

# Credit Risk Analysis and Countermeasure Research of China's Commercial Banks

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## Abstract

This paper analyzed the current situation of credit risk management of commercial banks in China, and analyzed the six risks that China's commercial banks may face. Then, this paper pointed out four problems in the credit risk management of China's commercial banks. Finally, according to the specific problems of China's commercial banks, this paper put forward some concrete countermeasures to perfect the credit risk management of Chinese commercial banks. The article explores the issues in the field of finance.

**Key words:** Credit risk; Commercial banks; Countermeasure

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## INTRODUCTION

At present, the outstanding problem in the financial field is the credit risk of commercial banks, which made the commercial banks be faced with the expansion of the risk, thus affected the development of commercial banks, but also caused some interference on China's stable economic development. Therefore, it is necessary to identify the credit risk of China's commercial banks, to analyze the causes of its formation, and on this basis, the formation of countermeasures.

## 1. THE CURRENT SITUATION OF CREDIT RISK MANAGEMENT OF CHINA'S COMMERCIAL BANKS

China's banking industry began to recognize that risk management since the commercialization of professional banks in 1994. After the Asian financial crisis in 1997, we had a better understanding of the risk management, following China's Commercial Banks increasing capital in 1998, asset-liability ratio management and setting up asset management company stripped of bad assets in 1999. From 1994 to 2017, the commercialization of the Bank of China is less than three decades, and commercial banks mature risk management in China cannot be compared with developed countries'.

(a) The starting point of China's Commercial Bank is low, and started late. Commercial banks risk management has gone through five stages. Developed commercial banks are probably in the fourth stage (capital adequacy ratio management) to the fifth stage (comprehensive risk management) transition period, but most of China's commercial banks are still in the first stage (debt management), mainly to deposit scale expansion for the development goals, only a few banks may have reached the fourth stage or the fifth stage. This shows that China's banking industry risk management starting point is low, and compared to developed countries, China's commercial banks in the risk management have a big gap.

(b) There is a conflict between scale expansion and risk management. In China's banking industry, the phenomenon of heavy-scale expansion of light risk management is prevalent, and the evaluation of a bank is largely based on scale. It seems that the bank is a good bank if it is expanding rapidly developing fast and of big size. With the deepening of the shareholding system reform of the state-owned commercial banks and increasing the risk supervision of the CBRC, China's banking industry risk management awareness continues to

increase, and more and more attention are being paid on the relationship between the scale expansion, the capital constraint and the risk management. However, the impulse of scale expansion did not fundamentally resolve from the business philosophy.

(c) Risk management approach is single. Modern commercial banks are very rich in risk control technology, and classification scientific, quantitative accuracy, means advanced, these technologies are from the scientific risk management philosophy. China's banking industry still has many gaps in the risk management of advanced technology and methods, and is still very weak in the risk of quantitative management, most banks still remain in the management of asset-liability indicators and position matching management level.

(d) The risk control system is not perfect, corporate governance structure is flawed, and there is no establishment of an independent clerk order. Modern commercial bank business lines are vertical, to adapt to this system, the clerk of the order is also vertical. At present domestic banks

The system of lending is basically horizontal, and there is no risk management organization system in the modern sense.

## 2. CREDIT RISK ANALYSIS OF COMMERCIAL BANKS

In general, the credit risk of commercial banks mainly includes six risks, such as pre-loan risk, post-loan risk, non-performing loan risk, mismatch risk of deposit and loan period, industry concentration risk and operational risk in credit expansion. The risks are described separately.

### 2.1 Pre-Loan Risk

The risks faced by commercial banks before the issuance of loans are manifested in operational risk, credit risk and other compliance risks. Commercial banks must comply with national policy requirements in order to issue loans, the size of the loan and the industry is also subject to a certain degree of policy constraints, which are called compliance risk. Before the loan, the commercial banks need to identify and quantify the risk of the customer, only the standard customer would be issued loans, here mainly visit the customer's credit problem, to see whether there are bad credit records, to see if there is a potential risk, whether there is sufficient repayment ability, whether it has a higher credit rating, etc., and through these to judge the size of its risk.

### 2.2 Post-Loan Risk

After the loan is issued, the risks that commercial banks may produce are specific to market risk, credit risk and operational risk. For the borrower, its operating conditions are affected by the market and the industry, then the financial situation has been in a state of volatility, and

financial conditions directly affect the borrowers' ability to repay, once the business crisis, the banks will face a huge credit risk.

