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Research on Industry Competition, Ownership Structure and Earnings Management: Empirical Analysis based on Listed Bank

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Abstract

Earnings management is an important strategic decision of banks, which will affect the future development direction of the bank. In this paper, author selects the data of listed banking industry in China from 2004 as the sample, and tries to find out the factors that affect the earnings management, especially the influence of the ownership structure and the competition on earnings management. Through the empirical analysis, we found that the proportion of the first largest shareholder and the degree of earnings management of the bank presents the "U" type nonlinear relationship; the proportion of the senior executives has negative impact on the earnings management. There is a positive correlation between the market share competition and earnings management in the banking industry. Overall, the rise in the absolute amount or relative amount of bank loans will increase the level of earnings management of banks. The degree of competition of state-owned banks is negatively related to earnings management, but non state-owned banks were positively correlated to earnings management.

Keywords: *Earnings management; ownership structure; industry competition; commercial bank*

1. Introduction

Since Healy (1985) put forward the model of earnings management, the follow-up scholars have opened a large number of empirical analyses of earnings management [1]. From the point of view of the whole study area, earnings management is a popular research topic, especially for earnings management of the bank, the bank is the entire financial system is very important in the link, and many international and national practice shows that, the economic growth and the economic crisis and has direct or indirect connection with the bank. For bank managers, earnings management has been put out in order to maximize their own interests to develop trading rules, and they adjust the financial indicators to manage the results of the bank's earnings management. Although in the short term, this way of governance to allow banks to obtain very good market effect in the short term, investors' trust, so that the owners, investors, the market for the bank's current situation and future is full of expectations[2]. But in the long term, bank operators once manipulation will not immediately notice the change, if this behavior with a "lag" nature cannot be scheduled, it will make the market think it is a fraud.

So far, most of the research literature on earnings management focus on listed companies, mainly observe how the operator use annual financial data and the distribution of profits to achieve earnings management. So that business owners' purposes including high salaries, greater reputation, and the enterprise get the better of external investment. Recently, according to the characteristics of the bank's high debt management, it is considered that the bank is more important than the general business; so many scholars have turned to the issue of earnings management. From the existing literature search elements, at present on bank earnings management

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research, mainly including two aspects, on the one hand is on bank earnings management motives and methods, such as Song Tao (2013) analyzed the motivation of earnings management of China's commercial banks[3], pointed out that the internal bank earnings management is insiders profit and contradiction in the agent model and profit balance, owner of earnings management were certain control; external reasons because of regulatory and regulatory issues, the impact of new accounting standards. Gui Hua (2014) analyzed China's 16 listed banks by using ROA and net profit balance index[4]. The results show that China's listed commercial bank earnings management rate is very low; the main reason is China's commercial bank has special status and independent bank supervision mode. Xu Chao (2011) described the commercial bank earnings management means and methods[5], that banks will generally choose the loan loss provision of earnings management, because of reduced loan loss preparation will be a corresponding increase in the current book profits. In addition, through the adjustment of loan transaction time, which mainly through changing the rate of non-performing loans and interest recovery, and control of revenue and expenditure confirmed, also is an effect way to achieve earnings management.

On the other hand, earnings management is analysis of the relationship between bank earnings management and other business indicators, such as Shengmin (2011) studied the relationship between China's listed commercial bank earnings management and market discipline[6], the results shows that banks do not increase the rate of capital adequacy for the purpose of earnings management, there is no profit smoothing earnings management through investment income, but with loan loss preparation of profit smoothing earnings management. Lin & Guohua (2013) test the relationship between the earnings management and the performance of commercial banks[7], by using the data of 16 listed commercial banks from 2007 to 2011.The result found that there exist significant negative correlation between commercial bank earnings management and economic performance. That is, commercial banks have the greater the degree of earnings management will show the worse in performance. Jiguang (2010) using the commercial bank loan loss preparation for earnings management[8]. The results show that the earnings and loan loss preparation is related, according to the data of 42 commercial banks from 2004 to 2007, he found banks have no management motivation or management needs, so the motivation of earnings management is weak, it can be explained from the ownership structure, ownership structure and its derivative of management incentive. Guohua (2012) using the data from Chinese commercial bank data, then make measurement of bad debts expense and avoid the earnings loss method to measure the earnings management of commercial banks[9], the result found that Chinese commercial banks exist obvious phenomenon of earnings management, the distribution situation of the distribution of earnings management and general industries and enterprises are not the same, the prospect theory can better explain the behaviors of earnings management of Chinese commercial banks.

