

A study on the loan pricing mechanism of commercial banks in China

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Abstract: On the basis of understanding the loan status in our country, this paper point out some problems in the process of pricing. Combining the research of loan pricing by domestic and foreign scholars, the article analyzes the strengths and weaknesses of three kinds of loan pricing methods, and discusses their applicability in Chinese commercial banks. Finally, the paper summarizes some phenomena and problems in the process of research.

1. Introduction

Before 1980s, China implemented the central bank to control the interest rate, and commercial banks did not have the autonomous pricing power of loans. Since 1996, China has continuously promoted the reform of market economy and interest rate liberalization. On July 20, 2013, the Chinese government fully liberalized the control of loan interest rate on financial institutions. China's interest rate management system has evolved from a strictly regulated interest rate to a regulated floating interest rate, and into the current interest rate liberalization reform. In this process, commercial banks have gradually gained the autonomy of loan pricing.

Under the condition of interest rate liberalization, the loan prices offered by different banks to different customers may be slightly different, which will lead to more intense inter-bank competition. In the long run, customers will receive a relatively fair rate of interest and the financing problems the real economy facing may ease due to financial deregulation. However, this also puts forward higher requirements on bank operation efficiency, management level, risk identification and other aspects.

2. Analysis on the problems about loan pricing of commercial banks in China

At present, Chinese commercial banks mainly have the following problems in loan pricing:

(1) The benchmark interest rate is not a reflection of the free market level

As an important reference for the loan pricing of commercial banks, the benchmark deposit and loan interest rates are issued by the people's bank of China on a regular basis in China, rather than determined according to the average market level. They cannot reflect the supply and demand of funds in the current loan market. In addition, there is also the problem of information asymmetry in Chinese loan market, which is prone to adverse selection and moral hazard.

(2) There is no quantitative analysis on the floating of loan interest rate

Commercial banks generally make higher loan rates for small and medium-sized enterprises, which makes it easy for banks to lose this part of customers. On the other hand, due to the pressure of competition, commercial banks may strive for borrowers with good credit ratings at favorable loan prices to stabilize the source of customers, but the prices may not be able to compensate for the capital costs and risks.

In addition, when determining the actual loan interest rates, commercial banks still lack the accurate grasp of the prices, and most still rely on past experience and subjective judgment. In short, the floating of loan interest rate cannot truly reflect the capital cost and risk degree behind it.

(3) Commercial banks have not established a scientific pricing system and credit management system

The internal management mechanism of commercial banks is not perfect enough to form a scientific and reasonable credit management system. For cost calculation, commercial banks are not

good at cost accounting for customers, products and other aspects. For credit risk, commercial banks have not established an effective measurement model, and the failure to effectively evaluate the risk means that the price and risk cannot be accurately matched. For the loan business default rate and default loss rate, commercial banks lack of historical data and effective measurement model for reference, and there are still full of extensive capital estimation phenomenon.

3. Study on loan pricing methods

3.1 The basic method of pricing commercial bank loans

Western economists started to study the loan pricing of commercial banks earlier, and through continuous practice and improvement, a relatively complete system has been formed, including a series of pricing systems such as capital asset pricing model (CAPM), option pricing model, and RAROC loan pricing model. At present, there are several pricing models, which are widely used at home and abroad:

(1) Cost-plus method

Cost-plus pricing method takes the cost of loans as the core, and mainly considers the cost of loanable funds, the bank's non-capital operating costs (loan fees), the compensation of risk premium and the bank's target rate of return. Its calculation formula can be expressed as follows:

$$\text{Loan interest rate} = \text{cost of capital rate} + \text{loan expense ratio} + \text{risk premium rate} + \text{bank target profit level}$$

