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An Economic Evaluation of Targeted Reserve Requirement Ratio Reduction on Bank Ecosystem Development

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Abstract: In China's bank-centered financial and economic environment, bank risk attitudes have an important impact on the effective implementation of structural monetary policy, and monetary policy can have an impact on the corporate ecosystem through risk taking by banks. To make an economic assessment of the evolution of the banking ecosystem and empirically explore the correlation between targeted Reserve Requirement Ratio (RRR) cuts and banks' risk-taking levels in the context of financial supply-side structural reforms, this paper uses multiple regression analysis and a fixed-effects model to analyze the causal impact of targeted RRR reduction on the risk taking of Chinese commercial banks. In addition, it uses the mediation effect model to analyze the mechanism. Results show that targeted RRR cuts have significantly increased the level of risk taking of commercial banks. The findings are pronounced in urban commercial banks. However, the leverage ratio regulation has a restraining effect on the level of risk taking of banks. This study provides an effective economic evaluation for the benign development of the banking ecosystem under the environment of government policy supervision. Future research needs to expand the bank sample and further examine the changes in bank credit scale and credit investment.

Keywords: targeted RRR cuts policy; leverage ratio supervision; bank risk taking

Citation: Xiong, L.; Fang, J. An Economic Evaluation of Targeted Reserve Requirement Ratio Reduction on Bank Ecosystem Development. *Systems* **2022**, *10*, 66. https://doi.org/10.3390/systems10030066

Academic Editors: Jurgita Raudeliūnienė, Rashid Maqbool and Jianbang Du

Received: 28 March 2022
Accepted: 11 May 2022
Published: 15 May 2022

1. Introduction

Preventing financial systemic risks has become the focus of financial regulators in various countries after the 2008 global financial crisis. At the same time, traditional monetary policies rely on frequent adjustment of the deposit reserve ratio and interest rate, which not only cannot guarantee the policy effect continuously, but also lead to increasingly prominent problems such as the imbalance of the economic structure and unreasonable resource allocation. The traditional monetary policy cannot effectively identify the actual situation of macroeconomic operation, and cannot implement effective measures to prevent the instability of the financial system from spreading to the real economy in case the financial system is unstable. The academic and practical circles began to reflect on the defects and deficiencies of the traditional monetary policy framework, and explored the structural optimization of the monetary policy regulation framework on the basis of the financial supply-side structural reform.

In order to avoid the "flood" of monetary policy and the "disenchantment from real to virtual" of the economy, the people's Bank of China (central bank) launched the targeted Reserve Requirement Ratio (RRR) reduction policy in 2014. This policy can effectively shorten the transmission chain of monetary policy, reasonably guide the flow of funds, and focus on supporting weak links in the economy. Targeted RRR reduction is a structural monetary policy that encourages financial institutions to allocate targeted funds by reducing the legal deposit reserve ratio of some deposit financial institutions, so as to provide greater financial support for industries and fields that need support in the real economy. At present, only a few studies have been conducted on the risk-taking behavior of banks after the implementation of the targeted RRR reduction policy. In China, banks' risk attitude has

an important impact on the effective implementation of structural monetary policy. The correlation between targeted RRR reduction and the bank risk-taking level is particularly important in the context of financial supply-side structural reform. At present, there are few research studies on the risk-taking behavior of banks after the implementation of the targeted RRR reduction policy. In China, banks' risk attitude has an important impact on the effective implementation of structural monetary policy. The correlation between targeted RRR reduction and bank risk-taking level is particularly important in the context of financial supply-side structural reform.

The third edition of the Basel Accord adds the regulatory standard of the leverage ratio and defines the leverage ratio as the ratio of tier 1 capital and its main form to the sum of on-balance sheet and off-balance sheet risk assets. The China Banking and Insurance Regulatory Commission defines the leverage ratio as the ratio between the net amount of tier 1 capital and the adjusted balance of on-balance sheet and off-balance sheet assets of commercial banks. The commission stipulates that the leverage ratio shall not be less than 4%. Leverage regulation focuses on the scale of banking business, which helps curb the excessive expansion of the banking business scale, so as to make up for the limitations of the single regulatory target of CAR, reduce regulatory capital arbitrage, reduce the probability of bank default loans, and reduce the risk bearing of banks. However, increasing the leverage ratio will weaken the profitability of banks and reduce the competitiveness of commercial banks. In order to improve returns, banks may increase the proportion of high-risk assets, which is not conducive to financial stability.

Therefore, this study takes listed commercial banks as the research object, to make an economic assessment of the evolution of the banking ecosystem and empirically explore the correlation between targeted Reserve Requirement Ratio (RRR) cuts and banks' risk-taking levels in the context of financial supply-side structural reforms. This paper uses multiple regression analysis and a fixed-effects model to analyze the causal impact of targeted RRR reduction on the risk taking of Chinese commercial banks. In addition, it uses the mediation effect model to analyze the mechanism. As an important part of banking supervision, the leverage ratio can change the risk level of banks and improve the effectiveness of supervision.

The theoretical significance of this study is examining, in depth, the changes in banks' risk-taking behavior after the implementation of the targeted RRR reduction policy. The study explores the relationship and influencing factors between bank leverage ratio supervision and risk mitigation, and further analyzes bank asset quality and the influence of heterogeneity on the relationship between targeted RRR reduction policy and bank risk-taking. These contributions enrich the literature and research on targeted RRR reduction and bank risk. Moreover, the findings of this study provide practical evidence for regulators to implement differentiated regulatory policies.

In summary, this work conducts an in-depth study on the impact of monetary policy and regulatory policy on banks' risk-taking behavior through the analysis of large-sample panel data of 16 listed commercial banks in China from 2010 to 2021. Banks' risk-taking behavior is studied in this paper, which is the innovation of this paper. In addition, given that domestic research focuses on the single-quantity analysis of capital regulatory variables, this study further pays attention to the impact of different capital constraint pressures on banks' risk-taking behavior. Therefore, this study also analyzes bank risks under different capital adequacy regulatory pressures, and commitment behavior was studied. In addition, this research studies the impact of asset size, liquidity level, and profitability on bank risk-taking behavior. The findings confirm the policy continuity of the new regulatory tools proposed by Basel III, which is another point of innovation and research contribution of this study.

Finally, the limitation of this study is that the sample size does not cover unlisted banks, and the changes in credit scale and credit investment of commercial banks under the targeted RRR reduction policy are not detailed. Therefore, future research needs to expand the bank sample and further examine the changes in bank credit scale and credit investment.

