Effectiveness of Internal Control, Financing Constraints and Corporate Value

Ya-zhou Zhang

School of Accounting, Dongbei University of Finance and Economics

217 Jianshan Street, Shahekou District, Dalian 116025, China

Tel: 86-411-8361-2983   E-mail: zhangyazhou2003@163.com

Abstract

Internal control plays an important role in corporate governance, and it will have an important impact on enterprise value. This paper chooses 16362 samples from 2009 to 2016 in Shanghai and Shenzhen as the research object, discusses the influence mechanism of the effectiveness of internal control on the enterprise value, and explores the effect path of the effectiveness of internal control on enterprise value from the perspective of financing constraints. The results show that: first, the effectiveness of internal control contributes to the value creation of enterprises, after using *3SLS* and fixed effects model to control possible endogeneity problems, the conclusions are still robust; second, financing constraints are effective paths for the effectiveness of internal control to influence enterprise value. The effectiveness of internal control can help enterprises achieve value growth by easing the financing constraints of enterprises. This paper enriches the theory of the internal control of the economic consequences, reveals the governance effectiveness of financing constraints in the effectiveness of internal control ,and provides useful inspiration for promoting China's internal control construction.

Keywords: Effectiveness of Internal Control, Enterprise Value, Financing Constraints, Function Path

1. Introduction

As a special governance mechanism, internal control is a beneficial supplement and perfection to the traditional corporate governance framework. The internal control construction of Chinese enterprises has experienced many years of development, and some remarkable achievements have been achieved. There are great differences among the academic circles on the relationship between internal control and enterprise value: Jain and Reazaee (2006) and Li (2008) believe that internal control helps to enhance the value of the enterprise, and Zhang (2007) and Engel (2007) argue that internal control lead to a decline in enterprise value, such as Ogneva (2007) and Beneish (2008) believe that internal control does not have an impact on the value of the enterprise. The admiration of the practical circles and the disagreement of academic circles has formed a huge contrast. Can high quality internal control achieve the expected target of the regulatory layer? In view of such a realistic problem, it is necessary to excavate the internal relationship between internal control and enterprise value, and clarify the influence mechanism of internal control effectiveness on enterprise value. Based on this, 16362 annual observation samples of A - Share Listed Companies in two cities of Shanghai and Shenzhen from 2009 to 2016 are studied in this paper. This article focuses on the path of how does effectiveness of internal control affect enterprise value. By constructing a path checking model, we try to find out the path of effectiveness of internal control affecting corporate value from the perspective of financing constraints.

2. Literature review and research hypothesis

2.1 Effectiveness of internal control and enterprise value

This paper holds that the effectiveness of internal control can affect enterprise value from two aspects: on the one hand, effective internal control can reduce agency conflicts and prevent adverse selection and moral hazard. The high quality of internal control can effectively balance the rights and obligations of all parties, and allocate power through the arrangement of main bodies of enterprises, so as to establish a control system that checks and balances with each other, which helps to reduce adverse selection and moral hazard of enterprises. On the other hand, effective internal control can reduce enterprise risk and information asymmetry. Ashbaugh-Skaife et al (2009) believes that companies with internal control defects have higher system risk and trait risk. As an important part of an enterprise, internal control is a fundamental management of the enterprise from the internal, and as an important mechanism to promote the legitimate operation of enterprises. Easley and OHara (2010) find

that asymmetric information brings enterprise risk, and internal control can greatly reduce the possibility of this risk and then provide a good development environment and atmosphere for the enterprise, which has a positive role in the promotion of the value of enterprises. Based on this, this paper puts forward the following hypotheses:

Hypothesis 1: there is a positive correlation between the effectiveness of internal control and the the enterprise value. In particular, the higher the effectiveness of the internal control is, the greater the value of the enterprise is.

