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The Reflection and Recommendations for Banking Capital Adequacy

Regulation

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Abstract: On financial system, Bank is the most important financial intermediaries in economy. It has played a central role to the entire financial system. The bank's capital also has played an important role on the bank risk management and governance. This study issued the function of the financial capital adequacy ratio on Bank supervision system. The article establish the multiple regression model analysis the relationship between various bank indicators and capital adequacy ratio, point out too high of capital adequacy ratio is negative to the bank's operation and regulation. Through empirical study, we explored the effectiveness of the regulatory capital adequacy ratio.

Key words: capital adequacy ratio, capital structure, bank capital supervision, risk management

1. INTRODUCTION

Capital adequacy ratio guaranteed the safety and stabilization operation of financial system. It is also the important tool of financial supervision. Commercial bank will face unrestricted expansion without capital adequacy constrains. In view of the bank risk's hysteresis quality , concealment and of secular, the unrestricted expansion will bring huge risks, even bring bankruptcy to bank. Unqualified capital index, high liquidity debt ratio , high bad loan ratio and weak adaptive ability can induce liquidity risk and systemic risk on the whole banking system.

The traditional theory of bank supervision emphasis the capital control's positive effects. On this opinion ,a certain proportion of capital or net worth prepare capital can buffer the negative impact and the damage of operation. In fact, some bankruptcy case showed that their capital adequacy ratio has far more than 8%- the supervision level. So the theory of modern some ideas are exactly the opposite, question to traditional theory about capital controls can reduce risk behavior of the argument, believe that even if the regulators also can't again smart design ideal reasonable level of capital controls, hard to avoid is distorted market participants behavior. Too much emphasis on capital adequacy ratio regulation may even increase bank risk behavior.

2. REFLECTION OF BANK CAPITAL SUPERVISION THEORY

The researchers have different theory to explain to capital regulation plan. Some bank supervision theory special emphasis capital's positive effect. In fact, even though a bank may have capital adequacy ratio above the minimum levels. It is no guarantee that the bank is safe. Some theory point capital requirements limit the risk - benefit the border. This may lead to increase probability of bank failure. In order to compensate the losses ,it would cause the choice of riskier assets.

2.1 The Traditional Bank Capital Supervision Theory

Jensen and Meckling (1976) first offered agency theory. The theory is one of the most population bank capital supervision theory. It says that the motivation of supervision is want to protect benefit of customer and bank payment system. It has become the root of contracting cost theory. they integrate elements from agency, the theory of property rights and the theory of finance develop of the firm, they argue that agency cost are an

unavoidable result of the agency relationship. Contractual relations are the essence of the firm, not only with employees, but also with suppliers, customers, creditors, and so on.

There are two kinds of capital management theoretical basis. One is to put the capital ratios as a buffer, when a bank goes bankrupt, the more of the bank's capital, the less of government spending. The other is relevant with incentive, owners of the bank risk the more capital, it is the better they are not willing to take the risk of not appropriate. So to make banks stable operation, that is about to make banks have enough capital to stimulate it according to risk aversion's way. The current capital adequacy ratio management method is by making certain capital adequacy standards to restrain the bank.

However, on the basis of the commission and agency theory, the agency problems become more and more serious due to the different goals between owner and manager and the information dissymmetry. Since 1970's, the agency theory has become a crucial issue of the capital structure theory.

2.2 The Basel Accord

The Basel Committee published its first "Basel Capital Accord", in 1988. It discussed and researched international banking supervision by the Group of Ten. The view from the bank supervision agreement will turn to bank in the body and establishment capital requirements to the level of risk assets hook, the quantity and quality of the unity of the commercial bank capital management. The Basel capital accord expanded the range of sufficient capital constraints, the banks are facing credit risk, market risk and operational risk are put forward the corresponding requirements of capital allocation.

The committee concerns itself with ensuring the effective supervision of banks on a global basis by setting and promoting international standards. Its principal interest has been in the area of capital adequacy ratios. In 1988 the committee issued a statement of principles dealing with capital adequacy ratios. This statement is known as the "Basle Capital Accord". It contains a recommended approach for calculating capital adequacy ratios and recommended minimum capital adequacy ratios for international banks. The Accord was developed in order to improve capital adequacy ratios (which were considered to be too low in some banks) and to help standardise international regulatory practice.

