Does Product Market Competition Improve the Quality of Information Disclosure of Listed Companies? Empirical Evidence Based on China A-Share Market

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ABSTRACT: This paper examines how the product market competition under Chinese market conditions affects the quality of information disclosure of listed companies. Based on the data of China A-share listed companies from 2001 to 2014, we find that the improvement of product market competition measured from the industry level and corporate level has a significant negative impact on the quality of information disclosure of listed companies. After further distinguishing the earnings management activities that can change the quality of information disclosure, the results confirm that the increase of product market competition at the industry level will make the listed companies tend to positive earnings management, while the increase at the corporate level will lead to more negative earnings management. In addition, the nonlinear model confirms that both of them have an inverted U-shaped relationship, but there is only a single negative impact of product market competition on the quality of information disclosure under the sample conditions of Chinese listed companies.

Keywords: product market competition; information disclosure; earnings management

1 INTRODUCTION

Whether the factors at the management level will affect the company’s information disclosure behavior is a hot issue in the field of corporate governance. As a good external variable that has a tremendous impact on the company’s state of operation, product market competition affects the decision-making of managers’ information disclosure. The related research has an important guiding significance on the reasonable adjustment of the product structure of national economy, improvement of the capital market supervision system and company’s internal governance mechanism.

Based on the empirical evidence of China A-share market, this paper examines the actual impact of China’s product market competition on the company information disclosure behavior, and compares with the similarities and differences of measurement methods of product market competition at different levels in the impact, and discusses the possible causes of generating the above empirical results through combination with the nonlinear model. There are three parts of possible innovation: (1) Keep a foothold in the crossing field of industrial economics and corporate governance, arrange and theoretically construct a reasonable path of product market competition affecting the quality of information disclosure; (2) conclude the measurement index of product market competition, and carry out influence research from industry and corporate level; (3) differentiate and further verify the earnings management activities that change the quality of corporate information disclosure, and use the non-linear model to reasonably explain empirical conclusions of product market competition affecting the quality of information disclosure in (2).

2 THEORETICAL ANALYSIS AND RESEARCH HYPOTHESES

Product market competition belongs to the influencing factors of the quality of corporate information disclosure at the management level, and mainly acts on the quality of information disclosure through two mechanisms. Viewing from the information mechanism, the assumption that the company reduces capital costs by
improving the quality of information disclosure and then eases the plight of production and operation brought by product market competition often fails to be established. Because the timeliness of information disclosure increases the volatility of the stock, it may cause an increase in the capital cost. In addition, if disclosure itself leads to more information asymmetry, that is, investors do not believe the authenticity of the information disclosed, the quality of information disclosure will no longer become a factor of judging the corporate value, and then the capital cost will be further increased (Kim and Verrecchia, 1994). Under the environment of fierce competition, the company will choose to disclose invalid information, in order to avoid predatory threats from rivals (Verrecchia 1983; Gertner et al. 1988). In other words, the huge product market competition pressure of the company greatly reduces the transparency of corporate earnings information. The purpose of aggressive earnings management (higher earnings management level) is actually to limit the flow of information to potential competitors and keep the company from possible competition.

Viewing from the governance mechanism, product market competition has been regarded as a possible external governance mechanism for a longer period of time. In case of effective development, the interests of managers and shareholders will be effectively tied together. The more intense the product market competition, the lower the private benefits controlled by the management level (Guadalup and Gonzalez, 2010). As a punishment mechanism, the company’s product competition will restrict the manager’s behavior (Hart, 1983), thereby significantly reducing the earnings management level. However, the product market competition has a negative impact on the company’s own profitability and ability to buffer risks. Due to the objective requirements of maintaining relatively stable performance and avoiding risks in the operation, the company has an incentive to reduce the quality of information disclosure. In the explanation of Hart (1983) model, Scharfstein (1988) pointed out that, if the marginal utility of income level is strictly positive at the management level, product market fails to substitute corporate governance to a certain extent, but may weaken manager’s incentive, and fail to change the manager’s lazy state. In addition, the manager’s attention to career may improve as the product market competition pressure increases, resulting in management opportunism and short-sighted behavior (Fama, 1980; Narayanan, 1985; Rotemberg and Scharfstein, 1990; Hermanlin and Weisbach, 2012) and the researches show that competition can aggravate moral hazard problems (Milgrom and Roberts, 1992) and increase management escape behavior (Scharfstein, 1988).