### 2.3 Risk of Nonperforming Loans

With the financial reform and the gradual reform of the banking industry, China's commercial banks pay more and more attention to the safety of bank assets, and loan approval process of risk awareness has gradually increased. China's commercial banks are divided into five categories of loans, respectively, normal, attention, sub-level, suspicious and loss class, we usually call the latter three non-performing loans.

In 2004, the balance of non-performing loans of China's commercial banks reached 1,717.6 billion yuan, and the non-performing loan ratio reached 13.21%. And in 2005, both appeared in a significant decline. Among them, in 2005, the balance of non-performing loans fell to 1313.36 billion yuan, non-performing loan rates fell to 8.61%. Compared to 2004, they decreased by 4.6%, a "double down" mainly benefiting from the divestiture of state-owned commercial banks. Until the end of the third quarter of 2014, suspicious category, loss class, subordinated loan balance were respectively 305.3 billion yuan, 96.7 billion yuan, and 364.9 billion yuan. The loss of loan ratio was 0.15%, subordinated loan rate was 0.55%, and Class loan rate was 0.46%.

### 2.4 Deposit and Loan Period Mismatch Risk

Deposit and loan maturity mismatch refers to the use of short-term liabilities for long-term loans. The reasons for this phenomenon may be subject to macroeconomic policy adjustments, fixed asset investment growth and other factors. Long-term loans have been high, at the same time, the use of funds in various enterprises operating were more frequently, rarely use the form of time deposits, both are current deposits for temporary shortage of funds. Therefore, there are unstable factors for the commercial banks in the source of funds, which would lead to its deposit and loan period between the mismatch phenomenon.

The average annual value of medium and long-term loans of China Agricultural Bank of China was 55.23%, and the average value of medium and long-term loans of China Construction Bank was 43.54% and 44.02% for CITIC Bank. And in the process of credit expansion, the long-term loans in the growth rate is significantly higher than the short-term loans, and new deposits in the current deposits accounted for more, so that commercial banks will face the maturity of the loan and loan risks and the use of funds is not smooth That is, liquidity is greatly affected.

### 2.5 Industry Concentration Risk

From the perspective of credit from China's commercial banks, most banks have invested credit assets in infrastructure, such as manufacturing, real estate industry, these industries are characterized by a long investment and a greater risk. Especially in the real estate industry

during the construction, once the capital chain breaks, it will affect the progress of the construction, which is a cause of the flats.

According to the statistics, till the first half of 2013, China's real estate loans and real estate as collateral to obtain loans total amount of loans accounted for 37.2% of all commercial banks. It can be said that nearly 40% of commercial bank assets had to bear the risk of fluctuations in the real estate market.

## **2.6 Operational Risk in Credit Expansion**

For operational risk, most countries in the world take the new capital agreement as the yardstick, which is due to the banks' internal control system is imperfect, incomplete programming, business personnel irregularities and other external factors, which caused the risk of commercial banks suffered losses.

From year 2003 to the end of the third quarter of 2014, the scale of the assets of China's commercial banks, in addition to the impact of the financial crisis in 2008 has declined, the overall trend was upward. And the rapid growth of credit scale will undoubtedly be accompanied by more operational risks, in the process of credit distribution, the loss suffered cases were abound because of the interests of the bank. In the international banking sector, whether it was the reorganization of the assets of Bahrain Bank in 1995 or the Japan's Daiwa Bank which was suffered by heavy losses, both were related to the illegal operation of employees in the bank. Bank of Bahrain, due to the fact that a trader of a subsidiary body privately concealed transactions and losses without authorization, resulted in a bank loss of \$ 1.3 billion and was eventually acquired. Japan's Daiwa Bank employees for the violation of the provisions of the account business, resulting in the loss of 1.1 billion US dollars of banks. In China's banking industry is also full of operational risks, especially in the banking business occupies an important position in the credit business of illegal operations, but also bring huge hidden risks to the commercial banks.

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## **3. PROBLEMS IN CREDIT RISK MANAGEMENT OF CHINA'S COMMERCIAL BANKS**

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### **3.1 Credit Risk Management Philosophy Behind**

Firstly, commercial banks should improve their ability to resist risks. Bank business staff is only focused on their own performance, most of the risk management would be shirked to the wind control department, and find all kinds of excuse to write off their relationship. In fact, risk management should implement all levels of the bank departments and departments of all staff, each business staff have to do a full understanding of the risk of their own business. And the current situation, China's

commercial bank business staff should be learning actively to try to change the status quo, whether in the management of risk management or technical aspects.