2.3 The Reflection Of Traditional Bank Capital Supervision Theory

Joseph Stiglitz (2000) points out that capital controls may even increase risk behavior. The reason is controlled capital weakens the banks' ability to make a profit, so that the bank in order to realize the set target profit margin, save a part of the loss, will be adopted some of the high risk project. In certain conditions to risk as a benchmark capital control method certainly will change long used by bank loans for examination and approval system, credit rationing in failure, which will bring about a negative impact on the overall economy. In addition, through the bank to raise the funds required for the enterprise and turned to look securities market, this will weaken the bank financing status.

Use mean-variance model analysis how the raise of capital adequacy ratio impact on banks. Assume bank behavior is risk aversion. The utility is wealth of continuous strictly concave function. That is the biggest wealth expected the bank said the utility for EU_{t+1} . The final of the wealth of the mean and variance said for N, M, r, e and C .

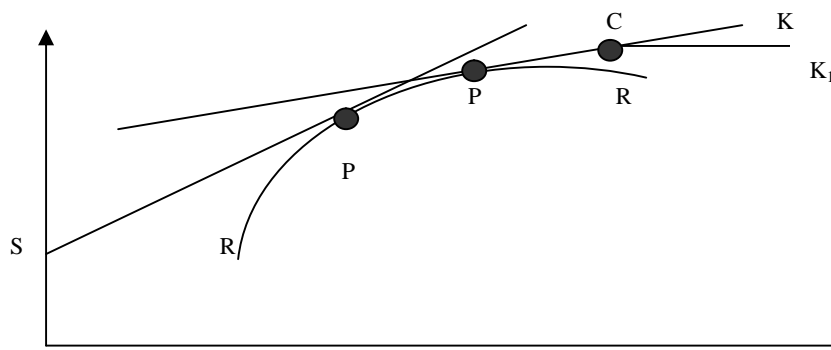
$$\mu_{t+1} = \mu_t + N \cdot M \cdot r \cdot e, \quad C \cdot \dots$$

$$\sigma_{t+1} = \sigma_t + N \cdot M \cdot r \cdot e, \quad C \cdot \dots$$

N : bank lending M : Treasury Bills r : prime lending rate e : Treasury Bill Rate
 e : Monitoring loans C : bankruptcy cost μ_t : The bank's initial wealth

Assume that the bank all of its net assets used for loans and loans and the monitoring spending. Through effective policy choice, the bank can get a maximum average "effective" loan set, in the picture the RR said. When the bank to move right along the RR curve, the requirements of the loan interest rates rise, but the loan monitoring spending down. The requirement of capital adequacy ratio has limited the fixed assets of the

foundation bank can release of loans. But the effect of capital adequacy requirements are not confined to loan level. If the bank willing to take on more risk, it may take such a way: raise interest rates, to higher risk of loan portfolios, and reduce investment in monitoring. Banks from SPP 'K' K_1 moved to the SPR. The increase of capital adequacy requirements may be more risk behavior.



But through this kind of capital adequacy ratio of management way, bank actual neither provide extra buffer, also did not improve incentive. Because when a country is facing a financial crisis, the private sector will not offer additional equity capital to make bank capital adequacy ratio to the standard, but credit supply contraction of the social cost is high, so the government will have to direct bank capital adequacy standards to meet the capital injection, this kind of crisis for the government to provide natural cannot injection of additional protection. On the other hand, the government directly capital injection to meet the requirement of capital requirements for Banks the incentive is limited, they in the bank when the risk of bankruptcy for better than no capital injection and may even promote small when they risk higher activities.

3. RESEACH MODEL

Capital structure and the capital adequacy ratio has close relationship between, there have been many scholars in this study the structure of the capital adequacy ratio and influencing factors. Alan J.M arcus(1983) analysis the impact of bank capital structure of the various factors on regression analysis according to market value calculation of American bank capital structure change trend from between 1960 and 1978, , MarkJ. Flannery and KasturiP. Rangan think the return on assets and capital assets structure is significant positive correlation, bank scale and equity ratios are related.

WangXiaoFeng(2003)established sufficient capital evaluation index system, this index system including three parts: capital structure, and the quality of the assets and profitability, and he thinks the capital structure core capital, affiliated capital and capital ratios are positively related; The quality of the assets of the bad assets ratio and risk assets amount and capital adequacy ratio is inversely related; Profitability margins and tax rate of assets and capital ratios are positively related and negative correlation. WangPeng, XuPei zouping (2005) combined the actual situation of China and MarkJ. Flannery and KasturiP. Rangan study concluded, draw the conclusion: the fixed assets ratio and fixed asset growth index is also the factors influence the capital adequacy ratio.