The remainder of this study is organized as follows. Section 2 discusses the literature review and research hypothesis. Section 3 describes the data and empirical methodology. Section 4 reports the empirical results. Section 5 presents the heterogeneity analysis. Section 6 presents the discussion. Finally, the last section presents our conclusion.

2. Literature Review and Research Hypothesis

2.1. Targeted RRR Cuts and Bank Risk-Taking

Borio and Zhu proposed the "risk taking channel" of monetary policy in 2008. According to their definition, changes in monetary policy can affect banks' risk perception (Risk Perception) and risk tolerance (Risk Tolerance), and influences the bank's risk, credit decisions, and asset portfolios, which ultimately affect financial stability and transmission to the real economy. According to the review of past literature, monetary policy has four main transmission paths for bank risk-taking.

The first path is the amplification effect of financial accelerators. Wei et al. pointed out that the loose monetary policy represented by low interest rates can usually optimize the cash flow of borrowers and improve their income and valuation, and the value of the collateral provided by borrowers will also increase [1]. The risk tolerance of borrowers will also increase accordingly. In a low-interest-rate environment, banks speculate that the default risk of borrowers will decrease, and the expected default loss and related volatility will also decrease, prompting banks to increase their risk-taking levels [2]. Wang found that loose monetary policy prompted banks to significantly reduce the incentive to screen subprime investors strictly, face adverse selection risk when selecting borrowers, and thus actively expand credit, thus increasing the level of risk-taking [3].

The second path is the pursuit of the income effect. When monetary policy tends to loosen and market interest rates gradually decline, the rate of return of risk-free assets relative to risky assets drops sharply, causing investors to reduce the proportion of risk-free assets in their investment portfolios. Zhang et al. pointed out that when the market is in a low-interest-rate environment, in order to maintain the nominal return on portfolio investment under the original high-interest-rate environment, market investors will reduce their holdings of low-risk bonds and increase their holdings of high-risk bonds [4]. For example, from 2003 to 2004, market investors generally reduced their holdings of low-yield government bonds in their asset portfolios, and replaced corresponding shares with high-risk and high-yield corporate bonds or other new types of bonds. Given that the financial industry is flooded with various ranking lists, and fund managers generally accept the compensation system with investment income as the main evaluation index, fund managers have further enhanced the pursuit of income effect under the impetus of the "herd effect" [5].

The third path is the mindset effect. The mindset effect means that the consumption and investment habits of experienced investors will form a mindset to a certain extent and affect their current consumption and investment. The mindset effect will have an impact on the risk-taking level of individual investors and institutional investors in the market [6]. When the economy develops rapidly, the consumption level of the whole society will be improved, and the risk of investors will increase. The degree of aversion will also decrease as a whole; with loose monetary policy and sufficient liquidity, commercial banks will also have confidence in the market, thereby reducing the degree of risk aversion and increasing the level of risk taking [7].

The fourth path is the feedback effect of central bank communication. The monetary transparency and predictability implemented by the central bank can significantly affect the risk-taking behavior and level of commercial banks. If investors expect that monetary policy will tend to be loose and market interest rates will decline in the short term, then they will accordingly chase high-risk assets and increase the proportion of risky assets in their asset portfolios. Accordingly, in order to pursue higher profits, commercial banks will follow monetary policy, change their risk-taking level, and increase their risk tolerance and risk tolerance in anticipation of monetary policy easing. Such behaviors are evident

during periods of rapid economic development [8]. On the basis of the above analysis, the following hypothesis is proposed.

Hypothesis 1. *The targeted RRR reduction policy will increase the risk-taking level of commercial banks.*

2.2. Leverage and Bank Risk-Taking

In 2011, the China Banking Regulatory Commission stipulated in the Measures for the Management of The Leverage Ratio of Commercial Banks that the regulatory requirement of the leverage ratio of commercial banks should not be less than 4%. This requirement attempted to intervene in the excessive risk-taking behavior of commercial banks and make up for the deficiency and defect of the single CAR regulation. In the long run, the regulation of the bank leverage ratio can guide banks to publish risk reports in a timely manner, thus weakening the motivation for false statements, reducing bank risk-taking, and alleviating the degree of information asymmetry between banks and regulatory authorities [9]. Blum showed that the leverage ratio index can fully expose the risk level of banks, thus restricting the risks of banks [10]. The supervision of the bank leverage ratio and liquidity can not only reduce the risk-bearing level of banks, but also reduce the probability of bank loan default [9].

A large number of empirical studies have found an obvious relationship between leverage ratio regulation and bank risk-taking. Koehn et al. pointed out that the increase in the bank leverage ratio, on the one hand, increased the proportion of the bank's own capital [11]. On the other hand, it eased and reduced bank risks. The increase in the bank leverage ratio will also reduce its profit level, change the original ratio of high-risk assets and low-risk assets, and play a role in controlling the overall risk of banks [12]. Kiema et al. found that the regulation of the bank leverage ratio would prompt banks to change their loan schemes [13]. For the purpose of obtaining high profits from investment portfolios, banks would increase the level of risk taking and eventually expose banks to greater risks. Leverage ratio regulation can reduce the probability of default of bank loans, and also reduce the asset level of banks. However, in the case of information asymmetry, a low asset level may cause depositors to worry about the normal operation of banks and the occurrence of bank runs, which is ultimately not conducive to the stable development of banks [14]. Zhang et al. found that the regulation of the leverage ratio could promote banks to increase their own capital and slow down their risk taking, thus contributing to the stable development of banks [15]. Song et al. also pointed out that leverage can change the impact of macro-prudential policies on bank risk bearing [16]. The effect of the leverage ratio is nonlinear. At a low level of the leverage ratio, macro-prudential policies have a negative impact on bank risk-taking. By contrast, when the leverage ratio increases gradually, the impact of macro-prudential policies on bank risk-taking turns from negative to positive. Yuan et al. investigated the relationship between the leverage ratio and bank risk taking on the basis of the data of 15 listed banks [17]. They found that leverage ratio regulation can reduce the risk-taking level of banks and improve the capital adequacy level of banks, thus enhancing the stability of the financial system. On the basis of the above analysis, the following hypothesis is proposed:

Hypothesis 2. *The leverage ratio will affect the effect of the targeted RRR reduction policy on bank risk-taking.*

3. Data and Empirical Methodology

3.1. Sample Selection and Data Sources

On the basis of public data on Chinese commercial banks from 2010 to 2021, this study examines the relationship between targeted RRR reduction policies and the risk-taking level of commercial banks, as well as the influence and role of the leverage ratio between the

two. The year 2010 was chosen as the starting year because the Agricultural Bank of China and China Everbright Bank went public successively in that year. To ensure data integrity and the consistency of time span, 16 banks were selected as sample companies, namely the Industrial and Commercial Bank of China, Agricultural Bank of China, Bank of China, China Construction Bank, Bank of Communications, China Merchants Bank, Shanghai Pudong Development Bank, China CITIC Bank, Industrial Bank, China Minsheng Bank, China Everbright Bank, Hua Xia Bank, Ping An Bank, Bank of Beijing, Bank of Ningbo, and Bank of Nanjing.