When the product competition of the industry in which the company is located in is fierce, the buffer brought by excess profits in the form of Ricardo’s rent owned by the company is relatively small (Peteraf, 1993), and it is relatively more difficult for the company to pass the cost impact on to consumers. When the overall profit of the industry decreases, companies in relative monopolizing industries and competitive industries may be more engaged in earnings management activities, in order to gain the trust and help of investors and creditors, ensure normal operation of the company, thus maximizing the short-term value of the company (Shleifer, 2004). In the industries with a high concentration, each company occupies a higher proportion of gross output of the industry; relative to the companies in the industries with a relative low concentration, the information disclosed by them may provide more information of the future product demands in the industry in which the company is located. Similarly, the companies with a stronger pricing ability (a huge product market power) may have a relatively lower motivation for earnings management, and such companies often have more share price information content (Peress, 2010) and higher stock liquidity (Kale And Loon, 2011), the company’s real earnings performance becomes more stable, earnings management and other activities reducing the quality of information disclosure are even more unnecessary.

Hypothesis 1: When the company confronts greater product market competition, that is, the degree of concentration of the industry in which the company is located reduces or the company’s pricing ability is weakened, the quality of information disclosure will be lower.

An increase in the level of industrial competition will reduce the corporate profits. Viewing from the restriction mechanism, the company will face higher liquidity risks in the future (Hou and Robinson, 2006). A decline in the corporate profits is often regarded as a signal of decline in the industrial competition, which may lead to greater punishment on the stock market (Markarian and Santalo, 2014), thus impairing managers’ private rent (in case of stricter supervision, visible and invisible income will be reduced, and even dismissal, etc.). To avoid this situation, managers often take measures to distort the company’s real performance. Researches show that, it will become an instrument to distort economic performance when earnings management costs are lower and are not easily found by external stakeholders (Bagnoli and Watts, 2000). Compared to real earnings management, manipulative, costs of accrued profits are lower, and it is difficult for stock investors, financial analysts and auditors to accurately identify the true impact of accrued earnings management. For managers, the positive earnings management is an effective tool to protect own interests.

When the product market competition at the corporate level increases, the marginal profit of the company has risks of decline. If the unmanaged surplus reflects a higher demand of the market on the company’s products in the future, it may increase the participation of competitors and endanger the interests of
the company. In order to avoid the financial reports disclosed to pass more information on the company’s future business development state to the outside world (Chen Jun and Xu Yude, 2011), prevent potential entrants of the industry, eliminate possible “predatory risks”, and consolidate their own industry status, the company can increase the negative earnings management behavior and create an illusion that the performance of main business fails to reach expectations.

**Hypothesis 2**: An increase in the product market competition at the industry level, or a decrease in the concentration of the industry in which the company is located will make the earnings management activities that can reduce the quality of corporate information disclosure tend to positive earnings management.

**Hypothesis 3**: An increase in the product market competition at the corporate level, or weakening the market pricing ability of the company will make the earnings management activities that can reduce the quality of corporate information disclosure tend to negative earnings management.

3 INDEX MEASUREMENT AND DATA SELECTION

3.1 Measurement of product market competition

Based on the domestic and international researches on the impact of product market competition on the company, this paper selects the industry concentration (HHI, Wang Xiongyuan, Liu Yan, 2008; Wu Haomin, et al., 2012) and product-cost margin (Datta et al., 2013) for measurement, which reflects the market competition situation from the inter-industry competition and competition in the industries.

