

The Impact of Equity Incentives on Idiosyncratic Risk: Evidence from the Panel Regression Analysis

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Abstract. Idiosyncratic risk of listed firms has attracted the attention of a series of researchers. Using the data of A-share listed firms in the Shanghai Stock Exchange and Shenzhen Stock Exchange, we examine the impact of equity incentives on listed firms' idiosyncratic risks. Based on the panel regression model and fixed effects model, we find that the degree of equity incentives is positively correlated with idiosyncratic risk. This correlation is robust to a series of robustness checks including the use of alternative samples and the inclusion of some possibly omitted variables. Further analysis shows that equity incentives would not infect the idiosyncratic risk of SOE companies, but have a significant and positive impact on the idiosyncratic risk of non-SOE companies; the impact of equity incentives is more pronounced to the firms with better corporate governance, which have Big-4 auditors and more analysts. These findings provide support to the notion that equity incentive is positively associated with corporate idiosyncratic risk.

Keywords: Idiosyncratic risk; Equity incentive; Agency issues; Internal control.

1. Introduction

Equity incentives are a long-term incentive mechanism promoted by companies to motivate employees or managers and retain core talents. It is one of the most commonly used methods of motivating employees in companies around the world. Equity incentives are mainly to give employees part of the shareholders' rights and interests through conditions so that employees consider the benefits of their labour wages and assume part of the owner's responsibilities, thus forming a community of interests with the company. This method can effectively promote the company's expected growth and its employees, thereby helping the company achieve the long-term goal of stable development.

In general, the main types of equity incentives are divided into restricted stocks and stock options. Existing literature proves that equity incentives have different effects on different markets. Many scholars at home and abroad have conducted a large number of empirical analyses on the impact of corporate management's equity incentives and corporate performance and whether there is a positive correlation between the value of the company. The results of the realization analysis of Londerer and Martin [1] show that management owning a large number of shares cannot improve the performance of their companies, which means that equity incentives are ineffective for the companies. However, many studies have concluded how much management's shareholding affects corporate performance, such as Morok, Meconnell, and Servaes [2]. They proved that corporate performance could rise first and then decline with the increase in management equity incentives, and the two are in an inverted U-shaped relationship.

However, as far as the Chinese market is concerned, the conclusion drawn by domestic scholars is that there is only a weak correlation between equity incentives and corporate performance. A low shareholding ratio will not have an incentive effect on managers. Only after the manager's shareholding reaches a higher ratio can it significantly impact corporate performance [3]. In recent years, after implementing the "Measures for the Management of Equity Incentives for Listed

Companies" in the Chinese market on August 13, 2016, the implementation of equity incentives has received significant support.

In this paper, we want to explore the impact of equity incentives on idiosyncratic risks in the Chinese market. Based on the samples of A-share of the Shanghai and Shenzhen stock exchanges between 2007-2018, we investigate the impact of equity incentives on corporate idiosyncratic risk. We found that the degree of equity incentives and idiosyncratic risk is positively correlated. This correlation is robust to a series of robustness checks, including the use of alternative samples and the inclusion of some possibly omitted variables. In addition, the firm size and firm age are significantly and negatively related to idiosyncratic risk, while the firm leverage has a significant positive relationship with the idiosyncratic risk. Further analysis shows that equity incentives would not infect the idiosyncratic risk of SOE companies, but have a significant and positive impact on the idiosyncratic risk of non-SOE companies; the impact of equity incentives is more pronounced to the firms with better corporate governance, which have Big-4 auditors and more analysts. These findings provide support to the notion that equity incentive is positively associated with the idiosyncratic risk of a corporation.

Our paper adds to the growing study of equity incentives and their effect on idiosyncratic risk. By using empirical study, we provide new evidence on the side-effect of equity incentives and extend the prior study on idiosyncratic risk of firms in China by taking equity incentive into consideration. In general, this paper provides support to the notion that equity incentive hampers corporate governance of Chinese listed firms.

The remainder of this study is organized as follows. We develop our hypothesis in Section 2. Section 3 describes the research design, including sample selection, model specification, and variable measurement. The empirical results are discussed in Section 4. Section 5 provides robustness checks and Section 6 performs further analyses. Section 7 concludes the paper.

