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## The empirical research of the relationship between product market competition and surplus information

Yan Hui<sup>1\*</sup>, Zhang Yanfang<sup>2</sup><sup>1</sup>Jiageng building 1<sup>th</sup>, School of Management, Xiamen University, Fujian Province, (CHINA)<sup>2</sup>School of Management, Xiamen University, Fujian Province, (CHINA)

E-mail : yanhui@xmu.edu.cn

### ABSTRACT

Ensuring the quality of the information disclosure of the company and itself, which could help investors know the real value of the company, is the necessary premise to help protect the interests of them and the securities market of the rational allocation of resources. This study focus on the emerging market and the research object is China's a-share listed companies. This study mainly discusses the influence of product market competition on the quality of the surplus information from the perspective of industrial organization theory. This paper tried to expand the company's financial theory field to the accounting information theory from the subject basis of the industrial organization theory, further deepening the explanation of surplus information quality. Through this paper we found that (1) Concentration degree of the industry is higher, the company's surplus information quality is worse. (2) There is a certain positive relationship between industry homogeneity and company surplus information quality, industry homogeneity is higher, the better the quality of surplus information company. (3) In a given industry concentration degree of cases, industry homogeneity has positive effect on the surplus information quality. Industry homogeneity will help alleviate the industry concentration and have a negative impact on surplus information quality.

### KEYWORDS

Relationship; Product market; Surplus; Information quality; Empirical study.



## INTRODUCTION

Since 2000, the United State, as the western capital market public justice model of the stock markets, and other developed countries broke out a series of financial scandals and trust crisis caused by the information disclosure problems of the company. While securities market development is not mature in China, also broke out the financial scandals and securities fraud frequently in recent years. The listed company information disclosure problem has become the focus of investors, theoretical government and the public. Surplus is operating results formed by the enterprise in a certain period, are often used to measure the performance of the enterprise, is the core part of the financial report of listed companies Surplus<sup>[1,2]</sup>. The accounting information users often use surplus as the information resources of the most basic judgment when making decisions. Therefore, there is necessary to study the surplus more deeply, especially in a Chinese context.

Although some research of western industrial organization theory shows that the corporate disclosure strategy depends on the competitive position of its product market competition. However, compared with relatively mature western competition market, China's competitive mechanism has not yet fully formed and disproportionate<sup>[3]</sup>. In this special market environment, we want to explore the product market competition whether to play its role, and have impact on corporate surplus information quality? This study focus on China's a-share listed companies which as our research object. Mainly focuses on the influence of product market competition on the quality of the surplus information from the perspective of industrial organization theory.<sup>[4]</sup>

## LITERATURE REVIEW

### Accounting information quality

According to the financial accounting standards board (FASB) released in May 1980, the no.2 financial accounting concept announcement (FSAC No.2) - the quality characteristics of accounting information, which main points emphasized that the most important quality characteristics of accounting information is decision usefulness, and decision usefulness is implemented through correlation, reliability, comparability, consistent, profitability and importance of a number of different levels of quality attributes.

JiaPeng Ge (1999), for the following interpretation of the accounting information quality, "it makes the enterprise accounting condition, operating results and cash flow information with the enterprise have passed to the people who have related interests with, and let them know the enterprise's past, now and the future. By decision to regulate the business activities of enterprises and investment in the enterprise credit and other activities, in order to make the enterprise management authorities to take the most effective measures to reduce costs, increase profits and achieve positive cash flow; So that enterprise's investors and creditors can seek high rewards and low risk investment and credit opportunity."<sup>[5]</sup> Francis, Lafound, Olsson & Schipper (2004) summarizes the empirical study to measure the accounting information quality in the seven attributes: accrual quality, continuity, predictability, smoothness, value relevance, timeliness and robustness. Among them, the first four properties are considered based on the attribute of accounting, because all of these measures from the perspective of cash flow or surplus, with pure accounting data to complete the construction of a model; And the left three kinds of attributes are considered based on the properties of the market, these attributes are often measured by the data related to the market value stock price or market rate of return, etc.<sup>[6]</sup>

### The quality of the surplus information

Surplus information is an important part of accounting information, reflects the enterprise's operating results. It can be used to predict future performance, evaluate enterprise value, is a major decision-making basis of stakeholders such as creditors and investors, and as an important symbol of management performance. At the same time, surplus information also as the monitoring and evaluation index of enterprise operating performance by regulators. Because of such an important role the surplus information plays in the accounting information, that surplus information quality received special attention. Surplus information quality is so closely related to the accounting information quality that evaluating surplus information quality can reflect the accounting information quality to a certain extent. Decision-making useful measurement view argues that surplus quality refers to the financial statements of accounting surplus can reflect the extent to which the real enterprise surplus, emphasizing that the surplus quality is the degree of deviation between quality of accounting surplus and economic surplus, authenticity is its core. So far, there is no agreement in academia about the definition of surplus information quality, But the surplus information quality itself is a multi-dimensional concept, different people based on different purpose or perspective will have different understandings, furthermore, with the development of the Times, this understanding of surplus information quality will continue to deepen.

