An Empirical Study on the Relationship Between Growth and Earnings Management of Chinese Listed Corporation

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This paper explores whether investors can assess the company's growth and risk management according to the company's financial statements in the capital market or not. The company's growth will affect the company's earnings manipulation for earnings management which is often encountered in corporate governance problems. This research constructs the research hypothesis on this basis of the summary and analysis of the relevant theory, using the data from Chinese listed corporation during the period of 2009-2011, and designs the empirical model to prove it. The study found that for Chinese listed corporation, the higher the company's growth and business risk, the higher the degree of earnings management. The degree of earnings management will be high when the growth of the company and the business risk exist at the same time.

Keywords: company growth, risk management, earnings management

Introduction

In the pursuit of enterprise management, business growth has been one of the objectives of business operators. While the future growth opportunities in the future do not necessarily bring excess returns to the company, if the investment is less than the cost of capital, the wealth of shareholders will be reduced. Therefore, only the expansion of sales or assets will not be able to ensure that the benefits of enterprise must grow. Before the publication of corporate financial fraud in our country, the common characteristic is the pursuit of constant growth, but ignoring the pursuit of growth in the process will make the company suffer too much risk. Earnings management means the use of GAAP with certain professional judgment by means in financial reporting and in structuring transactions to alter financial reports to either mislead stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting practices, in order to achieve the maximization of self-interest or enterprise value.

The value of the enterprise is not only influenced by the past performance, but also depends on the future growth opportunities and risks. Under the fierce market competition, the company management tends to expand market share rapidly in the pursuit of high growth performance, but will also be faced with higher business

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risks at the same time. Someone found that companies having more growth opportunities will take a more conservative policy of financial leverage. Subsequent scholars' study found that companies where higher growth and operating risk exist prefer to use more conservative lending policies in order to avoid bankruptcy, making the company lose growth opportunities at the same time (Myers, 1977). In addition, Tsui, Jaggi, and Gul (2001) pointed out that the high growth of the company's CEO has obvious behavior on random investment, expanding the investment in fixed costs, also having relatively high risks. Therefore, the high growth opportunities and high risk may bring greater profits for the company, on the other hand, which may make the company to bear greater risks, prompting the management authorities to engage in the motivation of earnings management (Tsui et al., 2001).

This study mainly discusses whether among Chinese listed companies, companies having high growth opportunities and high management risks have more motivation to engage in earnings management.

Theoretical Analysis

Kothari Collins (1989) found the alternative variable of growth opportunities between the market value of company's equities and the value of company's financial assets in the study. He pointed out that the possibility of earning excess returns will be high, which will have higher likelihood of earning excess returns, indicating that investors expect that the rate of return on investment will be high. The growth opportunities of the company also have higher uncertain factors. Because the value on future depends more on company expenses such as R&D expense, advertising expense, personnel training expense and so on, which are beneficial to the company's growth in the future, but cannot be reflected in the value of present enterprise. Company managers may manipulate earnings information so as to get investors' attention (Collins, Shackelford, & Wahlen, 1995).

Some researches show that information asymmetry exists between investors and corporate managers for companies having high growth opportunities, so these companies are sensitive to earnings volatility. The management authority in the earnings management can bring more benefit, which is engaged in the causes of earnings management. In addition, investors estimate that firms will grow in the future based on past short-term marketing and profit, so business expectations will be more optimistic. Jones (1991) demonstrated that the expected growth opportunities for the company in the future have more dirigibility project compared to the growth of the company which is lower in the future. That is to say, companies having high growth opportunities are more likely to use accruals earnings management (Jones, 1991). Besides, Barton's (2001) empirical results also pointed out that when the company research has more development expenses, there will be more growth opportunities. And then, the company managers may use the manipulation of accruals to engage in earnings management (Barton, 2001).

According to financial theory, financial enterprises are bound to take risks in the process of pursuing high returns and high growth opportunities. The increase of investment risk and bankruptcy probability will reduce the company's growth, because of the over-high risks, so that the company will reduce the excessive investment. There will be a mutual growth and decline in the relationship between them. Jorgensen and Kirschenheiter's (2003) study found that when the company's cash inflows are low in the future, managers are willing to release the information about risk. On the contrary, they are not willing to release such information when the company's future cash inflows are low. And if the company has a high amount of cash flow, its risk parameter can be increased (Jorgensen & Kirschenheiter, 2003).

