

Research on Intelligent Risk Characteristics and Management of Commercial Banks

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Abstract: An important feature of modern financial risk management is that as an integral part of the internal management of financial institutions, its position in the entire management system has risen to the height of the development strategy of financial institutions. The actual cases of commercial banks show that improving the system management capability is itself to reduce unnecessary risks, and that fine risk control is the major development direction of foreign exchange risk control, and the system processing capability is the premise. In the centralized management of credit risks, this paper starts with the introduction of risks and characteristics of commercial banks, the classification of intelligent risks of commercial banks and what is the risk management of commercial banks, analyzes the main problems existing in the intelligent risk management of commercial banks in China, and then focuses on how to further improve and deepen the concept of risk management of commercial banks in China. For commercial banks, standardized modern risk management is more important for their survival and development.

1. Introduction

Risk management is an important topic faced by commercial banks all over the world. Due to the particularity of commercial banks' currency management, the risk management of commercial banks and that of general enterprises have different characteristics [1]. Especially with China's accession to the World Trade Organization, the pace of opening up of the financial service industry has been further accelerated, the degree of financial deepening has been increasingly strengthened, the international financial system is illusory, the rapid expansion of financial derivatives, the unsound and inefficient financial supervision system and so on, resulting in huge potential risks for China's commercial banks and serious threats to bank safety [2]. The profitability of the foreign exchange market is characterized by correct estimation of price uncertainty and rapid response to price changes. Artificial intelligence and big data mining technologies have driven institutions to improve their adaptability to the market. Programmed strategic trading makes it possible to maximize the profitability of foreign exchange trading through high-frequency operations. No matter for banks or financial regulators, how to carry out effective risk management and avoid risks as much as possible is an eternal theme [3]. Due to the particularity of its position, function and stage, commercial banks have a large number of financial risks. How to resolve the financial risks of commercial banks is the key to solve this problem.

2. Intelligent Risk Characteristics of Commercial Banks

2.1 Entire Course

Business risks exist in all kinds of business items and business links of commercial banks. Whether it is credit, savings or investment, whether it is bill exchange or accounting treatment, there are inevitably risks of one kind or another. They are fighting for each other. There is no overall and systematic risk assessment, identification, early warning and reflection mechanism from the decision-making level to the grass-roots institutions. The concept of risk management in particular has not yet been rooted in the thoughts of bank employees [4]. First, in order to gain profits, banks take the initiative to bear the risks of uncertain future exchange rate trends. Second,

banks use their own capital to trade in the foreign exchange market by setting a trading strategy, resulting in foreign exchange losses when the market trend contradicts traders' judgment of the market. If the commercial bank's funds lack security, that is, when the customer requires the bank to pay all the payable money, the bank cannot pay in time; For example, if the loaned funds are not well controlled and the principal and interest cannot be recovered on schedule, depositors' crowding out will cause liquidity risks, and payment errors or losses caused by fake receipts and counterfeit currency will result. Hedge psychology, such as U.S. dollar, precious metal and Japanese yen, is usually used as a hedge asset investment choice in times of crisis. Hedge assets usually rise in times of political turmoil.

2.2 Uncertainty or Variability

The causes of commercial banks' operational risks are mostly related to some human factors, which determines the variability and uncertainty of their operational risks, and the market environment and corporate behavior are constantly changing. The current credit decision-making procedures of China's commercial banks are still incomplete, covering only two steps of credit risk identification and measurement, prevention and control, and the two links of risk strategy and management evaluation are relatively weak. The failure of customer trading has exposed the risks of flat trading, forcing banks to accept reverse hedging of market prices. Foreign exchange transaction credit risk is different from credit risk of credit business counterparty, the latter's risk is one-way for banks, while the former is two-way. Commercial banks, with their functions of credit intermediary, payment intermediary, credit creation and providing financial services, are effectively allocating social resources, reflecting and transmitting the orientation of national economic policies and industrial policies. The operation and business activities of commercial banks are linked with various social economic organizations and thousands of households. Once the risk occurs due to poor management of commercial banks, it will have a wide spread and great influence. Due to competitive pressure, commercial banks are also constantly developing new financial service projects, which will also make the operational risks faced by commercial banks constantly change [5].