(2) Price leadership method

The core principle of Price leadership method is firstly to determine a broad accepted market benchmark interest rate as the foundation, secondly to consider the borrower default risk compensation and the deadline of risk compensation, which points to determine the corresponding risk premium, and at last to add or times the benchmark interest rate. Two forms of price leadership methods are expressed as follows:

a) Base rate mark-up model

$$\text{Lending rate} = \text{base rate} + \text{spread}$$

Among them:

$$\text{Spread} = \text{default risk premium} + \text{credit term risk premium} + \text{expected yield}$$

The default risk premium demanded by the bank depends on the borrower's credit rating and financial status. The bank's expected rate of return depends on the base rate, which is zero if the bank's target is included.

b) Base rate multiplication model

$$\text{Lending rate} = \text{base rate} \times \text{premium coefficient}$$

The base rate here should already include fees and target returns, and the premium coefficient is based on default risk and term risk, usually greater than 1.

(3) Customer profit analysis

The analysis method of customer profit is customer-centered. It considers the overall relationship between the bank and the customer, and the analysis should be made from the following three aspects: the cost of providing the loan service to the borrower, the total income brought by the borrower and the target income of the bank. The basic principle is as follows:

$$\text{Total customer account revenue} > \text{total customer account cost} + \text{target revenue}$$

Among them:

$$\text{Total income of customer account} = \text{loan income} + \text{intermediate business income} + \text{investment income}$$

When the account income is greater than the sum of account cost and target income, the income

brought by the customer can meet the bank's profit target, and the bank's loan interest rate can be defined as:

$$\text{Loan interest rate} = (\text{total cost of servicing the customer} + \text{target profit} - \text{income from services other than interest on the loan}) / \text{loan amount}$$

3.2 Comparison and conclusion of loan pricing methods

The three commonly used loan pricing methods are the result of the gradual development and practice in the loan market, with their own characteristics and scope of application.

The cost-plus pricing method is a model that favors the internal control of banks. Banks only need to control their own costs and make clear the profits to price loans simply and clearly. However, this method ignores credit demand, market interest rate volatility, inter-bank competition and other factors, which easily leads to the loss of customers. Cost-plus method, therefore, is suitable for the loan demand of the seller's market. Given commercial banks in China may not have quite perfect risk management system, this paper doesn't believe that this method is suitable for our country commercial bank loan pricing.

The price leadership method is a market-oriented pricing method. Based on the widely recognized market benchmark interest rate, it can be closer to the market, and has strong operability. However, in the process of pricing, this method does not fully consider the cost and benefit of banks themselves, which may not guarantee their profit indicators, and there is also a lack of analysis on bank-enterprise relationship and customer contribution, which is not attractive enough for high-quality customers. Therefore, for the unsound credit rating system and the imperfect quantitative system in China, the biggest obstacle to the application of this method is to accurately determine the risk premium and to select the appropriate benchmark interest rate.

Customer profit analysis is a customer-oriented model, which requires the bank to comprehensively consider the overall relationship with the customer to achieve the final pricing. It is especially advantageous in the highly competitive market, which can attract high-quality customers for the bank and enhance the bank's business performance. However, this method requires commercial banks to have sophisticated computer accounting functions and the ability to accurately calculate the revenue and cost of customer accounts, which increases the difficulty of bank operation and management. Generally speaking, the customer profit analysis method is suitable for the customers who have close relationship with banks and need more funds, but has certain limitations for new customers.

To sum up, under the reform of interest rate liberalization, the cost-plus pricing method is not widely applicable in Chinese commercial banks. The price leadership method is more operable. As the future development trend of loan pricing, customer profit analysis is a pricing method that commercial banks should study in order to use differentiation analysis method to implement customer classification pricing, such as core customers can consider individual pricing, strategic customers can consider portfolio pricing.

4. Conclusions

Through the analysis of the existing problems of China's commercial banks and a comparative analysis of several highly recognized loan pricing methods, we think: (1) Price leadership method is suitable for the present development state of Chinese commercial banks; (2) The customer profitability analysis needs further research and development. Of course, there still exist some problems on management system and the computer level for the commercial banks to improve and overcome.

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