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Analysis of the Impact of Interest Rate Derivatives on the Market Risk of Commercial Banks in China

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Abstract: With the development of China's financial derivatives market, China needs to pay more attention to the management of interest rate risk, and commercial banks should avoid interest rate risk typically through the role of derivatives. China's financial markets have been opened up to the rest of the world, and many international factors are influencing the changes in our financial markets. This paper focuses on the function of interest rate derivatives and their impact on commercial banks in China. This is an important step for commercial banks in China to take in order to reform and improve themselves. Using interest rate derivatives to enable banks to reduce their operational risks and to ensure the safety of China's financial system is the goal of this paper. According to the findings of the research, the adoption of interest rate derivatives can help commercial banks decrease their exposure to market risk, credit risk, and liquidity risk.

Keywords: Financial derivatives market, interest rate risk, commercial banks, the role of interest rate derivatives, operational risks

1. Introduction

Commercial banks frequently have some risks and interests during the process of the formation of financial policy. It is essential to lessen the dangers facing the interests at stake. Financial derivatives, such as forward contracts, future contracts, swaps, and options, are some of the ways that interest risk can be mitigated. Because of this, the amount of interest rate risk is effectively reduced, since it leads to a reduction in the losses that are caused by changes in interest rates.

When it comes to the market for interest rate derivatives, commercial banks are significant participants and often trade for a variety of reasons. The first justification is speculation, which might be beneficial in lowering the amount of risk exposure. Second, it acts as a market maker, which means that it regularly makes the purchase and sale prices of financial derivatives available to the market. This provides the market with liquidity while also boosting the money generated by its intermediary business. Thirdly, it places a strong emphasis on the expertise and skill that it possesses [1].

This paper focuses on the function of interest rate derivatives and their impact on commercial banks in China. This is an important step for commercial banks in China to take in order to reform and improve themselves. Using interest rate derivatives to enable banks to reduce their operational risks and to ensure the safety of China's financial system is the goal of this paper.

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2. Background

It is essential to have a solid understanding of the meanings of crucial terminology. The following is a definition of a few terms that are used in the paper. This section covers financial derivatives, interest rate derivatives, interest rate swaps, bond forwards, and interest rate forwards, among other related topics.

Contracts to buy or sell underlying assets are what are known as "financial derivatives," and they are a type of financial derivative. They include futures, options, and swaps as their component parts [2].

There are currently four primary types of underlying assets that banks can use to conduct derivatives transactions. These underlying assets are interest rates, exchange rates, commodities, and credit. Of these, interest rate derivatives and exchange rate derivatives account for a relatively large portion of the total.

Derivatives that are based on a single interest rate or on a collection of interest rates are referred to as interest rate derivatives [3]. For instance, interest rate swaps, bond forwards, and interest rate forwards are the primary types of derivatives that involve interest rates.

A derivative contract known as an interest rate swap is one in which two counterparties agree to exchange one future stream of interest payments for another, based on a principal amount that remains the same. An interest rate swap, in its most common form, refers to the transaction in which a fixed interest rate is traded in for a variable interest rate [4].

Utilization of bonds as well as bond futures Futures contracts on bonds and bond indices are legally binding agreements between two parties to buy or sell the proceeds of a bond or bond index at a defined price f on a fixed date in the future. These contracts can be used to speculate on the price of bonds or bond indices.

A forward yield curve is a graphical representation of the market forward rate for a particular market index at a particular point in time. This curve is known as the forward yield curve [5].

3. Analysis

Concerning risk management, commercial banks in China have a number of challenges; one of these challenges, to cite just one example, is the risk of fluctuating interest rates. The second issue is a flawed mechanism for protecting people's property rights.