Concerning the relationship between the risk and earnings management, Barton (2001) found that company management will reduce the company's risk through the manipulation of accruals. In addition, for companies which have lots of major investment opportunities and whose enterprise scale is larger, they can be more risk averse (Barton, 2001). While Burgstahler and Dichev (1997) considered whether the authorities manipulate earnings to avoid earnings decreases and losses. Empirical findings show that when the number or its loss of the company earnings is very small, management authority is likely to manipulate earnings which can be from loss to profit or showing the surplus growth situation, and the company showed a stable earnings growth of illusion, in order to obtain a higher market evaluation. As a result, management authority is more likely to engage in earnings manipulation activities when facing the higher earnings volatility and uncertain higher risk (Burgstahler & Dichev, 1997).

Based on the analysis of liability risk, higher liabilities can lead to company bankruptcy. Bankruptcy costs will lead to corporate hedging, and we will be able to reduce the possibility of bankruptcy costs through risk aversion to reduce fluctuations in company's future value. The research showed whether there are abnormal accruals before violating a treaty for companies violating debt contract. The results showed that managers had indeed manipulated the surplus during the year before the breach of the contract, showing that the company will manipulate the accruals to improve the motivation of book earnings in the face of imminent default risk (Defond & Park, 1997).

Research Assumptions

The research on the motive formation mechanism on earnings management can be understood from a deeper aspect of the usefulness of accounting earnings and the accounting behavior of accounting. In the development of the company's growth process, earnings management is often used to cater to the market investors, financial analysts, and management of corporate earnings expectations, company or enterprise earnings just reached or over the expected results of the rising proportion, and inconsistent ratio declined continuously. It makes the companies or enterprises fail to reach the expected current-account surplus, which will be possible to bring a negative effect of the stock price and reduce its reputation, leading the market to suffer a loss during the business process. Burgstahler and Dichev's (1997) study also found that in order to cater to the prediction of the securities and investment analysts, managers should use earnings management to overestimate the surplus to avoid that financial reporting earnings might not meet the expectations of financial analysts, which can help keep the enterprises' good reputation and avoid legal disputation. Some people also found that the company is unable to achieve the financial crisis of the earnings expectations, which will adjust the control of the project to enhance the evidence of earnings report.

Many previous studies found that the frequencies of slight earnings decrease and losses are abnormally low, while the frequencies of slight earnings growth and positive are abnormally high, which proved that in a certain extent, company or enterprise managers may have to avoid earnings decreases and losses of earnings management.

As the company or enterprise investors hold different views about the achievement of earnings expectations stocks, the earnings management behavior of financial expectations will affect the stock market returns. Also, analyst's advice on stock trading can be used (such as buy, hold, or sell) to anticipate the direction of earnings management. The study also found that the recommendations of "buy" for companies are more likely to achieve the analysts' earnings expectations through the earnings management and suggestions to "sell"

firms which are more likely to provide the negative discretionary accruals. Zhang's (2005) research described that the stock price on the growth of company earnings with reverse change has a great negative effect. When the growth companies immensely disclose the surplus less than the target earnings, stock prices will decline.

If investors will be the change of earnings information to measure a company's operating risk, the risk of the company will be high which follows the higher earnings volatility significantly, investors take more conservative attitude to such companies. High growth enterprises will be more robust to control risks in the future. Dhaliwal (1988) found that business risk will affect the choice of depreciation method. The company, at high risk, will use some accounting methods to increase the surplus. Barton (2001) found that managers will manipulate accruals to reduce the risk.

From the point of view of the research on achievements on the development of Chinese listed companies and to the Chinese listed company governance, stock prices usually reflect the net present value of the investment with future growth opportunities for the company; although the benefits of new investment will be expressed on earnings information in the future, in a short period of time, principle of accounting is calculated by historical costing. So there is no timely reflection of investors on the company's future cash flow. Therefore, the accounting earnings and prices over the same period failed to cooperate fully with each other. In the meanwhile, the growth opportunities for these companies include capacity expansion, new product development, mergers and acquisitions of other companies and existing assets replacement and so on. As a result, managers of company which has greater growth opportunities with higher quantity of capital may use generally accepted accounting principles, who are more likely to execute the right to adjust to manipulate earnings, in order to provide attractive investment earnings information.

So we can build that:

H1: In Chinese listed corporation, company's growth and its risk of management increased with the increasing degree of earnings management.

When companies are in the operational state in the growth period, in order to pursue growth as the goal, they may face high financial risk and business risk at the same time. Companies with high growth opportunities desire for expanded reproduction where higher cost can be used to raise capital and expand investment in fixed costs, and they need more sales revenue to maintain their operations. As a result, the company bears higher business risk. According to H1, we can further build that:

H2: In Chinese listed corporation, the degree of earnings management will be high when the growth of the company and the operating risk exist at the same time.

