Are Cost Stickiness Relevant to Accounting Information Transparency? Evidence from the Manufacturer Enterprises in Shenzhen A Shares

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Abstract. Based on the ABJ model, we select the manufacturing enterprises listed on the main board of Shenzhen A-shares as the sample to test the relationship between accounting information transparency and cost stickiness. The results show that the accounting information transparency can alleviate the cost stickiness in manufacturing enterprises. Further research show that the transparency of accounting information has a more significant effect on cost stickiness in manufacturing enterprises with high concentration of equity and high asset-liability ratio. This finding provides suggestions for shareholder governance, which can enhance the external supervision ability by improving the accounting information transparency to alleviate the problem of cost stickiness.

Introduction

According to reports on A-share violations in recent years, the company has not disclosed the most important issues in the company in a timely manner. The industry in the hardest-hit areas is mainly manufacturing. This shows that the information disclosure problem of listed companies in China is serious, and the information disclosure problem of manufacturing enterprises is severer. The problem of information disclosure of enterprises seriously indicates that the transparency of accounting information is low. Because the transparency of accounting information is an important indicator for the disclosure of business operations, it is also an important guarantee for investors and shareholders to obtain effective information[1]. The more perfect the information disclosure system of listed companies, the more beneficial it is to reflect the real situation of the enterprise, and the more effective external supervision [2]. Cost stickiness is the result of asymmetric matching of enterprise resources in the change of business volume, usually caused by enterprise resource redundancy and misplacement of resources[3]. Therefore, cost stickiness is an important indicator reflecting the internal resource allocation of enterprise.

Is there a certain relationship between the low accounting information transparency and the cost stickiness in manufacturing enterprise? The cost stickiness of manufacturing enterprise in China has been confirmed, and some research believe that the cost stickiness is the result of cost management[4]. Higher accounting information transparency is conducive to reducing agency costs, that is, reducing managers' self-seeking behavior, enabling managers to achieve resource optimization and allocation goals, thereby alleviating cost stickiness. On the other hand, high-quality accounting information can reduce the excessive investment and under-investment behavior of Chinese listed companies, thereby increasing investment efficiency, that is, the transparency of accounting information can positively promote the optimal allocation of resources [5].

Therefore, the paper takes the manufacturing enterprises listed on the A-share main board of Shenzhen Stock Exchange in 2009-2016 as a research sample, draws on the ABJ model, constructs the impact model of accounting information transparency on cost stickiness, and tests the relationship between accounting information transparency and cost stickiness of manufacturing enterprises. The results show that the higher the transparency of accounting information based on the manager's self-seeking behavior, the lower the cost stickiness of the manufacturing companies

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listed on the A-share market. At the same time, the concentration of equity and the high debt-to-asset ratio of manufacturing enterprises will strengthen the weakening effect of accounting information transparency on cost stickiness. This finding provides suggestions for shareholder governance, which can enhance the external supervision ability by improving the transparency of accounting information to alleviate the problem of cost stickiness. In addition, this study finds that the transparency of accounting information and the cost stickiness of manufacturing enterprises are connected, which helps investors to judge the cost stickiness through the transparency of accounting information, and indirectly judges the internal cost management of the enterprise and the transparency of accounting information is equivalent to a signal of the internal cost of the enterprise.

Literature Review and Hypothesis Development

The Impact of Accounting Information Transparency on Cost Stickiness. The improvement of the quality of accounting information disclosure is one of the ways to reduce agency costs. High-quality accounting information disclosure can reduce the information asymmetry in the capital market and the expected risk of investors, and guide investors to make value judgments and rational decisions [6]. At the same time, shareholders have more control over the actual operating conditions of the company, and the possibility of self-interested behavior of managers is reduced [7]. The problem of cost-effective agent problem is that, due to the agency problem between managers and shareholders, managers also have self-interested behaviors when making adjustment decisions on various commitment resources. These self-interested behaviors make cost habits and enterprise optimal. Resource allocation is inconsistent and creates cost stickiness issues [8]. The internal cost management of manufacturing enterprises is complicated, and the difficulty of information disclosure is increased. It provides a convenient channel for managers' self-interested motives. Managers are the ones who have the advantage of information. They have the motivation and ability to choose the content or disclosure method of accounting information to maximize interest [9]. Improving the transparency of accounting information and strengthening the ability of external supervision can effectively curb the self-interested motivation of managers, and make managers' decision-making move toward the direction of resource optimization and configuration, thus alleviating cost stickiness. Hence, we propose the following hypothesis:

H1: Improved transparency of accounting information can weaken cost stickiness in manufacturing enterprises.

