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Study on the Impact of RMB Real Effective Exchange Rate on the Performance of Domestic Banking

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Abstract

One reason for the slow process of reforming the RMB exchange rate regime is the concern that exchange rate fluctuations will adversely affect the healthy development of the economy, as well as negatively impact the financial system. Given that domestic scholars have mostly studied China's exchange rate policy in general, with less empirical research on the situation of micro-entities, this project will empirically examine the impact of changes in the real effective exchange rate of the RMB on the business performance of the domestic banking sector. As a financial intermediary sector, banks play an important role in economic development. Since the settlement of China's foreign trade is basically done by banks, banks become the main sector facing and bearing the risk of currency mismatch, so this micro subject of banks is selected as the research object. This project first uses relevant data information to determine intuitively whether there is a balance sheet effect of currency mismatch in commercial banks in China, and what and how much the currency mismatch caused by exchange rate changes affects the relevant items on banks' balance sheets. On the basis of the previous theoretical models, the dynamic panel generalised moments estimation method is used to empirically test whether exchange rate changes have a significant impact on the performance of commercial banks, and to verify the stability of the exchange rate effect by replacing several different indicators related to the exchange rate as a stability test, and to put forward corresponding policy recommendations.

Keywords

Renminbi; Real Effective Exchange Rate; Banking Sector; Business Performance.

1. Introduction

The impact of RMB exchange rate fluctuation on China's economy has always been one of the focus issues in China's academic circles, which have a large number of literatures on the impact of RMB exchange rate fluctuation on China's macroeconomic level. However, there is little research on the effect of RMB exchange rate fluctuation on the operation of the microeconomics, and only a small amount of literature has discussed the effect of RMB exchange rate fluctuation on financial institutions. Wen Bin (2005) analyzes the impact of RMB appreciation on China's commercial banks from the perspectives of bank assets and liabilities, International Settlement, foreign exchange funds, and Capital adequacy ratio management. Chen Xiaoli (2006), through the bank run model based on information, constructs a model of the impact of local currency appreciation on the bank crisis through the bank's balance sheet channel, as long as banks and their clients have a significant Currency mismatch of foreign assets and local Currency liabilities, and this Currency mismatch can be observed by some depositors, leading them to change their withdrawal plans, it could cause a liquidity crisis in the banking sector.

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2. Research Significance

2.1. Theoretical Significance

With the full opening up of China's financial sector and the gradual shift of the exchange rate from being pegged to the US dollar to a relatively freer exchange rate system with a basket of currencies, China's banking system has accumulated a long-standing issue of currency mismatch has also attracted widespread attention. The exchange gains and losses of the domestic commercial banks gradually turn from positive to negative with the accumulation of the increasingly large foreign currency net assets and the continuous appreciation of the RMB. From the balance sheet, we can see that the exchange rate appreciation has an impact on the balance of foreign currency statements, cash gains and losses and other items. At the same time, the reform of China's exchange rate system, under the background of the accumulation of foreign exchange reserves and the great pressure of currency appreciation, China's monetary policy must consider the impact of the accumulation of currency mismatches. Especially in view of the great role of the banking sector to the stability of China's economic development, it is necessary to verify whether the currency mismatch has an impact on China's banking sector and how much impact it has.

2.2. Practical Significance

This project analyzes the impact of RMB exchange rate on China's commercial banks from the perspectives of bank assets and liabilities, International Settlement, foreign exchange funds, and Capital adequacy ratio management. The study of the impact of exchange rate on the performance of the banking industry can not only effectively avoid the impact on the national economy, but also help the economic actors to enhance the awareness of preventing exchange rate risk. For the financial intermediary commercial banks, not only to strengthen their exchange rate risk management ability, but also to provide the market to avoid exchange rate risk products. This puts forward higher requirements for Chinese commercial banks to deal with exchange rate risk. Therefore, how to improve the ability and level of managing and controlling exchange rate risk as soon as possible has become a top priority for domestic banks.