Research Design

Sample Selection

In order to verify the relationship between Chinese listed company's growth and earnings management, we use the development of the CSMAR management database, financial and stock transaction database, designed by Shenzhen Guo Tai'an information research. In addition, we took the necessary manual collated and summarized based on the Shanghai and Shenzhen A-share listed companies, not including some special industries, such as financial enterprises, etc., as the research sample. The study takes company's 2009-2011 data as the research data and finally gets a sample of 1,278, and hypotheses are tested and verified using SPSS statistical software.

Variable Design

Earnings management variables. Overall, the listed corporations can be divided into two parts: non-discretionary accrual and discretionary accrual. The former aims to improve the quality of accounting information and reflects the company's operations results and financial conditions more accurately, while the latter is based on specific motives of creating its necessary report earnings through a deliberate adjustment of cash flow or reported earnings in a specific period of time. Therefore, discretionary accruals can measure listed corporation's earnings management variables, and empirical studies show that the modified Jones model can be more effective to estimate discretionary accruals and measure the company's earnings management accurately (Shi, 2009).

Steps are as follows:

$$TAC_{it} / A_{j,t-1} = \alpha_1 (1 / A_{it-1}) + \alpha_2 (\Delta REV_{it} / A_{it-1}) + \alpha_3 (PPE_{it} / A_{it-1}) + \varepsilon_{it} \quad (1)$$

TAC_{it} refers to the total project account of company i in year t . ΔREV_{it} refers to business net amount minus the $t-1$ business net amount for company i in year t . PPE_{it} refers to the company i 's depreciation of fixed assets in year t . A_{it-1} is the total asset of company i at the beginning of the period t . Estimating each year under the normal level of each industry $\hat{\alpha}_1$, $\hat{\alpha}_2$, and $\hat{\alpha}_3$, which are OLS estimated values, we then get non-manipulating accrued items assessment $NDTAC$ by substituting actual data:

$$NDTAC = \hat{\alpha}_1 (1 / A_{it-1}) + \hat{\alpha}_2 (\Delta REV_{it} / A_{it-1}) + \hat{\alpha}_3 (PPE_{it} / A_{it-1}) \quad (2)$$

The actual total accruals minus the estimated non-balance of accruals, which is the manipulation of total accruals $DTAC$:

$$DTAC_{it} = \frac{TAC_{it}}{A_{it-1}} - NDTAC_{it} \quad (3)$$

Company growth. In the empirical study, Tobin's Q is usually used to measure the value of the enterprise and the growth of the company. There were non-tradable shares in most of the Chinese listed companies in 2007, so the total market value of the stock is equal to the market value of the circulation plus the value of non-tradable shares and the value of the amount of non-tradable shares accounted for the net assets at the end of the calculation. So this study uses the research methods of Zhang's (2005) research methods.

Operational risk. For the measurement of operational risk variables, foreign research takes the variance coefficient of business revenue as the indicator of risk in the first three years of the event years. And earlier studies are marked by systemic risk, which can be signed by a measure of the company. The later studies are marked by adopting the stock return, standard deviation, and coefficient of variation to represent the degree of the management risk of the company. The variation degree of operating income becomes bigger, representing that the uncertainty of making a profit will be high. Therefore, we can foresee that managers will be more motivated to engage in earnings management. Due to the coefficient of variation compared to the standard deviation, which is not absolute, but relative, using the variation coefficient among different companies is significant (Tsui et al., 2001; Zhang, 2005). The focus of this study is the business risk of the company's growth process, and the variation coefficient of operating income is used as a method to measure the risk of the business. Metric model:

$$CVSALE = |E_t - E_{t-1}| / A_{t-1} \quad (4)$$

where E represents operating income and A represents total property.

Control variables. The occurrence of earnings management behavior has a variety of motives. Generally speaking, earnings management behavior is related to the company's debt ratio, company scale, and interest rate return of total assets in previous studies, which are taken as the control variables in the study of earnings management. Because accrued projects have the characteristics of statistical regression, that is to say, manipulated accrued projects can influence the accrued projects of current period. Accrued project of pre-manipulated earnings is a kind of regression of controlling manipulated accrued projects of current period. So the pre-operational accrued projects should also be considered as control variables. There are four control variables: (1) *LEV* represents the company debt, which means the end of total debt/the end of total assets. When the company suffers higher debt ratio, in order to ease the pressure, management authorities are likely to engage in earnings management; (2) *SIZE* refers to company scale. *LOG* can be regarded as stock final market value of the listed company. When the companies' scale is larger, we will suffer higher complex company's governance, serious agency problem and the phenomenon of earnings management is more likely to occur; (3) *ROA* represents the return on total assets, which is the ratio of operating profit to total assets; and (4) the prior control surplus is used to $DTAC_{it-1}$.