The Impact of Equity Concentration on Accounting Information Transparency and Cost Stickiness. The shareholding structure refers to the different ownership allocation structure of the enterprise, which is the foundation of corporate governance and an important institutional arrangement for solving the principal-agent behavior in the enterprise. Eng and Mak (2003) found that when the management's shareholding ratio is high, the level of information disclosure of enterprises is also improved, because the enhancement of corporate governance ability promotes the improvement of information effectiveness. Higher equity concentration can avoid the phenomenon of small shareholders' free riders, improve the effectiveness of information and the supervision and governance ability of major shareholders, and enhance the transparency of accounting information. At the same time, the improvement of the transparency of accounting information means that while the company's supervision is strengthened, the manager's self-seeking behavior will be limited[10]. And then the executive will pay more attention to the compensation, which is usually related to the company's performances. Therefore, managers will reduce redundant resources and optimize resource utilization to maximize the company's performance, and then the cost stickiness will be weakened. Hence, we propose the following hypothesis:

H2: The higher equity concentration has strengthened the weakening effect of accounting transparency on cost stickiness in manufacturing enterprises.

The Impact of Asset-Liability Ratio on Accounting Information Transparency and Cost Stickiness. The asset-liability ratio refers to the ratio of liabilities to assets, reflecting the capital structure of the enterprise. The increase of debt financing ratio can restrain the self-interest behavior of managers, the possibility of managers manipulating accounting information is reduced, and the transparency of accounting information is improved to a certain extent, which strengthen the mitigation effect of accounting information transparency on cost stickiness[11]. The reason why managers choose less information disclosure is to protect their own interests, and debt financing can encourage management to work harder, making managers' decision-making and enterprise's optimal resource allocation closer, further reducing agency costs[12], and then the cost stickiness is weakened. Therefore, the third hypothesis is proposed:

H3: The higher asset-liability ratios has strengthened the weakening effect of accounting transparency on cost stickiness in manufacturing enterprises.

Research Methods

Selection of Samples. The research sample is the manufacturing company of the Shenzhen A-share listed main board from 2009 to 2016. All financial data of the sample companies are from the CSMAR database. In the process of sample selection, we excluded the following companies: (1) companies that exclude ST and ST*; (2) companies that were listed in 2009-2016 and companies with missing research data; (3) delete observations missing sales and management fees or sales revenue data for two consecutive years. Finally, we obtained 1779 sample observations. In order to eliminate the influence of outliers, the winsorize command is used to replace the extreme value of 1% of the variable at both ends.

Definition of Research Variables. Based on the regression model constructed by Anderson et al. (2003) [13], it is investigated whether the transparency of accounting information of manufacturing enterprises has an impact on the cost stickiness of enterprises. The dependent variables is the changes in sales and management expenses (SG&A) and independent variable is the degree of transparency of accounting information (Tran). Regarding the measure of transparency, we collect the results of the evaluation of the information disclosure level by the Shenzhen Stock Exchange and then standardize results. The results are divided into four levels, namely A, B, C, and D. If the rating result is “A”, then the information rating is 4, if the rating result is “B”, the information rating is 3, if the rating result is “C”, the information rating is 2, and if the rating result is “D”, the information rating is 1 and finally Standardized processing yields accounting information transparency variables. In addition, we also add four control variables: future demand expectation, asset intensity, labor intensity, and GDP growth rate. The descriptions of the variables are shown in Table 1.

Table 1 Variable Definition

Variable	Definition
SG&A	The sum of sales and administrative expenses
TRA	Standardize the results of the Shenzhen Stock Exchange information disclosure level
REV	Revenue of Main Business
DEC	The variable equal to 1, if income declines from the previous year ,and zero otherwise.
SCDE	The variable equal to 1, if operating income decreased for two consecutive years, and zero otherwise.
AI	Ratio of total assets to Revenue
EI	The ratio of the number of employees at the end of the year to the operating income (million) this year
CR1	The median of the shareholding ratio of the largest shareholder is taken as the standard. If it is greater than the median, the variable is 1, otherwise it is 0.
LEV	The median of the debt asset ratio is taken as the standard. If it is greater than the median, the variable is 1, otherwise it is 0.

