

Research on the Influence of Institutional Environment on the Earnings Characteristics

Xin Lv

Nanjing University of Science and Technology
Nanjing, China 210000

Abstract—There is a great imbalance between the regional economic and rule of law levels in China, and choices of the company's financial policy will be affected by this institutional environmental difference. Senior management is likely to adopt various earnings management methods to adjust the earnings characteristics of enterprises. This paper studies the earnings characteristics of accounting information of listed companies in China from the perspective of accounting conservatism, and uses the institutional environmental indicators to conduct research. It is concluded that the higher the rule of law, the lower the degree of government intervention, and the higher the degree of marketization, the robustness of accounting information is stronger.

Keywords—*institutional environment; accounting conservatism; earning management*

I. INTRODUCTION

In the business process, investors need to use the accounting information provided by the company to make decisions, especially the information about the characteristics of corporate earnings. Because of information asymmetry and the existence of various impure motives, listed companies will take the earnings management behavior, whitewash and package the company's accounting earnings information. After the Enron incident, earnings management has become a hot topic in the field of financial management, but due to its high degree of concealment, there are still a large number of companies willing to give it a try. The immaturity of China's capital market and the economic gap between the East and West are still important issues that Chinese society can't avoid now. The differences between regions will lead to the company's institutional environment, such as government intervention, the rule of law, and marketization. It is affected by different degrees, which in turn affects whether the senior management will adopt relevant earnings management behaviors and adjust and change the characteristics of the company's earnings information.

This paper mainly studies the following three questions: (1) From the perspective of accounting conservatism, will the institutional environment affect the characteristics of corporate earnings? (2) How does the institutional environment have specific effects on corporate earnings characteristics in terms of government intervention, legal system level and marketization process? (3) What are the

implications for the government sector and investors based on the impact of the institutional environment on earnings characteristics?

II. THEORETICAL ANALYSIS AND RESEARCH HYPOTHESIS

A. Research on the Correlation Between Earnings Management and Earnings Characteristics

In 2008, Qing Yao analyzed the impact of earnings management on the quality of accounting earnings information, and concluded that earnings management basically does not affect the correlation of accounting earnings information quality.

Different from Qing Yao, Lijun Xia and Xiaonan Lu studied the correlation between the two in 2009. They found that if a listed company receives a good financial performance and a low asset-liability ratio, it is still in a good development situation. The public condemnation of the securities regulator, which indicates that the company's accounting earnings information disclosure quality is poor, then the company is very likely to carry out earnings management.

In 2010, Catherine Snowper believes that earnings management is a kind of behavior that artificially regulates profits. Based on its own interests, management uses professional knowledge to judge the situation and adjust the accounting surplus behavior, in order to maximize its own interests. Earnings management behavior is mainly used in the adjustment of financial reports, so from the negative side, accounting earnings information can also reflect the company's earnings management behavior.

Through a questionnaire survey, Graham concluded that listed companies use real earnings management behaviors to adjust corporate accounting earnings in 2011. They also proposed that enterprises adjust their accounting earnings information for three purposes: the first is to achieve the previously set profit targets; the second is to avoid the loss of financial reports; the third is to meet the analyst's forecast requirements.

In 2012, Paul M. Healy and James M. Wahlen argue that earnings management occurs when managers conduct business activities and provide accounting earnings reports through professional judgment. Then, the senior

management will conduct earnings management behavior to adjust accounting earnings information under the judgment and guidance of accountants.

B. Research on the Correlation Between Institutional Environment and Earnings Management

1) *Government intervention and earnings management:* Government intervention has two meanings. On the one hand, the government directly controls or intervenes in the company's operations. For example, many local governments participate in local listed companies. On the other hand, there may be a political connection between the company and the government.

In 2009, Xianhui Bo and Liansheng Wu believe that the government's intervention in the company's business activities is not the only feature of China, but also in other countries. However, government intervention is particularly evident in China.

Xiaohe Chen believes that more than 70% of listed companies in China are ultimately controlled by the state in 2004. At this stage, state-owned enterprises still have entanglements in government-enterprise relations, especially in key policies such as financing and listing taxation. On the other hand, some senior managers of state-owned enterprises are appointed by the government. This special status is more likely to trigger managers to seek personal gain.