3.2 Measurement of quality of information disclosure

The quality of information disclosure is often confused with the information transparency, and the current two measurement methods of information disclosure rating and scholar’s self-built index scoring are often difficult to be transplanted or contain unrelated influencing factors. This paper selects earnings management (manipulative accrued profit DA, Dechow et al., 1995) that can more accurately describe the quality of information disclosure for measurement, and the information disclosure rating data of Shenzhen Stock Exchange, Hutton and other people’s methods\(^1\) in 2009 are used for robustness test.

3.3 Other control variables

To control the impact of the company’s characteristic factor on the quality of information disclosure, this paper selects variables, company scale logAsset (logarithm of year-end total assets, Bhushan, 1989), book-to-market ratio MB (logarithm of price/book value ratio, Chen Ying, 2008), corporate growth Growth (total assets growth rate), leverage ratio leverage (non-current liabilities / total assets, Trueman and Titman, 1988), company trait volatility volatility (daily return rate of corporate stock - corresponding to daily return rate of China A-share market, Mohanram and Rajgopal, 2009); to control the impact of the organization and management level on the quality of information disclosure under the corporate governance structure, this paper selects the nature of property right SOE (Lu Zhengfei, et al., 2012), shareholding proportion of controlling shareholders First (shareholding proportion of the largest controlling shareholder of the company), size of board of directors Board (number of board of directors), proportion of independent directors indirector, duality Dual (serving as chairman and general manager is 1, otherwise 0), shareholding proportion of senior executive Mshare, executive salary Salary (logarithm of a sum of top three executive salary with Unit 10,000), shareholding proportion of institutional investors instu (See Table 1).

3.4 Data

This paper selects the annual data of all China A-share listed companies from 2001 to 2014 as samples, and screens according to the following criteria: (1) considering the availability of the going-concern data of the company, select the companies landed China A-share in 2001 and before; (2) remove the samples of listed companies classified into ST, PT, and financial insurance industry in that year. The corporate nature, governance structure and financial data are from Wind Info Financial Terminal. The data of the company’s stock trading status are from CSMAR database. The data of the company’s historical dynamic industry belongs are from the industry classification and industry change database of RESSET listed companies. To avoid the impact of extreme values, Winsorize processing is given to the continuous variables contained in the data at 1% and 99% of quantile level.

After distinguishing the manufacturing industry by two levels of codes, the research samples in this paper are involved in 43 industries. According to the statistics of the definition of industry concentration in Table 1, the industry concentration in China from 2001 to 2014 has been maintained at a higher level of about 0.16; the difference in the subdivided industry concentration is larger, but the inter-industry difference is significantly shrunk around 2007, which may be related to the reshuffle and mergers and acquisitions within the industries caused by the financial crisis.

\(^1\)Hutton et al. (2009) Take Disclosure\(_i\) = \(-DA_{i,-1} + DA_{i,-2} + DA_{i,-3}\) as the proxy variable of information disclosure quality.
4 EMPIRICAL TEST AND RESULT ANALYSIS

4.1 Product market competition and quality of information disclosure

Model I is used to empirically test the relationships between the level of corporate competition in the industry and the quality of corporate information disclosure. Among them, comcontrol is a control variable reflecting the characteristics of the company; govcontrol is a control variable reflecting the corporate governance structure; PCM reflects the product market competition of the company. Here, the proxy variable at the industry level HHI is first substituted into for analysis, and specific variables have been described above. The model controls the annual effect and industry effect.

\[
absDA_{ij} = \alpha + \beta PMC_{ij} + \sum \gamma_{comcontrol_{ij}} + \sum \delta_{govcontrol_{ij}} + \sum industry + \sum year + \epsilon_{ij}
\]

Table 3. t test results of quality of information disclosure of sub-samples with different industry concentration.