Secondly, following the post separation system. The stability of commercial banks' market value is considered to be the standard of commercial banks' long-term success, and the benefits and risks of a commercial bank are accompanied. Therefore, the more developed countries are, more emphasis is put on the relationship between their own income and the risk of. Banks in developed countries conduct day-to-day management with the principles of matching income and risk.

However, China's commercial banks are not able to combine the two together, pay too much attention to the infinite expansion of the banking business, ignoring whether the quality of assets and the expansion of the banking business would be brought to the issue of income. Of course, this business expansion is mostly due to bank performance assessment indicators, these factors also led to a large number of bank loans, as one of the reasons for non-performing loans. The neglect or lack of emphasis on credit risk management will have a negative impact on its development in the long run.

### **3.2 The Credit Internal Control System of Commercial Banks Is Not Perfect**

#### **3.2.1 The Corporate Governance Structure Needs to Be Improved**

Most of the reform of China's commercial banks has adopted the modern enterprise system, but there are still problems between the owner and the actual manager: taking the state-owned commercial banks. For example, firstly, the state-owned commercial banks external governance environment is not perfect, financial reform makes a large number of foreign banks enter to the China's market, and form a certain competition with China's commercial banks. But such competitive pressure the state-owned banks faced with is not obvious, coupled with the China's banking regulatory system needs to be improved, which makes the internal governance structure not only will not be subject to internal constraints, and will not be affected by the external market environment.

Secondly, after the shareholding reform, the state-owned banks were changed by state or government control, and most of the control of the banks came from managers or internal employees who are not only employees of banks, but also individuals with selfish interests, often preferred private interests, and neglect or even damage the collective interests (here refers to the interests of banks). Managers may false performance to cover up the commercial banks in the operation of the non-standard phenomenon for their own career development, the consequences of doing so will damage the effectiveness of state-owned assets, and even lead to the loss of assets.

Thirdly, commercial banks do not exist independently, they will also be subject to various constraints, such as bank regulators will supervise the inspection of banks in accordance with national banking standards to operate, such as the audit of commercial banks will audit the financial report, which has a certain role in the supervision of banks, but also to ensure that the financial information provided by banks with authenticity. For example, the Ministry of Finance will allocate public finance for the sake of the interests of the state, so that commercial banks in the course of business will be affected by these departments as the impact or pressure inevitably.

### **3.2.2 The Credit Constraint Mechanism Needs to Be Improved**

First of all, commercial bank credit risk management involves a wide range of knowledge, which need comprehensive support for talent. A high-quality workforce will help commercial banks improve efficiency, because high-quality talent can analyze the development model which is conducive to the bank according to the national macroeconomic policies, industry information and business conditions, and bank performance and management capacity Promotion will help to improve its competitiveness in the industry. But at present, China's professional talent in this area is still relatively small, and the concept of internal staff of commercial banks is lagging behind. Either they only based on their own interests, either for their changing ability of new knowledge is poor, either the training mechanism of commercial banks is not sound, or even if the training is frequent but the effect is small, the existence of these factors will increase the credit risk.

Secondly, because the corporate governance structure of China's commercial banks is not yet sound enough, resulting in the managers or the president would complete a variety of performance indicators based on their own interests rather than the interests of shareholders to ,this would result in the business process may encounter business shortcomings: just for personal career promotion and blindly seek personal performance, do not take into account the prospects for the development of the bank. For example, the manager may be the pressure for higher-level indicators, and blindly expand the scale of loans. As the credit approval is not strict, resulting in the emergence of bank non-performing loans, all of which have increased the bank's credit risk.

## **3.3 Internal and External Rating System Is to Be Improved**

### **3.3.1 Internal Credit Rating**

At present, the internal rating of Chinese commercial banks is relatively simple, mainly using expert judgment. But this scoring method depends largely on the professional quality of the experts and personal risk appetite, may be different experts to deal with the same risk will give different

conclusions. The key question is that the result is not able to predict how much the default rate is after the firm, and of course it will not be able to predict how much the bank will face default losses in the future.

The existence of information asymmetry can also constrain commercial banks to establish an internal rating system, this is because that the internal rating system needs a lot of data need to get from the enterprise, so that enterprises cannot avoid false information. In addition, the establishment of China's internal rating system is still in its infancy, for the previous business to obtain the situation of the default is more difficult, incomplete data will directly lead that the degree of default loss cannot be accurately measured.

### **3.3.2 External Credit Rating**

First, the current China credit rating agencies started late. Whether in technology or method, the process of China's credit rating is to imitate the experience of foreign advanced organizations. The lack of independent research and development of the rating standards, and the rating agencies generally do not have in-depth exploration of the risk on different enterprises in China, different industries, different regions. And this copy of the foreign model is likely due to different countries facing different external environment caused by the difference in risk estimating.