Empirical Model

According to the previous theoretical analysis, we can set up an empirical model to test H1:

$$DTAC_{it} = \beta_0 + \beta_1 Q_{it} + \beta_2 CVSALE_{it} + \beta_3 LEV_{it} + \beta_4 SIZE_{it} + \beta_5 ROA_{it} + \beta_6 DTAC_{it-1} + \varepsilon_{it} \quad (5)$$

Also in the empirical testing of H2, we consider that the growth opportunities and operating risk exist at the same time, which influences the managers' engagement in earnings management behavior. First, we distinguished all samples into low business risk (below the sample median) and high business risk (higher than that of all sample median) according to the operating risk of company. We further classified all samples into low growth opportunity (higher than the sample median) and high growth opportunities (below the sample median) according to growth opportunities. Operating risk and growth opportunities are represented by suppositional variable, that is high operating risk is 1, and 0 if otherwise. Higher growth opportunity is 1, and 0 if otherwise. And we joined $Q*CVSALE$ to explanatory variable in the regression Formula (5). So, the empirical testing model of H2 is:

$$DTAC_{it} = \beta_0 + \beta_1 Q_{it} + \beta_2 CVSALE_{it} + \beta_3 LEV_{it} + \beta_4 SIZE_{it} + \beta_5 ROA_{it} + \beta_6 DTAC_{it-1} + \beta_7 Q*CVSALE_{it} + \varepsilon_{it} \quad (6)$$

Empirical Results Analysis

Descriptive Statistical Analysis

Firstly, we conduct the descriptive statistical analysis of the sample and describe the statistical parameters such as the maximum, minimum, average, and standard deviation.

We can find in Table 1 that the average number of operating earnings is positive. Its maximum value is 0.5589 and minimum value is -1.0026, showing that there are certain manipulated earnings in the holistic sample. In the growth opportunities of Tobin's Q, the average number of overall sample is 1.2367, the maximum value is 6.5623, and the minimum value is -0.1167, displaying that the whole sample has higher growth opportunities. Concerning the operating risk of operating income variation coefficient, the whole sample average is 0.2098, the maximum value is 1.4598, and the minimum value is 0.00014. In the whole sample, total assets return rate of change is very large (standard deviation is 9.6426), which is the same with the conclusion of the majority people. It refers to the rate of total assets which has great changes, because it contacts closely with industry scale and industry characteristics. There are bigger differences between different scale and industry.

Table 1

Descriptive Statistical Analysis (N = 1,278)

Variable	Average number	Median	Standard deviation	Minimum	Maximum
DTAC	0.01673	0.0023	0.05683	-1.0026	0.5589
Q	1.2367	0.5799	0.2246	-0.1176	6.5623
CVSALE	0.2098	0.1205	0.1630	0.00014	1.4598
LEV	0.2678	0.2094	0.2784	0.0078	4.2478
SIZE	6.2309	6.1846	2.0098	1.9036	10.0948
ROA	3.1109	2.7783	7.7908	-99.58	69.09
DTAC _{t-1}	-0.0014	0.0077	0.0655	-1.2238	0.5743
TBQ*CVSALE	0.3384	0	0.2187	0	1

Empirical Model Testing

Before the empirical model testing, Pearson's correlation coefficient of each variable was tested, and the correlation between the variables was found to be stronger. At the same time, the correlation of the equation is checked by using the Durbin-Watson statistics.

Table 2

Analysis Results Among Company's Growth Opportunities, Operating Risk, and Relation Regression of Earnings Management (N = 1,278)

Variable	Expected symbol	Coefficient	t	p-value	VIF
DTAC	?	0.045***	11.265	0.000	1.218
Q	+	0.0048***	4.645	0.000	1.227
CVSALE	+	0.034***	5.776	0.000	1.037
LEV	+	0.00564***	1.4578	0.057	1.078
SIZE	-	-0.0013***	-2.9846	0.001	1.226
ROA	+	0.005***	36.319	0.000	1.774
DTAC _{t-1}	-	0.056***	3.372	0.000	1.286
Adjusted R ²		0.544			
Durbin-Watson		1.276			
Model F (p-value)		522.343 (0.000)			

Note. *** represents 1% conspicuous level.