3. References

3.1. Research Status and Development Trend at Home and Abroad

There are few researches on the influence of exchange rate change on micro-subjects in China, especially on the financial system. The research on the impact of exchange rate change on banking industry is limited to the descriptive explanation by using the data of balance sheet, there are mainly Wen bin (2005), Chen Xiaoli (2006) and Tang Weixia, Zhu Chao (2007) and another research. As Chen Xiaoli (2006) built a theoretical model that: the impact of exchange rate changes on the banking sector mainly through the balance sheet channel. The main components of the balance sheet effect of exchange rate movements are: if there is a serious currency mismatch in an economy, corporate debt increases faster than revenue when the domestic currency depreciates significantly, its net worth would be reduced. When a firm's risk increases, the cost of raising capital or the way in which it can raise capital is limited. This can affect investment, reducing aggregate demand and ultimately leading to a decline in output. Such a decline in output and an increase in the cost of imports as a result of currency depreciation may lead to further currency depreciation, thereby exacerbating the balance sheet effect. This effect is manifested in the financial sector: a large number of currency mismatches if encountered adverse exchange rate changes (such as the existence of foreign currency net assets when the local currency appreciation, or the existence of foreign currency net liabilities when the local currency depreciation), it will make it harder for the public to assess the state of

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financial institutions and to raise capital, which is largely deposit-taking for banks. Chen Xiaoli's (2006) model suggests that if large amounts of information about damaged bank assets become publicly known, it could lead to bank runs, which could lead to a more severe banking crisis. Of course, the presence of foreign currency assets is more optimistic than the presence of large foreign currency liabilities.

Foreign literature on the impact of currency mismatch on banks, this paper mainly studies the effect of currency mismatch on bank behavior from the following aspects: whether the bank maintains the value of foreign currency assets (liabilities), the effect of currency mismatch on bank credit, and the relationship between currency mismatch and bank crisis. For example, Chang et al. (1999) argue that real exchange rate depreciation leads to more severe and frequent bank failures, and that the effect is more pronounced in developing countries than in developed countries; Bumside et al. (2001) argue that implicit government guarantees on banks reduce the incentive for banks to hedge their money; Dererux (2001) considered the impact of devaluation on trade credit when credit-providing banks had currency mismatches between assets and liabilities; Chen (2001) studied the impact of asset price declines when the domestic banking system was subject to collateral constraints; Alen et al. (2002) demonstrate how currency mismatches can be transmitted from one sector to another and ultimately lead to banking crises through related items on the balance sheet, particularly in terms of currencies, maturities and capital structure; Choi et al. (2002) set up a general equilibrium dynamic model of small open economy under the condition of price stickiness and currency mismatch to study the effects of currency mismatch on economic cycle and monetary policy, the results show that exchange rate depreciation leads to the deterioration of banks' balance sheets and the macroeconomic impact of further depreciation under the Taylor rule, this feedback effect between the banking system and the macroeconomy leads to large fluctuations in the exchange rate, the degree of fixed exchange rate that can stabilize the bank's balance sheet can provide more stability to the financial system. Cepdes et al. (2000) also proved that currency mismatch can amplify the impact of exchange rate depreciation on the financial system through the balance sheet approach by constructing a general equilibrium model Michae (2006) examined the relationship between currency depreciation, bank balance sheets and funding costs through the historical fact that France began devaluing silver in 1873.

Although there is no empirical study on the impact of exchange rate changes on financial institutions in China, Tan Banyan and Zhou Xianping (2009) based on the financial data of 522 listed manufacturing enterprises in China from 2001 to 2007, the dynamic panel data model is used to analyze the impact of RMB exchange rate fluctuation on the financing ability of manufacturing enterprises. The results show that there is a large amount of debt currency mismatch in Chinese enterprises, the depreciation of RMB effective exchange rate has brought negative impact on the financing ability of Chinese enterprises.

Under the background of the current high-quality development of China's economy, to realize the sustainable development of China's commercial banking system, all commercial banks should take into account the coordinated development of economic, social and environmental objectives and the different roles played by various influencing factors in the triple development objectives, we should learn to treat and deal with the complicated factors that affect the performance objectives in the process of commercial banks' operation. In the current multi-level development system of commercial banks, commercial banks of different natures should increase their investment and expand their advantages in terms of assets scale, return on assets and other factors that have a positive impact on the triple efficiency, the use of management methods, business technology innovation to expand the scale of assets and return on assets, and thus enable commercial banks to improve operational efficiency; Each commercial bank main body should establish the strict risk early warning, the risk management

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mechanism, the strict control non-performing loan rate rise, thus avoids the commercial bank management efficiency which thus causes.