Although the scholars research on bank earnings management motivation of earnings management [10-11], studied the relationship between earnings management and operation indicators, but has scholars not yet research on the factors that will impact on bank earnings management based on empirical analysis. This paper argues that commercial bank earnings management not only related to the internal management, but more depends on the two aspects of ownership structure and market competition, the centralization of equity stakes in banks, large shareholders can control and management of enterprise management right and operators, as agents [12]. In China, the dominance situation is more prominent, and governance mechanism is not perfect and "free rider" phenomenon, making listed banks are often controlled by insiders, increase the possibility of earnings management that ownership concentration degree is high, the surplus pipe control force may be more strong, so ownership structure may will affect the degree of earnings management[13]. In addition, a unit in the industry development strategy depends largely on the degree of competition in the industry, such as banking industry, it's products is similar but the has competition for customers, so market competition make management layer pays more attention to earnings management. Different from general manufacturing enterprises, bank itself is a kind of capital operation of enterprise, so relatively speaking; banks will focus on earnings regulation. If banks take into account their own in the market competition in the inferior position, such as small size, low market share, then it will pay more attention to earnings management. In this paper, we select the bank sample data, and analyze the factors that affect the earnings management of China's commercial banks, which has theoretical significance for the real problem of the bank to deal with earnings.

2. Model and Variable

This paper studies the factors of commercial banks operating earnings management, in particular, the impact of industry competition and ownership structure. At present there are more than 200 commercial banks, but only 16 listed joint-stock banks disclose their annual operating conditions, the rest of the bank is almost operational and financial indicators data not shown, so this article the sample focused on this 16 listed banks. After the period of this study sample selected from our equity division reform, namely 2005-2014, an annual basis. Various indicators of each bank's original data referred to herein are derived from the annual financial statements of the banks disclosed, taking into account existing economic and financial database to collate these data summary, this paper mainly calling Shenzhen GTA database (CSMAR) to get each variable data, and then finishing the calculation.

2.1. Dependent Variable Earnings Management

Current methods to assess and improve the ability of enterprise earnings management, many scholars and literature generally through the Jones model and modified Jones model calculation accrued earnings level is obtained by calculation of the sales control, cost control of real earnings management measure method. However, considering the current for commercial banks mainly in money as the main operating target, to bad debt for primary surplus operation object, therefore this paper for earnings management in the commercial banks of measurement to traditional to profit as the object of observation, but its ability of risk control as measure method to measure earnings management ability of commercial banks.

Bank risk mainly includes the provision for loan loss provision for non-performing loans and bank loans. However, with the absolute amount of measurement cannot reflect bank because of the risk and quantification of earnings management control. In this paper, we decided to choose the relative amount, including two indicators, one is risk adjusted loan losses to provision rate (RISK-LLP), the second is risk adjusted loans to RISK-LLR. Two indicators of the specific calculation formula are as follows:

2.1.1. Risk Adjusted Loan Loss Provision Rate (RISK-LLP): The indicator to RISK_LLP said, where LLP is the Bank of China Banking Regulatory Commission in accordance with the provisions of the loan loss reserve, in order to be able to effectively compare the LLP value of each year, this study uses the risk adjusted LLP, that is:

$$RISK\_LLP = \frac{LLP / LOAN_{t-1}}{\sigma_{LLP / LOAN_{t-1}}} \tag{1}$$

In formula (1), $LOAN_{t-1}$ is the last year of the total bank loans, $\sigma_{LLP / LOAN_{t-1}}$ is the bank standard deviation of $LLP / LOAN_{t-1}$ from the 2005-2014. (If cannot get this data, then take the remaining data as standard deviation).