2.2 The effectiveness of internal control, debt financing constraints and enterprise value

Good internal control can improve the information quality of enterprises, improve the degree of information asymmetry between the two sides of credit, reduce the risk of uncertainty, and help to ensure the safety of corporate credit funds. At present, financing problem in China has been a bottleneck restricting the development of enterprises. Firms with large financing constraints often face the risk of bankruptcy because they can't get the funds needed for development. The relevant state departments have also made a lot of attempts to reduce the financing constraints of enterprises. The logic of this paper is that the effectiveness of internal control can reduce the degree of financing constraints of enterprises, and help enterprises to obtain funds needed for development, which play an important role for enterprises to expand reproduction or investment in research and development, and will have a more positive impact on the growth of enterprise value. Thus, the following hypothesis is obtained:

Hypothesis 2: debt financing constraint is the path to improve the value of the enterprise by internal control effectiveness, in other words, effective internal control increases corporate value by reducing financing constraints.

3. Research design

3.1 Sample selection and data sources

The sample and data of this article are as follows: the first is the time window. Because "basic norms of internal control" and "internal control evaluation guidelines" in China were released in 2008, this paper selects the time window from 2009 to 2016, which can effectively identify the effectiveness of the internal control of the enterprise.The second is the research object. In this paper, we take China's Shanghai and Shenzhen A-shares listed company as the research object. In order to ensure the reliability of data and the universality of research conclusions, we deleted samples from financial industry, *ST* or **ST*, and deleted the samples of the missing variable data, and samples of significant changes in main business during the sample period. In the end, 16362 observation samples were obtained in this paper. The third is data sources. The financial data, corporate governance data, and internal control data used in this article are derived from the CSMAR and the Wind database.

3.2 Variable selection and definition

3.2.1 Interpreted variable

Enterprise value: first, Tobin Q value. Tobin Q is widely used in the research field of western enterprise value. For example, Graham (2017) and Fauver (2017) all use Tobin Q as the agency variable of enterprise value. Second, the economic added value EVA. The economic added value EVA of this article is: EVA= [NOPAT (Net Operating Profit After Tax)- Adjusted Capital×*WACC*]/ Total Assets.

3.2.2 Explanatory variable

The effectiveness of internal control: the effectiveness evaluation model of internal control of listed companies is set up in this paper, which is as follows:

$$
\begin{aligned}
ICE = {} & 0.13410 \times X_{11} + 0.12312 \times X_{12} + 0.12312 \times X_{12} + 0.01859 \times X_{13} + 0.08228 \times X_{14} \\
& + 0.03988 \times X_{15} + 0.01671 \times X_{16} + 0.01059 \times X_{21} + 0.10547 \times X_{22} + 0.02001 \times X_{23} \\
& + 0.01397 \times X_{24} + 0.03039 \times X_{25} + 0.12616 \times X_{26} + 0.01900 \times X_{31} + 0.04790 \times X_{32} \\
& + 0.01966 \times X_{33} + 0.02776 \times X_{34} + 0.02695 \times X_{35} + 0.02451 \times X_{41} + 0.01484 \times X_{42} \\
& + 0.01117 \times X_{43} + 0.01201 \times X_{44} + 0.00658 \times X_{45} + 0.09538 \times X_{51} + 0.01370 \times X_{52} \\
& + 0.01348 \times X_{53} + 0.00772 \times X_{54} + 0.03541 \times X_{55}
\end{aligned}
\tag{1}
$$

Among then, *ICE* is the level of the effectiveness of the internal control of the enterprise.

Financing constraints:

First, the *WW* model. Whited and Wu (2006) have established the following models:

$$WW_{it} = -0.091 \times CF_{it} - 0.062 DDiv_{it} - 0.021 \times Lev_{it} - 0.044 \times Size_{it} + 0.102 \times ISG_{it}$$
$$- 0.035 \times Growth_{it} \tag{2}$$

Among them, *DDiv* is a dumb variable to pay dividends. When the enterprise pays dividends, it will be 1, otherwise it will be 0. *Size* is the natural logarithm of the total assets of the enterprise, *ISG* is the growth rate of the industry's operating income, and *Growth* is the growth rate of the enterprise's operating income. The *WW* index is a positive index, and the larger the *WW* index is, the greater the financing constraints are.