3.1 Factors Explaining

According to the above theory and research, this article choice four variables to explain capital adequacy ratio: bad loan ratio, return on assets, deposit-loan ratio, total assets growth ratio:

- Capital adequacy ratio

Capital adequacy ratio is a measure of bank assets and capital to risk prevention is an important index of sufficient degree. Refers to the holders of the banking financial institutions with the provisions of the regulatory authority of capital and the ratio of risk-weighted assets,

- Bad Loan Ratio

Bad loans refers to non-performing loans accounted for the proportion of the total outstanding balance of the loans on financial institution. bad loans is one of the important indexes for security of credit assets evaluation in financial institutions. Bad loans is high, reflect the risk of financial institutions take back the loan is big; Bad loans is low, explain the risk of financial institutions take back the loan is small. So the lower of the bad loan ratio, the quality of assets will be more better .

- Return On Assets

It is an indicator of how profitable a bank relative to its total assets. ROA gives an idea as how efficient management is at using its assets to generate earning. The assets of the bank comprised of both debt and equity. Both of these types of financing are used to fund the operations of the bank. The higher the ROA number, the better effectively of operation. Because the bank is earning more money on less investments.

- Deposit-loan ratio

Bank loans and customer deposit ratio. The higher the Bank loans and customer deposit rate, reflects the higher the more aggressive on the operation way, Low ratio reflects business more conservative.

Basically, the ratio reflects a bank' s loan space. The higher the ratio, the more on behalf of the company's customer deposit lent out, although the opportunity to increase profit, but also increase the ratio of bad loans. So, and the higher the ratio of the bank, and the higher the risk level.

- Total asset growth rate

The growth rate of fixed assets is fixed assets during a given period reflects the scale of business growth targets. It reflects the rate of expansion of the scale of corporate capital, is a measure of the total size of changes in business conditions and growth of the important indicators.

Assets of the enterprise to obtain revenue for the resources, but also corporate debt security. Asset growth is an important aspect of enterprise development. The higher growth rate of total assets, that asset management companies a period of time the faster expansion of the scale, the greater the demand for capital.

3.2 Empirical Framework

According to the above theory and research, we put forward the following hypothesis:

H1: There are negative correlation between capital adequacy ratio and bad loan ratio.

H2: There are positive correlation between capital adequacy ratio and return on assets

H3: There are negative correlation between capital adequacy ratio and deposit-loan ratio

H4: There are negative correlation between capital adequacy ratio and total asset growth rate

The total assets of the natural logarithm take measure of bank scale. Total assets of growth rate of commercial Banks declare behalf of growth, the growing stronger enterprise itself liabilities demand is higher, and the reaction in the capital adequacy between should exist on negative correlation, this article with the (total assets-last year in total assets) / year calculating total assets total asset growth rate; The return on assets (net profit/total assets) on behalf of commercial Banks' profitability, the return on assets improve, total assets must be in the commercial bank profits that increase, which can help improve the commercial bank capital adequacy, both between should exist positive relationship; Deposit-loan ratio (total loans/deposit) reflect the bank balance sheets, also shows bank pace of expansion, the bank savings and the higher than, the more risk-weighted assets, and the capital adequacy ratio shall be negative correlation; Bad loans is bad loans in the total loans the proportion of, and it should be between capital adequacy ratio is inversely related.

3.3 Model Set

This article establish the interpretation of the capital adequacy ratio model. It use the capital adequacy ratios as the explained variable (Y), select the following indicators as the explanatory variables :bad loan ratio (X_1), the return on assets (X_2), deposit-loan ratio (X_3) and total asset growth rate (X_4).

According to the above analysis, this paper analyzes the influence of the capital ratios. The multiple

regression model is:

$$Y_i = \beta_0 + \beta_1 \ln X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \mu_i$$

4. DATA AND POSITIVE ANALYSIS

4.1 Source Of Data

This paper studies the sample data in 1998-2011 years of commercial bank on China. The main cross-sectional data (the data for synthetic data, also known as the timing and section mixed data), include the listed banks: the industrial and commercial bank of China, China construction bank, bank of China, bank of communications, huaxia bank, minsheng bank, shenzhen development bank, China merchants bank, Shanghai pudong development bank, Agricultural bank of China and guangdong development bank. Data is collected from the bank's annual report and the annual financial yearbook. The analysis made by SPSS software. Because capital adequacy ratio index during the sample calculating methods in 2004 by the banking regulatory commission after a revised, this may influence on analysis result.