### The influence of surplus information quality

Surplus information quality is affected by the business environment and the accounting standards, which is the ultimate achievement of enterprise management activity, and also the deep reflection of real corporate governance enterprise decision-making and management, no matter good or bad. Theoretically, including system and non-system factors that affecting the quality of enterprise surplus information. System factor refers to the factors that influence the quality of the surplus information on all or most of company. The company's management generally unable to control these factors, mainly refers to the accounting standards and regulations. Non-system factors refer to the factors that management can control. The company's management as surplus of information producers, making decisions on the frequency and quality of information disclosure may be in different motives. Bushman, Chen, Engel and Smith (2004) found that board composition, the

independent directors proportion, Stock incentives of the independent director, executive incentive system have a significant relationship with surplus timeliness.

## THE THEORY ANALYSIS AND RESEARCH HYPOTHESIS

### Industry concentration and the surplus information quality

Industry concentration degree is aimed for a particular market or industry concentration and often used to measure market competition (Carranza 2008). Enterprises in the industrial organization theory suggests that the market concentration degree decides the structure of the market of the most basic and the most important factor, embody a concentrated reflection of market competition and monopoly. In the case of other conditions unchanged, the higher the concentration of the industry, the less competitive. On the other hand, the industry concentration degree is lower, the greater the competition. The basic logic is that higher concentration showed more sales is controlled by a small number of enterprises or other economic activities, so this part of the enterprise has a considerable market power so that the market competitive is low; At the same time, in the market of focus between enterprises is more likely to form the collusion behavior to reduce the degree of competition.<sup>[7]</sup>

According to full information hypothesis and bankruptcy liquidation hypothesis, the results of the competition in the market can be the most economical form of revealing information, the comparison of performance information between enterprises can eliminate the influence of market volatility and provide the basis for performance evaluation, and can reflect the degree of management ability and effort, so as to reduce the incentive for shareholders and supervision cost (Meyer and Vichers, 1997). Due to the high quality accounting information to make the company become transparent, thus more easily exposed in the public eye cause more supervision (Fan and Wong, 2002; Leuz et al., 2003). Therefore, the economic rationality of the enterprise's management is likely to choose "low key", lower the quality of accounting information, so as to reduce the political cost (Bai Gongyi, 2006; Chen, 2006). When the level of competition is in a low degree, the company may hide profitable business division or take surplus management or other technical means, to create an opaque information environment hidden the real financial performance from competitors and the public. The above discussion formed the first hypothesis of this article, as follows:

Hypothesis 1: The higher industry concentration ratio, the worse surplus information quality.

Industry homogeneity play to enhance the effect of information by relative performance evaluation more effectively, the correlation output between competing enterprises weakens environmental uncertainty caused by the managers' information advantage, which makes it easier for owner to identify the managers' effort. At the same time, the competition promotes manager efforts and correlation between its pay and reputation will reduce the degree of the manager's laziness. Industry homogeneity embodied in: the market participants have full understand of the market information, including competitor information and All impact to the cost of the industry, technology, etc. will affect all parts of the industry at the same time. Compared with heterogeneous firms in the industry, The shareholders of a company in homogeneous industry are easier to extract information from the market interaction, the known interaction to get outside investors to understand the real business environment, for them to provide a possible chance to take action to punish insider according to the information, reducing the cost of the supervision of the shareholders of a company. Industry homogeneity enhances the effect of information more effectively by relative performance evaluation, the positive correlation between output of competitive enterprises weakens environmental uncertainty caused by the managers' information advantage, makes it easier to identify the owner manager's efforts; At the same time, competition promote manager's efforts and the strong correlation between its pay and reputation will reduce the degree of the manager's laziness.

Therefore, after describing the relationship between the industry homogeneity and the Surplus information quality, we put forward the second assumption is as follow:

Hypothesis 2: The greater the degree of homogeneity in the industry, the better the Surplus information quality.