2.3 Sudden Occurrence of Risk Loss

Market risk control of foreign exchange business mainly focuses on limit risk control, and reports are used as communication management means. Limit management adopts a top-down vertical authorization method. The intelligent risk management department of joint-stock commercial banks shall report the limit demand, and the risk executive committee and the board of directors shall review the risk preference according to the strategic objectives [6]. For example, due to the randomness of depositors' withdrawal demand, it is difficult to predict in advance, especially for banks with less self-owned funds, more deposits and more depositors. Commercial banks raise funds from the society through the debtor's identity, and lend to the fund demanders with most of the funds raised by their depositors as creditors, while the proportion of their own funds in the total assets is extremely low. Once for some reason (such as misinformation through the grapevine) the demand for funds for simultaneous withdrawal requests greatly exceeds the bank's normal reserve funds, the bank will find it difficult to cope with it. Uncertain factors affect the safety of commercial bank funds, or the operating efficiency deviates from the expected income, resulting in the possibility of loss of commercial bank funds, or the uncertainty of income.

3. Main Problems in Intelligent Risk Management of Commercial Banks in China

3.1 The Scientific Concept of Risk Management Has Not Been Fully Established

Compared with western capital markets, China's capital market is still underdeveloped, and many enterprises obtain capital mainly through indirect financing. Indirect financing is a double-edged sword for commercial banks. It can not only make profits for commercial banks, but also bring high risks to their operations. At present, the business of most commercial banks has far

exceeded the scope of traditional business, including many innovative businesses and services previously provided by other financial institutions. The proportion of transaction accounts and direct loans in the total business is declining year by year [7]. Customers who apply for credit line or pay security deposit meet the compliance requirements, but the foreign exchange price is not skewed by their credit qualification and the company's scale of operation, that is to say, the quotations of multinational institutions of large-scale joint-stock limited companies and small and medium-sized enterprises are the same, which is relatively simple and extensive. Some bank staff do not know enough about the short-term and long-term management objectives of modern commercial banks, do not have a scientific outlook on development, only focus on the immediate, regardless of the long-term, which is especially obvious in terms of asset quality, ignoring the control of asset quality decline. It can not only promote the healthy development of commercial banks, but also play a positive role in the risk management of commercial banks. However, at present, most commercial banks in our country do not have a perfect risk management system.

3.2 The Risk Management System and Framework Are Not Perfect Enough

The construction of intelligent risk management system for commercial banks in China is still relatively backward and the risk management system is not perfect. Judging from the balance sheet, the bank's liabilities are mainly savings deposits, and the amount of liabilities is limited by savings contracts, so there is relatively little room for adjustment [8]. However, the competition in the banking industry is fierce at present. High-quality customers, especially large-scale companies, are equipped with professional information companies, specialized management and even traders. Their bidding ability is comparable to that of banks. When financial companies have foreign exchange hedging needs, they conduct inquiry transactions among a number of commercial banks and select the most favorable price to clinch a deal. For example, some commercial banks have not yet set up risk management committees, some commercial banks have only set up risk management departments in branches at a certain level, have not formulated risk monitoring procedures, have no scientific and reasonable risk management plans, and lack independence, systematicness and integrity in risk management. The reason why the risk management of foreign commercial banks is in place is that it is very important to have a sound and effective risk management mechanism. Another example is that credit customers use loans for risky speculative activities without the bank's consent, and loan collateral is lost due to fire and the owner of the property right has not insured it, which will also cause sudden damage to commercial banks [9].

3.3 Risk Management Techniques and Methods Are Backward

The simplicity and backwardness of risk assessment and risk quantification techniques are one of the major weaknesses of intelligent risk management in China's commercial banks. In the face of globalization and competition from other financial institutions or market substitute businesses, the profit space in the field of commercial business is gradually shrinking. Expanding the profit space through financial innovation will be a necessary condition for all kinds of financial institutions including commercial banks to survive. The quantity and speed of financial innovation can reflect the vitality and competitiveness of the financial system. The disadvantages of traditional transaction inquiry are: manual inquiry needs to be carried out among multiple institutions, transaction efficiency is low, operational risks are easily generated due to communication errors, transaction settlement management costs are high, manual transaction processing is easy to contain moral risks and operational risks, and indirectly leads to market risks. In order to solve the complexity of financial innovation and bank risks, foreign commercial banks have a set of scientific and complete methods and measurement models for risk assessment and quantification, and have developed and adopted advanced measurement models for financial innovation and financial derivatives to manage or control risks. Although China's banks have established a basic framework for risk management, the statistics and measurement of risks have not been institutionalized. China's banks attach more importance to qualitative analysis in risk management. Compared with foreign banks, the quantitative means of risk management are lacking, and the identification and measurement of risks are still very inaccurate.