Second, *SA* model. Hadlock and Pierce (2010) mainly estimated the financing constraints of the enterprise from two aspects of the scale and age of the enterprise. The concrete models are as follows.

$$SA_{it} = -0.737 \times Size_{it} + 0.043 \times Size_{it}^2 - 0.04 \times Age_{it} \tag{3}$$

Among them, *Age* is the age of the enterprise. Referring to the practice of Hadlock and Pierce (2010), this paper takes the absolute value of the *SA* index, and the greater the value is, the lower the financing constraints are.

3.2.3 Control variable

Based on the study of enterprise value by Jong (2014), Schmidt and Fahlenbrach (2017), this paper controls the following variables: first, *Size* (enterprise scale), natural logarithm of total assets at the end of the period; second, *Growth*, the growth rate of operating income; third, *CF*, the ratio of net value of cash flow to total assets; fourth, *EPS*, the ratio of net profit to total stock; fifth, *Lev*, the ratio of total liabilities to total assets; sixth, *RD*, the ratio of RD input to business income; seventh, *Age*, the natural logarithm of the company's time of listing; eighth, *Cross*, the company Cross is 1 in H-shares or N shares, and otherwise is 0; ninth, *HI*, proportion of the first largest shareholder; tenth, *Dsize*, the natural logarithm of the number of board of directors of a company; eleventh, *Dir*, the proportion of the number of independent directors in the total number of boards of directors; twelfth, *Ssize*, the natural logarithm of the number of the board of supervisors; thirteenth, *Pay*, the natural logarithm of the average salary of the top three executives; fourteenth, *PT*, the PT is 1 while the board and the general manager are the same, and otherwise is 0. In addition, this paper also designed the annual virtual variable *Year* and the industry virtual variable *Ind*.

3.3 Test model design

In order to test the internal relationship between the effectiveness of internal control and the enterprise value of the listed companies, the following model is built.

$$CV_{it} = \alpha_0 + \alpha_1 ICE_{it} + \alpha_2 Size_{it} + \alpha_3 Growth_{it} + \alpha_4 CF_{it} + \alpha_5 EPS_{it} + \alpha_6 Lev_{it} + \alpha_7 RD_{it}$$
$$+ \alpha_8 Age_{it} + \alpha_9 Cross_{it} + \alpha_{10} H1_{it} + \alpha_{11} Dsize_{it} + \alpha_{12} Dir_{it} + \alpha_{13} Ssize_{it} + \alpha_{14} Pay_{it} \tag{4}$$
$$+ \alpha_{15} PT_{it} + \sum Year_{it} + \sum Ind_{it} + \varepsilon$$

Among them, CV_{it} is the value of the *i* enterprise for *t* years, including the Tobin Q and the economic added value *EVA*. ICV_{it} is the degree of internal control effectiveness of the *i* enterprise for *t* years, and the other variables are control variables.

At the same time, in order to reveal the intermediary role of debt financing in the relationship between the internal control effectiveness and the enterprise value, the following test model is constructed.

$$FC_{it} = \beta_0 + \beta_1 ICE_{it} + \beta_2 Size_{it} + \beta_3 Growth_{it} + \beta_4 CF_{it} + \beta_5 EPS_{it} + \beta_6 Lev_{it} + \beta_7 RD_{it}$$
$$+ \beta_8 Age_{it} + \beta_9 Cross_{it} + \beta_{10} H1_{it} + \beta_{11} Dsize_{it} + \beta_{12} Dir_{it} + \beta_{13} Ssize_{it} + \beta_{14} Pay_{it} \tag{5}$$
$$+ \beta_{15} PT_{it} + \sum Year_{it} + \sum Ind_{it} + \varepsilon$$