Testing of H1. In the testing of H1, the testing results are showed in Table 2. Empirical testing results showed that there is a positive correlation between Tobin's Q and manipulated earnings ($t = 4.645$, $p < 0.000$), representing that the value of Tobin's Q is high, and the manipulation of earnings is higher, that is to say, it belongs to stronger earnings management phenomenon. The results show that when the growth opportunities of company become higher, the company managers have stronger earnings management motivation to improve the accounting earnings book and the degree of earnings management is also greater. There is also a positive correlation between *CVSALE* and manipulated earnings ($t = 5.776$, $p < 0.000$), which refers to the phenomenon that earnings management is stronger. When the variation coefficient of operating income is higher, the operating surplus is also higher. The results also show that when the management company has higher risk, the management authorities have stronger motivation to enhance accounting book and the degree of the management earnings will be high. Thus, H1 is accepted.

Testing of H2. The testing results of H2 are shown in Table 3. In the test regression model of H2, we add growth opportunities and business risk multiplication variables, and show it with virtual variables, that is, 1 means high growth opportunities, and 0 if otherwise; high operating risk is 1, and 0 if otherwise. We can see that the growth of enterprise and the manipulated earnings were correlated positively as seen from Table 3 ($t = 3.774$, $p = 0.001$), and there is also a positive correlation between operating risks and manipulated earnings ($t = 4.553$, $p < 0.000$). At the same time, we can see that when the higher growth and higher operating risks exist simultaneously, it is positively correlated with manipulation earnings ($t = 1.554$, $p = 0.033$). The testing results showed that in the pursuit of expansion, enterprises usually face the shortage of financial funds, the expansion of production scale, and the greater production supply at the same time, so the need of funds and working capital is very large. Managers are likely to manipulate earnings by adjusting the rights given by generally accepted accounting principles in order to provide earnings information conducive to attracting investment. So when the growth opportunities and business risks coexist, the company managers will adjust the surplus through the manipulation of earnings, and the extent of earnings management is also greater. Thus, H2 was verified.

Table 3

The Analysis Result Between Growth Opportunities and Operating Risk Existing Simultaneously (N = 2,311)

Variable	Expected symbol	Coefficient	t	p-value	VIF
<i>DTAC</i>	?	0.074	10.245	0.000	
<i>TOBQ</i>	+	0.00***	3.774	0.001	1.434
<i>CVSALE</i>	+	0.028***	4.553	0.000	1.267
<i>LEV</i>	+	0.0074***	1.554	0.033	1.442
<i>SIZE</i>	—	-0.007***	-4.125	0.001	1.332
<i>ROA</i>	+	0.006***	37.104	0.000	1.293
<i>DTAC_{t-1}</i>	—	0.053***	3.996	0.000	1.243
<i>Q*CVSALE</i>	+	0.004*	1.782	0.067	1.268
Adjusted R^2		0.782			
Durbin-Watson		1.339			
Model F (p-value)		421.304 (0.000)			

Note. *** represents 1% conspicuous level.

The Conclusion of the Study

We can see from the research that when companies' business growth opportunity is relatively high during the process of operation, they are more likely to use discretionary accruals of earnings management to improve book earnings. Because pursuing high growth is the management company's goal and target in the business, and in enterprise accounting accruals, most of the time is historical cost accrued means to reflect the accounting earnings, which cannot be timely for investors to transfer the earnings of companies. There is no timely reflection of investors on company's future cash flow. Then, the accounting earnings and prices over the same period failed to cooperate with each other fully. And the growth opportunities of the company include production capacity expansion, development of new products, mergers and acquisitions of other companies with the replacement of existing assets and so on, so for companies with higher growth opportunities, they have higher demand for funds. Managers are more likely to manipulate earnings by the adjustment rights provided by generally accepted accounting principles. Namely, using earnings management to attract investment earnings information, managers will increase the profits manipulation of accruals to increase earnings to investors, transferring some favorable information to the companies, so that the company can have better financing and expansion and development.

At the same time, our research confirms that companies with higher operational risk may use operational accruals to increase earnings. Investors often have a kind of evasive attitude to a high risk of enterprises. When the company marketing income volatility is large, companies face higher risk. In order to enable investors' investment interest, the company managers may use operating accruals and earnings management to improve earnings information. At the same time, we also found that when the company is in the growth phase, it is possible to suffer high operating risk and high financial while pursuing growth. Companies with high growth opportunities, having a desire for expanded reproduction, may use higher cost to raise capital, expand investment in fixed costs, and need more sales income and capital to maintain the company's operation so that the company bears higher business risk. Managers are likely to use the general accounting principles to manipulate earnings, in order to provide beneficial information to attract investment earnings. So when growth opportunities and business risks coexist, the company managers will adjust the surplus through the manipulation of earnings, and the extent of earnings management is also greater.

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