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On the Risk Control of Financial Derivatives

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Abstract: financial derivatives entered China in the 1990s. Because of its function of avoiding risk and creating income, it is gradually widely used by domestic commercial banks. However, financial derivatives are intertemporal, linked and leveraged, resulting in risks when used. Therefore, it is of great significance to study the risk control of financial derivatives. This paper discusses the risk control of financial derivatives based on the financial derivatives business of commercial banks. Firstly, it analyzes the scale of financial derivatives business of commercial banks, then puts forward the problems existing in the risk control of financial derivatives business of commercial banks, and finally puts forward some suggestions on the risk control of financial derivatives business of commercial banks.

1. Introduction

The financial derivatives trading of China's commercial banks began in the 1990s. The Bank of China has been engaged in RMB forward business since 1997. It has accumulated rich professional advantages and policy convenience in foreign exchange business, but the business volume of the bank is not large. In August 2002, industrial and Commercial Bank of China, Agricultural Bank of China and China Construction Bank, among the four major state-owned banks, began to participate in RMB forward business. It was not until the CBRC promulgated the Interim Measures for the administration of derivatives trading business of financial institutions in 2004 that domestic joint-stock commercial banks participated in financial derivatives trading.

1.1 Current Situation of Transaction Scale of Financial Derivatives of Commercial Banks in China

Up to now, there are 37 listed banks in China. In recent years, the total amount of financial derivatives transactions of China's commercial banks has shown an obvious upward trend. The contract value of financial derivatives of the three major state-owned commercial banks except Agricultural Bank of China is much higher than that of joint-stock banks and urban commercial banks. Among the four major state-owned commercial banks, Bank of China has the largest derivatives trading scale, because bank of China was formerly a foreign exchange professional bank, and it is also the first bank in China to engage in financial derivatives trading; Among joint-stock banks, China Merchants Bank has the largest nominal amount of financial derivatives transactions[1]. By the end of 2016, the nominal amount of derivatives was 2667774 million, even higher than that of Agricultural Bank of China among state-owned banks. Huaxia Bank has the smallest transaction scale; Among the city commercial banks, the transaction scale of Bank of Beijing is the smallest, while that of Bank of Ningbo is the largest. In general, the four state-owned banks lead the joint-stock banks and urban commercial banks in financial derivatives transactions, which shows that the scale of financial derivatives transactions is directly proportional to the scale of bank assets. The transaction scale of financial derivatives of the four state-owned commercial banks exceeds the total transaction scale of the eight national joint-stock commercial banks. At the same time, the transaction scale between the four banks and joint-stock banks far exceeds that of urban commercial banks.

1.2 Current Situation of Transaction Types of Financial Derivatives of Commercial Banks in China

Compared with more than 1200 types of financial derivatives in the international financial derivatives market, there are less than 10 types of financial derivatives in China's commercial banks. This shows that the types of financial derivatives used by China's commercial banks are relatively single and not rich enough. From the perspective of basic financial assets, the financial derivatives participated by China's commercial banks are mainly composed of foreign exchange, interest rate and credit. By the end of 2016, China's foreign exchange financial derivatives accounted for 65% of the total financial derivatives, mainly including foreign exchange forwards, foreign exchange options, foreign exchange swaps, etc; Interest rate financial derivatives mainly account for 29%, including interest rate forward, interest rate option, interest rate swap, etc; Other financial derivatives account for a relatively small proportion, only 6%. This leads to the financial derivatives of China's commercial banks can not meet the diversified needs of customers and banks themselves[2].

2. Current Situation of Risk Control of Financial Derivatives Business of Commercial Banks in China

China's commercial banks have operated financial derivatives for 20 years. With the increasing variety of financial derivatives, all kinds of risk problems are prominent, so the risk control of financial derivatives by commercial banks is very important. At present, China's commercial banks have a certain understanding of financial derivatives risk management, but there are still some problems in the process of practice.

2.1 Weak Risk Analysis Ability and Product Pricing Ability

At present, most of the international advanced risk analysis methods use quantitative analysis methods, while China's commercial banks are usually limited to qualitative risk analysis or directly use foreign risk quantitative models. Due to the different degree of financial development among countries, China's interest rate marketization and exchange rate marketization have not been really completed, and the foreign risk quantification model can not be fully applicable to China. Similarly, China's commercial banks do not fully grasp the design and pricing methods of derivatives and generally rely on outsourced trading systems. When trading complex products, they need to make inquiries from foreign banks, which is not conducive to risk management.

2.2 Failure to Form a Good Risk Management Culture

For many years, China's commercial banks have not established an overall view of risk control and a good risk management culture[3]. When trading, the marketing department has a weak sense of risk, pushes the responsibility of risk management to the risk control department, subjectively opposes risk management to business development, and believes that financial risk management hinders the development of financial derivatives business.