3.1. Interest Rate risk

There are a number of significant risks that are prevalent in the financial markets, and one of these is the risk that is related with the fluctuation of interest rates. In addition to this, swap provides participants in the financial market with the ability to avoid as much risk as is reasonably possible. The rise in interest rates seen across the financial markets came as no surprise and was entirely foreseeable. The counterparty to the floating rate debt has the ability to alleviate funding pressure and losses associated with this increase by covering interest rate risk through interest rate swaps with the fixed rate portion of the debt. This allows the counterparty to the floating rate debt to reduce the amount of interest rate risk that they are exposed to. This enables the swap proceeds from the floating rate debt to be used to offset the original debt, and the floating rate portion of the loan now has the opportunity to avoid the risk of rising interest rates by simply fixing the interest rate.

There is good reason for China's commercial banks to be concerned about the threats that are linked with the cyclical nature of interest rate swings. Changes in interest rates will almost certainly have an effect on the amount of money that commercial banks in China bring in and the amount that they pay out in fees and other operating costs. This is because the amount of money that

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commercial banks in China bring in is directly proportional to the amount of money that they pay out. This is because the primary focus of commercial banks in China has traditionally been the business of receiving deposits and making loans to customers. As a result, this situation has arisen.

It is a reference to the image that compares the interest income to operational income ratio as well as the interest expense to operating income ratio of the four most important state-owned commercial banks. The subsequent example makes it abundantly evident that interest income and expenses constituted a considerable portion of the overall revenue and expenditures that were generated by each and every commercial bank over the course of the two years. In addition, as can be seen from the figure 1 below, during the fiscal year 2003-2004, interest revenue and expenditures accounted for a fairly large share of each commercial bank's total income and expenses. This was the case for all commercial banks. In every single one of the commercial banks, this was the situation. During the fiscal year 2003-2004, this was the scenario with regard to each commercial bank's income as well as their costs. This was the case during the entire year. As a direct result of this, the risk that is created by the aforementioned shifts in interest rates is a particular cause for concern. In addition to this, it demonstrates that commercial banks in China face the possibility of interest rate swings, which is a risk that cannot be ignored.

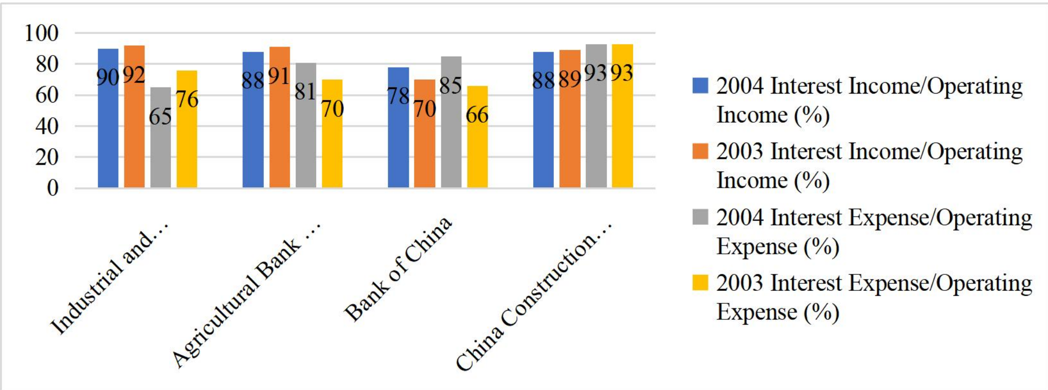

Figure 1: 2004 annual reports of the four largest state-owned commercial banks [6].

3.2. Inadequate Property Rights System

The actual situation in China, which was influenced by the traditional model of economic development, reflects the fact that in the past there were four major commercial banks with single universal ownership; supposedly, the state exercised the corresponding rights on behalf of the people; however, in reality, the bank executives and bank employees were directly responsible for the distribution of bank assets; the people were not able to better exercise their rights; and the supervising authorities were able to more effectively exercise their authority. China has, over the course of the past few years, been making the shift away from the conventional paradigm of economic development.

The figure 2 shown depicts the percentage change in actual commercial real estate prices for the whole market (left) and for specific market groups (right), when averaged across significant cities in countries with advanced and emerging markets respectively. As a result, the data presented in this graph demonstrate significant variances, which suggests that an imprecise property rights framework contributes to the interest rate risk posed by banks. In addition, the current state of the economy can be a contributor to this danger. In addition, the findings of the Lower Global Financial Conditions Index imply that financial conditions are becoming less restrictive.