2. Hypothesis development

When management invests, the uncertainty of returns comes from the overall volatility of the market and the uncertainty of the individual company. Compared with the macro market factors, the uncertainty of individual returns comes more from internal reasons. Moreover, when their investment portfolio deviates from the optimal portfolio of market investments, the company faces higher risks than the market risk, resulting in heterogeneous risks of individual companies. Company heterogeneous risk also reflects the degree of internal management, which depends on the company's management level, technology, business philosophy, product market competition and debt burden, and other factors. The previous study shows that firms with internal control deficiencies have significantly higher idiosyncratic risk and systemic risk [4].

Concerning the impact of equity incentives, there are two opposite views in previous studies. On the one hand, Cho points out that there is a significant link between management shareholding and firm value, and management shareholding can align management and shareholder interests as well as reduce management's short-term behavior [5]. Aggarwal [6] illustrates that investment behavior has a private cost, and stock options will reduce the problem of corporate overinvestment and underinvestment. Hall and Liebman [7] show that there is a positive correlation between firm performance and equity incentives by examining data from 475 firms in the United States from 1980 to 1994. Equity incentives can reduce a given firm's own heterogeneous risk because they reduce agency costs between shareholders and management, thus reducing information asymmetry. It aligns with the interests of shareholders and management. Jensen and Meckling [8] strengthen the internal management of firms and reduce operational and debt risks. Such problems are more evident in large Chinese State-Owned Enterprises (hereafter, SOEs), where management is supervised individually, and management has greater power and insufficient rights to share residual profits. These enterprises have no pressure to survive, and they are well-capitalized, their risks that the state's reputation can mostly guarantee. In this case, they tend to misuse corporate funds and use excessive on-the-job

spending, reducing higher agency costs. When equity is granted to the management, it links their interests with the interests of the enterprise, allowing them to share profits and risks with the enterprise, reducing agency costs, and improving the performance of the company.

On the other side, the empirical results of Panousi and Papanikolaou [9] suggest that equity incentives help to mitigate the risk aversion of corporate managers caused by environmental uncertainty and increase corporate investment. Option incentives can better promote risk-taking by corporate managers. However, this will undoubtedly increase the risk of the corporate portfolio and break the equilibrium of the risk-free bond portfolio. Furthermore, high-power equity incentives can also have negative managerial effects, which can lead to irregular disclosure of information by the CEO to distort the true picture of the firm, and a “defensive effect” in which the CEO manipulates the disclosure of information to avoid principal monitoring or to try to cover up his investment failures or mismanagement. This can also change the CEO’s risk appetite and opportunistic exercise behavior, leading to a greater non-systematic risk to this firm.

According to the above analyses, we purpose the following hypotheses concerning the effect of equity incentives on corporate idiosyncratic risk:

Hypothesis 1a: The adoption of equity incentives for management will reduce corporate idiosyncratic risk, *ceteris paribus*.

Hypothesis 1b: The adoption of equity incentives for management will exacerbate corporate idiosyncratic risk, *ceteris paribus*.

3. Data and methodology

3.1 Models

In our model, IR (Idiosyncratic risk) is the dependent variable, while managerial equity incentives as an independent variable. To exclude the impact of endogenous concerns, we employ the next period of idiosyncratic risk IR_{t+1} to estimate the regression models. Taking control variables into consideration, we construct the following regression model, where $CrossList_t$ is a dummy variable.

$$IR_{t+1} = \alpha_0 + b_1 Stock_t + b_2 Size_t + b_3 Age_t + b_4 Roa_t + b_5 Lev_t + b_6 Frs_t + b_7 Growth_t + b_8 CrossList_t + \varepsilon_{i,t} \quad (1)$$

3.2 Dependent variable: Idiosyncratic risk (IR)

Based on Fama-French’s three-factor model, we can calculate the idiosyncratic risk with the model below:

$$R_{i,t} - R_{f,t} = \alpha_{i,t} + \beta_{i,t} (R_{m,t} - R_{f,t}) + \beta_{SMB,i,t} SMB + \beta_{HML,i,t} HML + \varepsilon_{i,t} \quad (2)$$

Where $R_{i,t} - R_{f,t}$ is the excess earning of a company; $R_{m,t} - R_{f,t}$ is the excess earning of the market; SMB is the Size factor of Small Minus Big; HML is the book-to-market factor of High Minus Low. $\alpha_{i,t}$ is the interception; $\beta_{i,t}$, $\beta_{SMB,i,t}$, and $\beta_{HML,i,t}$ are the sensitivity coefficient. $\varepsilon_{i,t}$ is the residual, from which IR (*Idiosyncratic risk*) could be calculated.

$$IR = \sqrt{Var(\varepsilon_{i,t})} \quad (3)$$

3.3 Test variable

The management is usually granted equity in the corporation to align the interests of the management with the interests of the shareholders. We adopt the following approach to calculate the equity incentives of managers in a given firm.

$$\frac{0.01 * Price * Share}{0.01 * Price * Share + Cashpay} \quad (4)$$

That is, for every 1% increase in the stock price, the percentage of the increase in the executive equity mechanism to the sum of the total compensation and the value of equity. The greater the value of $Stock_t$, the greater the intensity of equity incentives.