In 2012, Yuanyuan Gu and Kunrong Shen found that the environment of the company's external governance will affect the company's research and development activities. The government intervention is less, companies will invest more research and development costs for research and development, and research and development is a way of earnings management.

In 2005, Faccio found that the impact of political relations on companies is a global issue. However, Fisman, Johnson, and Mitton argue that the political relationship between the company and the government is negatively related to its own development. Once a company has a political relationship, it is likely to have a bad motivation to seek more benefits for itself.

Che and Qian in 1998 pointed out that China's economic development has its own characteristics, and the central government will actively encourage local governments to control and intervene the business activities of enterprises. The probability that enterprises involved by local governments will have less hidden profits than fully private enterprises. This shows that government intervention may prevent the decline in the level of corporate earnings management, and it will also help enterprises to develop smoothly in the long run.

Government intervention makes the ability of entrepreneurs not fully reflected and applied, which will directly affect the contribution of entrepreneurs to enterprises, and ultimately reflected in the business results and operations of enterprises. Therefore, this paper presents the following hypothesis:

H1: In areas where the government intervenes in the market, the level of stability of listed companies is lower.

2) *Marketization process and earnings management:* Love pointed out that the development and improvement of financial markets is very effective in creating a sound capital market mechanism in 2003, and it can also weaken the financing constraints of the company, which is more conducive to the company's financing.

In 2006 Hongjun Zhu found that the opportunities for earnings management are constantly amplified due to financing constraints. However, the financing constraints of enterprises can be effectively alleviated under the premise of market development.

Hongbo Shen made similar conclusions on the empirical research of Chinese manufacturing listed companies in 2010. In areas with a high degree of financial marketization, companies are less subject to financing constraints.

In 2011, Rui Gao believes that the existence of financing constraints will lead to the motivation of enterprises to generate earnings management, and the financial marketization process has a significant influence on financing constraints. Therefore, the level of financial marketization has an indirect effect on corporate earnings management.

In 2012, Guanglun Dai found that in areas with high levels of financial marketization, even if there is government intervention, its ability to restrain the financing of enterprises will be weakened.

In areas with low marketization, in order to compete with enterprises across the country, the company will generate more incentive to whitewash its own profits, implement earnings management behavior according to the company's own specific circumstances, and ultimately affect the earnings characteristics of accounting information and Disclosure quality. Therefore, this paper proposes a second hypothesis:

H2: The higher the level of marketization, the higher the level of stability of listed companies.

3) *Rule of law and earnings management:* Qiliang Liu in 2009 found that in a region with a high level of rule of law and a relatively perfect institutional environment, a company not controlled by the government has a positive correlation coefficient between its debt amount and its earnings management behavior. The company's earnings management behavior and the resulting surplus characteristics have an important impact. The level of the rule of law has an important impact on the company's operations and future development.

In 2016, Kezhen Chen and Yanxi Li believe that the perfect institutional environment constrains the accrued earnings management behavior of listed companies, that is, the more perfect the institutional environment, the higher the rule of law, the lower the degree of earnings management of listed companies; the real earnings management of listed companies and the institutional environment is significantly

positively correlated, that is, the more perfect the institutional environment, the higher the rule of law, the higher the company's true earnings management.

Zhonggao Lin and Jun Zheng show that in areas with imperfect institutional environment in 2014, relationship-specific investment is more, and relational investment can inhibit earnings management behavior and reduce the degree of enterprise earnings management.

In 2013, Shijie Lin found that there are regional differences in the institutional environment. This regional difference will have a greater impact on the company's internal financial policy choices and the level of real earnings management. His research shows that in areas with low levels of government intervention and high levels of rule of law, the company's earnings management is low.

The higher the level of the rule of law, the more perfect the construction of laws and regulations, and the stronger the ability to constrain the enterprise's earnings management. The more perfect the legal system environment, the higher the requirements for the accounting conservatism of the earnings information. The role played by the business process is greater. At the same time, a more complete legal environment can improve the company's litigation environment, so that it has a high degree of stability in both the business process and the final accounting information. Therefore, this paper proposes a third hypothesis:

H3: In areas with higher levels of rule of law, the level of stability of listed companies is higher.