2.1.2. Risk Adjusted Loan Provision for Doubtful Debts (RISK-LLR): This index as LLR means that the LLR is prepare the bank in accordance with the provisions of the CBRC list of bad loans, can be more effective in the LLR values, this study use risk adjusted LLR, namely:

$$RISK\_LLR = \frac{LLR / Assets_{t-1}}{\sigma_{LLR / Assets_{t-1}}} \tag{2}$$

In formula (2), $Asset_{t-1}$ is the last year of the total bank loans, $\sigma_{LLR / Assets_{t-1}}$ is the bank standard deviation of $LLR / LOAN_{t-1}$ from the 2005-2014.

2.2. Ownership Structure and Bank Competition

2.2.1. Ownership Structure: Relation between ownership and earnings management based on modern enterprise principal-agent theory, namely between enterprise owners and managers of enterprises exist principal-agent relationship, the manager is an agent that has information advantage; while the owner is the principal, has weak information, and clients have to bear the risk of the agent's actions. Therefore, business managers will form the enterprise earnings and business quality directly determines the size of the surplus, but for the agent of the decision by the earnings management is not, but all the control, so the degree of earnings management will with the ownership of enterprises especially the equity ratio of the actual controller. Therefore, this paper selects the first largest shareholder shareholding ratio (accounted for the proportion of shares of the total number of shares in circulation) as one of the indicators of a structure of ownership; the index reflects the influence for the enterprise decision-making power and management in enterprises, the largest shareholder. The formula for calculating the index is:

BO = maximum shareholder / total number of shares in circulation

In order to observe whether the proportion of the largest shareholder has a nonlinear effect on earnings management, this paper constructs the influence factor of the influence factor to add the square of the BO variable:

BO^2 = maximum shareholder / total number of shares in circulation

For the equity structure, although the top managers of the enterprise business relative to the shareholders, and not so much equity ratio, but as a result of the executives is actually a business operators, familiar with enterprise operation, even control the size of deviation of corporate earnings, so the equity ratio of the top management in a certain extent may also affect earnings management, senior executives in the shareholder may will decide the direction and quality of earnings management. So in the proportion of ownership, this paper joins the variable:

MO = Management Holdings / total circulation of shares

2.2.2. Banking Industry Competition: To decide on the management of an enterprise is not the reason why the nature of the enterprise product, how the customer needs, but the level of competition in the industry and their market share. For banks, there is little difference between the scope of business of each bank, but in our country, large and small banks between deposits and loans, revenue and profit difference more obvious, and in this context, banks of different size of earnings management will exist differences. Therefore, the theory of competition in the industry will become an important factor that affects earnings management. In this paper, we set up an index of the size of the enterprise itself in the industry:

$$com = x_i / x$$

Among them, x is the entire sample banking revenue and x_i for the banks operating income.

2.3. Control Variables

For the control variables, this paper mainly from the internal management can affect the enterprise earnings management variables, including:

1) The loan rate of change (CH_LOAN): the rate of change of the loan is mainly reflected in the degree of changes in the amount of bank loans, mainly in the size of the rate of change.

2) Total loans and total assets ratio(L_A): the ratio of total assets ratio of total assets to look at the solvency of the bank as a foreign risk, that is, the amount of loans under an asset.

3) Total loans to total deposits ratio($LOAN\_DEPO$): the ratio of total loans to total deposits is to measure the deposit interest rate differential, which can reflect the situation of corporate earnings in a large extent, when the ratio is large, the interest income will be higher, but bank risk will also be expanded, thus have an impact on earnings management.

After defining each variable, we established the model of panel data analysis.

Model one as:

$$RISK-LLP_{it} = \beta_1 BO_{it} + \beta_2 MO_{it} + \beta_3 BO_{it}^2 + \beta_4 COM_{it} + \beta_5 CH\_LOAN_{it}$$
$$+ \beta_6 L\_A_{it} + \beta_7 LOAN\_DEPO_{it} + C + \varepsilon_{it}$$

Model two as:

$$RISK-LLR_{it} = \beta_1 BO_{it} + \beta_2 MO_{it} + \beta_3 BO_{it}^2 + \beta_4 COM_{it} + \beta_5 CH\_LOAN_{it}$$
$$+ \beta_6 L\_A_{it} + \beta_7 LOAN\_DEPO_{it} + C + \varepsilon_{it}$$

Among them: $i = 1, \cdots, N$, $t = 1, \cdots, T$. In this paper, the static panel data model is used to estimate the influence of ownership structure and industry competition on earnings management. When using static panel data model, using the F test to determine selection is mixed regression model and the fixed effects or random effects model, using the Hausman test to judge the choice is fixed effect model and random effect model.