3.4 Control variables

We also include some well-known control variables in our regression model. We control $Roat_t$, which is defined as net profit divided by the book value of total assets in year t ; financial leverage (Lev_t), which equals to the book value of total debt divided by the book value of total assets. Furthermore, the increased percentage of sales growth ($Growth_t$) in year t . A dummy variable ($CrossList_t$) equals 1 if firm i is cross-listed in overseas exchanges in year t and 0 otherwise. Appendix A provides definitions for all the variables used in our analysis. All continuous variables are winsorized at 1% at both tails.

4. Empirical analyses

4.1 Descriptive statistics

Table1 reports the descriptive statistics, IR_{t+1} represents the corporate idiosyncratic risk. Its average value is about 0.885, the minimum value is 0.331, and the maximum value is 1.600. According to the data in Table1, it can be seen that the standard error is 0.271, which means that different firms have relatively significant differences in idiosyncratic risks.

However, according to the analysis of the median value, we can find that the sample with high idiosyncratic risk accounts for a higher proportion of the total sample. Lev_t represents a company's debt ratio, which has an average value of 0.468. Thus, it can be seen that in the Chinese market, the debt ratio of listed companies is generally high. Moreover, among them, the debt ratio of some companies can reach up to 0.957.

Table 1. Reported the results of descriptive statistics

variable	N	mean	sd	min	p50	max
IR_{t+1}	19,917	0.885	0.271	0.311	0.870	1.600
$Stock_t$	19,917	0.206	0.326	0	0.003	0.956
$Size_t$	19,917	22.060	1.293	19.460	21.90	25.970
Age_t	19,917	2.777	0.361	1.609	2.833	3.434
$Roat_t$	19,917	0.039	0.056	-0.195	0.035	0.204
Lev_t	19,917	0.468	0.207	0.062	0.470	0.957
Frs_t	19,917	0.359	0.153	0.086	0.342	0.754
$Growth_t$	19,917	0.206	0.553	-0.591	0.113	4.070
$CrossList_t$	19,917	0.074	0.261	0	0	1

4.2 Correlation analysis

In Table II, equity incentives are significantly and positively related to the idiosyncratic risk at the 1% significance level, which is consistent with our *Hypothesis 1b*, that is, the more equity incentives a firm has, the higher idiosyncratic risk in this firm. $Roat$ has a significant positive relationship with

equity incentives, which confirms our previous suspicion that equity incentives change management behavior and positively impact firm profitability. The regression results show that firm size, firm age, and firm profitability are significantly and negatively related to firm idiosyncratic risk. All other things being equal, a larger firm and an older firm will lead to a more rational regulatory system and internal structure, which will face relatively lower idiosyncratic risk.

Table 2. Summary statistics

	IR_{t+1}	stock1	Size	Age	Roa	Lev	Frs	Growth	CrossListt
IR_{t+1}	1	0.018**	-0.273***	-0.156***	-0.035***	0.001	-0.005	0.027***	-0.042***
$Stock_t$	0.040***	1	-0.093***	-0.123***	0.195***	-0.232***	-0.210***	0.107***	-0.120***
$Size_t$	-0.277***	-0.195***	1	0.197***	-0.059***	0.411***	0.188***	0.021***	0.210***
Age_t	-0.139***	-0.233***	0.171***	1	-0.104***	0.106***	-0.159***	-0.087***	0.109***
Roa_t	-0.028***	0.161***	-0.023***	-0.087***	1	-0.407***	0.112***	0.288***	-0.016**
Lev_t	0.002	-0.289***	0.397***	0.125***	-0.375***	1	0.036***	0.036***	0.092***
Frs_t	-0.009	-0.165***	0.223***	-0.157***	0.111***	0.035***	1	0.014**	0.043***
$Growth_t$	0.043***	0.043***	-0.000	-0.012*	0.171***	0.059***	0.034***	1	-0.031***
$CrossList_t$	-0.038***	-0.155***	0.267***	0.097***	-0.013*	0.094***	0.041***	-0.022***	1

*** is significant at the 1% level, ** is significant at the 5% level, * is significant at the 10% level; the relevant continuous variables were scaled up and down by 1%.