According to the statements made by the State Administration of Foreign Exchange, it is recommended that reform and improvement of the foreign policy environment, in addition to the implementation of incentive and restraint mechanisms, should be carried out. This condition illustrates that there is not enough of a framework in place for property rights.

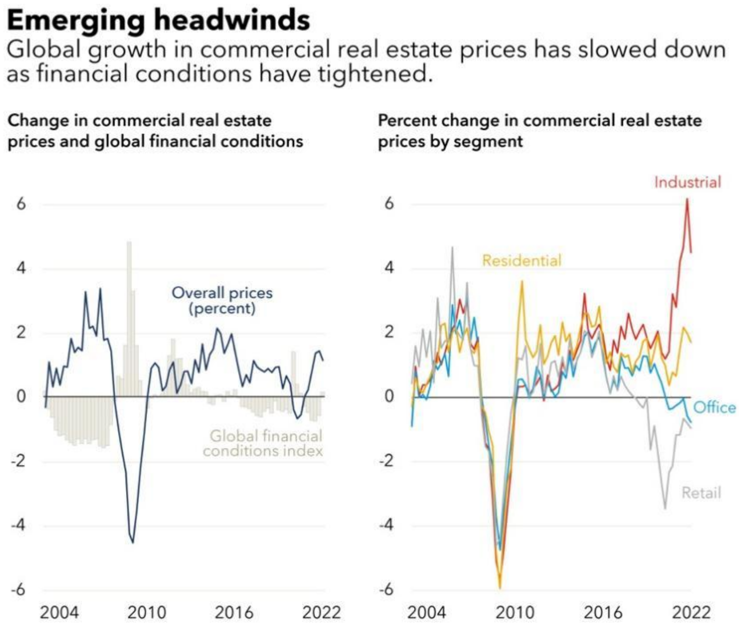

Figure 2: Emerging headwinds, 2022 [7].

4. Evaluation

The process of exchanging interest rates is something that can never be completely avoided, and there are unquestionably certain risks associated with it. As a consequence of this, and taking into consideration the conditions and idiosyncrasies of our contemporary monetary system, the following preventative activities need to be carried out in order to reduce the risks that are associated with interest rate swaps.

To begin, it is imperative that a robust infrastructure for the disclosure of information on interest rate derivatives be developed as quickly as possible. We need to carry out a good accounting practice in order to achieve the disclosure of them, and we also need to gain knowledge from foreign accounting standards and information in order to establish a standardized accounting system in China that is based on these standards and is able to further standardize the risk disclosure of interest rate derivatives [8]. Due to the fact that interest rate derivatives in China are still in their infant stages, a great deal of information is not entirely transparent; hence, we need to carry out proper accounting procedures in order to ensure disclosure of this information. mainly due to the fact that interest rate derivatives in China are just in their infant stages.

In addition to this, one should focus more of the attention on the fragile nature of the instruments that derive from derivatives. When it comes to the subject of accounting, interest rate derivatives can be placed into one of two categories: either financial derivative assets or financial derivative liabilities. When commercial banks take part in interest rate swaps, they are required to place a primary emphasis on determining the risks associated with interest rate derivatives, engaging in independent thought on risk management, and maintaining vigilance over these risks. In addition, they are required to place a secondary emphasis on maintaining vigilance over these risks.

Last but not least, in order to increase the amount of control that is already in place in the market, it is required to construct a set of rules and regulations that are tailored specifically for the financial derivatives market. It is essential for us to continually work toward improving new laws and

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regulations if we are to preserve the integrity of the market, etc., and it is also essential that we do this.

5. Conclusion

To summarize, the utilization of interest rate derivatives carries with it the possibility of mitigating the market risk, credit risk, and liquidity risk that commercial banks are exposed to. It is essential to bear in mind that the most successful method for finding answers to problems is to combine a number of different policies. In addition, this study contains a number of shortcomings, such as insufficient research, a lack of completion, and other problems, all of which will be investigated in following studies in a more in-depth manner.

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