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An Analysis of Market Risk Management in Commercial Banks

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Abstract: With the development of China's economy, the financial market has become more and more prosperous, and all kinds of financial innovations have emerged like bamboo shoots after a spring rain, which has brought great benefits to China's economy. However, the arrival of opportunities is always accompanied by crisis, and there are risks lurking behind the financial market. In this case, China's commercial banks will put the market risk management in an important position. Through the research data, this paper finds that the risks faced by commercial banks mainly come from interest rate, exchange rate, stock price and commodity price, and the fluctuation of these factors is the focus of commercial banks. With the study of many articles and analysis of the industrial and commercial bank of China's public information data, the causes of the formation of market risk and its characteristic, have been further analyzed so as to make the commercial Banks timely identify risk type quickly when facing market risk to make corresponding countermeasures at the same time, its significance is to help our country perfect set up a set of "Chinese Mode " risk management system.

1. Introduction

With the development of China's financial sector becoming more and more rapid, the financial system is also constantly improving and progressing, the financial market has become more and more complex, a variety of different risks are also endless, so there are still many problems waiting for commercial banks to solve.

The impact of market risks on commercial banks should not be underestimated. Commercial banks will inevitably encounter various market risks in the process of operation. Therefore, bank managers must understand and pay attention to the impact of market risks on commercial banks. The impact of market risk on commercial banks should not be underestimated. Commercial banks will inevitably encounter various market risks in the course of operation. Therefore, bank managers must understand and pay attention to the impact of market risk on commercial banks.

Market risk management refers to the whole process of identifying, measuring, monitoring, controlling and reporting market risks. Research and analysis of market risk faced by commercial banks can effectively enhance the bank's ability to face the various disadvantages brought about by market risk, minimize its losses in the risk, and even seize various opportunities in the risk to achieve the purpose of obtaining benefits.

2. Review of relevant studies

2.1 Types of market risk faced by commercial banks

The market risks faced by commercial banks include the risks brought by interest rates, the risks brought by exchange rates, and the instability brought by the volatility of the market.

According to Xue Hongli (2019), the market risk faced by commercial banks can be divided into two kinds of market risk in the broad sense and narrow sense [1]. The narrow sense includes interest rates, exchange rates, commodity stocks and equity risk, and the broad risk includes not only the narrow market risk, but also the interest rate risk of the bank account, which is caused by changes in interest rates and other factors, resulting in the loss of the bank's proprietary business; the credit risk of the counterparty's failure to fulfill the agreement, as well as the credit risk of the bank's investment in the bonds, which is caused by the changes in the solvency of the issuer.

2.2 Causes of market risk in commercial banks

There are many reasons for market risk in commercial banks, and unfavorable fluctuations in interest rates, exchange rates, stock prices, and commodity prices are all important causes of risk.

According to Li Muzi (2020), with the development of securitization of bank loans, the number of liquid and tradable assets slowly becomes more and more, and the purpose of financial institutions changes from stable investment and hedging to buying and selling all kinds of assets as well as liabilities, which generates market risk[2].

According to Ma Chunhua (2020), the real interest income of commercial banks is decreasing, which exposes commercial banks to interest rate risk[3]. Especially small and medium-sized commercial banks, they launch many short-term financial products in order to satisfy people's demand for financial business, so that the change of interest rate will have a great impact on them.

Sun XiaMeng, Wang HaiMan (2017) proposed that the generation of market risk in small and medium-sized commercial banks is divided into intrinsic and extrinsic causes[4]. The intrinsic reasons include the lack of a complete risk management system and the lack of highly specialized talents, while the extrinsic reasons are the insufficient support from the government and the difficulty of obtaining information compared with large commercial banks.

According to Chen Zhiwu (2020), at the end of 2016, the total assets of China's banking sector exceeded 230 trillion, of which the total loans were about 100 trillion, and a large number of assets were traded financial assets such as bonds and foreign exchange. When the prices of these financial assets move unfavorably, banks are exposed to market risk.

Xia Linyan (2019) believes that the main investment of commercial banks is securities and other financial derivatives, and the volatility of the securities market is the main risk of personal finance business [5]. The economic globalization is that the connection between countries is getting closer and closer, and the economic problems of one country are likely to involve other countries. In addition, the market pattern of mixed business in the financial industry may also be a cause of market risk.