3. The Influence Factors of Earnings Management

3.1. The Overall Sample Estimate

Table 1 shows the ownership, the impact of competition on the banking industry, bank earnings management. Whether or when the dependent variable is risk_llp or risk_llr, or F test for the return value of mixed-effects model judge panel, the corresponding probability level of 0.000, indicating that the model refused to intercept the full equal of the original assumption that reject the null hypothesis using mixed regression Further, the choice of Hausman panel fixed effect model or random effects model test test value, corresponding to the probability level Prob> 0.05, it cannot reject the null hypothesis choose a random effects model, and therefore the two models were ultimately choose a random effects panel data.

From Table 1, when the dependent variable is risk_llp, the largest shareholder equity ratio variable coefficient is 4.687> 0, at 1% significance level of probability is statistically significant. Squared coefficient stake of the largest shareholder as -1.732 <0, are statistically significant at the 1% significance level of probability. Senior management staff shareholding and variable coefficient -1563.315 <0, at the 10% significance level of probability is statistically significant, indicating that the proportion of managerial ownership and increase earnings management capability will be weakened banks. For the competition in the industry, com variable coefficient is a measure of the scale of the banking industry as 10.990> 0, but in 10% without significant, indicating that the bank is ready to competitive risk-adjusted bad loans in the industry is not obvious. For the three control variables, the growth rate of bank loans and bank loan assets ratio coefficient is significantly negative, the loan deposit ratio is not statistically significant.

Then observe the dependent variable is the estimated results risk_llr time from each variable coefficients, the largest shareholder scale factor is positive, its squared term variable coefficient is negative, both statistically significant at 1% significance level of probability, this and As a result of the dependent variable when risk_llp unanimous. Executive shareholding ratio and variable factor is still negative, but statistically not significant. Competitive variable coefficient as 25.145> 0, at 1% significance level of probability is statistically significant, indicating that banks increase the size of the market to promote bank earnings management capabilities. From the point of view of control variables, in addition to the bank loan assets than variable at 5% probability level of statistical significance, the other two variables, coefficients are not significant.

Table 1. Ownership, Competition and Bank Earnings Management

dependent variable	risk_llp	risk_llr
bo	4.687***	2.933***
	(0.000)	(0.008)
bo2	-1.732***	-1.122***
	(0.000)	(0.007)
mo	-1563.315*	-40.988
	(0.069)	(0.121)
com	10.990	25.145***
	(0.213)	(0.002)
ch_loan	-4.213***	0.081
	(0.001)	(0.935)
l_a	-4.681*	5.087**
	(0.093)	(0.026)
loan_depo	-2.711	1.628
	(0.442)	(0.574)
_cons	16.807***	5.846
	(0.001)	(0.128)
F test	986.50	617.74
Prob	0.000	0.000
Hausman test	4.22	0.36
Pob	0.337	0.999
N	80	118

Note: *, **, *** means the 10%, 5%, 1% significant level of statistical significance

3.2. State-Owned banks and Non State-Owned Banks

Due to the special nature of the financial sector, China's state-owned banks and non-banks into state-owned banks, state-owned banks including industrial, commercial, construction, agriculture, Bank of China and Bank of five, the rest are non-state-owned banks. At this stage, the state-owned banks and non-state-owned banks in the business differences are not significant, but there are some differences between the two ownership structure, the degree of competition in the market (market share) and bank management.