III. RESEARCH DESIGN

A. Sample Selection and Data Source

This paper selects the Shanghai A-share listed company that has been put into the city from 2011 to 2017 as a research sample. In order to enable the evidence to have better explanatory power, the data was filtered according to the following principles: (1) Excluding financial industry companies; (2) Excluding ST, PT companies with abnormal financial conditions; (3) Excluding data incomplete and discontinuous samples between 2011 and 2017.

Through the above screening, 697 listed companies were compiled. The valid sample of this paper is the data of these 697 listed companies from 2013 to 2017 for a total of 5 years. The data for 2011-2012 are used to calculate the 2013 accruals. The detailed algorithm can be viewed below.), with a total of 4879. The data used in this paper are from the Guotaian Database (CSMAR), and the institutional environment indicators are derived from the "China Marketization Index" compiled by Gang Fan.

B. Variable Definition and Measurement

1) *Explained variable*: A sound accounting policy can lead to negative accruals, the greater the negative value of the accruals, the higher the robustness of the financial report. Due to the reversal of accounting accruals, this paper takes the 3-year cumulative accruals as a descriptive variable of

robustness. In order to avoid differences in the fundamentals of companies listed in different periods, this paper uses 697 companies that have been in the market from 2011 to 2017 to avoid the impact of new listed companies, or delisting during this period, on the calculation of robustness measures. The reason for choosing data from 2011 to calculate accruals is to avoid the impact of accounting standards changes on the empirical results. Since the three-year cumulative accruals are calculated, the samples that were finally displayed and used for analysis began in 2013.

This article uses net profit to calculate accruals:

Accruals = (net profit - cash flow from operating activities) / total assets at the beginning of the period;

Accumulated accruals = 3 years accrued accruals;

E.g:

Accumulated accruals in 2013 = (2011 accruals + 2012 accruals + 2013 accruals);

Accumulated accruals in 2014 = (2012 accruals + 2013 accruals + 2014 accruals);

Then, for the convenience of explanation, this article uses CONSERVE to indicate the degree of robustness, and multiplies the 3-year cumulative accruals by -1. The larger the value is, the higher the accounting stability of the enterprise will be.

2) *Explanatory variables*: Some literature focus on two aspects of government intervention and the level of rule of law, and explore the impact of institutional environmental factors on earnings management and earnings characteristics. This paper refers to the data sources of most domestic papers, and defines the institutional environment variables as the legal integrity index (LAW), the marketization process index (MARKET) and the government intervention index (GOV).

3) *Control variable*: In order to strengthen the overall explanatory ability of the model, the following control variables are set in the model: The nature of the ultimate controller STATE, divided into state-owned and non-state-owned, represented by dummy variables, 1 means state-owned, otherwise 0; The total asset-liability ratio represents the proportion of creditor's rights LEV, equal to the total liabilities / total assets at the end of the period; The growth ability of the enterprise GROWTH is characterized by the sales growth rate of the main business; Company size SIZE. The natural logarithm of the company's total assets at the end of the year is used as a surrogate variable for the company's size; Earnings management behavior LOSS, using dummy variable control, 1 indicates the company's loss in the current year, otherwise it is 0; the company's profitability ROA. The stronger the company's profitability, the greater the fluctuation of accounting information, which will affect the accounting stability of the company; Cash flow CFO is characterized by the ratio of operating cash flow to total assets.

C. Model Building

This paper mainly studies the influence of the institutional environment on earnings characteristics from the perspective of accounting conservatism. Based on previous theoretical analysis and corresponding research hypotheses, the following multiple linear regression models are set:

$$\text{CONSERV} = \beta_0 + \beta_1 \text{LAW} + \beta_2 \text{GOV} + \beta_3 \text{MARKET} + \beta_4 \text{STATE} + \beta_5 \text{LEV} + \beta_6 \text{GROWTH} + \beta_7 \text{SIZE} + \beta_8 \text{LOSS} + \beta_9 \text{ROA} + \beta_{10} \text{CFO} + \varepsilon$$

Among them, β_0 is a constant term, β_1 to β_{10} are regression coefficients of each explanatory variable of the model, and ε is a random error term.

IV. EMPIRICAL RESULTS AND ANALYSIS

A. Descriptive Statistics

This paper will analyze the data of 697 Shanghai A-share listed companies from 20011 to 2017, a total of 4879 samples, and obtain descriptive statistics as showed in "Table I" below.