3.2. Application Prospects and Academic Value of the Project

This project focuses on the impact of RMB real effective exchange rate changes on the performance of domestic banking, to analyze the status quo of China's commercial banks' operating performance and the impact of exchange rate changes on the banks have a certain role in promoting, it has an important application prospect for China to further develop sufficient monetary policy tools to deal with external and internal shocks. At the same time, this paper analyzes the influencing factors and effects of RMB real effective exchange rate on domestic banking performance by means of entropy weight method, factor analysis and cluster analysis, it not only enlightens the development of domestic banking, but also provides practical reference for our government to make policy.

The reform of China's exchange rate system, under the background of the accumulation of foreign exchange reserves and the great pressure of currency appreciation, the formulation and implementation of China's monetary policy must consider the impact of the real effective exchange rate of RMB. Especially in view of the great role of the banking sector to the stability of China's economic development, it is necessary to verify whether its changes have an impact on China's banking sector, how much impact is in the end.

4. Research Content

Based on the study of the relationship between the real exchange rate and the performance of banks and the mechanism of the effect of the real exchange rate on the performance of banks, this paper puts forward some countermeasures and suggestions to improve the performance of banks from the aspect of monetary policy, promoting the financial development of our country. The study can be divided into the following important sections:

4.1. Introduction and Literature Review

In the 1980s and early 1990s, many developed, developing and transition economies experienced severe banking crises. From the debt crisis sweeping Latin to the Mexican currency crisis, the East Asian financial crisis, the Russian debt crisis, the Brazilian crisis, the peso crisis in late 2001. The spread of this massive banking crisis has caused widespread concern. The banking crisis disrupted credit to businesses and households, reduced investment and consumption, and even led to the collapse of otherwise functioning companies. Banking crises also have the potential to undermine the functioning of the payment system by reducing public confidence in the domestic financial system, leading to a reduction in domestic savings and/or large-scale capital outflows. Eventually a systemic crisis could lead to the closure of healthy banks. The characteristics that accompanied the outbreak of these currency crises and the causes that led to them have gone beyond the interpretation of the first-generation currency crisis theory, scholars have found that these countries have some similar characteristics before and during the crisis, and it is very important that banks and enterprises have large foreign debts, which is what we discussed in this paper, it is also that developing countries are facing more problems of insolvent currency mismatch. The accumulation of these external debts has exposed the financial system and the country as a whole to great financial risks in the event of a devaluation of the country's currency or an expectation of a devaluation of the currency, it can cause capital to stop flowing in, or even flight. In extreme cases, when a country's foreign exchange reserves are depleted, a currency crisis or financial crisis erupts, causing banks to run out of liquidity and the local currency to continue to depreciate, then there's the recession, the economic crisis. Some scholars have found that in the process of the crisis, the indicators of currency mismatch in the crisis countries are relatively high, or even rise, after the currency

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crisis, these indicators will decline. We have reason to believe that currency mismatches are one of the very important factors that trigger currency crises in developing countries, and that they can also make the cost of resolving crises costly, particularly in terms of output. The improved "third-generation" financial crisis model proves that the balance sheet effect of currency mismatch exists when there is dollarization of liabilities, that is, a devaluation of the currency reduces private sector net worth and public confidence in those sectors, which in turn leads to a decline in spending and output and ultimately to a financial crisis. Serious currency mismatch will affect the choice of a country's exchange rate system, the use of monetary policy, the accumulation of foreign exchange reserves and the fragility of domestic financial system, and hinder the process of financial liberalization. So, Alan Greenspan, the 13th Chairman of the Federal Reserve Board, called the massive currency and maturity mismatches among financial institutions in emerging markets "the fuse that started the fire."