The selected data are mainly from the official website of the Central Bank, CSMAR database, and Wind database. Specifically, the information on the targeted RRR reduction policy comes from the official website of the central bank. The company's financial data and macroeconomic data are from the CSMAR database; basic financial data, monetary policy data, and commercial bank data come from the Wind database.

After obtaining relevant data, this study screened and cleaned the data according to the following criteria. First, we dealt with outliers. Second, we supplemented missing values through manual collection and sorting. Finally, 16 companies were selected for a 12-year total of 192 company-annual sample data. Considering the potential extreme values of continuous variables, the accuracy of the results will be affected during regression, so winsorization tail reduction was carried out for such variables, and Stata15 software was used for the specific operation.

3.2. Variable Setting

The explained variable is the risk-taking level of banks, and the indicators to measure the risk-taking level of banks include the *Z_Score*, weighted risk asset ratio (*RA*), nonperforming loan ratio (*NPL*), loan loss reserve ratio, and expected default probability. Referring to the practice in the literature, this study adopts the *Z_Score* as a proxy variable of the bank risk taking level and adopts the *NPL* variable to conduct a robustness test [18,19]. The following formula is used to calculate the *Z_score* value according to the method of Laeven and Levine:

$$Z\_score_{i,t} \frac{roa_{i,t} + \frac{e_{i,t}}{a_{i,t}}}{sdroa_{i,t}} = raroa_{i,t} + raea_{i,t} \quad (1)$$

The return on total assets is represented by *roa* while *e/a* stands for the ratio of capital and assets, which can measure the rights and interests of banks. *Sdroa* stands for the standard deviation rate of the return on total assets. *Raroa* on the right-hand side of the equation reflects the level of bank earnings, and *raea* reflects the bank's equity level. Thus, *Z_score* comprehensive bank profitability and leverage can be used as the proxy for the variable bank risk-bearing level. The higher the *Z_score*, the lower the risk-taking level of the bank, and the smaller the *Z_score*, the greater the bank's risk-taking level, which is inversely proportional to the bank's risk-taking.

NPL refers to the proportion of subprime, doubtful, and lost loans in the total loan balance in bank loans, which reflects the quality of bank loans and is an important indicator of the safety of bank credit assets. In the risk supervision of China's commercial banks, the regulatory target for the *NPL* is that the value must be less than or equal to 4%. Nonperforming loans are a major risk and hidden danger to banks and even the domestic financial industry, and they inevitably have a significant impact on the operation and development of banks. Generally, a high *NPL* ratio represents a high level of risk taking.

Core explanatory variables. The first explanatory variable is the targeted RRR reduction policy, which is a dummy variable, represented by *POST*, with values of 1 and 0. Given that the targeted RRR reduction policy was first introduced in April 2014, this variable takes 1 in 2014 and subsequent years, and takes 0 in 2013 and previous years. Another explanatory variable is the leverage ratio (*LA*), which is expressed by dividing the net tier 1 capital by the adjusted balance of on- and off-balance sheet assets. China's banking industry stipulates that the leverage ratio should not be lower than 4%. Supervising the leverage

ratio of banks can reduce the asset–liability ratio and prevent the risks accumulated by banks for a long time.

Control variables. Numerous empirical studies show that the year-on-year *GDP* growth rate, broad money *M2* growth rate, bank of Shanghai seven days between interbank interest rates (*SHIBOR*), legal deposit reserve rate (*DR*), capital adequacy ratio (*CAR*), liquid assets ratio (*LR*), return on total assets (*ROA*), and variables such as total assets scale (*SIZE*) also affect the empirical results. Therefore, this study considers these variables as control variables. Table 1 lists all the variables covered in this article.

Table 1. Variable definition.

Default Variable Type	Symbolic Representation	Variable Definition	Computational Formula
Explained variable	*Z_score*	Bank risk-taking level	See Formula (1) above, take the logarithm of the calculated Z
	NPL	Nonperforming loan ratio	Nonperforming loans at the end of the year divided by total loan balance
Explanatory variable	*POST*	Targeted reserve ratio reduction policy dummy variables	1 for 2014 and later years, 0 for other years
	LA	Lever ratio	Net Tier 1 capital divided by the adjusted balance of off-balance-sheet assets
Control variable	*LR*	Liquid asset ratio	Current assets divided by current liabilities at year end
	M2	Broad money growth rate	The annual growth rate of broad money
	CAR	Capital adequacy ratio	In year t, the bank's own capital divided by its risk-weighted assets
	SHIBOR	Shanghai seven-day interbank offered rate	Shanghai interbank offered rate of 7-day weighted average
	GDP	*GDP* growth rate	The annual growth rate of gross domestic product
	ROA	Return on total assets	You divide t year-end net profit after tax by total assets
	SIZE	Total assets	The size of the company at the end of t is the logarithm of its total assets at the end of t

3.3. Empirical Methodology

3.3.1. Targeted RRR Reduction and Risk Taking of Commercial Banks

This study first demonstrates the relationship between the targeted RRR reduction policy and the risk taking of commercial banks. The variable of targeted RRR reduction policy is a binary dummy variable, and the following model is used for regression analysis.

$$Risk_{i,t} = \beta_0 + \beta_1 POST_{i,t} + \beta_j Controls_{i,t} + \delta_i + \delta_t + \varepsilon_{i,t} \quad (2)$$

Among them, i stands for the listed commercial banks; t stands for the year, the variable $Risk_{i,t}$ represents the level of risk exposures of commercial banks by the indicators *Z_score* and *NPL*. *POST* stands for directional drop policy virtual variable, $Controls_{i,t}$ stands for the control variables, β_0 is the intercept, δi, δt are the Banks type effect and time effect, respectively, and $\varepsilon_{i,t}$ stands for the error term.