TABLE I. DESCRIPTIVE STATISTICAL ANALYSIS OF FULL SAMPLE CONSERVE TABLE

	N	Minimum value	Maximum value	Average value	Standard deviation
CONSERVE	4879	-3.5077	1.2620	0.0218	0.2343
LAW	4879	0.18	19.89	11.7196	6.1293
GOV	4879	-23.31	10.29	6.8805	3.53565
MARKET	4879	5.90	12.66	10.8300	1.33387
STATE	4879	0.0	1.0	0.309	0.4621
LEV	4879	0.0317	11.9950	0.54120	0.2970
GROWTH	4879	-0.9961	71.2344	0.2907	2.2014
SIZE	4879	17.5318	28.1356	21.9337	1.3598
LOSS	4879	0.0	1.0	0.884	0.3200
ROA	4879	-0.7652	1.2840	0.0336	0.0733
CFO	4879	-1.9376	2.4572	0.04210	0.0978
Effective N	4879				

1) *Descriptive statistics of interpreted and explanatory variables:* According to "Table I", the accruals of the sample enterprises vary greatly, the maximum value is 1.2620, and the minimum value is negative. Objectively, there is a difference in accounting conservatism among enterprises, indicating that the three main indicators of the institutional environment are GOV, LAW and MARKET. There are also great differences, in which the maximum value of the rule of law is 19.89, which is about 100 times the minimum value of 0.18, and the minimum marketization degree of the minimum gap is 12.66, which is more than twice the minimum value of 5.9, which reflects the level of regional economic development and the rule of law in China. The current state of imbalance.

2) *Descriptive statistics of control variables:* According to the actual controllers, the average value of the actual controllers in 2009 and 2010 was 30.9%, indicating that there were more non-state-owned holding companies in the Shanghai A-share listed companies in the past two years. The asset-liability ratio of each enterprise also differs greatly from the sales growth rate of the main business. The maximum asset-liability ratio is nearly 12, and the minimum value is 0.54. The maximum growth rate of main business

sales is 71.23, and the minimum value is 0.3, indicating the company's development status is different, and the sample coverage is wide. The average size of the company in the three years is 21.93, the maximum is 28.14, and the minimum is 17.53, indicating that the company's size distribution is relatively mediocre. By converting the natural logarithm of assets, the total assets can be transformed into more concentrated ones, which is more conducive to regression analysis. From the perspective of corporate losses, the average is 0.884, indicating that the loss-making companies account for the majority, which may be due to the financial crisis caused by the 2008 US subprime mortgage crisis.

B. Related Analysis

1) *Multicollinearity:* From the correlation coefficient of each variable in the table, except that the correlation coefficient between the two variables of marketization degree and rule of law level is higher (0.76), the correlation analysis of explanatory variables shows that there is no correlation coefficient above 0.6, thus Explain that in addition to the two variables of marketization degree and

rule of law level, other variables can pass the correlation test and can be placed in the same regression.

2) *Analysis on the correlation between interpreted and explanatory variables:* The correlation coefficient between the accrued item (CONSERVE) and the rule of law level (LAW) is 0.057, which is a positive correlation between the two, which are consistent with the previous H2 hypothesis;

The correlation coefficient between the accrued item (CONSERVE) and the government intervention (GOV) is -0.018, which is a negative correlation between the two, which are consistent with the H1 hypothesis in the previous section;

The correlation coefficient between the accrued item (CONSERVE) and the marketization process (MARKET) is 0.037, and there is a positive correlation between the two, and the correlation is consistent with the previous H3 hypothesis.

C. Regression Analysis

1) *Fitness test:* The fitness test is tantamount to test the degree to which the prediction result of the prediction model fits the actual situation. The degree of fit can be shown using the R or R square. In general, the closer R is for the 1 bit, the better. When the R or R square is larger than 0.4, the equation fit is better. The fitness test table of this paper is shown in "Table II":

TABLE II. FITNESS TEST TABLE

Model	R	R side	Adjust the R	Standard estimated error
1	0.567	0.321	0.32	0.1931

From the data in the "Table II", the correlation coefficient R of the model is 0.567, the coefficient R side is 0.321, the adjusted coefficient R side is 0.32, and the standard error of the regression estimation is 0.1931. The R of the model is greater than 0.4, indicating that the fit of the model is statistically significant. At the same time, the standard estimated error value is 0.1931, which is very small, indicating that the model does not have autocorrelation problems.

