

The Influence of Capital Adequacy Ratio of Commercial Banks on Financing Efficiency

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Abstract

This paper takes financing efficiency as the starting point to empirically study the impact of capital adequacy ratio of commercial banks on financing efficiency. This paper takes 15 commercial banks from 2018 to 2020 as a research sample, and finds that capital adequacy ratio significantly positively affects financing efficiency. The improvement of capital adequacy ratio can effectively improve financing efficiency from bank performance, risk assets and other risks. Finally, this paper puts forward relevant opinions on the research conclusions, and provides solutions for banks to improve financing efficiency.

Keywords

Commercial banks; Capital adequacy ratio; Financing efficiency.

1. INTRODUCTION

As financial intermediaries, banks play an increasingly important role in the modern economic system. However, there are also hidden dangers in some of the inherent vulnerabilities of commercial banks, because all governments have an attitude towards strengthening supervision of commercial banks, and the China Banking Regulatory Commission has also made strict regulations on the primary core adequacy ratio, primary core capital ratio and capital adequacy ratio of commercial banks. In previous studies, the impact of capital adequacy on bank efficiency was generally studied through financial indicator analysis, and Rime and Christophee's research showed that changes in capital adequacy ratio can cause changes in bank profitability, risk level and asset size, and this effect is mutual. At the same time, some scholars believe that the regulatory requirements for setting capital adequacy ratios can affect the credit behavior of banks, which in turn will affect the efficiency of banks. With the continuous development of efficiency theory, foreign scholars' research on the impact of capital adequacy ratio on bank efficiency has also been continuously improved, but the results of the research are quite different. Fonseca and Gonzalez argue Sufficient capital can effectively promote the improvement of bank operating efficiency, so commercial banks have a high preference for holding capital. However, the impact of capital adequacy ratio on the financing efficiency of listed banks has not been deepened, and this paper specifically analyzes how the capital adequacy ratio of commercial banks affects the financing efficiency from the perspective of financing efficiency. It can provide reasonable suggestions for listed commercial banks to improve their financing efficiency, and provide a reference basis for more commercial banks to make decisions.

2. THEORETICAL ANALYSIS AND RESEARCH HYPOTHESES

The measurement of financing efficiency mainly comes from financing costs and financing benefits. In terms of financing costs, the impact on banks mainly lies in capital costs and risks. For financing income, it mainly lies in the scale of financing and the effectiveness of capital utilization. This article examines the impact of capital adequacy ratio on financing from both risk and performance perspectives:

First of all, improving the capital adequacy ratio can play a positive role in the company's financing cost from the perspective of risk, from the perspective of investors, the lower the risk, the more investors will be inclined to invest, and have a broader investor base than irresponsible companies. Based on the dynamic characteristics of banks' continuous operations, Zhang Zongyi studied the internal mechanism of capital adequacy ratio supervision affecting the risk behavior of commercial banks, and concluded that there is a significant negative correlation between capital changes and risk changes of commercial banks in China, and improving capital adequacy ratio can affect banks' credit risk appetite and reduce bank risk behavior[1] .

Li Ximei proposed in the relationship between the capital adequacy ratio of commercial banks and bank performance that the improvement of the core subsidiary capital adequacy ratio is conducive to improving the performance of commercial banks, and the improvement of bank performance not only means that value can be created, because they increase shareholder wealth, this type of value creation can also be achieved by increasing cash flow [2]. Tan Zhengxun used the truncated regression method to analyze the impact of capital adequacy ratio on efficiency, and the results showed that there was an inverted U-shaped relationship between capital adequacy ratio and bank efficiency. When capital adequacy ratios are low, bank efficiency increases as capital adequacy ratios increase [3]. Based on the theoretical assumption of the relationship between capital adequacy ratio and profitability of commercial banks, Zhou Jiaying conducted a regression test on the capital adequacy ratio and asset return rate of 16 commercial banks, and the results showed that the capital adequacy ratio of commercial banks played a positive and significant role in improving profitability.