4.2. Measurement and Analysis of Operational Performance of Domestic Banking

At present, China has basically formed a multi-level banking system, but with the deepening of the interest rate market, the competition of China's banking industry has become increasingly fierce. Therefore, how to guarantee both the benign competition of our banking industry and the high-level operating efficiency of commercial banks on this basis has become an urgent problem to promote the healthy development of our banking industry. As one of the core issues in the study of commercial banks, the operational efficiency of commercial banks has been the focus of academic research. Foreign scholars mostly use DEA method to analyze the operational efficiency of commercial banks. Barr and Seiford (1993) used DEA method to study the operational efficiency of commercial banks, and concluded that the difference between surviving banks and bankrupt banks can be made by observing the operational efficiency of banks According to the research of Sherman and Gold (2014), the DEA method is an effective method to evaluate the performance of bank branches. In the case of China, Yu et al. (2019) evaluated the operational efficiency of 26 commercial banks in China, a DEA model incorporating the influence of bank credit risk is proposed. Domestic scholars mainly use DEA method to study the operational efficiency of commercial banks. Zeng Wei and others (2016) used two-stage DEA method to study the innovation efficiency of Chinese banks from 2004 to 2014 Song kaiyi (2017) uses SBM-DEA model to analyze the effect of factor market distortion on the operational efficiency of commercial banks Chen Qing et al (2018) measured the operating efficiency of 15 listed commercial banks in China from 2010 to 2015 by using SBM-DEA method; Ma Xiaoqian et al (2019) studied 64 city commercial banks, this paper uses three-stage DEA method to analyze the business efficiency of city commercial banks in China, and Yang Lu et al (2020) used DEA model to study the financial efficiency of 15 commercial banks in Pratt & Whitney. Through the above literature review, most of the existing research is from a single dimension of commercial bank operating efficiency analysis, and from a multi-dimensional perspective is a research perspective to be explored.

4.3. The Theoretical Analysis of the Impact of Exchange Rate Change on Banking Performance

This project intends to explain the impact mechanism of real exchange rate change on bank performance from three aspects: balance sheet effect, risk and competition effect and direct and indirect currency mismatch effect. The balance sheet effect of real exchange rate change is illustrated by the scale of investment and net foreign currency assets, and the risk and competition effect are illustrated by improving financing and promoting innovation The direct and indirect effects of currency mismatch are expounded from the perspective of currency depreciation.

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4.4. An Empirical Test of the Impact of RMB Real Effective Exchange Rate on the Performance of Domestic Banking

This project will collect nearly 10 years of relevant information and data, in the form of text and charts analysis of domestic banking business situation, this includes bank assets and liabilities, International Settlements, foreign exchange funds, Capital adequacy ratio, etc. Review the research progress of banking performance at home and abroad, specifically, from the impact of RMB real effective exchange rate changes on the performance of banks, relevant research methods and policy recommendations to enhance the performance of the banking industry, and then explore the entry point of the project, innovative points, based on literature review, the theoretical analysis framework of the study is established. There are many factors that affect the performance of the domestic banking industry, such as the construction of four factors, namely: the type of bank, the non-performing loan rate of the bank, the return on assets, the logarithmic value of the scale of assets, etc., the main influencing factors are obtained through the analysis of entropy weight method, and the relative weights are given according to the influence of each factor and the econometric model is set up. According to the endogenous growth theory, we verify and analyze the results of empirical research, and explain the current situation of domestic banking performance by cluster analysis and factor analysis.

4.5. Conclusion and Policy Recommendations

Through the research on the relationship between the real exchange rate and the performance of banks and its influence mechanism, based on the research conclusion, the paper puts forward the macro and micro countermeasures to improve the performance of banks from the perspective of the real exchange rate, promoting domestic financial development.

5. Conclusion

This paper focuses on the impact of RMB real effective exchange rate changes on the performance of domestic banking, to analyze the status quo of China's commercial banks' operating performance and the impact of exchange rate changes on the banks have a certain role in promoting, it has an important application prospect for China to further develop sufficient monetary policy tools to deal with external and internal shocks. At the same time, this paper analyzes the influencing factors and effects of RMB real effective exchange rate on domestic banking performance by means of entropy weight method, factor analysis and cluster analysis, it not only enlightens the development of domestic banking, but also provides practical reference for our government to make policy.

The reform of China's exchange rate system, under the background of the accumulation of foreign exchange reserves and the great pressure of currency appreciation, the formulation and implementation of China's monetary policy must consider the impact of the real effective exchange rate of RMB. Especially in view of the great role of the banking sector to the stability of China's economic development, it is necessary to verify whether its changes have an impact on China's banking sector, how much impact is in the end. /n/n.

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