4.3 Univariate analysis

We divide the full sample into two groups according to the degree of equity incentives. As in Table III, G1(0) contains 9,986 samples and G2(1) group contains 9,931 samples, the sample companies in G1(0) group adopt a higher degree of equity incentives compared to G2(1) group. The degree of idiosyncratic risk faced by companies in G1(0) group is higher than that in the G2(1) group. This trend is significant, and the degree of equity incentives and idiosyncratic risk shows a significant positive correlation. In general, when firms adopt more aggressive equity incentive policies, the more severe the idiosyncratic risk problem faced by firms. A possible explanation for this phenomenon is that when shareholders adopt stock option incentives for management, managers may resort to unconventional means to promote the stock price rise. For example, the managers would probably inflate the corporate earnings to manipulate the stock price, which signifies internal control deficiency. As a result, the worsening internal control would increase the idiosyncratic risk of the firm. Our empirical results also indicate that equity incentives do not discourage firms from disclosing violations in competitive markets. This can lead to the opposite outcome of equity incentives than what is expected in the case.

Table 3. Univariate analysis

Variables	t	test	with	equal	variances	t-Value
	G1(0)	Mean1	G2(1)	Mean2	MeanDiff	
IR_{t+1}	9,986	0.879	9,931	0.890	0.0100	2.692***

4.4 D. Multivariate results

The effect of equity incentives on idiosyncratic risk can be seen in Table 4. In the regression results, the coefficients on equity incentives are 0.063 and 0.041 respectively, both are

significant at the 1% significance level. After adding control variables, there is a significant increase in the coefficients. The above results indicate that equity incentives will aggravate agency problems within the firm. The managers may hide bad news to make the stock price grow and create a price bubble, which makes the stock price inflated and the idiosyncratic risk increases significantly. In addition, managers may also adopt risky investments that break the balance of the company's portfolio and thus increase idiosyncratic risk. In line with our findings, Aboody and Kasznik [10] find that CEOs who are insiders tend to manipulate company information when they receive stock options by disclosing bad news early or good news late to lower the exercise price of stock options and increase their equity value. The relationship between executive stock ownership and disclosure

violations is further supported by the study of Agrawal and Cooper [11]. They find that executives engage in more stock trading during periods of corporate disclosure non-compliance.

From the regression results of the control variables in Table IV, we can find that firm size is significantly and negatively related to idiosyncratic risk. The larger the firm is, the lower the idiosyncratic risk it faces. Similarly, the firm leverage is significantly and positively related to the idiosyncratic risk. The lower the financial leverage is, the lower the idiosyncratic risk. Firm age is significantly and negatively related to the idiosyncratic risk. The older the firm is, the lower the level of idiosyncratic risk.

Table 4. Multivariate results

	(1) IR_{t+1}	(2) IR_{t+1}
$Stock_t$	0.063*** (8.66)	0.041*** (5.41)
$Size_t$		-0.056*** (-23.30)
Age_t		-0.014** (-1.98)
Roa_t		-0.057 (-1.39)
Lev_t		0.128*** (8.83)
Frs_t		0.102*** (6.69)
$Growth_t$		0.020*** (6.22)
$CrossList_t$		0.038*** (3.89)
_cons	1.272*** (54.70)	2.369*** (43.29)
N	19,917	19,917
Industry_fixed_effect	YES	YES
Year_fixed_effect	YES	YES
r2_a	0.248	0.293

4.5 Robustness tests

In order to test the robustness of our findings, we adopt the following approach to test the robustness of the results. First, we measure the equity variables in two ways; the first column measures the extent of the firm's equity incentives in terms of the number of shares held by management and the total number of shares in the firm. The second column test takes the 0-1 variable, which takes 1 when the company takes equity incentives and 0 when the company does not take equity incentives.

Second, we include the nature of ownership variables in the model, whether it is a state-owned enterprise (SOE_t); whether it is audited by an international Big 4 firm ($Big4_t$); the percentage of female directors ($Gender_t$); the average log age of management (Ln_age_t); and whether the company's chairman and CEO are the same person ($Isduality_t$). We test the robustness of hypothesis two by adding new variables. We adopt time-fixed effects and industry-fixed effects models to regress the three new models.