2) *Significance test:* When the difference caused by the random error is assumed, if the obtained probability p is less than the significance level (Sig), the hypothesis is rejected, that is, the difference is not randomly caused, but there is an essential difference; otherwise, if the probability p is greater than the significance level, the assumption is established. In general, when $p < 0.05$, the level of significance is high, the hypothesis is rejected, and by the inspection, the significance test table is shown in "Table III":

TABLE III. SIGNIFICANCE TEST TABLE

Model		sum of squares a	df	Mean square	F	Sig
1	Regress	85.876	10	8.588	230.219	0.000b
	Residual	181.250	4859	0.037		
	Total	267.126	4869			

It can be seen from the table that Sig is 0, which is obviously less than 0.05, indicating that the model established in this paper has passed the significance test, which is close to 0, which is very small, indicating that there is a significant correlation between the interpreted variable and the explanatory variable.

3) *Regression coefficient analysis:* The influence of the institutional environment on the characteristics of corporate earnings is shown in "Table IV" below:

TABLE IV. MODEL REGRESSION RESULTS TABLE

Model		Non-standardized coefficient		Standardized coefficient	t	Sig
		B	Standard error			
1	C	-0.121	0.056		-2.149	0.032
	LAW	0.002	0.001	-0.053	-2.876	0.004
	GOV	-0.001	0.001	-0.009	-0.631	0.528
	MARKET	0.004	0.004	0.021	1.029	0.303
	STATE	0.020	0.006	0.039	3.246	0.001
	LEV	-0.057	0.010	-0.073	-5.888	0.000
	GROWTH	0.001	0.001	0.007	0.574	0.566
	SIZE	0.007	0.002	0.043	3.561	0.000
	LOSS	-0.033	0.010	-0.045	-3.163	0.002
	ROA	-1.088	0.048	-0.341	22.764	0.000
	CFO	1.374	0.030	0.573	45.144	0.000

The regression model we can get is:

$$\begin{aligned} \text{CONSERV} = & 0.121 + 0.002\text{LAW} - 0.001\text{GOV} \\ & + 0.004\text{MARKET} + 0.02\text{STATE} + 0.057\text{LEV} \\ & + 0.001\text{GROWTH} + 0.007\text{SIZE} - 0.033\text{LOSS} \\ & - 1.088\text{ROA} + 1.374\text{CFO} \end{aligned}$$

From the regression model, it can be seen that government intervention is negatively correlated with the level of accounting conservatism, and the hypothesis H1 is verified again. Explain that the more serious the government intervenes in the market, the less stable the accounting information of listed companies, and the level of rule of law is positively correlated with the degree of marketization and accounting conservatism, and the hypothesis H2 and H3 are successfully verified. Explain that the better of the legal system is and the higher the marketization process, the more stable the accounting information of listed companies.

V. CONCLUSION

A. Research Conclusions

The assumptions presented in this paper have all been verified. That is, government intervention is negatively correlated with the level of accounting conservatism, indicating that the more serious the government intervenes in the market, the less stable the accounting information of listed companies; the level of rule of law is positively correlated with the accounting conservatism, indicating that the better the legal system is, the more stable the accounting information of listed companies is. The level of marketization is positively correlated with the accounting conservatism, indicating that the higher the level of marketization, the higher the level of stability of listed companies.

B. Recommendations

The institutional environment has a significant impact on the characteristics of corporate earnings. Therefore, China should actively contribute to the improvement of the institutional environment in each region. At the same time, it should also pay attention to the differences between regions, and build the institutional environment according to the specific conditions of each region. The government promptly withdraws from the market, reduces the intensity of intervention, and drafts a large number of rigid laws and regulations. While encouraging enterprise innovation, it cannot relax the suppression and supervision of corporate earnings management behavior. It is believed that with the further development of China's economy and the further promotion and implementation of various policies, a sound institutional environment will be finally established, thereby reducing the probability of occurrence of corporate earnings management behavior and increasing the robustness of accounting information.