Second, in the case of commercial banks, although the external credit rating can reveal the risk factors through the rating agencies on the financial situation of the loan business and growth potential analysis. But there is still a lot of disagreement among Chinese banks in dealing with external credit rating agencies, especially the results of their ratings.

Again, in the enterprise, the fact that the bank internal rating and external social credit rating using the method of caliber differences would lead to a large deviation from the final result. Commercial banks' internal rating is generally in accordance with the head office of the evaluation indicators and standards, and external rating agencies is in accordance with the central banks' standards, which led to the commercial banks' internal credit rating results will generally be higher than the external agencies' credit rating. And the level of credit rating directly affect the borrowing business credit and credit line, so for the lower external credit rating, borrowing enterprises are generally not involved.

## **3.4 Credit Risk Measurement Methods Are to Be Improved**

First of all, the credit information system of China Commercial Banks has already provided some data base of credit risk management, but the quality of data has yet to be improved. The reliability of these data will directly affect the accuracy of credit risk measurement.

Second, even if the credit information system has statistical data, it is still not enough for the current China's commercial banks on the using of these data. At the

commercial level of each commercial bank, the various enterprise information data they exposed to cannot be reported to the credit information system in time, causing the loss or distortion of the business information, which leads to the establishment of the risk management model or the management of the asset portfolio be more difficult. Further, we do not have a good understanding of the risk at all, so the use of such advanced measurement methods will encounter a lot of resistance.

## **4. COUNTERMEASURES OF PERFECTING CREDIT RISK MANAGEMENT OF CHINA'S COMMERCIAL BANKS**

### **4.1 The Establishment of a Modern Credit Risk Assessment System**

Commercial banks are faced with a variety of risks in credit business operations. In order to maximize the interests of banks, we need to adopt advanced risk measurement methods, improve the internal control system and efficient risk early warning system. An accurate and sound risk management system is conducive to commercial banks in a timely manner to avoid risks or improve the awareness and level of risk prevention.

#### **4.1.1 The Use of Modern Risk Measurement Methods**

In terms of risk measurement methods, there are traditional credit risk measurement methods and modern risk measurement methods mentioned earlier. And for the modern commonly used in the modern risk measurement methods in a variety of models, it mainly divided into default model and mark-to-market model. As the name suggests, the default model mainly examines the borrowers' default or not, and the mark-to-market model includes not only the situation of default, but also the credit rating of the transfer, that is, a credit rating of the enterprise, in the next year may be downgraded or upgrade, then the market model needs to be taken into account to meet the needs of the real situation.

Optimize the asset structure of commercial banks, and implement credit portfolio management. The models that are more important in credit portfolio management are the income equilibrium model and the VAR model. Most of the large commercial banks in the world will adopt this credit portfolio approach. It is mainly through the credit derivatives trading activities, the sale of credit assets and securitization to reduce economic and regulatory capital, but also reduce the size of assets, which increases the value of economic growth and shareholder value.

#### **4.1.2 The Establishment of a Sound Credit Rating System**

The emergence of internal rating law affects the World Bank, its risk sensitivity characteristics, better urge banks around the world to improve their credit risk

identification, measurement and management. From the results of the use of this method of international banks, the internal rating method has its own many advantages.

First, it can determine the price of a financial instrument. Second, it established a comprehensive credit rating system for the borrower, and based on the rating results to determine the amount of credit or credit or how much credit. Again, the internal rating method can provide a basis for the allocation of capital and the amount of bad debt provision. Finally, because the internal rating method can take into account the specific circumstances of the banks, so its rating results have a greater applicability, but also for managers to make a reliable decision to provide a reliable reference.

### **4.2 Improve the Credit Risk Management of the Internal Control System**

The internal control system originated in the United States, mainly by organizing some of the methods or regulations adopted by the successful implementation of the internal plans of the enterprise. It is to ensure the safety of enterprise assets and the accuracy of accounting information under the premise of improving the efficiency of business behavior. Similar to the operating mechanism of the enterprise, banks also belong to a special type of business organization, but also for the purpose of profitability, but also stressed the safety. Therefore, the perfect internal control system is indispensable. The biggest risk facing banks is credit risk. Therefore, internal control is to prevent or reduce the occurrence of credit risk, strengthen the credit sector and the staff of the risk control, system management, methods or means of integration. Establish and improve the internal control system is conducive to the high efficiency of bank operations.

