations, there are still loopholes in the existing regulation, which cannot

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be completely eliminated. From the perspective of fair competition within the industry, the current regulation has corrected some of the irregularities and maintained fairness [16,18]. The current regulation uses various means to form a regulatory synergy, such as capital regulation and internal control regulation. It is conducive to regulating business behaviour and maintaining fair competition. In the case of Agricultural Bank of China, the regulation corrected its irregularities and balanced the fairness of the industry. Regulatory requirements guide capital to serve the real economy, but may limit financial innovation. However, the rules have not been updated in a timely manner and do not fully cover new ways of violating the rules. Enforcement varies widely by region, and the Agricultural Bank of China case reflects a lack of regulatory enforcement.

7.3. The need for appropriate relaxation

Due to the low degree of marketisation of deposit and lending rates, banks' pricing power is limited, resulting in insufficient financial innovation, limited sources of new revenue for the banking industry, capital and scale requirements have increased cost pressures on the banking industry, and the marketisation of interest rates has led to a further decline in banks' core spreads. As a result, China's bank spreads have continued to decline in recent years, falling below 2%. At the same time, the growth rate of banks' intermediary business income has slowed down, pressure on income growth has increased, banks' profit growth space is limited, which is not conducive to attracting more capital into the industry, and low spreads will suppress the banking industry's enthusiasm for credit investment, which is not conducive to the banking industry's capital accumulation and affects the stability of the financial system.

7.4. Basel Capital Accord Implementation and Differences in Central America

In 2008, the financial hit hard, in 2015 the financial trough, the financial market can not be separated from the government, efficiency and stability is also the relationship that financial regulation has to face, China is still close to the international financial, and constantly optimise the principle of financial regulation path. The 19th Party Congress report pointed out that "improve the financial regulatory system, and keep the bottom line of no systemic financial risk". Systemic risk is more irreversible, the system is non-avoidable risk, Wang Lifeng in China's financial regulatory framework optimisation path research proposed. There is a difference between systemic financial risk and individual financial risk, systemic financial risk is more destructive, may lead to financial crisis, economic crisis, and even affect social stability [18]; at the same time, they are related, the cumulative effect and contagion effect of individual financial point is an important reason for the outbreak of systemic financial risk. At present, China's financial development and financial regulation have certain conflicts and contradictions, and the financial regulatory framework is the bottom line that we must guard against the occurrence of systemic financial risks, and it is the primary goal to optimise the path of financial regulation; secondly, we should not let the financial detach from the essence of serving the real economy, and the optimisation path of the financial regulatory framework should be in accordance with the principles; Third, we should be based on the trend of domestic and foreign financial development and reform, and be fully in line with the international financial development path; Fourth, we should be in line with the international financial development path; and Fourth, we should be in line with the international financial development path. Thirdly, it should be based on the trend of financial development and reform at home and abroad, and be fully in line with the international financial development track; fourthly, it should be oriented towards balancing financial development and financial stability; and fifthly, it should be based on better protection of financial consumers' rights and interests.

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8. Conclusions

Managing the main risks of commercial banks' financial market operations and conducting reasonable testing and hedging of the corresponding risk indicators are important requirements for commercial banks to maintain the normal operation of their own financial systems. The core of the Basel Accord is not simply to raise capital, but to build a comprehensive risk management system, and it is necessary to promote the implementation of protective barriers for risk-weighted assets by all financial entities in accordance with the status quo and characteristics of China's financial market, and to promote the popularization and implementation of modern risk management concepts.

(1) Establish a reasonable and perfect counterparty credit risk management framework to avoid moral hazard and other problems.

(2) Optimizing the risk appetite indicator system

(3) Perform adequate financial risk modelling management procedures

The Basel Accords form a crucial component of worldwide banking regulation, emphasising the enhancement of banking system stability through prudent capital management and risk control. Whilst China has not fully embraced the Basel Accords, it has integrated certain concepts and practices into its supervision of risk-weighted assets (RWA). Besides, the disparities in RWA supervision between China and international standards primarily originate from the relatively new development of China's banking sector and increased regulatory attention to preventing systemic risk. Nevertheless, China is continuously enhancing relevant regulatory frameworks. In the future, while incorporating the key elements of the Basel Accords, China will advance its RWA supervision system in line with domestic conditions and risk management requirements. The current RWA supervision mechanism has significantly contributed to maintaining stability in the banking system.

Part IV first analyses the capital regulatory indicators for commercial banks, mainly the capital adequacy ratio and the leverage ratio, and describes the different types of capital adequacy ratios. It then provides data on the capital adequacy ratios of Chinese commercial banks in recent years, which have fluctuated between 14 and 15 percent. The paper compares the standard capital adequacy requirements of China and Basel, with China slightly higher than Basel. Finally, through the case of irregular operation in the assessment of asset risk weights of the Construction Bank, it analyses the impact and inspiration of this incident, i.e., banks should assess asset risks in accordance with the principle of prudence, and the supervisory authorities should further improve the capital supervision methodology and raise the prudential requirements for asset risk assessment.

Since the initiation of the reform and opening up in China, the economy has been steadfastly growing and flourishing. As the second-largest economy, it has driven the demand for global financial resources consequently resulting in the unceasing expansion of its banking industry. The banking system has improved significantly, together with a concomitant rise in the commercial banking industry and credit investment, thus leading to the continual advancement of the actual economy. While an increase in loans has a direct effect on the assets of the bank, the compression of the spread and the mounting non-performing loans have consequently put a downward pressure on the profitability of the bank. Under the influence of the Basel Accord, China has pursued further reforms in the banking industry's development direction, enhanced risk management capabilities, optimised industry structure, and bolstered liquidity risk management. These measures aim to diversify the country's banking industry, promoting an open financial environment.

Going forward, China aims to enhance its diverse and accessible economic system, while adhering to the standards of the Basel Accord. This will result in added improvements to the

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transparency and standardisation of its banking sector and allow China to strengthen its ties with the global economy.

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