$$CV_{it} = \chi_0 + \chi_1 ICE_{it} + \chi_2 FC_{it} + \chi_3 Size_{it} + \chi_4 Growth_{it} + \chi_5 CF_{it} + \chi_6 EPS_{it} + \chi_7 Lev_{it}$$
$$+ \chi_8 RD_{it} + \chi_9 Age_{it} + \chi_{10} Cross_{it} + \chi_{11} H1_{it} + \chi_{12} Dsize_{it} + \chi_{13} Dir_{it} + \chi_{14} Ssize_{it} \tag{6}$$
$$+ \chi_{15} Pay_{it} + \chi_{16} PT_{it} + \sum Year_{it} + \sum Ind_{it} + \varepsilon$$

where FCit is the financing constraint of the i enterprise for t years, including the WW index and the SA index.

4. Internal control effectiveness evaluation research

4.1 Descriptive statistics

From the descriptive statistics of Table 1, there is a certain difference in the enterprise value between the observed samples. The maximum value of Tobin *Q* is 11.250, the minimum value is 0.000, the average value is

2.175; the maximum economic added value *EVA* is 0.150, the minimum value is -0.221, the average value is 0.002; the maximum value of internal control effectiveness *ICE* is 0.381, the minimum value is 0.285, the average value is 0.345, which shows that there are certain differences in the internal control effectiveness among different listed companies in China. Taking the SA index as an example, the maximum value is 9.220 and the minimum value is only 0.833. The cost of debt financing is 0.079, which is similar to the real economic life.

Table 1. Descriptive statistical results

Variable	Mean	SD	Min	p25	p50	p75	Max
Q	2.175	1.980	0.000	0.882	1.643	2.807	11.250
EVA	0.002	0.053	-0.221	-0.019	0.002	0.028	0.150
ICE	0.345	0.020	0.285	0.340	0.349	0.352	0.381
WW	-0.884	0.394	-1.230	-1.050	-0.990	-0.917	0.799
SA	4.139	1.488	0.833	3.160	3.910	4.870	9.220
COF	0.089	0.132	0.000	0.045	0.075	0.113	0.273
Size	21.913	1.284	19.256	20.996	21.752	22.642	25.810
Growth	0.153	0.341	-0.572	-0.032	0.108	0.269	1.810
CF	0.040	0.076	-0.201	0.000	0.040	0.084	0.256
EPS	0.343	0.450	-0.950	0.080	0.260	0.530	2.070
Lev	0.444	0.223	0.045	0.265	0.438	0.614	0.985
RD	0.026	0.036	0.000	0.000	0.015	0.038	0.206
Age	2.044	0.872	0.000	1.386	2.303	2.773	3.178
Cross	0.065	0.246	0.000	0.000	0.000	0.000	1.000
H1	0.355	0.154	0.086	0.233	0.334	0.462	0.757
Dsize	2.155	0.198	1.609	2.079	2.197	2.197	2.708
Dir	0.371	0.053	0.308	0.333	0.333	0.400	0.571
Ssize	1.262	0.257	1.099	1.099	1.099	1.609	1.946
Pay	12.966	0.726	11.002	12.514	12.970	13.424	14.870
PT	0.240	0.427	0.000	0.000	0.000	0.000	1.000

4.2 The regression analysis of the effectiveness of internal control and the value of the enterprise
4.2.1 Basic regression
Table 2 shows the results of the return of the effectiveness of internal control and the value of the enterprise. From the results of OLS regression, it is found that the effectiveness of internal control *ICE* is significantly positively correlated with Tobin *Q* and economic added value *EVA* at the level of 0.01. This shows that good effectiveness of internal control contributes to the growth of enterprise value, which validates the research hypothesis 1 of this article. Effective internal control can mitigate agency conflicts, reduce information asymmetry and agency costs, and ultimately play a role in the value growth of enterprises. The study found that the internal control system in China has reached the expected goal of the regulatory layer and has an important positive significance for the growth of the value of the enterprise.
4.2 The regression results after considering the endogeneity problem
Simultaneous equations: the possible interaction between the internal control effectiveness and the value of the enterprise. In order to solve the potential endogenous problems between the two key variables, this paper constructs a simultaneous equation model, and uses the *Three Stage Least Square* (*3SLS*) to do the regression analysis and to test the reliability of the conclusion of the study. The specific model is shown as follows:

$$
\begin{cases}
CV_{it} = \alpha_0 + \alpha_1 ICE_{it} + \alpha_2 Size_{it} + \alpha_3 Growth_{it} + \alpha_4 CF_{it} + \alpha_5 EPS_{it} + \alpha_6 Lev_{it} + \alpha_7 RD_{it} \\
\qquad + \alpha_8 Age_{it} + \alpha_9 Cross_{it} + \alpha_{10} H1_{it} + \alpha_{11} Dsize_{it} + \alpha_{12} Dir_{it} + \alpha_{13} Ssize_{it} + \alpha_{14} Pay_{it} \\
\qquad + \alpha_{15} PT_{it} + \sum Year_{it} + \sum Ind_{it} + \varepsilon \qquad\qquad\qquad\qquad (7) \\
ICE_{it} = \zeta_0 + \zeta_1 Size_{it} + \zeta_2 Growth_{it} + \zeta_3 CF_{it} + \zeta_4 EPS_{it} + \zeta_5 Lev_{it} + \zeta_6 H1_{it} + \zeta_7 Dsize_{it} \\
\qquad + \zeta_8 Dir_{it} + \zeta_9 Ssize_{it} + \zeta_{10} PT_{it} + + \zeta_{11} PRN_{it} + \zeta_{12} Law_{it} + \sum Year_{it} + \sum Ind_{it} + \varepsilon
\end{cases}
$$

Among them, *PRN* is the property rights of the enterprise, the *PRN* is 1 while the enterprise is state-owned property right , and otherwise is 0. *IE* is the degree of marketization.

Fixed effect model: influence factors of the enterprise value are complex. There may also be some factors that have not been found to affect the value of the enterprise, which will lead to the existence of that test model variable problem. The *Fixed Effects Model* helps resolve the problems that may exist in the lost variables in this study. In view of this, this article uses the *Fixed Effects Model* to carry on the regression analysis.

From the regression results in Table 2, we can see the regression results after using *3SLS* and *Fixed Effects Model* that the internal control effectiveness is positively correlated with the value of enterprises at the level of 0.01 and 0.05 respectively, which is consistent with the previous empirical results. This indicates that after controlling the potential endogeneity problem, there is a positive correlation between the effectiveness of internal control and the value of enterprises. The research hypothesis 1 in this paper has been confirmed.

4.3 The regression analysis of the effectiveness of internal control, debt financing constraints and enterprise value.

Table 3 shows the results of the internal control effectiveness, debt financing constraints and enterprise value. From the regression result after taking the *WW* index as the financing constraint proxy variable, we can see that the internal control effectiveness *ICE* is negatively correlated with the financing constraint *WW* index at 0.05 level, and the regression coefficient is -0.015. This shows that good internal control can reduce the financing constraints, and the internal control effectiveness *ICE* is significantly positively correlated with Tobin *Q* or economic value added *EVA* at the level of 0.01, while the *WW* index of financing constraints is significantly negatively correlated with the Tobin *Q* and the economic value added *EVA* at 0.1 and 0.05 level respectively. In economics, the internal control effectiveness can promote the growth of business value by reducing the debt financing constraints of enterprises, and verify the hypothesis 2 of this paper. In the same way, the regression results using *SA* index as a financing constraint agent variable to support the above conclusion.

5. Conclusion

Based on the 16362 observation samples of Shanghai and Shenzhen A share listed companies during 2009-2016 years, this paper empirically examines the relationship between effectiveness of internal control and corporate value, and explores the role of debt financing in the relationship between internal control effectiveness and enterprise value. The results show that: first, the effectiveness of internal control is positively correlated with corporate value, in other words, the higher the internal control efficiency is, the higher the corporate value is. After using *3SLS* and *Fixed Effect Model* to control the possible endogeneity problem, the conclusion is still robust. Second, there is a significant negative correlation between the effectiveness of internal control and the debt financing constraints of enterprises, and the debt financing constraints have a significant negative correlation with the enterprise value. This shows that the effectiveness of internal control can alleviate the financing constraints of enterprises, and then improve the value of enterprises.