3.4 The Risk Management Mechanism is Not Perfect

With the development of capital markets such as information technology and direct financing, commercial bank operators are facing more competition from outside the industry. A large number of peer members have carried out gold cross-market programmed trading and cross-market agency services, providing fast network connections and convenient trading interfaces to customers, attracting a large number of customers with programmed trading needs and achieving medium and high frequency returns. The risk early warning system is not perfect. Due to incomplete or untrue customer information collected and stored by commercial banks, it is difficult to carry out objective and comprehensive analysis and risk early warning on customer information. The concept of comprehensive risk management is still not in place, and credit risk management is still the main focus, with insufficient attention paid to market risks and operational risks [10]. Lack of the concept of differentiation in the risk management process, ignoring the differences between different businesses and different regions, not only can't manage business risks well, but it is easy to generate new risks. It is also very dangerous to stick to the old rules and try to deal with the changing business risks in its form and connotation with the same methods, strategies and systems. It is unable to provide efficient and accurate quotation in customer service and faces great challenges when competing for some business. There is an urgent need for systematic platform support to provide quantitative automatic quotation capability.

4. Conception of Improving and Deepening Intelligent Risk Management of Commercial Banks in China

4.1 Setting Up the Concept of Overall Risk Management is the Premise of Doing Well in Risk Management

How commercial banks balance risks is an art in management science. Risk is a game of gains and losses. The premise for banks to survive is to win the maximum benefits from overcoming risks. If risks exceed benefits, banks cannot survive. In the environment of an open socialist market economy, macro-economic problems have a great impact on bank risks. It is urgent to establish a macro-early warning system for banks to be specifically responsible for monitoring and early warning of national and regional banking institutions. The research direction will be focused on network construction and transaction strategy setting, and procedural transaction will be introduced into in-depth research field. As the market peers have adopted high-frequency quantitative methods, the excess returns of high-quality strategies have been diluted rapidly. To truly establish the concept of comprehensive risk management: first, all commercial banks are required to instill the awareness, concept and requirements of risk management into all employees, and organize employees to seriously study the relevant documents of risk management. To ensure systematic risk control and sufficient working strength in terms of organization and power allocation. The establishment of institutions should adhere to a reasonable division of labor and mutual checks and balances. Gradually realize horizontal extension and vertical management of risk management, and realize flattening of management process on the basis of matrix management; On the basis of a sound corporate governance structure, a mutually independent and vertical organizational framework for risk management should be established.

4.2 Strengthening the Relative Independence of Risk Management Departments is the Basis for Implementing Risk Management

The bank's board of directors should play its role as the highest authority organization for risk management and further strengthen the risk management organization construction with the board of directors as the main body. To study ways to coordinate and implement effective large-scale risk supervision, so as to improve the ability of financial institutions to develop themselves and bear risks themselves, and to effectively monitor risks and losses caused by poor management or other reasons. High performance system architecture and network infrastructure are required.

The general operating procedures of risk early warning are as follows: risk identification-index

selection-selection of early warning methods-comprehensive evaluation and issuance of early warning instructions. Of course, this is only a general operating procedure, and some risk warnings may have different procedures and procedures depending on the method chosen. The specific operation procedures of the intelligent risk early warning system for commercial banks are shown in fig. 1.

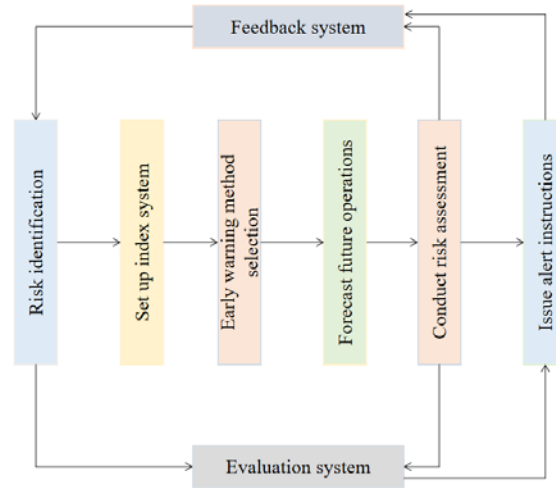


Fig.1 Flow Chart of Operational Procedures for Risk Early Warning System of Commercial Banks