Based on the above analysis, it can be seen that the impact of capital adequacy ratio on financing efficiency may be positive, so this paper proposes the following assumptions:

H1: Capital adequacy ratio is positively correlated with corporate financing efficiency

3. RESEARCH DESIGN

3.1. Variable selection

This paper aims to study the impact of capital adequacy ratio of commercial banks on financing efficiency, and on the basis of combing the existing academic literature, the following indicators are constructed: taking financing efficiency as the explanatory variable, this paper uses Li Wenxin's achievements in the research on financing efficiency to take the input-output ratio as the main indicator to measure financing efficiency [4], and makes certain adjustments on this basis, using return on equity (ROE). Represents return on investment, weighted average cost of capital (WACC) represents cost of capital ratio, and financing efficiency F_e represents $ROE/WACC$; The explanatory variable is the capital adequacy ratio, and the other control variables are defined as follows:

(1) Enterprise size. The scale of the enterprise is specifically manifested in the asset status, the size of the enterprise will affect the judgment of investors, investors will prefer large-scale enterprises, generally speaking, large-scale enterprises are easier to finance. This paper takes the natural logarithm of enterprise assets as the size of the enterprise.

Capital structure. Academics believe that the capital structure of an enterprise affects the equity financing ratio and refinancing ability, and the debt ratio is the core indicator of the capital structure, and when the enterprise integrates funds with less capital, the higher the financing efficiency. This article considers the gearing ratio as the capital structure (Str).

(2) Equity concentration. Modern enterprises have double agency costs, and the checks and balances of shareholders affect the future development of enterprises. On the one hand, controlling shareholders often conduct related party transactions and transfer assets for their own interests [5], which hinders the company's business decision-making and financing process. On the other hand, the existence of controlling shareholders will reduce free rider behavior, which is conducive to shortening decision-making time and improving financing efficiency. This article takes the shareholding ratio of the top ten shareholders of an enterprise as the equity concentration (Owncon) [6].

(3) Growth trends. The financing efficiency of enterprises at different stages of growth is necessarily different, a start-up has more room for growth, short-term development benefits as the goal, rarely consider other benefits [7]. For an enterprise with a stable market share, more attention is paid to social benefits and other aspects. This paper uses Rgta and Sustainable Growth as growth indicators.

Table 1. Variable definitions

The variable type	The variable name	symbol	Variable description
The variable being explained	Financing efficiency	Fe	Return on equity/weighted average cost of capital
Explanatory variables	Capital adequacy ratio	R	Model score
Control variables	Enterprise size	Size	The natural logarithmic value of the total assets of the enterprise
	Capital structure	St	The ratio of a company's liabilities to total assets
	Equity concentration	Omncon	The total shareholding ratio of the top ten shareholders of the enterprise
	Ability to operate	Rgta	The average growth rate of a business's total assets
	Sustainable growth rate	Sustainable	Return on equity multiplied by retained yield

3.2. Model building

Based on the above variable design, this paper constructs the following OLS regression model:

$$Fe = \alpha + \beta R + \lambda_i \text{Controls}_i + \zeta \quad (1)$$

R stands for capital adequacy ratio, and the others are set as control variables. Model 1 estimates all the correlation coefficients through OLS after adding the control variables, and shows whether the capital adequacy ratio has an impact on financing efficiency according to the significance analysis.

3.3. Sample selection and data source

In this paper, taking the three years from 2018 to 2020 as the research period, the listed banks currently listed on the Shanghai Stock Exchange and the Shenzhen Stock Exchange were

selected as samples, and the data samples were obtained by combining the research methods and capital market practices of the existing literature. Considering that the study will be affected by the outliers of the sample data, this paper treats the data as follows: (1) Exclude local banks. (2) Excluding banks listed in 2016, including only companies listed before December 31, 2015. (3) Exclude banks with incomplete data and do not disclose relevant information.

The research data comes from the CSMAR series database provided by Guotai An Information Technology Co., Ltd., in order to ensure the accuracy of the data, the data sampling survey of some enterprises was checked with the flush database and the public data of the stock exchange, and finally we obtained 15 banks as research samples for empirical analysis. The software used in this empirical analysis is StataMP14.0.

4. ANALYSIS OF EMPIRICAL RESULTS

4.1. Regression results

In this paper, under the premise of controlling the other five variables, the OLS model is used to estimate the model, and the regression coefficients of each variable are shown in the figure below.

Table 2. Regression results

Variable	Coefficient	Std. Error	Prob.
R	0.0107***	0.0065	0.009
Size	0.0239**	0.0114	0.0703
St	-3.3392***	0.8171	0.0035
Owncon	-0.06	0.0345	0.1202
Rgta	0.5318***	0.2508	0.0068
Sustianable	1.8024*	0.9658	0.099
C	2.5129**	0.7775	0.012

Note: *, **, **** indicate significant at the level of 10%, 5%, and 1%, respectively.