4.2 The empirical result

Table Correlation model regression results

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Bad Loan Ratio	0.196	0.134	0.171	1.457	0.158
ROA	13.818	2.310	0.923	5.981	0.000
Deposit-loan ratio	0.127	0.081	0.182	1.568	0.130
total asset growth rate	0.061	0.020	0.382	3.075	0.005

Bad loans analysis: In theory, bad loans should be and capital adequacy ratio is inversely related. But from the results of regression model watch, but on the contrary. The main reason is: over the years, our country is joint-stock Banks take own bad loans of cleaning, have basic realize the balance of bad loans and than "double down". But the bank in dealing with bad loans by the method is mainly the occurring of nuclear away, that is, from a high proportion of the profits out for bad debts cancel after verification, this will cut capital adequacy ratio.

The return on assets analysis: The return on assets and capital adequacy ratio in the model analysis is significant positive relationship between number. The return on assets reflects the profitability of level, so the bank primary task is to pay attention to the return on assets, improve the return on assets, and achieve operational profit maximization goal. But the current joint stock commercial Banks in China because of the proportion of the intermediate services too small, management mode is still not mature, low efficiency, caused the return on assets the result of low, this makes improve with a lot of difficulty capital ratios.

Deposit-loan ratio analysis: Model fitting results show that deposit-loan ratio are coefficient, and it is not significant. Deposit-loan ratio have two-way capital adequacy ratio, the effects of the Banks' earnings from the standpoint of, deposit-loan ratio, the higher the better, because deposit is of interest to, the so-called capital cost, if a bank deposit many, loan seldom, it means that it cost is high, and less income, and the bank, profit ability is poor. Improve the deposit-loan ratio, the bank's earnings increase, further up the bank capital, improve the capital adequacy ratio. From the standpoint of bank resistance risk, deposit and loan ratio is unfavorable and exorbitant, because the bank also for the customers cash settlement and daily routine, in need of cash with have certain bank deposit reserve, such as deposit-loan ratio is too high, this part of the funds are less, will lead to the bank to pay the crisis, such as pay crisis spread and could cause financial crisis, the state of the economy of the region or great harm, central Banks to prevent bank excessive expansion, the current regulations of commercial Banks and the highest rate of 75%. From this perspective, the higher the proportion of bank deposit, the capital

adequacy ratio has negative effects. Model, the deposit-loan ratio coefficient is positive, the reason is: bank to loan quality control to strengthen, improve deposit-loan ratio and the growth of risk-weighted assets is not quick, this makes the deposit-loan ratio capital adequacy ratio advantageous one side show. This point and the total assets is consistent with the growth rate of the conclusion.

Total assets growth rate analysis: From the total assets to see growth rate, it and capital ratios are positively related. In recent years, the joint-stock Banks to increase their own strength, in the fierce competition position, began to develop business assets, making it the largest assets bank rapid growth. And the quality of the assets is rapidly improving. In contrast, the bank's capital growth speed is slightly better than the growth rate risk assets, and that has made our country commercial bank capital adequacy ratio increases.

5. DISCUSSION AND RECOMMENDATIONS

5.1 The Empirical Result Discussion

In the eyes of the supports of Basel that capital adequacy ratios are a measure of the amount of a bank's capital expressed as a percentage of its risk weighted credit exposures. In fact, even though a bank may have capital adequacy ratio above the minimum levels. It is no guarantee that the bank is safe.

Capital controls may even increase risk behavior. Because regulated capital weaken the Banks' ability to make a profit, so that the bank in order to realize the set goals, restore profits will be part of the loss, the high risk project. Some In certain conditions to risk as a benchmark capital control method certainly will change long used by bank loans, leading to the examination and approval system for credit rationing, this will have a negative impact on the overall economy. In addition, not through the bank to raise the funds required for the enterprise and turned to look securities market, this will weaken the bank financing status.

5.2 Recommendations

- To establish an effective capital constraints management system

Commercial Banks should establish economic capital concept and fully realize that any business produce risk will take up the capital resources. Short-term profit level and long-term profitability, quality, scale, profit and risk should be combined. A stable earnings system is better than a simply expand the scale of capital constraints management system.

- To adjust the business development structure

Low proportion of Middle business income currently restricted bank profitability improve. Commercial Banks should exchange the earnings of structure that the mainly the income of the earnings rely on interest income.

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