Li Xingyong (2019) believes that mainly in the international economic environment, the turbulence of the international market has brought risks to business, he believes that this is determined by the development trend of international finance, which has a great impact on the entire financial system, naturally, including commercial banks, this risk is worldwide, and it is fatal for commercial banks[6].

2.3 Market risk management measures for commercial banks

Wang Zhanjun (2019) suggests that in the face of market risks, banks should select experienced talents to form a professional macroeconomic team to cope with market risks, and suggests that the risk committee should draw on the risk management experience of external fund companies to prepare for countermeasures before the risk arrives[7].

According to Li Qing (2020), commercial banks should always pay attention to market trends to avoid the risk of not having the first clear policy promulgation, exchange rate and price changes on commercial banks[8]. And banks should also expand their access to information channels, more information about the market will be more able to reduce the impact of market risk on commercial banks.

Li Yan (2018) believes that it is necessary to strengthen the management's awareness of risk management and popularize the relevant knowledge among the staff, to learn from the risk management experience of developed countries, to improve the effectiveness of risk management, and to adjust the scale of assets and liabilities in a timely manner through interest rate forecasts, so that all kinds of financial assets or liabilities are in an appropriate proportion, in order to reduce the impact of interest rate changes on earnings[9].

Wang Xueqi (2020) and Cao Fan (2019) have proposed that market risk should be analyzed by combining emerging technology and mathematical models, and all aspects of the lender should be evaluated to ensure that defaults due to credit risk are reduced as much as possible, so that the impact of market risk on commercial banks can be reduced[10].

3. Causes and characteristics of market risk in commercial banks

3.1 Causes of market risk in commercial banks

3.1.1 Market risk from changes in interest rates

In the past many years, China practiced a regulated interest rate system, in which the central bank adjusted interest rates, and commercial banks could earn a certain amount of income by passively accepting them without having to take the management of interest rates into account.

However, since 1996, China has begun to implement interest rate marketization reform. Interest rate marketization refers to treating interest rates as commodities and letting supply and demand in the market determine their level, which includes the marketization of interest rate decision, interest rate transmission, interest rate structure and interest rate management. It is easy to see from this method of interest rate determination that interest rates must be volatile and relatively unstable, in which case there may even be negative interest rates. This is likely to have a significant impact on the earnings of commercial banks.

3.1.2 Market risk from changes in exchange rates

Exchange rate fluctuations bring risks to commercial banks in the following aspects: firstly, in the process of foreign exchange or foreign exchange trading business of commercial banks, the fluctuation of the exchange rate will bring certain risks to it, and this kind of risk is generally known as the transaction risk. Secondly, because of China's regulations, the foreign currency assets and liabilities in the accounting statements of commercial banks should be converted into local currency at the end of the period in accordance with the prevailing exchange rate to be measured. If the exchange rate fluctuates unfavorably, commercial banks will suffer losses, which is generally called translation risk. Finally, exchange rate changes can have an impact on commodity imports and exports, interest rates, and so on. When the exchange rate rises, the domestic goods relative to foreign countries will become more expensive, the international market demand for domestic products will be reduced, thus reducing exports; on the contrary, when the exchange rate falls, the domestic goods relative to the price in the international market falls, the competitiveness of goods will rise, exports will increase. When changes in exchange rates are not expected by commercial banks, there will be an impact on the future cash flows of commercial banks, which may affect the value of commercial banks and cause losses to commercial banks.

3.1.3 Market risk from stock price movements

The market risk arising from stock prices comes mainly from the commercial banks' own investments in various stocks, and because of the ever-changing situations that arise in the stock market and the various factors that affect stock prices, when stock prices undergo various changes, they pose a certain amount of risk to the commercial banks.

3.1.4 Market risk from changes in commodity prices

Commodity price risk refers to the risk of economic loss caused by unfavorable changes in the prices of various commodities held by commercial banks, which is composed of supply risk, demand risk, macro-price risk, political price risk, seasonal price risk, policy price risk and sudden price risk. Commodity prices will affect the profits of each enterprise. To a certain extent, increasing commodity prices will bring higher income to enterprises, and the income status of enterprises will affect the release of loans by commercial banks to resume on schedule, and then determine the scale of savings and loans of commercial banks. At the same time, commodity prices tend to affect the world economy, which may allow commercial banks to hold fixed assets and collateral prices change, and finally will bring unpredictable risks to commercial banks.