Table 2 shows the results of the panel data model estimated the state-owned banks and non-state-owned bank of samples, samples for state-owned banks, the column (1) Select the panel data fixed effects model, the column (2) select the panel data random effects model. Looking at the results from the table, the dependent variable is whether or risk_llp risk_llr, the largest shareholder equity ratio variable coefficients are significantly positive, while its square term are significantly negative, consistent with the results of this result and the overall sample under. Then observe the shareholding and management indicators, we can see when the dependent variable is when risk_llp, mo variable coefficient is negative, and when the dependent variable when risk_llr, the variable coefficient is significantly positive, which also shows the coefficient of variation in theory mo uncertainty on the direction. Competition observed variables to give more than the variable coefficients are negative, but not significant. For the control variables, you can see the variable coefficients are negative, but some variables statistically significant, some variables were not significant.

Table 2. The Analysis of the State-Owned and Non-State-Owned Banks

	state-owned Banks		non-state-owned Banks	
dependent variable	risk_llp	risk_llr	risk_llp	risk_llr
column	(1)	(2)	(3)	(4)
bo	57.948***	8.913**	3.111*	2.985*
	(0.000)	(0.021)	(0.071)	(0.060)
bo2	-19.135***	-8.016*	-1.037	-1.191
	(0.001)	(0.098)	(0.186)	(0.106)
mo	-8174.010*	5165.167*	-1615.294*	-49.008*
	(0.082)	(0.065)	(0.065)	(0.073)
com	-80.888	-51.171	86.707**	71.603**
	(0.201)	(0.278)	(0.037)	(0.014)
ch_loan	-59.585	-11.716	-3.551**	1.104
	(0.224)	(0.519)	(0.018)	(0.361)
l_a	-89.779	-4.675	-3.397	4.950**
	(0.614)	(0.964)	(0.252)	(0.037)
loan_depo	-196.590**	-76.107	-1.999	0.309
	(0.012)	(0.150)	(0.651)	(0.926)
_cons	13.485	-0.374	18.238***	5.717*
	(0.281)	(0.945)	(0.000)	(0.090)
F test	503.59	899.05	386.15	401.68
Prob	0.000	0.000	0.000	0.000
Hausman test	10.25	8.75	0.01	1.21
Prob	0.000	0.427	1.000	0.991
N	24	34	56	84

For the column (3) and (4), non-state-owned bank samples were selected panel data random effects model. Looking at the results from the table, the dependent variable is whether or risk_llp risk_llr, the largest shareholder equity ratio variable coefficients are significantly positive, while its square term are significantly negative, this result and the overall sample, consistent with the results of state-owned bank samples. Then observe the management stake and indicators, you can see the mo variable coefficients are significant at the 10% probability level is negative, indicating that the non-state-owned bank, the proportion of managerial ownership and increase earnings management will be weakened. For competition variable, you can see, both statistically significant positive. For the control variables of the three credit type, you can see that when the dependent variable is risk_llp, the variable coefficients are negative, where loan growth variable at 5% probability level of statistical significance, when the dependent variable is risk_llr, the variable coefficients It is positive, but not significant majority.

We can see from the above consolidated results , which shows that the relationship between banks and bank earnings management ownership structure, the existing ratio of the largest shareholder and bank earnings management nonlinear relationship inverted "U" shaped, the paper considers the start of the first increase the stake of the largest shareholder will increase the bank's shareholders 'ability to control, because of the distribution of surplus from the right end in the shareholders' meeting, thus increasing the proportion of the largest number of shareholders will own shares through earnings management, thereby improving Earnings Management. However, earnings management capability impossible as the largest shareholder stake increase has been rising, the largest shareholder in proportion to grow to a certain extent, the major shareholder of energy will gradually turn to other aspects, such as equity investments, So it will reduce the "earnings management" attention, weaken earnings management capabilities. The ratio of executives and shareholders, tend negative relationship, this might be when the surplus more, executives are more inclined to working capital surplus as the next, and then the actual control of people, more The surplus then let them have the desire to manipulate earnings, so that in the two "contradictory" to the decline in earnings management capability.