Under a given level of industry concentration, enterprises can operate under very similar or different cost structure. Under the condition of the industry concentration must, therefore, as a result of the industry homogeneity degree (facing the enterprises operating environment differences), caused by the difference in the competition, and the enterprise has different impacts on the surplus information quality. Based on the influence of competition situation to exclusiveness cost, agency cost and the political cost, in the case of a given industry concentration, we can expect a higher surplus of information quality in homogeneity industry, so we get the third hypothesis as follows:

Hypothesis 3: In a given industry concentration, homogeneity in the industry enterprise have higher surplus information quality than heterogeneous enterprise.

## STUDY DESIGN

### Sample selection and data source

This paper chose Shanghai and Shenzhen two cities from 2008 to 2012 a-share listed companies as the primary data sample, according to the China securities regulatory commission issued "industry classification guidance of listed companies" (2001) of the classification of the industry.

### The dependent variable - surplus information quality

Based on the realistic background and existing literatures in our country, then refer to many models of accounting surplus information quality at home and abroad. This paper uses Dechow(1995) modified Jones model calculation of

discretionary accruals instead of surplus information quality from the perspective of accrual quality to measure the quality of the accounting surplus.

The greater the absolute value of discretionary accruals, the lower the surplus information quality. Firstly, according to the adjusted Jones model divisions by CSRC industry classification standard in all the years in the same company as sample, then do regression analysis for divisions, points the annual corresponding regression coefficients. Secondly, we isolated the discretionary accruals and nondiscretionary accruals according to the different companies. The specific calculation steps are as follows:

The first step: according to the model (1) at the end of each year, estimates model parameters in a wide range of industries according to industry

$$TA_{i,t}/A_{i,t-1} = \alpha_1(1/A_{i,t-1}) + \alpha_2(\Delta REV_{i,t} - \Delta REC_{i,t})/A_{i,t-1} + \alpha_3(PPT_{i,t}/A_{i,t-1}) + \gamma_{i,t} \quad (1)$$

Among them:  $TA_{i,t}$  on behalf of the company  $i$  accrued profit in the year  $t$ , is equal to profit minus the net operating activities cash flow;  $A_{i,t-1}$  represents the  $i$  company's total assets of  $(t-1)$  year;  $\Delta REV_{i,t}$  represents operating income minus the  $(t-1)$  year;  $\Delta REC_{i,t}$  represents the  $i$  company in the  $t$  year of receivable accounts minus the year of  $(t-1)$ ;  $PPT_{i,t}$  represents the fixed assets of  $i$  company in the year of  $t$ ;  $\gamma_{i,t}$ , as residuals, represents discretionary accruals among total accruals of the  $i$  company in the year  $t$ .

The second step, calculate the NDA according to the formula (2):

$$NDA_{i,t} = \alpha_1(1/A_{i,t-1}) + \alpha_2(\Delta REV_{i,t} - \Delta REC_{i,t})/A_{i,t-1} + \alpha_3(PPT_{i,t}/A_{i,t-1}) \quad (2)$$

Among them:  $NDA_{i,t}$  represents nondiscretionary phase  $t$  accruals after the phase  $(t-1)$  adjustment of final total assets.

Finally, according to the (3) calculate discretionary accruals.

$$DA_{i,t} = TA_{i,t}/A_{i,t-1} - NDA_{i,t} \quad (3)$$

Among them:  $DA_{i,t}$ , on behalf of  $i$  company discretionary accruals in the year  $t$  by total accruals minus discretionary accruals.

Calculate the discretionary accruals of absolute value, with the first measured variables accruals quality by the modified Jones model  $EQ1 = |DA_{i,t}|$ .

Kothari (2005) modified Jones model to get the performance after adjustment. The model is as follows:

$$TA_{i,t}/A_{i,t-1} = \alpha_1(1/A_{i,t-1}) + \alpha_2(\Delta REV_{i,t} - \Delta REC_{i,t})/A_{i,t-1} + \alpha_3(PPT_{i,t}/A_{i,t-1}) + \alpha_4 ROA_{i,t-1} + \gamma_{i,t}$$

Among them,  $ROA_{i,t-1}$  represents  $i$  company last year's return on assets, the definition of other variables and the same as above. The second metric variables  $EQ2$  the accruals quality for the modified Jones model by using the performance adjustment calculation of discretionary accruals of absolute value. Of particular note is that the  $EQ1$  and the  $EQ2$  value is greater, accruals quality is poorer, because the surplus information quality is worse.