3.2 Market risk classification of commercial banks

The market risk faced by commercial banks can be categorized into broad market risk and narrow market risk, and the narrow market risk is interest rate risk, stock price risk, exchange rate risk, and commodity price risk as mentioned above. In addition to the narrow market risk, the broad market risk also includes the credit risk of not being able to repay the loan due to the credit problems of the customers, and the uncertainty of various situations in the market of financial instruments, and the risk of the issuer's repayment ability when the issuer of these financial instruments has problems. There is also the interest rate risk of bank accounts due to various problems in the bank's proprietary business caused by the variable level of market interest rates. This thesis focuses on market risk in a narrow sense because market risk is generally referred to as market risk in a narrow sense nowadays.

3.3 Market risk characteristics of commercial banks

The market risk encountered by commercial banks is determined by interest rates, exchange rates, stock prices, commodity prices, which will make commercial suffered from market risk has two very significant characteristics, that is, its suddenness and uncertainty, in the encounter with the risk is generally sudden, a large part of the market risk in the occurrence of a large part of the market risk before the occurrence of the difficult to predict, which leads to its suddenness; there are a lot of factors that will lead to the occurrence of market risk and it is difficult to predict its future development after it occurs, which is also its uncertainty. There are many factors that can cause market risk to occur, and it is difficult to predict its future development after it occurs, which is also its uncertainty.

4. Current Situation and Shortcomings of Market Risk Management in Commercial Banks

4.1 Current status of market risk management in commercial banks internationally

Currently, the Basel Accord is the most widely recognized international agreement, which mainly focuses on the credit risk, market risk and operational risk of banks and thus puts forward capital requirements for banks, as well as standardizing the measurement standards of commercial banks, and effectively regulating the risks encountered by commercial banks through the supervision of regulatory authorities and the supervision of the market. The agreement has three pillars. The first pillar is the minimum capital requirement for banks, which takes into account market risk, credit risk, and operational risk, and sets minimum ratios for various capital ratios of banks through weighted calculations; the second pillar is the need for supervisory supervision, which is required to ensure that banks establish reasonable and effective internal assessment procedures so that the adequacy of their capital can be assessed. Regulators also need to assess the capital adequacy ratio of banks to ensure that banks are in a reasonable range of risks ; the third pillar is the market discipline of commercial banks, requiring banks to disclose information every six months, and large banks to disclose information every quarter. In the face of market risks, it is necessary to disclose information at every important time.

4.2 Current status of market risk management in commercial banks internationally

Because China operates under a compartmentalized business model, there are two main types of risk that have the greatest impact on commercial banks: interest rate risk and exchange rate risk (including gold). In recent years, China has imposed controls on a variety of interest rates, such as the interbank lending rate and the upper and lower limits on banks' deposit and loan rates. It has also carried out a series of reforms to the exchange rate system, making the exchange rate level follow the market supply and demand to a certain extent to make changes, so far China is still practicing a managed floating exchange rate system. And in accordance with the Basel Accord, it has also issued the Measures for the Administration of Capital Adequacy Ratio of Commercial Banks, which regulates the capital adequacy ratio and liquidity of China's commercial banks. Maintaining higher capital adequacy ratios is of great benefit in dealing with market risks, and in the event that market risks cause significant losses to the bank, the retained capital will enable it to cope with the incoming market risks.

4.3 Comparison of market risk management approaches between Chinese and foreign commercial banks

First of all, China implements a managed floating exchange rate system, which has great advantages over pure fixed exchange rate system or floating exchange rate system. On the one hand, the managed floating exchange rate system has a floating exchange rate. In order to prevent large-scale foreign exchange outflows, it can automatically adjust the balance of payments and maintain the independence of domestic economic policy advantages. On the other hand, it can also greatly improve the floating exchange rate system. Encourage speculation, inherent instability, easily lead to currency wars, have inflation trends, and have several shortcomings. On the other hand, the floating exchange rate system can largely ameliorate the shortcomings of the floating exchange rate system, which encourages speculation, is inherently unstable, is prone to currency wars, and has a tendency to inflation. Meanwhile, China has also formulated capital adequacy rules, liquidity rules, and leverage rules in accordance with Basel I, Basel II, and Basel III, which are in line with the situation of Chinese commercial banks, so as to ensure that commercial banks have a certain degree of ability to cope with and withstand various market risks when they come.