REFERENCES

- [1] Li Yanxi, Chen Kezhen, Yao Hong, Liu Wei. Research on the Relationship between External Governance Environment and Earnings Management Based on Regional Differences — Also on the Alternative Protection of Corporate Governance[J]. Nankai Management Review, 2012,15(4): 89-100.
- [2] Xia Lijun, Fang Yuqiang. Government Control, Governance Environment and Corporate Value: Empirical Evidence from China's Securities Market[J]. Economic Research, 2005(05): 40-51.
- [3] Fan Gang, Wang Xiaolu, Zhu Hengpeng. China's marketization index — the relative process of marketization in various regions 2011 Annual Report [M]. Beijing: Economic Science Press, 2011.
- [4] Ning Yaping. The Definition and Significance of Earnings Management[J]. Accounting Research, 2004(09): 62-66.
- [5] Li Bin, Zhang Junrui, Cao Zhen. Actual Activity Control, Accrual Project Control and Accounting Flexibility [J]. Management Review, 2011, 23(11): 160-168.
- [6] Li Bin, Zhang Junrui. Research on the Economic Consequences of Actual Activity Earnings Management: Evidence from Sales Manipulation [J]. Management Review, 2010, 22(9): 84-92.
- [7] Pan Yue, Wu Chaopeng, Shi Xiaokang. Social Capital, Legal Protection and Earnings Management[J]. Accounting Research, 2010(05): 62-67.
- [8] Xie Weimin, Fang Hongxing. Financial Development, Financing Constraints and Enterprise R&D Investment[J]. Financial Research, 2011(05): 171-183.
- [9] Chen Xiao, Dai Cuiyu. Research on Earnings Management Behaviors and Means of A-Share Loss Companies[J]. China Accounting Review, 2004(02): 299-310.
- [10] Gu Yuan, Shen Kunrong. Local Government Behavior and Enterprise R&D Investment — An Empirical Analysis Based on Chinese Provincial Panel Data[J]. China Industrial Economy, 2012(10): 77-88.
- [11] Shen Hongbo, Yan Hong, Zhang Chuan. Empirical Research on Financial Development, Financing Constraints and Enterprise Investment[J]. China Industrial Economy, 2010(06): 55-64.
- [12] Dong Hongxing. Control of Large Shareholders and Accounting Conservatism — An Empirical Test from Chinese A-share Listed Companies[J]. Journal of Shanxi University of Finance and Economics, 2009(01): 118-124.
- [13] Li Zengquan, Lu Wenbin. The Robustness of Accounting Earnings: Discovery and Enlightenment [J]. Accounting Research, 2003 (02): 19-27.
- [14] Qu Xiaohui, Qiu Yuehua. Compulsory Institutional Change and Earnings Robustness — Evidence from Shenzhen-Shanghai Stock Market[J]. Accounting Research, 2007(07): 20-28.
- [15] Feltham Gohlsong JA. Valuation and clean surplus accounting for operating and financial activities[J]. Contemporary Accounting Research, 1995(11): 689-731.
- [16] Basu S. The conservatism principle and the asymmetric timelines of earnings [J]. Journal of Accounting and Economics, 1997(24): 3-37.
- [17] Zhang XJ. Conservative accounting and equity valuation [J]. Journal of Accounting and Economics, 2000(29): 125-149.
- [18] Zang AY. Evidence on the Trade-Off between Real Activities Manipulation and Accrual-Based Earnings Management[J]. Accounting Review, 2012;87(2): 675-703.
- [19] Roychowhury. The association between pro forma earnings and earnings management. Review of Accounting and Finance. 2010(10): 47-52.
- [20] North D. Institutions, institutional change and economic performance [M]. Cambridge University Press, 1990.
- [21] Bushman RM, Piotroski JD, Smith AJ. What Determines Corporate Transparency?[J]. Journal of Accounting Research, 2004, 42(02): 207-252
- [22] Leuz C, Nanda D, Wysocki PD. Earnings management and investor protection: an international comparison [J]. Journal of Financial Economics, 2003, 69(03): 505-527.

- [23] Graham J. R., Harvey C. R., Rajgopal S. The Economic Implications of Corporate Financial Reporting [J]. Journal of Accounting and Economics, 2005(40):3-37.