2.3 Lack of Professionals

At present, China's commercial banks are mainly engaged in interest rate derivatives and exchange rate derivatives, such as swap, forward and foreign exchange products. In view of international experience, this requires high professional quality of managers, but at present, there are few talents with practical skills and professional knowledge in this field in China. Employees have weak ability to judge, predict, identify and control the trend of market interest rate. At the same time, they also lack corresponding training mechanisms and teachers.

2.4 Imperfect Internal Risk Control Mechanism

There is a lack of necessary communication and coordination in risk regulation among various departments. The risk management system, authorization and reporting system for financial derivatives can not keep up with the rapid development of financial derivatives and can not effectively identify and control risks. Moreover, the bank's assessment and reward and punishment for the implementation of financial derivatives transaction risk management are not enough, and the reward and punishment measures have not been fully implemented to the responsible subject, resulting in the low consciousness of internal risk control of bank financial derivatives practitioners.

2.5 Imperfect External Supervision System

At present, because China's financial industry adopts the separate operation mode, the corresponding financial supervision mode is also the separate supervision. China's futures market is mainly supervised by the CSRC, while the bank financial derivatives market is mainly supervised by the people's Bank of China and the CBRC. This mode of separate supervision belongs to “Whoever has children will take them away”, and the characteristics of financial derivatives are cross institution and cross market. The separate supervision mode is prone to problems such as supervision vacuum zone, conflict of supervision regulations and duplication of supervision policies. At the same time, it also seriously increases the difficulty of coordination among various institutions, which brings potential risks to the financial derivatives trading of commercial banks in China.

3. Measures to Strengthen the Risk Control of Financial Derivatives in China's Commercial Banks

3.1 Improving Pricing and Risk Measurement Capabilities, and Use Risk Measurement Models Scientifically

Quantitative risk is the basis of comprehensive risk management and the guarantee of effective management. International practical experience has proved that effective risk quantification helps banks deal with different types of risks and effectively reduce the risk of derivatives business of commercial banks. China's commercial banks should fully learn and master risk metrics, credit metrics, KMV and other models for credit risk, VAR model for market risk measurement and advanced measurement model for operational risk, and should improve their pricing and risk measurement ability. Modern risk management techniques use mathematical statistics on a large scale and become more and more complex, but there are many risk factors leading to changes in the financial market. Some factors are difficult to quantify, and some factors have no historical data[4]. Therefore, the measurement model of risk management is based on many assumptions and approximate calculations, It is a rough statistics and description of complex financial market behavior. In view of this, the risk management department of the bank should not over trust the complex quantitative methods in risk management, and should timely correct the model according to the changes of the market at any time, and scientifically use the risk measurement model in combination with scenario analysis and stress test.

3.2 Strengthening the Risk Awareness of Employees and Pay Attention to Talent Selection

First of all, we should improve the risk awareness of all employees of the bank, which is the premise of effectively controlling the transaction risk of financial derivatives. Risk management is the work of the whole bank. All departments and individuals are important links in the bank's risk management process. All staff should have risk awareness and preventive measures. The risk management responsibilities of relevant departments must be clarified within the bank. The business department shall not only be responsible for the daily operation and operation of derivative financial products, but also check the implementation of risk management measures and feed back the information to the risk management department in time.

Secondly, select personnel with both political integrity and ability to engage in derivative financial products trading. Financial derivatives is a complex financial instrument, which has high professional requirements for talents, so it needs to have a solid theoretical basis and practical experience. These talents must be very familiar with financial engineering knowledge, sensitive to information, proficient in financial derivatives trading, be able to accurately grasp the market trend, and have good psychological quality.

3.3 Clarifying the Responsibilities of Risk Management Departments and Strengthen the Internal Control of Commercial Banks

At this stage, China's commercial banks have basically set up a special risk management department independent of the daily business operation Department and marketing department. Commercial banks should further clarify the responsibilities of risk management departments. The risk management department shall identify, monitor and report the risk management of derivative financial products trading, and reasonably determine the risk limit and trading position of derivative financial products according to the nature, risk and tolerable risk level of derivative financial products[5]. In addition, the risk management department shall make an ex ante assessment of various risks that may occur in derivatives trading, measure the change of value at risk when derivatives trading positions change through the application of risk assessment model, and estimate the possible risk situation in extreme cases. Employees at all posts must clearly understand the main risks faced by their posts and the preventive measures that should be taken. Only when all departments cooperate with each other can effective risk management be carried out.

4. Conclusion

Considering the characteristics of separate operation of China's finance, while implementing separate supervision, we should also strengthen the cooperation among the people's Bank of China, CBRC, CSRC and CIRC, realize information sharing among regulatory institutions, overcome the low regulatory efficiency caused by information asymmetry under separate supervision, and solve the problems of regulatory vacuum, conflict of regulatory provisions and duplication of regulatory policies. On the other hand, a collaborative supervision system based on “one bank, three associations” and supplemented by industry self-discipline should be established.

At the same time, we should study and formulate exclusive laws and regulations for the development of financial derivatives as soon as possible. Considering the risk and complexity of derivatives market, China urgently needs to formulate a series of effective laws specifically for financial derivatives market trading, product design, risk supervision and so on.

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