As can be seen from the above table, the regression coefficient sign of the capital adequacy ratio R is positive, and the regression coefficient of R is significant at the 95% confidence level, which indicates that the higher the capital adequacy ratio, the higher the financing efficiency, assuming that H1 is proven.

In addition, among the control variables, it is worth noting that the significant negative impact of capital structure on financing efficiency indicates that financing efficiency is lower in banks with higher liabilities, and because higher liabilities may lead to lower core capital, and affect the trust of investors, resulting in lower financing efficiency. This is in line with reality.

4.2. Robustness test

In order to test the reliability of the above conclusions, this paper conducts the following stability tests: First, when defining financing efficiency, ROE is replaced by ROA. Second, the model incorporates other factors that may affect financing efficiency, such as cash ratios. The results show that the conclusions of this paper remain unchanged.

Table 3. Robustness test

Interpret variables	Coef.	Interpret variables	Coef.
R(ROA/WACC)	0.0120***	R	0.0122***
Size	0.0180**	Size	0.01600**
Str	-3.5000***	Levb	-3.0000***
Owncon	-0.0500	Owncon	-0.0500
Rgta	0.5501***	Sustainable	0.4800***
Sustianable	1.8004*	Ar	1.8000*
cons	2.381***	cons	2.381***
		-	
		Cashratio	0.222*

Note: *, **, **** indicate significant at the level of 10%, 5%, and 1%, respectively.

5. CONCLUSIONS AND SUGGESTIONS

The empirical research in this paper concludes that the financing efficiency of enterprises is obviously affected by the capital adequacy ratio, and there is a positive correlation between the two.

From the results of this paper, the following enlightenment can be obtained: (1) The improvement of the capital adequacy ratio of commercial banks is conducive to improving financing efficiency. At present, the capital adequacy ratio of large commercial banks is relatively high, but for other commercial banks, the core capital is not sufficient. (2) The improvement of capital adequacy ratio is the embodiment of the bank's hard power, the higher the hard power of a bank, the more rational investors recognize the company, and the more investor trust helps to improve financing efficiency. (3) To improve the capital adequacy ratio of banks, in addition to increasing their own capital, they must also reduce weighted risk assets, that is, reduce the denominator item. Risk-weighted assets are determined according to the corresponding rating and added up. To reduce risk-weighted assets, it is necessary to carry out more businesses with lower risk weights, optimize business structure, and speed up the disposal and divestment of non-performing assets. In view of the development of China's banking industry, the development of intermediate risk business in China's banking industry is in the initial stage of exploration, and dealing with non-performing assets is the top priority at this stage.

The direction of future research optimization in this paper: The sample data obtained in the study may be small, and there may be deviations in conclusions, which are not deeply examined in this paper. In future studies, the sample data will be expanded.

REFERENCES

- [1] Zhang Zongyi, Wu Jun, Liu Qiongfang. The impact of capital adequacy regulation on banks' risk behavior [J]. Systems Engineering Theory and Practice, 2008(08):183-189.
- [2] Li Ximei. Research on the relationship between capital structure and performance of China's listed commercial banks under the principle of "three genders" [J]. Management World, 2011(02): 173-174+177.
- [3] Tan Zhengxun, Yu Mingxuan Non-performing loans, capital adequacy ratio and commercial bank efficiency [J]. Financial Forum, 2016, 21(10): 40-50.

- [4] Li Wenxin, Zhang Dan, Zhou Bencai Research on the Influencing Factors of Capital Market Financing Efficiency in Strategic Emerging Industries -- Empirical Data from A-share Market [J]. Business Accounting, 2015(23): 28-29.
- [5] Zhong Fusheng Research on the relationship between related party transactions and enterprise value [D] Shenyang University of Technology, 2008.
- [6] Cheng Qiongwen, Cao Yawen Equity structure, property rights nature and enterprise performance of resource-based listed enterprises [J]. Finance and Accounting Bulletin, 2019(21): 7-10+24.
- [7] He Haiying. Research on the measurement and influencing factors of equity financing efficiency of cultural and creative listed enterprises [D] Chongqing Technology and Business University, 2021.