3.3.2. Targeted RRR Reduction, Leverage Ratio, and Risk-Taking of Commercial Banks

In the benchmark model, on the basis of (2), to test the leverage on orientation in the policy and the relationship with bank risk-taking, directional drop must join policy variables and leverage of the regulatory indicators by $\beta_2 POST_{i,t} * LA$.

$$Risk_{i,t} = \beta_0 + \beta_1 POST_{i,t} + \beta_2 POST_{i,t} * LA + \beta_j Controls_{i,t} + \delta_i + \delta_t + \varepsilon_{i,t} \quad (3)$$

4. Empirical Estimation and Analysis of Results

4.1. Descriptive Statistics

The variable descriptive statistics in Table 2 show that the *Z* value has decreased after the targeted RRR cut, with the mean value dropping from 4.235% to 4.100% alongside the increase to 1.446%, and the mean changes of the *Z* value and *NPL* ratio indicated that the risk-taking level of banks greatly increased after the targeted RRR reduction policy. Therefore, hypothesis 1 is supported by the descriptive statistical results of the two explained variables. The average leverage ratio increased from 4.728 to 6.411, indicating that the current leverage ratio of listed banks has been well controlled.

Table 2. Descriptive statistics of variables.

Variables	Before Targeted RRR Cuts in 2010–2013				After Targeted RRR Cuts in 2014–2021			
	Average	Standard Deviation	Min	Max	Average	Standard Deviation	Min	Max
Z	4.235	0.263	3.544	4.820	4.100	0.227	3.490	4.581
POST	0.000	0.000	0.000	0.000	1.000	0.000	1.000	1.000
NPL	0.841	0.274	0.420	2.030	1.446	0.337	0.780	2.370
LA	4.728	1.393	3.412	6.254	6.411	1.483	5.828	7.893
M2	15.961	2.847	13.533	20.773	10.557	1.962	8.275	13.017
CAR	12.401	1.362	10.440	16.200	13.180	1.450	10.800	16.770
SHIBOR	3.502	0.821	2.154	4.210	3.184	0.356	2.546	3.742
GDP	8.950	1.176	7.800	10.600	6.748	0.367	6.100	7.300
ROA	0.011	0.002	0.007	0.014	0.009	0.002	0.007	0.014

The control variables show that after the targeted RRR cut, the broad money growth rate *M2* and the *SHIBOR* value have declined to varying degrees, indicating that the targeted RRR cut has eased market liquidity and relatively reduced the cost of currency use. The average annual growth rate of *GDP* has also declined, and the decline in the economic growth rate is in line with the reality that China has entered a new economic normal. The capital adequacy ratio (*CAR*) is an important indicator to measure bank risk. In the risk supervision of commercial banks in China, the regulatory indicator for *CAR* is greater than or equal to 8% to ensure the bank's ability to resist risks. The average value of *CAR* in the table has increased from 12.401 to 13.180. Thus, the *CAR* has increased after the targeted RRR cut, which shows that the sample banks are paying more attention to bank risks. The mean value of *ROA* on total assets decreased from 0.011 to 0.009, indicating that as the interest rate spreads decreased, so did banks' yields.

4.2. Targeted RRR Reduction, Leverage Ratio and Bank Risk-Taking

As shown in Table 3, the explained variable *Z* represents the risk-taking level of banks, the explanatory variable *POST* represents the directional reserve ratio reduction policy, and *LA* represents the leverage ratio indicator. According to Formula (1), the *Z* is negatively correlated with the risk-taking level of banks. The first and second columns are model (2) in the directional drop policy and bank risk bearing the regression results. The third and fourth columns are model (3) in the targeted policy, leverage ratio index on bank risk bearing the regression results. The first and third columns use least-squares regression, whereas the second and fourth columns adopt a fixed-effects regression model.

Table 3. Targeted RRR reduction and bank risk-taking.

Variables	OLS	Fixed Effect	OLS	Fixed Effect
	Z	***Z***	***Z(POST*LA)***	***Z(POST*LA)***
POST	−0.052 *** (−3.272)	−0.089 *** (−3.903)	−0.059 *** (−4.901)	−0.194 *** (−3.421)
M2	−0.008 (−0.645)	−0.005 ** (−2.035)	−0.007 ** (−2.555)	−0.004 *** (−2.822)
CAR	0.043 ** (1.966)	0.039 *** (5.366)	0.026 *** (3.536)	0.029 *** (3.854)
SHIBOR	0.080 ** (2.149)	0.032 * (1.720)	0.051 ** (2.184)	0.011 *** (2.586)
GDP	−0.017 (−1.169)	−0.020 (−1.605)	−0.020 (−1.386)	−0.009 (−0.733)
ROA	0.344 ** (2.553)	0.675 *** (4.927)	0.329 ** (2.465)	0.387 *** (5.454)
LR	0.014 (0.958)	0.029 *** (5.291)	0.002 (0.108)	0.015 ** (2.245)
SIZE	0.013 ** (2.440)	0.106 ** (2.214)	0.005 * (1.663)	0.031 *** (2.614)
*POST*LA*			0.002 ** (2.439)	0.004 *** (3.363)
Constant	3.480 *** (2.662)	6.934 *** (4.475)	4.018 *** (2.712)	4.596 *** (2.789)
N	192	192	192	192
R^2	0.640	0.749	0.657	0.768
Adj-R^2	0.625	0.706	0.606	0.727

* Indicated significance at the 10% level. ** Indicated significance at the 5% level. *** Indicated significance at the 1% level.

Table 3 shows a negative correlation between the targeted RRR reduction policy and bank risk-taking, and a positive correlation exists between the targeted RRR reduction policy and bank risk-taking when the leverage ratio regulatory index is added. The first column shows that the coefficient of *POST*, the policy variable of directional RRR reduction, is −0.052 and significant at the 1% level. This result indicates that the directional RRR reduction is negatively correlated with the level of bank risk taking, which is consistent with the conclusion of Dell Ariccia et al. [19]. The results in the second column also show that the targeted RRR reduction policy will decrease the *Z* value by 0.089 units, thus increasing the risk-taking level of banks. Whether an ordinary least-squares regression or fixed-effects model regression is used, the results show that the implementation of a targeted RRR reduction policy will improve the risk-taking level of commercial banks.