<table>
<thead>
<tr>
<th>Group</th>
<th>Observed value</th>
<th>absDA mean value</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>HHI &gt; median</td>
<td>5500</td>
<td>0.0623</td>
<td>0.0000</td>
</tr>
<tr>
<td>HHI &lt; median</td>
<td>14933</td>
<td>0.0661</td>
<td>0.0064</td>
</tr>
<tr>
<td>t test of two samples</td>
<td>-0.0038</td>
<td>( H_0: \text{diff} = 0 )</td>
<td>0.0001</td>
</tr>
<tr>
<td>Diff=mean(HHI &gt; median) - (HHI &lt; median)</td>
<td>( H_0: \text{diff} &lt; 0 )</td>
<td>( P(&gt;</td>
<td>t</td>
</tr>
</tbody>
</table>

All the estimation results in this paper are obtained by using the panel fixed effect model based on Hausman test, and by using the clustering robust standard errors with the company as clustering variables. The coefficient of variable HHI in Table 4 (1) is negative and significant at the confidence level of 1%, indicating that the fiercer the competition in the industry, the lower the quality of the corporate information disclosure, and the product market competition fails to improve the quality of listed companies on China’s capital market, confirming hypothesis 1. Dividing by the median of industry concentration in each year, median, HHI > median is higher than the industrial competition group, HHI < median is lower than the industrial competition group. According to Table 3, the mean value of the quality of information disclosure in a low industrial competition group is significantly higher than that of the high industrial competition group, also confirming hypothesis 1. Table 4 (1) reflects that the coefficient of explanatory variable of the corporate governance structure is negative, indicating that the organization management level has a significant positive impact on the quality of corporate information disclosure, which is consistent with the relevant conclusions of Yi Zhihong, et al. (2010). However, the corresponding coefficient after further adding HHI and its cross multiply item is insignificant, indicating that there is no complementary or alternative relationship between product market competition and corporate governance structure in terms of the impact on the quality of corporate information disclosure.

The proxy variable reflecting the market competition of the company as an individual at the corporate level PCM is substituted into as a proxy variable of PCM, and model I is reused for estimation. As shown in Table 4 (2), there is no change in the direction and significance of the coefficient of variable PCM. The larger PCM, the greater the company’s product power, the greater the pricing ability, the easier to obtain “monopoly rent”, the lower the product market competition for the company, the results show that the companies with a high bargaining ability on Chinese capital market have a little difficulty in maintaining the original profitability, little risks of profit uncertainty and weaker motivation for manipulating profits to reduce the quality of information disclosure in case
of market shock. It further confirms Hypothesis 1 at the corporate level.

4.2 Product market competition and earnings management direction

Based on the empirical evidence of product market competition affecting the quality of information disclosure, the information disclosure behavior of the total samples is subdivided into two sub-samples according to the positive and negative earnings management, and PMC proxy variables HHI and PCM at the industry level and the corporate level are respectively substituted into the model II for regression analysis, in which Positive_DA and Negative_DA are respectively the positive and negative earnings management carried out by the company to reduce its own quality of information disclosure.

\[ \text{Positive}_\text{DA} = \alpha + \beta_{\text{PMC}} + \sum_{i} \gamma_{i} \text{control}_{i} + \sum_{i} \delta \text{Govcontrol}_{i} + \sum_{i} \text{industry} + \sum \text{year} + \epsilon_{i} \]

\[ \text{Negative}_\text{DA} = \alpha + \beta_{\text{PMC}} + \sum_{i} \gamma_{i} \text{control}_{i} + \sum_{i} \delta \text{Govcontrol}_{i} + \sum_{i} \text{industry} + \sum \text{year} + \epsilon_{i} \]

As can be seen from Table 4 (3) - (6), at the confidence level of 1%, positive earnings management is only significant on the coefficient of product market competition at the industry level, while negative earnings management is only significant on the coefficient of product market competition at the corporate level. After observing the symbols of two coefficients, the company tends to positive earnings management in the fierce competition in the industry, while the company tends to negative earnings management when its own pricing ability is weakened.