Research Design. Based on the ABJ model, adding the variables of accounting information transparency, and then test two research hypotheses of this paper. Specifically, the aim is to study the relationship between the accounting information transparency and the cost stickiness of manufacturing enterprises and the influence of the concentration of ownership of manufacturing enterprises on the relationship between the two.

$$In\frac{SG\&A_{I,t}}{SG\&A_{i,t-1}} = \alpha_0 + \alpha_1 \times In\left(\frac{REV_{i,t}}{REV_{i,t-1}}\right) + \alpha_2 \times DEC_{i,t} \times In\left(\frac{REV_{i,t}}{REV_{i,t-1}}\right) + \alpha_3 \times DEC_{i,t} \times In\left(\frac{REV_{i,t}}{REV_{i,t-1}}\right) \times Tra_{i,t} + \alpha_4 \times DEC_{i,t} \times In\left(\frac{REV_{i,t}}{REV_{i,t-1}}\right) \times SCDE_{i,t} + \alpha_5 \times DEC_{i,t} \times In\left(\frac{REV_{i,t}}{REV_{i,t-1}}\right) \times In[AI_{i,t}] + \alpha_6 \times DEC_{i,t} \times In\left(\frac{REV_{i,t}}{REV_{i,t-1}}\right) \times In[EI_{i,t}] + \alpha_7 \times SCDE_{i,t} + \alpha_8 \times In[AI_{i,t}] + \alpha_9 \times In[EI_{i,t}] + \varepsilon_{i,t}$$

Empirical Results

Descriptive Statistics.

Table 2 Sample Distribution and Descriptive Statistics

variable	Mean	SD	Min	Max
$\text{In}\frac{SG\&Ai,t}{SG\&Ai,t-1}$	-0.1010	0.7888	-6.2032	3.8700
SG&A	10006.785	2444.276	2.415	33708.17
$\text{In}\frac{REVi,t}{REVi,t-1}$	-0.0071	0.8913	-6.3873	6.1467
REV	9322.097	18374.8	1.48	53865.39
TRAN	2.9280	0.6287	1	4
DEC	0.3648	0.4815	0	1
SCDE	0.1670	0.3730	0	1
AI	2.0142	4.1205	0.1760	129.48
Total Assets（万元）	1179481	2312015	4189.1	20500000
In(EI*1000000)	0.1781	0.8928	-3.7111	3.6907
Employee	7667	12365.36	5	89786
CR_1	0.4266	0.4947	0	1
LEV	0.3806	0.4857	0	1
N	1776	1776	1776	1776

From Table 2, we can know that the average rate of change in sales and marketing expenses of manufacturing enterprises in Shenzhen A-share main board is -1.01%, and the average rate of change in operating income is -0.07%, which indicates that the increase in sales management expenses is higher than the increase in operating income, also confirming Kong Yusheng (2007) conclusion that the manufacturing company's operating cost management efficiency is low, as is the Shenzhen A-share main board listed manufacturing enterprise. The average level of accounting information disclosure is 2.92, indicating that the transparency of accounting information of manufacturing enterprises is in the basic qualification stage and needs to be further strengthened. The asset intensity is about 4.1205 on average and the labor intensity is 0.8928 on average. In terms of equity concentration, 42.66% of Shenzhen City manufacturing companies have a high shareholding ratio.

Regression Results.

Table 3 The impact of accounting information transparency on cost stickiness

	Model（1）	Model（2）		Model（3）	
		Low CR_1 sample	High CR1 sample	High LEV sample	Low LEV sample
	$\text{In}\frac{SG\&A_{I,t}}{SG\&A_{i,t-1}}$	$\text{In}\frac{SG\&A_{I,t}}{SG\&A_{i,t-1}}$		$\text{In}\frac{SG\&A_{I,t}}{SG\&A_{i,t-1}}$	
$\text{In}\left(\frac{REV_{i,t}}{REV_{i,t-1}}\right)$	0.801*** (53.12)	0.8100 （39.77）	0.738*** （42.06）	0.805*** (37.61)	0,.797*** (43.35)
$DEC_{i,t} * In\left(\frac{REV_{i,t}}{REV_{i,t-1}}\right)$	-0.389** (-3.18)	-0.1856 （1.40）	-0.743*** (-2.79)	-0.717*** (-3.10)	-0.12*** （-0.89）
$DEC_{i,t} * In\left(\frac{REV_{i,t}}{REV_{i,t-1}}\right) * Tra_{i,t}$	0.0918** (2.21)	0.0080 （0.17）	0.229*** (2.68)	0.206*** (2.65)	0.0020 (0.04)
$DEC_{i,t} * In\left(\frac{REV_{i,t}}{REV_{i,t-1}}\right) * SCDE_{i,t}$	-0.0134 (-0.52)	-0.0140 （-0.44）	0.0408 (1.13)	0.00316 (0.09)	0.0010 (0.03)
$DEC_{i,t} * In\left(\frac{REV_{i,t}}{REV_{i,t-1}}\right) * In[AI_{i,t}]$	-0.00263* (-2.21)	-0.0003 （-0.22）	-0.000704 (-0.12)	-0.0103 (-1.80)	-0.0016 (-1.25)
$DEC_{i,t} \times In\left(\frac{REV_{i,t}}{REV_{i,t-1}}\right) \times In[EI_{i,t}]$	-0.0135 (-0.57)	-0.0483*** （-0.44）	0.0456 (1.39)	0.0193 (0.55)	-0.0333 (-1.11)
N	**1776**	**759**	**1017**	**677**	**1099**
adjR^2	**0.7077**	**0.6719**	**0.6719**	**0.712**	**0.6853**