Model (3) tests whether the addition of regulatory indicators of the leverage ratio will have a risk release effect on commercial banks. As seen from the third column, the coefficients of explanatory variables *POST* and *POST*LA* are −0.059 and 0.002, respectively, and are significant at least at the 5% level. This result indicates that under other conditions, leverage ratio regulation can slow down the strengthening effect of the targeted RRR reduction policy on the risk taking of commercial banks. The regression results of the fixed-effect model in Column 4 are consistent with those in Column 3. The Basel Agreement and China Banking and Insurance Regulatory Commission both stipulate the requirements for the leverage ratio of commercial banks, and a higher leverage ratio corresponds to a better sense of risk prevention. In the long run, the regulation of the bank leverage ratio can guide banks to publish risk reports in a timely manner, thus weakening the motivation or false statements, reducing bank risk-taking, and alleviating the degree of information

asymmetry between banks and regulatory authorities [20]. The leverage ratio can fully expose the risk level of banks, thus playing a role in restricting the risks of banks and reducing the risk-taking level of banks and the probability of bank loan defaults [10].

In terms of the control variable representing the characteristics of the bank, the *SIZE* of the company is significantly negatively correlated with the risk-taking of the bank, indicating that with the increase in the asset *SIZE* of the company, the risk-taking level of the bank will decrease. By contrast, the risk-taking level of the bank with a smaller *SIZE* will be higher. This finding is consistent with the regression results of Buch and Zhang [21,22]. On the one hand, in China, large banks are often subject to more supervision. Thus, compared with small and medium-sized banks, they are less motivated to take risks. On the other hand, large banks have economies of scale and have more ways and means to make profits, so they have less incentive to make returns through high-yield speculation. *CAR* is negatively correlated with the risk-taking level of banks, indicating that an increase in the *CAR* will reduce the risk tolerance of banks. Correspondingly, the motivation of banks to chase high-risk assets will weaken. The liquid asset ratio is also negatively correlated with the risk-taking level of the bank. The higher the liquid asset ratio of the bank, the lower the liquidity risk of the bank and the more stable the operation of the bank. The *ROA* of banks is negatively correlated with the risk-taking level of banks, indicating that when the profitability of banks is strong, banks can avoid earning profits by speculating on high-risk activities, which also avoids risks for banks. This finding is consistent with the empirical results of Hussain et al. [23].

In terms of the control variable of monetary policy, *M2*, the growth rate of broad money is significantly positively correlated with bank risk taking. This result indicates that the looser the monetary policy is, the higher the risk-taking level of banks will be. With the gradual tightening of monetary policy, the risk-taking level of banks will gradually decrease. *SHIBOR* represents the price of funds in the interbank market. When the price falls, the interest margin of the deposit and loan business of the bank will be reduced. For the same asset business structure of the bank, its return will be reduced. Therefore, to maintain profits, banks will choose to carry out riskier businesses to obtain higher returns. A positive correlation exists between the economic growth rate and *GDP* and the risk-taking level of banks, which indicates that in the boom period, banks' business strategies will be more aggressive. To obtain high returns, decision makers will make more active investment activities on the basis of the economic situation, and banks will have higher risk tolerance.

4.3. Endogenous Problems

To exclude the possibility that the dependent variables are sequentially correlated, that is, the risk-taking level of the bank in the previous year has an impact on the value of the current year and the next year, the dynamic panel generalized method of moment (GMM) examination is used to retest the model. This study refers to the research method of Song to verify whether the overall regression results mentioned above are robust [16].

To solve the possible endogeneity problems in models (2) and (3), the dynamic panel GMM method is used in this part to regress the equation again. In regression analysis, the results of auto regressive (AR), AR (1), and AR (2) statistics were used to test the serial correlation of the model, and Sargan statistics were used to test the validity of instrumental variables. As shown in Table 4, the *Z* value of the bank's risk-taking level lags in one period and is positively correlated with its current value, which is significant at the 1% level. The value of the *NPL* ratio lagging behind the first period is also positively correlated with its current value, which is significant at 1%. This result indicates that the bank's risk-taking level has a certain degree of inertia, and the bank's risk-taking level in the current period will be affected by the bank's risk-taking level in the previous period. The regression results of *POST* and the *Z* value of the targeted RRR reduction policy are significantly negative, and the regression results of *NPL* and *NPL* are significantly positive, indicating that the targeted RRR reduction policy will significantly increase the risk-taking level of banks. The cross term *POST*LA* of the RRR policy and leverage ratio is opposite to the sign of the

POST coefficient, and the coefficient value is significantly less than the absolute value of the RRR policy, indicating that the leverage ratio has a certain risk release effect. However, it cannot change the fact that the RRR policy increases the level of bank risk taking.

Table 4. GMM test results.

Variables	*Z*	*Z(POST*LA)*	*NPL*	*NPL(POST*LA)*
L.Z	0.429 *** (4.032)	0.236 *** (3.134)		
L. NPL			0.571 *** (2.601)	0.731 *** (2.624)
POST	−0.295 *** (−2.902)	−0.286 *** (−2.923)	0.221 ** (2.126)	0.204 *** (3.042)
*POST*LA*		0.017 ** (2.084)		−0.028 ** (−2.426)
Controls	control	control	control	control
AR(1) *p* value for inspection	0.000	0.000	0.000	0.000
AR(2) *p* value for inspection	0.238	0.211	0.084	0.072
Sargan *p* value for inspection	0.553	0.382	0.242	0.216

** Indicated significance at the 5% level. *** Indicated significance at the 1% level.

4.4. Robustness Test

A robustness test is conducted to replace the important bank risk-taking level indicator *Z-Score* with the variable *NPL* ratio with the same economic meaning and perform a regression test. The purpose is to avoid the contingency of the results caused by data statistics. This part adopts the method of changing the explained variables to test the robustness. Referring to the practice of Pan et al., the proxy variable of commercial banks' risk-taking is replaced by *NPL* to test the robustness of the regression results of the above benchmark [24]. Table 5 shows that the regression result of *POST*, the policy variable of RRR reduction, is positively correlated with the *NPL* ratio and is significant at least at the 5% level, indicating that the RRR reduction policy can significantly increase the risk-taking level of banks. The *POST*LA* cross-product term is negatively correlated with the coefficient of *NPL* and is significant at least at the 5% level. The leverage ratio plays a risk release role in the impact of targeted RRR reduction policy on bank risk taking, indicating that leverage ratio regulation can reduce the risk taking of commercial banks. The results in Table 5 support the baseline regression mentioned above, and the control variables are consistent with the baseline regression results.

Table 5. Changes in the explained variables.