4.3 Further discussion of non-linear relationships

\[ \text{absDA}_{ij} = \alpha + \beta_{\text{PMC}} + \sum_{i} \gamma_{i} \text{control}_{i} + \sum_{i} \delta \text{Govcontrol}_{i} + \sum \text{industry} + \sum \text{year} + \epsilon_{i} \]

In previous literatures, the impact of product market competition on the quality of corporate information disclosure is controversial. A very important reason is that the market environment where the samples are located is not controlled. A high quality of information disclosure may reduce the capital cost, and allow the corporate stock to obtain a reasonable price (Skaife et al., 2014; Francis et al., 2004; Dichev et al., 2013), but these benefits have a very little chance to increase in...
case of fierce competition in the product market (Guo et al., 2015). To examine the relationship between them under the transparency of the specific market, the nonlinear model III is used for regression. The results in Table 4 (7) and (8) show that there is no non-linear impact of the product market competition on the quality of information disclosure at the industry level; there is an inverted U-shaped relationship between them at the corporate level; when the positive axis of the horizontal axis is closer to the original point, it indicates that the product market competition is greater; when the vertical axis is more upward, it indicates that the quality of information disclosure is higher. The symmetry axis in the quadratic curve of model estimation is located at $PCM = 0.67$. According to the former descriptive statistics of China A-share listed companies, the maximum value of $PCM$ is only 0.55, which is located on the left side of the symmetry axis, indicating that the quality of information disclosure has a very little chance of increase as the fierce product market competition under the condition of overall buyer’s market and overcapacity in most industries, thus further confirming Hypothesis 1. In addition, this paper uses the information disclosure rating data of Shenzhen Stock Exchange to replace manipulative accrued profit as a proxy variable for the quality of information disclosure, and conducts the robustness test, and the result is consistent with the above.

5 CONCLUSION

This paper researches how product market competition affects the quality of corporate information disclosure based on the data of China A-share listed companies from 2001 to 2014. The author classifies the types of product market competition in detail and examines the impact of product market competition on the quality of information disclosure from the perspectives of industry level (industry concentration level) and corporate level (product pricing ability), and expands the impact content, and distinguishes between positive and negative directions of earnings management activities that can cause the changes in the quality of information disclosure, and further analyzes the possible non-linear forms. The results show that the external governance mechanism of information disclosure behavior in the product market competition is insignificant under the market conditions in China. There is no obvious motivation for the company to improve the quality of information disclosure in order to reduce the financing costs. On the contrary, a larger market competition pressure and predatory threats make the earnings management activities have a stronger incentive, which will generally result in the decrease in the quality of corporate information disclosure as the competition in the product market.

This paper believes that there are two major reasons for this phenomenon: on the one hand, the validity of China’s capital market is low, there is an insignificant positive correlation between the quality of information disclosure and stock liquidity and corporate valuation, investors’ concern about the content of information disclosure is low and degree of trust is low; and investors are lack of the ability to use the information disclosure content for value investment; on the other hand, with the reform and opening up and the development of market economy, Chinese market has gradually transitioned from the relative shortage of product supply to the general supply exceeding demand of products, the buyer’s market form is increasingly obvious, and most products have a relatively low technology, which are located in the middle and upper reaches of the industry, with a weak bargaining power.

Therefore, in the future, China should improve the effectiveness of the capital market based on the improvement of the information disclosure mechanism, supervision and punishment strength of information disclosure, and enhancement of investor protection and cultivation of value investment concept, and also improve the balance and coordination of its industrial structure, enrich the scale of product types, improve the bargaining environment for small and medium-sized enterprises, so as to achieve a healthy connection between the assets and the capitals of the company, which can not only expand the sales scale and improves the profitability, but also reduce the financing costs in the capital market by shaping the fame and reputation and feedback the production.

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