Table 2 regression results of effectiveness of internal control and enterprise value

Variable	OLS		3SLS		Fixed Effects Model	
	Q	EVA	Q	EVA	Q	EVA
ICE_{it}	3.055***	0.062***	40.869***	2.371***	4.107***	0.051**
	(3.388)	(3.151)	(3.924)	(7.642)	(4.686)	(2.559)
$Size_{it}$	-0.775***	0.001*	-0.705***	0.005***	-0.941***	0.009***
	(-21.488)	(1.772)	(-28.125)	(6.842)	(-13.069)	(6.161)
$Growth_{it}$	0.258***	0.020***	0.252	0.020***	0.130***	0.014***
	(5.121)	(17.509)	(5.935)	(15.245)	(2.606)	(13.158)
CF_{it}	0.684***	0.104***	1.025***	0.123***	-0.148	0.058***
	(2.620)	(16.368)	(4.813)	(19.026)	(-0.604)	(9.546)
EPS_{it}	0.517***	0.073***	0.653***	0.080***	0.403***	0.078***
	(8.645)	(42.592)	(13.576)	(56.438)	(7.098)	(38.181)
Lev_{it}	-1.130***	-0.034***	-1.335***	-0.046***	-1.521***	-0.054***
	(-6.832)	(-10.375)	(-14.222)	(-16.622)	(-7.484)	(-12.382)
RD_{it}	5.112***	-0.008	5.030***	-0.014	1.500	-0.036
	(6.102)	(-0.478)	(10.543)	(-1.336)	(1.288)	(-1.473)
Age_{it}	0.239***	0.003***	0.258***	0.004***	0.431***	0.016***
	(7.614)	(4.705)	(13.454)	(8.760)	(7.359)	(12.362)
$Cross_{it}$	0.466***	-0.010***	0.472***	-0.010***		
	(4.380)	(-4.662)	(8.617)	(-8.191)		
$H1_{it}$	0.433***	0.010***	0.765***	0.028***	-0.132	0.024***
	(3.120)	(3.178)	(6.500)	(7.966)	(-0.329)	(3.300)
$Dsize_{it}$	0.179	0.001	0.379***	0.012***	0.229	0.012***
	(1.488)	(0.382)	(3.847)	(4.107)	(1.279)	(3.238)
Dir_{it}	2.062***	-0.005	2.693***	0.030***	0.569	0.014
	(4.855)	(-0.636)	(8.028)	(2.944)	(1.203)	(1.258)
$Ssize_{it}$	0.044	-0.001	0.154**	0.005**	-0.016	-0.011***
	(0.533)	(-0.757)	(2.352)	(2.326)	(-0.090)	(-2.965)
Pay_{it}	0.157***	0.005***	0.157***	0.004***	0.246***	0.006***
	(4.627)	(5.848)	(7.183)	(9.116)	(4.595)	(4.572)
PT_{it}	0.001	-0.000	-0.088**	-0.005***	0.001	0.001
	(0.028)	(-0.144)	(-2.172)	(-4.083)	(0.024)	(1.148)
Constant	15.083***	-0.136***	30.793***	0.613***	17.413***	-0.343***
	(9.221)	(-8.958)	(9.612)	(6.214)	(10.227)	(-9.965)
Year/Ind	Control	Control	Control	Control	Control	Control
Adj-R²	0.368	0.600	16362	16362	16362	16362
N	16362	16362	0.186	0.171	0.214	0.516

Note: *、**、*** respectively represent a significant level of 10%, 5% and 1%; the parentheses are *t* values. The standard error has been processed by *cluster* at the company level. This article does not report the regression results of the internal control effectiveness model by *3SLS*. The iterative *3SLS* conclusion has not changed.