Variables	OLS	Fixed Effect	OLS	Fixed Effect
	NPL	*NPL*	*NPL(POST*LA)*	*NPL(POST*LA)*
POST	0.263 *** (6.286)	0.287 ** (3.282)	0.399 ** (2.459)	0.169 *** (2.859)
*POST*LA*			−0.037 ** (−2.193)	−0.036 *** (−2.811)
Constant	2.844 *** (2.297)	3.552 *** (2.093)	2.746 *** (1.940)	3.789 *** (2.427)
N	192	192	192	192
R^2	0.681	0.674	0.692	0.675
Adj-R^2	0.664	0.618	0.673	0.617

** Indicated significance at the 5% level. *** Indicated significance at the 1% level.

5. Heterogeneity Analysis

5.1. Heterogeneity Analysis Based on Bank Characteristics

The risk-taking level of commercial banks will also be affected by the characteristics of banks, such as the ratio of liquid assets, *CAR*, and return on total assets. Therefore, this part adds these characteristic variables of banks into the model for further analysis to test the impact of bank heterogeneity on the relationship between the RRR reduction policy and bank risk taking.

The liquid asset ratio is the ratio of the bank's liquid assets to its liquid liabilities. The higher the liquid asset ratio is, the stronger the enterprise's short-term solvency and ability to resist market risks will be. The bank liquidity ratio is one of the core indicators of risk supervision of commercial banks and is also the most commonly used financial indicator. Valaskova et al. pointed out that liquid assets are closely related to the stability of financial institutions such as banks [25]. However, Poliak et al. held the opposite opinion that the increase in bank liquidity will increase the instability of the banking sector and the externalities associated with banking collapse [26]. Poliak et al. explained that although higher liquidity can encourage banks to reduce the risk of the balance sheet and directly promote asset liquidation in a crisis, it also makes the crisis less costly for banks. As a result, banks have an incentive to take on a certain amount of new risk that offsets the positive direct effect of higher liquidity on stability. On the basis of the above analysis, this part constructs the cross-product term *POST*LR* between the policy variable of directional RRR reduction and the ratio of banks' liquid assets to test the possible impact of banks' liquid assets.

Many studies have analyzed bank risk taking from the perspective of bank regulatory constraints. For example, Wanget al. point out that Basel Agreement III and the Chinese Version of Commercial Bank Capital Management Measures (Trial) both assume that capital regulation can help prevent bank risks [27]. However, some scholars have reached a different conclusion through empirical research. As regulatory agencies also have limitations, they may also engage in "regulatory failure" and "overregulation," which will bring greater losses and fail to play the role of reducing the risks of financial institutions [28]. By contrast, Lu Jing drew the opposite conclusion: The bank requires high capital regulation to reduce bank credit growth and reduce its profit margins [29]. Moreover, the bank, in order to maintain profitability, will actively use the low interest rate policy, easing monetary policy and increasing the higher-yielding speculation, which, in turn, increases banks' risk-taking levels. In China, the *CAR* and bank liquidity asset ratio are common regulatory indicators of commercial banks. Therefore, *POST*CAR* of policy variables of targeted RRR reduction and *CAR* is constructed to test the impact of *CAR*.

The return on total assets is an important index to analyze bank profitability and bank income, and profit maximization is also the main operation goal of commercial banks. To maximize profits, banks have a strong incentive to change their risk-taking levels actively according to different monetary policy environments. However, different banks have different responses to profit indicators. When the return on assets of banks is high, banks may actively reduce the risk-taking level to protect their own returns. In this scenario, banks pay more attention to the safety and liquidity of operation and strengthen compliance control and sound operation. When the return on assets of banks is low, to maintain a certain level of profitability, banks may tend to be aggressive in their business strategies. Under a loose monetary policy, banks are more likely to carry out high-risk and high-return speculative activities, which will objectively increase the risk-bearing level of banks. Therefore, *POST*ROA*, the cross term between the policy variable of directional RRR reduction and *ROE*, was constructed to test the impact of *ROE*.

After joining bank characteristic variables, the regression results are shown in Table 6. The results in the table show that after joining by a directional drop, *POST* standard policy variables, being negatively correlated to the level of bank risk bearing results, have not changed, and the item by *POST*LA* and bank risk-taking as the *Z* value is still relevant and significant to a level that is consistent with the benchmark regression results in Table 3. It also supports hypothesis 1 and hypothesis 2.

Table 6. Heterogeneity analysis based on bank characteristics.

Variables	OLS	Fixed Effect	OLS	Fixed Effect	OLS	Fixed Effect
	Z	***Z(POST*LR)***	***Z***	***Z(POST*CAR)***	***Z***	***Z(POST*ROA)***
POST	−0.081 *** (−2.713)	−0.027 *** (−3.391)	−0.012 ** (−2.475)	−0.015 ** (−2.488)	−0.011 ** (−2.118)	−0.016 *** (−3.632)
*POST*LR*		−0.012 ** (−2.213)				
*POST*CAR*				−0.059 *** (−2.986)		
*POST*ROA*						−0.184 * (−1.799)
M2	−0.004 (−0.822)	−0.008 * (−1.709)	−0.009 * (−1.688)	−0.002 ** (−2.446)	−0.008 ** (−2.375)	−0.004 * (−1.843)
SHIBOR	0.052 (0.753)	0.011 (0.596)	0.045 (0.656)	0.019 (1.237)	0.027 (0.380)	0.017 (1.033)
GDP	−0.015 (−0.901)	−0.009 (−0.723)	−0.017 (−1.165)	−0.002 (−1.184)	−0.014 (−0.855)	−0.006 (−1.501)
SIZE	0.016 ** (2.561)	0.031 *** (2.605)	0.016 ** (2.498)	0.031 * (1.715)	0.022 ** (2.432)	0.024 ** (2.524)
*POST*LA*	0.004 *** (3.321)	0.005 *** (3.309)	0.002 ** (2.235)	0.002 ** (2.219)	0.003 *** (2.814)	0.005 *** (2.654)
Constant	4.257 *** (2.621)	4.589 *** (2.773)	3.301 *** (2.653)	3.257 *** (2.906)	3.822 ** (2.752)	4.004 *** (2.794)
N	192	192	192	192	192	192
R^2	0.768	0.756	0.843	0.837	0.852	0.815
Adj-R^2	0.725	0.711	0.814	0.826	0.824	0.781

* Indicated significance at the 10% level. ** Indicated significance at the 5% level. *** Indicated significance at the 1% level.