*, **, and *** indicate significance at 10%, 5%, and 1%, respectively. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

Model (1) aims to test the impact of accounting information transparency on cost stickiness.

From the empirical regression results of the model (1), the adjusted R^2 is 0.690, which is significant at the 5% level, indicating that the degree of fitting is higher and the independent variable can better reflect the dependent variable. If the costs are sticky, expect $\alpha_2 < 0$; or $\alpha_2 > 0$ or $=0$, indicating that cost stickiness does not exist. We can see that $\alpha_2 = -0.389$ and is significantly positive under 5% conditions, which means that the cost stickiness exists. In order to test the relationship between accounting information transparency and cost stickiness, we mainly investigate the coefficient significance of α_3,$\alpha_3 = 0.0918$, and is significantly positive under 5% condition, indicating that the more transparent the accounting information, the less the cost stickiness. Therefore, Hypothesis 1 has been established. Hypothesis 1 can be explained by agency costs. Because the internal cost information of manufacturing enterprises is complex and it is difficult to disclosure information, also providing managers opportunity to disclosure the less specific information to maximize their own benefits, which further weaken the transparency of corporate accounting information and worsen information asymmetry. Then, the problem of the information asymmetry will increase agent cost and agency cost is one of the motivations of cost stickiness, which means the higher the agency cost, the stronger the cost stickiness.

In order to test h2 and h3, we divide the sample into two sub-samples with high concentration of equity and low concentration of equity according to CR_1, and regresses the subsamples separately. The LEV data processing method is the same as above. The regression results are shown in Table 3. From the empirical results of model (2), $\alpha_3 = 0.04$, which is not significant at the 10% level, indicating that accounting information transparency has no significant effect on cost stickiness in firms with low equity concentration. $\alpha_3 = 0.091$, the coefficient is significantly positive under the condition of 1%, indicating that the transparency of accounting information in manufacturing enterprises with high concentration of equity has an enhanced effect on cost stickiness. From the empirical results of model (3), $\alpha_3 = 0.04$, which is not significant at the 10% level, indicating that accounting information transparency has no significant effect on cost stickiness in firms with low equity concentration. $\alpha_3 = 0.206$, the coefficient is significantly positive under the condition of 1%, indicating that accounting information transparency has a significant impact on cost stickiness in manufacturing enterprises with high asset-liability ratio.

Additional Analyses. We mainly use the following two methods to do the robustness test: (1) replace the dependent variable with the change rate of the sum of the operating cost and the sales management fee; (2) taking into account the lag effect of sales revenue and accounting information disclosure rating, we lag behind the independent variable. The empirical results are consistent with the original assumptions.

Conclusion

Taking the manufacturing companies listed on the Main Board of the Shenzhen Stock Exchange as a sample, the paper examines the impact of accounting information transparency on the cost stickiness of enterprises. The empirical results show that the transparency of accounting information can alleviate the cost stickiness of listed manufacturing companies. This finding provides suggestions for shareholder governance, which can enhance the external supervision ability by improving the transparency of accounting information to alleviate the problem of cost stickiness. In addition, the mitigation effect of accounting information transparency on cost stickiness is more significant in the sample with high concentration of equity and high asset-liability ratio. This finding indicates that enterprises can appropriately increase the concentration of equity, asset-liability ratio to improve the transparency of accounting information and alleviate cost stickiness.

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