For banks' ability to compete with bank earnings management, primarily rising size of the market on behalf of the bank significantly increased revenues and profits of the bank, which increased earnings, earnings in the number of cases, shareholders will strengthen the management of surplus, resulting in two not a negative relationship, but eventually presented a positive correlation. For the control variables, you can see that when the dependent variable is risk_llp when, with bank loans related to three variables are displayed coefficient is negative, and when the dependent variable is risk_llr when, with bank loans related to three variables coefficient is positive. Noted earlier, the increase in bank lending will make banks increased risk, which will increase bank earnings management. This dependent variable is risk_llr coincides with the assumption, however, is just the opposite of when risk_llp, which, mainly because the formula for calculating the denominator risk_llp variable contains the loan, and the loan three control variables molecules containing credit, just the opposite with risk_llp Therefore both the metering exists negative correlation.

The paper further compares the estimation results of state-owned banks and non state-owned banks, we can find the rest of the variable coefficient signs and significance are basically the same, different is the bank's own competition is the ratio of market size variables, the table shows sample of state-owned banks under the variable coefficient is negative, and non state-owned banks samples under the variable coefficient is positive. This article holds that state-owned banks operating profit is high, the increase of the ratio of market size is limited and in increases but will weakened the earnings management requirements. On the contrary, non state-owned banks pay more attention to long-term operating profit, when increasing the proportion of the size of the market, tend to be more consider the surplus is the effective use and management, provide greater assurance of support for the next phase of the business.

4. Conclusions

The purpose of enterprise management is to obtain greater profits, and how to manage earnings after the earnings, or how to improve the level of earnings management, is a strategic decision of corporate shareholders and senior executives. This paper selects the listed banking industry in China as the sample in 2004, focusing on the factors that affect the earnings management, especially the influence of the ownership structure and the competition of the banking industry on earnings management. Through the panel data model, it is found that: (1) The proportion of the first largest shareholder and the degree of earnings management of the bank presents the "U" type of non-linear relationship, the proportion of senior executives and the negative impact on earnings management. (2) There is a positive correlation between the market share of the banking sector and earnings management, that is, the stronger the competition, the higher the demand for earnings management. (3) Overall, the rise in the absolute or relative amount of bank loans will increase the level of earnings management of banks. (4) The paper further compares the state-owned banks and state-owned banks samples. The results showed that rest variable coefficient signs and significance are basically the same, different is the bank's own competition is the ratio of market size variables, state-owned banks the variable coefficient is negative, non state-owned banks the variable coefficient is positive.

According to the previous research, this paper puts forward some suggestions as follows:

1) Optimize the ownership structure: Large shareholders and bank earnings management degree of inverted "U" type nonlinear relationship, managerial ownership and earnings management of negative to show that the largest shareholder of the bank to the company operation and management has a considerable impact, but in the proxy mode, more easily lead to major shareholders of the company to exploit minority shareholders of the phenomenon. The key to solve the problem is to optimize the equity structure of listed companies, the introduction of foreign investors and private capital and quality of institutional investors, the bank equity concentration to reduce, ownership structure tends to be more perfect, form a good bank ownership structure, and establish a diversified investment main body. The bank management system from the management decided to change the investors jointly decided to form a mutual restraint mutual assistance situation, so as to avoid the problem of small investment interests are violated.

2) Build strong internal governance system: Although investor's strategic alliance can earnings management of internal executive's layer unreasonable or irregularities effectively, but may not always be able to effectively control, executives may to promotion, salary, and reputation for bank earnings management "tricks". To do this, we need to internal bank has a reasonable and effective regulatory system, and constantly improve the internal management mechanism, strictly control the internal risk and bank's key operational metrics, the regulatory system and external control two aspects of effective management of bank earnings.

3) Government should strengthen the supervision system: Although China's stock market as the representative of the capital market has developed for more than 20 years, part of the market system and norms, legal also issued for many years, but specific to the implementation of process, there are still a lot of problems, especially the listed company and the information asymmetry between investors, management system is opaque and problem of the distribution of the surplus has the phenomenon of related party transactions in the implementation. Therefore, the financial management department of the government to increase the market irrational, has the problem of aging, improve system as soon as possible corresponding adjustment policy and regulatory documents to be, must also crack down fraud in profit allocation, makes the listed companies have the self conscious.

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