The quantitative trading competition points of inter-bank counterparties are the setting of trading strategies and the reaction speed of the network. We should set up a centralized and unified computer database for the whole bank, use the powerful functions of the computer database, and set up a risk assessment system at the group headquarters to carry out overall screening, analysis and early warning on the asset status of the whole bank and feed back to all branches. The infrastructure of the comprehensive risk management system must rely on financial institutions' own computer systems and network technologies. An independent internal audit institution shall be established to monitor the bank's operation, assets, debts and other conditions in real time and continuously, and ensure that the internal audit institution can make independent judgment and play an independent role in terms of function setting and authority division.

4.3 Establishing Strict Rules and Regulations is the Institutional Guarantee for Implementing Risk Management

The risk management department shall formulate clear post responsibilities and rules and regulations. The risk management department shall, in accordance with national policies, superior financial and credit policies and market changes, formulate the job responsibilities, rules and regulations and risk prevention requirements of various departments, grassroots units and employees. The establishment of a bank risk meso-level early warning mechanism can establish a bank meso-level early warning organization system in provincial branches of the People's Bank of China and branches under the jurisdiction of state-owned commercial banks according to administrative divisions, specifically responsible for monitoring and early warning of bank risks within their respective jurisdictions, accepting the leadership of the central bank macro-level early warning system and transmitting information. Raising the quotation level is to provide better services to customers from a practical point of view and benefit the real economy. At the same time, banks' deep participation in proprietary trading in the international market with free capital is more conducive to exerting the influence of institutions on the market. In the current situation of extreme shortage of relevant senior talents, we should employ senior experts from large multinational banks as much as possible to develop computer management platforms and prepare risk management business software according to the municipal risk situation of our banks. It is necessary to strengthen the management of managers and operators at all levels, organize the staff to study carefully, grasp and be familiar with the regulations, operation procedures and key points of risk control of the department and the post, so as to enable all staff to grasp the risk links, risk points and

control measures of key businesses and enhance their sense of responsibility for consciously implementing the internal control system.

4.4 Strengthening the Construction of Credit Investigation and Intermediary Institution System is a Necessary Condition for Implementing Risk Management

At present, although China's credit investigation system has made great progress compared with that before the reform and opening up, there is still a big gap compared with some developed countries abroad, which cannot meet the needs of domestic customers in terms of quantity and service efficiency. The meso-level supervision system, through a multi-level and multi-functional information feedback network inside and outside, devotes itself to the investigation and analysis of financial management and financial risk early warning, plays a medium-term monitoring role, and uses various indicators of asset-liability ratio management to supervise the compliance and risk of financial institutions under its jurisdiction. Delayed transaction entry and document hiding refer to the fact that traders temporarily choose not to enter the transaction when they find a flat loss, avoiding the loss reflected after entering the system, and entering the transaction when the market turns to favorable conditions, thus avoiding the inspection of risk monitoring personnel. In terms of asset appraisal, some domestic asset appraisal companies often lack credibility. Some appraisers have low quality and are easily interfered by enterprises and the outside world. Some appraisal results are distorted. The transformation of operational risks into the sudden occurrence of actual hazards requires commercial banks to have foresight on the possible crises, to take preventive measures in advance, and to formulate preparatory plans for crisis management, so as to be prepared for emergencies. Only by strengthening the supervision of the social service system, enhancing the service credibility and providing a good credit environment for our banks and customers can we lay a solid foundation for our commercial banks to realize comprehensive risk management.

5. Conclusion

With the development of globalization and integration of world finance, especially after China's entry into WTO, instability and uncertainty in the business activities of commercial banks will surely increase. The specialty of risk management reflects the timeliness, accuracy and comprehensiveness of control. This depends almost entirely on the perfection of the system and its effective support. Effective risk control is the fundamental guarantee of bank operation and asset safety, and is the most basic content of commercial bank operation and management. We should improve the level of automated quotation, finely measure the credit risk value of customers, adopt differentiated quotation, increase the transparency of quotation and reflect the professionalism of banks. This will enable banks to have more leeway in risk management and have the financial resources to establish a more effective risk control system, thus fundamentally improving banks' risk control capability.

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