The U.S., on the other hand, implements a diversified regulatory system, where the regulatory functions of commercial banks are jointly handled by two or more organizations. Moreover, the U.S. implements a quantitative regulatory approach, whereby the regulatory authority supervises the risk management and capital adequacy of commercial banks, utilizes appropriate regulatory techniques to adopt targeted regulatory measures for commercial banks with different asset types, and rates the risks and quantifies the regulatory indicators.

The German commercial banks' approach to market risk management is also noteworthy in that they use a variety of risk management approaches based on relatively precise metrics and after accurately identifying the risks. Risk avoidance, risk diversification, risk transfer and risk compensation are all methods used by German commercial banks to deal with market risk. Risk diversification is a good way to manage market risk, as diversifying one's assets reduces the impact of individual risks.

4.4 Deficiencies in the Risk Management System of Chinese Commercial Banks

The deficiencies in the risk management system of Chinese commercial banks are;

1) There are fewer relevant professionals, and many people in the risk management department who are working lack more comprehensive and systematic learning of relevant knowledge. It can be seen from the public disclosure of information of ICBC that some of its employees are facing retirement due to their age, so that the number of their relevant talents will become even less. From the public data of ICBC, it can be seen that ICBC has a total of 434,798 employees, of which 4,023 are related market risk management personnel. Due to the high number of ageing retirees in the first half of the year, the number of relevant employees at the end of the reporting period decreased by 145 compared with the end of the previous year.

2) Because the risk management of Chinese commercial banks started relatively late, the market concept is still a bit backward compared with developed countries, and there are still many people who do not recognize the importance of market risk management and consider it a waste of time.

3) The technical level of market risk management of Chinese commercial banks is still relatively backward, and the measurement and assessment of various risks are still not accurate enough and need to be improved. Taking ICBC as an example, it currently adopts a variety of methods such as value-at-risk (VaR), stress test, sensitivity analysis, exposure analysis, profit and loss analysis, price monitoring and other methods to measure and manage trading account products. But in the case of VaR, for example, it only approximates the maximum amount that a bank could lose, and it assumes independence between consecutive trading days, that is, it assumes that trades occurring today won't have any impact on tomorrow's trades.

4) China is a very large market compared to most countries, and it is very difficult for the regulator to carry out all-round control. Although China already has a very sound system of laws and regulations, such as the “Guidance on the Implementation of New Supervisory Standards in China's Banking Sector” issued by the China Banking Regulatory Commission (CBRC) in 2011 and the “Guidelines on Operational Risk Management for Commercial Banks” formulated in 2007, they are still not fully in place as of now. However, for the time being, it has not been fully implemented and there is still a way to go before comprehensive supervision by the relevant authorities can be realized.

5. Conclusions and prospects

This thesis explores the causes of market risk and countermeasures of commercial banks by studying the literature as well as public data, and finally summarizes the following conclusions:

1) The market risk of commercial banks mainly comes from interest rate risk, exchange rate risk, stock price risk and commodity price risk.

2) Commercial banks need to take targeted measures for these different reasons for market risk.

3) Because of the late start of Chinese commercial banks, most of them have not reached the world's advanced level of market risk management, and the awareness of risk management still needs to be improved.

4) In order to better cope with market risk, commercial banks should introduce highly professional talents, accept market and government supervision, strive to improve their own technical level, deal with the relationship with customers, try their best to create a symmetrical business environment, and popularize cutting-edge market risk management knowledge among relevant employees.

The exploration of market risk management of commercial banks is to improve the reaction ability and confrontation ability of commercial banks in the face of market risk, which can effectively safeguard the interests of commercial banks, and also play a role in adding bricks and mortar to the whole risk management system.

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