### Control variables

The volatility of cash flows from operating activities ( $\sigma(CFO)$ ), measured the cash flow from the operational activities of standard deviation over the past 5 years. Operating cash flow information compared to the accounting surplus information, the management level operation difficulty, can confirm the authenticity of accounting surplus information. The volatility of cash flows from operating activities is smaller, that the business activities of enterprises cash flow is more stable, the top of management surplus management motivation is not strong, therefore the higher the quality of accounting surplus information. Therefore this paper inferred, operating cash flow volatility is smaller, the better the quality of accounting surplus information, business activity coefficient of expected cash flow volatility is positive.

Revenue volatility ( $\sigma(SALES)$ ), is measured by the standard deviation of operating income over the past 5 years. Similarly, volatility income is smaller, indicating that the company's sales situation is more stable from the perspective of volatility of the operating cash flow. To a certain extent, also shows that the operation of the company management layer is relatively stable, generally will not take the initiative to manipulate accounting surplus information. Therefore, the volatility of the expected revenue of more smaller, the surplus information quality is better, the expected revenue volatility coefficient is positive.

## THE EMPIRICAL ANALYSIS

### Descriptive statistical analysis

The largest sample size (1628) for the year is 2012, the minimum sample (1219) for the year is 2008. 15.89% sample firms from machinery, equipment, instrumentation industry (C7), 10.77% of the sample firms from the oil, chemical, plastic, plastic industry (C4), the other 8.75%, 6.80% and 6.57% respectively of the sample firms from metal and nonmetal

industry (C6), pharmaceutical and biological products industry (C8) and wholesale and retail trade (H). The top 5 industries accounted for the sample constitutes about half the total sample.

### **Simple financial data analysis**

In order to make the results more robust, the company tested according to the scale of grouping regression. The total assets of the overall rate of return of the Sample Firms (ROA) is low, an average of 3.64%, median 3.27%, the description of China's A share of the assets of the listing Corporation profitability is not high.

The sample firms' surplus per share (EPS) is an average of 0.2873 and a median of 0.2000, also reflects the characteristics of the company average profitability is not strong enough to a certain extent. Book to market value ratio (MB) is an average of 0.6045 and a median of 0.5851. Financial leverage (LEVERAGE) and the average value was 0.5273, the median was 0.5304, that of sample firms debt to asset ratio has reached 50% on average, at a higher level.

### **Analysis of the industry competition condition of product market statistics**

Concentration degree ranking according to industry concentration mean arranged from low to high, the higher ranking, show that the concentration degree is low, and the competition more intense. The top, such as chemical, plastic, plastic industry, machinery, equipment, instrumentation industry, textile, clothing, fur industry, pharmaceutical and biological products industry, wholesale and retail trade industry, market concentration is low, that competition is more intense. Almost in a monopoly position and have been criticized in the industry, such as mining industry (including oil and gas industry etc.), transportation and warehousing industry (including railway transport industry), information technology industry (including communication service), market concentration is high, that the market competition strength is weak.

Industry homogeneous ranked from high to low according to the average of industry homogeneity, the higher the rank, the more homogeneous the industry. Industry homogeneity is in the control of the market rate of return under the condition of average stock yields and the industry rate of return between the partial correlation coefficient. It is based on an assumption: if the enterprises in the industry to adopt similar products technology, competition in the similar products market, or technology impact and changes of economic situation will affect their cash flow in a similar way, thereby affecting their stock prices. As you can see, in the control of the market yield condition, mining industry, communication and cultural industries, the real estate industry, medicine, bio products industry, transportation, warehousing, business of electric power, gas and water production and supply industry and other industries in the stock return and the industry rate of return correlation is stronger, its industry homogeneity is higher, consistent with the basic. The machinery, equipment, instrumentation industry, textile, clothing, fur industry, petroleum, chemical, plastic, plastic industry has lower industry homogeneity.

## **CONCLUSIONS**

The higher the concentration degree of the industry, the company's surplus information quality is worse. The past research mainly concentrated on the effects of product market competition on the quality of accounting information. We further refined product market competition to analyze the core part of the information quality of accounting surplus information quality, mechanism of action. We found that the enterprises in the focus industry in order to protect the competitive advantage or avoid public and political attention that will reduce the quality of surplus information. And these results are robust for different size of the company. The past research is mainly to explore the measurement of single variable degree of product market competition's effect on the quality of accounting information, we discussed the interaction between different dimensions of product market competition. In general, the findings suggest that product market competition plays an important role in the management of the disclosure decision. The influence of management incentive not only disclose by economic factors and the system of the company background, but also under the influence of industry characteristics. At the same time, the relationship between the degree of competition in the industry and management disclosure motivation is a multi-dimensional concept, we should further study its impact on the surplus information quality in different angles.

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