European Journal of Business and Management
www.iiste.org
ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online)
Vol.10, No.3, 2018

Table 3 the regression results analysis of the internal control effectiveness, debt financing constraints and enterprise value

Variable	WW	Q	EVA	SA	Q	EVA
ICE_{it}	-0.015**	3.055***	0.063***	0.492***	3.173***	0.061***
	(-2.085)	(3.388)	(3.154)	(3.220)	(3.535)	(3.059)
WW_{it}		-0.022*	-0.001**			
		(-1.718)	(-2.563)			
SA_{it}					0.239***	0.004**
					(2.847)	(2.345)
$Size_{it}$	-0.042***	-0.774***	0.001*	1.200***	-1.062***	0.006***
	(-9.897)	(-21.538)	(1.695)	(262.667)	(-9.668)	(2.725)
$Growth_{it}$	-0.069***	0.260***	0.020***	0.018***	0.254***	0.020***
	(-4.194)	(5.157)	(17.430)	(3.011)	(5.045)	(17.564)
CF_{it}	-0.190***	0.688***	0.104***	0.081**	0.665**	0.105***
	(-4.456)	(2.637)	(16.342)	(2.572)	(2.549)	(16.423)
EPS_{it}	-0.022**	0.517***	0.073***	-0.030***	0.524***	0.072***
	(-2.392)	(8.650)	(42.585)	(-3.157)	(8.799)	(42.483)
Lev_{it}	0.024	-1.130***	-0.034***	-0.051**	-1.117***	-0.034***
	(1.256)	(-6.839)	(-10.367)	(-2.252)	(-6.759)	(-10.421)
RD_{it}	0.028	5.111***	-0.008	0.754***	4.932***	-0.005
	(0.285)	(6.101)	(-0.476)	(6.765)	(5.855)	(-0.303)
Age_{it}	0.037***	0.238***	0.003***	-0.219***	0.291***	0.002***
	(8.281)	(7.569)	(4.761)	(-18.877)	(7.725)	(2.766)
$Cross_{it}$	-0.032***	0.466***	-0.010***	0.012	0.463***	-0.010***
	(-2.761)	(4.384)	(-4.675)	(0.668)	(4.435)	(-4.653)
$H1_{it}$	0.029	0.432***	0.010***	0.022	0.427***	0.010***
	(1.336)	(3.116)	(3.187)	(0.891)	(3.096)	(3.219)
$Dsize_{it}$	0.000	0.179	0.001	0.033*	0.171	0.001
	(0.009)	(1.489)	(0.382)	(1.661)	(1.429)	(0.431)
Dir_{it}	0.051	2.061***	-0.005	0.192***	2.016***	-0.004
	(0.749)	(4.851)	(-0.630)	(3.242)	(4.778)	(-0.542)
$Ssize_{it}$	-0.008	0.044	-0.001	-0.045***	0.055	-0.002
	(-0.577)	(0.535)	(-0.761)	(-2.903)	(0.668)	(-0.856)
Pay_{it}	-0.014**	0.157***	0.005***	-0.021***	0.162***	0.005***
	(-2.158)	(4.640)	(5.831)	(-3.377)	(4.798)	(5.727)
PT_{it}	0.008	0.001	-0.000	0.020***	-0.003	-0.000
	(1.109)	(0.024)	(-0.134)	(2.623)	(-0.070)	(-0.062)
Constant	0.494***	15.072***	-0.135***	-21.363***	20.188***	-0.220***
	(4.146)	(9.227)	(-8.931)	(-196.699)	(8.196)	(-5.564)
Year/Ind	Control	Control	Control	Control	Control	Control
F	27.02***	86.88***	136.19***	4289.17***	88.49***	136.12***
Adj-R^2	0.056	0.369	0.600	0.969	0.369	0.601
N	16362	16362	16362	16362	16362	16362

Note: *、**、*** respectively represent a significant level of 10%, 5% and 1%; the parenthesis is *t*.

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