The results show that the first and second columns in the table, directional quasi policy variables on the bank liquidity assets ratio, show *POST*LR* coefficients of −0.015 and −0.012, respectively, and are at least at the 5% significance level, and therefore the bank liquidity assets ratio is higher. Banks have relatively sufficient funds to speculate and higher levels of bank risk-taking. The results in column 3 and column 4 show that the *POST*CAR* coefficients of the cross-product of the policy variable of targeted RRR reduction and the *CAR* are −0.013 and −0.059, respectively. Both are significant at the 1% level, indicating that the higher the *CAR* is, the more stable the operation of the banking system will be and the higher the risk-taking level of the bank will be. The fifth and sixth column coefficients of the regression results are −0.178 and −0.174, respectively, explaining that the bank's return on assets is negatively related to the *Z* value, and the *Z* value is negatively related to the level of bank risk exposures. This result shows that with the improvement of bank return on assets, banks resist the ability of the risk increases, and banks have a greater possibility of increased exposure. Therefore, regression results show that the sufficient liquidity and capital and profit ability of the bank, due to its table operation, reduce the legal reserve requirements at the central bank's loose monetary policy and has the ability to improve its risk-bearing ability to balance the benefits and risks.

5.2. Heterogeneity Analysis Based on Bank Type

In the banking industry, large banks play an important role in the financial system and have a greater impact on the economy and society. Therefore, when such financial institutions have a business crisis, the government or regulatory authorities will help them overcome the crisis, which is the phenomenon of "too big to fail." Therefore, large banks may think that they have implicit security and thus increase risk tolerance, resulting in excessive risk-taking, which brings greater risks and crises to banks. However, Hakenes et al. pointed out that, compared with small banks, large banks can make use of their own

advantages to conduct a risk assessment by the internal rating method, thereby saving capital, gaining competitive advantages, and reducing their own risks, whereas small banks are simply the opposite [30].

This part divides all bank samples into three categories: Large commercial banks, joint-stock commercial banks, and city commercial banks. The numbers of samples are 5, 8, and 3, respectively. Moreover, Table 7 lists the benchmark regression results of the whole sample to compare the effect of bank categories on the regression results. The direction of the directional RRR reduction policy and the sign direction of the multiplication term of the leverage ratio indicate that the regression results of large banks, joint-stock banks, and city commercial banks are consistent with the regression results of the full sample of the benchmark model. Moreover, all have statistical significance. This result shows that regardless of the type of bank, the targeted RRR reduction policy will significantly increase the bank's risk-taking. The multiplication results of the targeted RRR reduction policy and the leverage ratio also show that the leverage ratio plays a risk mitigation role in the impact of the targeted RRR reduction policy on banks' risk-taking, indicating that leverage ratio regulation can reduce the risk-taking of commercial banks. Moreover, the regression coefficient between the targeted RRR reduction policy and bank risk taking has the largest coefficient in the sample of city commercial banks, indicating that city commercial banks responded most positively to the targeted RRR reduction policy. The regression results of the control variables in Table 7 are consistent with the previous benchmark regression results.

Table 7. Heterogeneity analysis based on bank type.

Variables	Master Samples		5 Large National Commercial Banks		8 Joint-Stock Banks		3 Urban Commercial Firms	
	OLS Fixed Effect		OLS Fixed Effect		OLS Fixed Effect		OLS Fixed Effect	
	Z	*Z(POST*LA)*	*Z*	*Z(POST*LA)*	*Z*	*Z(POST*LA)*	*Z*	*Z(POST*LA)*
POST	−0.089 ** (−2.203)	−0.194 *** (−3.421)	−0.076 ** (−2.270)	−0139 * (−1.937)	−0.074 ** (−2.219)	−0.216 ** (−2.255)	−0.185 ** (−2.529)	−0.869 *** (−3.619)
M2	−0.005 ** (−2.035)	−0.004 *** (−2.822)	−0.001 ** (−2.203)	−0.012 (−1.045)	−0.005 * (−1.677)	−0.001 (−0.193)	−0.006 (−0.389)	−0.017 (−1.334)
CAR	0.039 *** (5.366)	0.029 *** (3.854)	0.013 (1.283)	0.006 (0.580)	0.024 ** (2.183)	0.010 * (1.916)	0.045 * (1.703)	0.001 (0.002)
SHIBOR	0.032 * (1.720)	0.011 *** (2.586)	0.019 ** (1.981)	0.001 (0.052)	0.061 ** (2.245)	0.031 (1.091)	0.035 (0.639)	0.076 (1.432)
GDP	−0.020 (−1.605)	−0.009 (−0.733)	−0.040 ** (−2.008)	−0.021 (−0.951)	−0.006 (−0.238)	−0.004 (−0.278)	−0.046 (−1.323)	−0.005 (−0.159)
ROA	0.675 *** (4.927)	0.387 *** (5.454)	0.597 ** (2.083)	0.619 * (1.942)	0.786 *** (3.202)	0.270 *** (3.577)	0.204 * (1.851)	0.115 *** (3.147)
LR	0.029 *** (5.291)	0.015 ** (2.245)	0.016 ** (2.283)	0.010 ** (2.290)	0.035 *** (4.597)	0.013 (1.163)	0.046 *** (3.119)	0.004 (0.244)
SIZE	0.106 ** (2.214)	0.031 *** (2.614)	0.060 (1.432)	0.103 * (1.663)	0.010 ** (1.971)	0.094 * (1.921)	0.340 ** (2.533)	0.167 ** (2.440)
*POST*LA*		0.004 *** (3.363)		0.013 * (1.899)		0.020 ** (2.428)		0.006 *** (3.571)
Constant	6.934 *** (4.475)	4.596 *** (2.789)	6.153 *** (4.352)	3.922 ** (2.178)	3.718 ** (2.272)	3.975 *** (2.804)	5.503 *** (3.190)	8.639 ** (2.403)
N	192	192	60	60	96	96	36	36
R^2	0.749	0.768	0.917	0.924	0.817	0.835	0.723	0.838
Adj-R^2	0.706	0.727	0.891	0.897	0.774	0.793	0.577	0.712

* Indicated significance at the 10% level. ** Indicated significance at the 5% level. *** Indicated significance at the 1% level.

5.3. Mechanism Analysis

Formula (1) shows the calculation method of the *Z* value, which consists of two parts, namely *raroa* and *rare*, representing the income level of banks and the equity level of banks. A regression model is further established to verify the mechanism of targeted RRR reduction policy affecting the risk taking of commercial banks. The model is as follows:

$$raroa_{i,t} = \beta_0 + \beta_1 POST_{i,t} + \beta_j Controls_{i,t} + \delta_i + \delta_t + \varepsilon_{i,t} \quad (4)$$

$$raea_{i,t} = \beta_0 + \beta_1 POST_{i,t} + \beta_j Controls_{i,t} + \delta_i + \delta_t + \varepsilon_{i,t} \quad (5)$$

Columns 1 and 2 in Table 8 show the regression results of banks' return level *raroa* and targeted RRR reduction policy, whereas columns 3 and 4 show the regression results of banks' equity level rare and targeted RRR reduction policy. *POST* is negatively correlated with banks' return level *raroa*, but not significantly. Directional drop *POST* standard policy variables are negatively related to the level of the rights and interests of bank rare, and there is a negative correlation at the 1% significance level. Moreover, the directional quasi policy changes the bank leverage levels to affect the bank risk bearing level, that is, the prospective policy is directed down by changing the degree of leverage of commercial banks to increase banks' risk exposure levels.