#### **4.2.1 Improve the Corporate Governance Structure**

Efficient corporate governance structure, the need for power checks and balances and reasonable division of labor. For the effective operation of the internal control system, it may be considered to establish its own risk management committee within the bank, meet regularly and have the right to set up its own risk management department. Listen to the work report of its subordinate departments, and adjust the risk management policy according to the actual situation. In addition, commercial banks can set up their own audit committee, the department is mainly responsible for the bank's audit, audit, and supervision and so on. The department should also set up its own auditing department to conduct periodic audit reports and maintain independence when exercising its internal oversight function.

#### **4.2.2 Resolutely Implement the Separation of Duties and the Separation System**

In order to prevent internal collusion, the banks' internal staff must clearly distinguish between their respective responsibilities and authority. Management

and practitioners must clearly define the relationship between the management to ensure that the management of the decision to timely and accurately communication to the executive. Executives should also ensure timely reporting of the business. In the credit system, the credit review, issue, authorization and approval, risk assessment and business management personnel should be strictly separated to prevent collusion.

In the loan approval stage, the credit department is mainly responsible for formulating relevant policies, designing credit evaluation methods and models, authorizing the internal authority of banks and personnel to approve power, and standardize the operation process of credit business. For the right to issue loans, they are mainly concentrated in the review departments and business units, the former need to review the loan and provide a review report, the latter is mainly responsible for the credit assets of the loan before the audit and follow-up investigation of the work. Regardless of how close the work of the department, the emergence of non-performing assets cannot be avoided. At this time, it needs for asset management and preservation departments of non-performing assets for disposal or collection.

### **4.3 The Establishment of Efficient Credit Risk Early Warning System**

In terms of credit risk regulation and measurement, China's commercial banks are more focused on qualitative analysis rather than quantitative analysis; more emphasis on static analysis, rather than dynamic analysis. In the traditional qualitative analysis model, we mainly analyze the historical data. Many times, from these data is not able to infer the extent of future risks, we can only use this as a basis for speculating about the future. However, this basis is not accurate at all, so that the traditional risk measurement method with great hysteresis or simply did not find the essence of risk lies. In this case, it would be necessary to improve the risk measurement techniques and levels and find a suitable country approach.

#### **4.3.1 Collection of Information Required for the Credit Risk Early Warning System**

According to whether the risk can be dispersed, credit risk can be divided into systemic risk and non-systemic risk. Systemic risk is mainly caused by macroeconomic factors, industry factors and regional factors. So we need to do the following three points. Firstly, we should strengthen the macroeconomic risk of early warning mechanism, such as China and even the world economic information and financial information changes in time to collect and analyze macroeconomic trends.

Secondly, commercial banks should strengthen the early warning mechanism for industry risks. Commercial banks should analyze the future trend of the industry according to the changes of national economic policies, industry market economy data or dynamic indicators, so as to forecast the risks facing it as soon as possible.

Thirdly, commercial banks should strengthen the early warning mechanism of regional risk. Commercial banks can evaluate regional risk based on economic development, regional policies, business conditions, bank liquidity, profitability, asset quality, etc. to measure or forecast regional risk conditions to determine whether or not credit assets are delivered or delivered.

#### **4.3.2 To Establish a Key Step in Establishing a Credit Risk Early Warning System**

The credit risk factor is changing rapidly, so the timely updating of the data is very important to the establishment of this system. Therefore, firstly, we need to update the various data needed for risk monitoring in a timely manner. Secondly, the credit risk has its own transmission process. The risks posed by macroeconomic factors can affect industry conditions and trigger industry risks, and industry information can affect regional volatility in the region as a regional risk. In addition, these factors will lead to an enterprise's operating conditions, financial conditions, personnel and other aspects of the change and then triggered a credit risk. Thirdly, given the excessive emphasis on non-systemic risk in the past, commercial banks should now turn their attention to systemic risks. Fourth, to control the risk of the industry early warning mechanism, many international banks will be the industry factor analysis as an important part of the enterprise risk analysis. China's commercial banks should use this as a reference.

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## **CONCLUSION**

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In general, the risks of commercial banks mainly include: pre-loan risk, post-loan risk, non-performing loan risk, maturity risk of deposit and loan maturity, industry concentration risk and operational risk in credit expansion. For the Chinese commercial banks, the credit risk is mainly reflected in the following four aspects: the first is that credit risk management concept is backward, the second is that internal control system of commercial banks is not perfect, the third is that external rating system needs to be improved, and the fourth is that credit risk measurement method is lagging behind. In view of the problems existing in credit risk management of Chinese commercial banks, this paper suggests that modern credit risk assessment system should be established, perfect the internal control system of credit risk management and establish an effective credit risk early warning system.

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