Table 8. Mechanism test.

Variables	OLS	Fixed Effect	OLS	Fixed Effect
	Raroa	***Raroa***	***Raea***	***Raea***
POST	−0.006	−0.011	−0.064 ***	−0.104 ***
	(−0.426)	(−0.093)	(−3.657)	(−3.960)
M2	−0.009	−0.001	−0.008	−0.006
	(−0.772)	(−0.514)	(−0.643)	(−0.981)
CAR	0.005	0.004	0.049 **	0.045 ***
	(0.101)	(0.216)	(2.112)	(5.457)
SHIBOR	0.037 **	0.001	0.085 **	0.035
	(2.082)	(0.267)	(2.228)	(1.654)
GDP	−0.012	−0.003	−0.018	−0.022
	(−1.145)	(−1.168)	(−1.151)	(−1.533)
ROA	0.788	0.753 ***	0.107	0.153 ***
	(1.103)	(5.511)	(0.810)	(3.171)
LR	0.009	0.011	0.016	0.032 ***
	(0.562)	(0.634)	(1.129)	(5.102)
SIZE	0.007	0.022 **	0.015	0.114 **
	(0.223)	(1.994)	(0.527)	(2.086)
Constant	1.471 **	1.793 ***	3.321 **	7.114 ***
	(2.060)	(4.965)	(2.433)	(3.991)
N	192	192	192	192
R^2	0.203	0.788	0.199	0.766
Adj-R^2	0.161	0.786	0.156	0.724

** Indicated significance at the 5% level. *** Indicated significance at the 1% level.

6. Discussion

Foreign research on the risk assessment of commercial banks is earlier and the results are richer. However, due to different national conditions and research focuses, research methods and concerns vary. Hugonnier et al. studied the credit risk of commercial banks from the perspective of the debtor or commercial bank counterparty's ability to perform repayment [10]. Zhang et al. provided a comprehensive assessment of the liquidity risk of

Islamic banks [15]. Song et al. used a duration gap model and a two-step model to measure the interest rate risk of different banks [16]. Buch used the duration model to estimate the duration of 12 commercial banks and gap, and the results show that commercial banks have higher interest rate risk [21].

In the current research on the risk assessment of commercial banks, there are many risk assessments for a certain type of risk but less for the overall risk assessment, more risk assessment for large banks or rural financial institutions, and less risk assessment for city commercial banks.

Our research is based on the comprehensive consideration of the actual situation of domestic commercial banks and the referencing of existing literature. This study adopts the *Z-Score* as a proxy variable of the bank's risk-taking level and adopts the *NPL* variable of the non-performing loan ratio for a robustness test. This study uses multiple regression analysis and a fixed-effects model to analyze the causal impact of targeted RRR reduction on the risk taking of Chinese commercial banks. In addition, it also uses the mediation effect model to analyze the mechanism.

However, the sample in this study does not cover unlisted banks, and the changes in credit scale and credit investment of commercial banks under the targeted RRR reduction policy are not detailed. Therefore, future research needs to expand the bank sample and further examine the changes in bank credit scale and credit investment. Therefore, possible further research directions should focus on the impact of bank risk changes on the real economy. Furthermore, future studies should be based on the findings of validation and improvement of the method proposed in this study.

7. Conclusions

This study employs a multiple regression analysis estimation to investigate the causal impact of targeted RRR reduction on the risk taking of Chinese commercial banks. The result shows that targeted RRR cuts have significantly increased the level of risk taking of commercial banks. The findings are particularly pronounced in urban commercial banks and rural commercial banks. However, the leverage ratio regulation has a restraining effect on the level of bank risk-taking. Mechanism analysis from the perspective of bank liabilities and assets found that banks with low leverage had little change in risk taking under the influence of targeted RRR reduction policy, indicating that leverage ratio regulation can prevent risks.

The theoretical significance of this study is to examine the changes in banks' risk-taking behavior after the implementation of the targeted RRR reduction policy and examine the relationship and influencing factors between bank leverage ratio supervision and risk mitigation. The findings of this study provide practical evidence for regulators to implement differentiated regulatory policies. Therefore, this study also analyzes bank risks under different capital adequacy regulatory pressures, and commitment behavior was studied. In addition, this research studies the impact of asset size, liquidity level, and profitability on bank risk-taking behavior, thereby confirming the policy continuity of the new regulatory tools proposed by Basel III, which is another innovation and research contribution of this study.

The limitation of this paper is that the sample size does not cover unlisted banks, and the changes in credit scale and credit investment of commercial banks under the targeted RRR reduction policy are not detailed. Therefore, future research needs to expand the bank sample and further examine the changes in bank credit scale and credit investment.

On the basis of the findings of this study, the following policy recommendations are given.

First, when the monetary policy of targeted RRR cuts affects bank credit and the real economy, and then achieves the expected monetary policy goals, the bank's liquidity asset ratio, CAR, and total asset return should be considered. The implementation may have a greater impact on the business activities of small and medium-sized banks, especially banks with poor capital adequacy.

Second, banking regulators should treat banks with different capital statuses differently. While supervising banks that meet capital regulation standards, they should pay more attention and monitor banks that fail to meet capital regulation standards. Through on-site guidance, differentiated regulatory policies, and flexibility, regulators can help these banks improve their capital levels and improve their operating performance.

Third, the implementation of targeted RRR reduction policies and incentives for bank risk supervision should be strengthened. When the targeted RRR reduction policy is further launched and implemented in the future, banking regulators need to support corresponding regulatory incentives, strengthen coordination and communication, and avoid policy conflicts when both parties achieve their respective policy goals, thereby reducing the probability of policy inefficiency and improving social welfare.

Author Contributions: L.X.'s contribution included Conceptualization, Data curation, Formal analysis, Software and Writing-original draft, while J.F.'s contribution included Validation, Methodology and Writing-review & editing. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Data Availability Statement: Data is contained within the article.

Conflicts of Interest: The authors declare no conflict of interest.

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