The results are shown in Table V, in the model that takes the 0-1 variable as a measure of equity incentives, the coefficient of the variable $Stock_t$ is significantly positive at the 1% level of significance. This result is the same as the result of the model that takes the number of management shares and the

total number of shares in the company to measure the degree of equity incentives in the company. This indicates that the different methods of measuring equity incentives have no significant effect on the results. The robustness of hypothesis two was tested. The effect of equity incentives on the risk of firm heterogeneity remains significantly positive in the model with new variables. In the test results, it is the Big4 coefficient that is significantly negative at the 5% significant level. This is also in line with our expectation that companies audited by Big 4 accounting firms are more regulated and rational in their operations and have lower idiosyncratic risk.

Table 5. Robustness tests

	(1) F_IR	(2) F_IR	(3) F_IR
<i>Stock_t</i>	0.073*** (5.22)	0.022*** (3.41)	0.044*** (5.35)
<i>Size_t</i>	-0.055*** (-22.79)	-0.057*** (-23.83)	-0.054*** (-21.86)
<i>Age_t</i>	-0.017** (-2.38)	-0.027*** (-3.85)	-0.015** (-2.12)
<i>Roa_t</i>	-0.048 (-1.18)	-0.040 (-0.97)	-0.053 (-1.29)
<i>Lev_t</i>	0.127*** (8.79)	0.122*** (8.44)	0.126*** (8.68)
<i>Frs_t</i>	0.094*** (6.24)	0.089*** (5.93)	0.103*** (6.67)
<i>Growth_t</i>	0.021*** (6.44)	0.021*** (6.47)	0.020*** (6.19)
<i>CrossList_t</i>	0.036*** (3.73)	0.036*** (3.72)	0.044*** (4.46)
<i>SOE_t</i>			0.005 (0.95)
<i>Big4_t</i>			-0.021** (-2.11)
<i>Gender_t</i>			0.003 (0.57)
<i>ln_age_t</i>			-0.014 (-1.39)
<i>Isduality_t</i>			-0.012 (-0.93)
_cons	2.370*** (42.99)	2.437*** (45.36)	2.399*** (36.61)
<i>N</i>	19917	19917	19917
Industry_fixed_effect	YES	YES	YES
Year_fixed_effect	YES	YES	YES
r2_a	0.293	0.292	0.293

4.6 Further analyses

To explore whether there are differences among different companies, we conduct the following heterogeneity analysis.

Table VI reports the results after we distinguish between state-owned and non-state-owned enterprises. The result of this regression shows that Stockt is not significant for state-owned enterprises, indicating that equity incentives have no apparent effect on state-owned enterprises. However, for non-state-owned enterprises, Stockt is a positive and significant effect, and increasing

equity incentives increase the heterogeneous risk of Non-SOE. Part of the reason is that state-owned enterprises have a massive advantage over non-state-owned enterprises because of their close political ties to the government. Projects that state-owned enterprises want to develop or plan often receive additional financial support, and additional cash flow increases the NPV of the project, reducing the adverse effects of heterogeneous risk on the project. Non-state-owned enterprises have the opposite reason.

Table 6. Further Analysis I

	(1) SOE	(2) NON-SOE
<i>Stock_t</i>	0.026 (1.05)	0.048*** (5.29)
<i>Size_t</i>	-0.065*** (-21.87)	-0.040*** (-11.16)
<i>Age_t</i>	-0.005 (-0.39)	-0.021** (-2.33)
<i>Roa_t</i>	0.056 (0.90)	-0.154*** (-2.81)
<i>Lev_t</i>	0.173*** (8.28)	0.071*** (3.72)
<i>Frs_t</i>	0.076*** (3.50)	0.148*** (6.90)
<i>Growth_t</i>	0.022*** (4.95)	0.021*** (4.73)
<i>CrossList_t</i>	0.040*** (3.71)	0.045** (2.45)
_cons	2.534*** (36.20)	2.072*** (24.25)
<i>N</i>	9899	10018
Industry_fixed_effect	YES	YES
Year_fixed_effect	YES	YES
r2_a	0.369	0.228

As Table VII shows below, the return in company size shows that equity incentives have a very significant effect on both large and small companies. For a High-Cap Company, *Stock_t* = 0.054 was more significant than 0.032. This result shows that the larger the enterprise, the more sensitive heterogeneous risk is to equity incentive policies. In addition, the heterogeneity of large firms is higher when two companies of different sizes adopt the same equity incentives.

Table VIII reports our results when we distinguish between different levels of corporate governance.

A company that has not gone through the Big4 trials. According to the following regression results, the coefficient of *Stock_t* in Big 4 is 0.086, ** The coefficient of *stock1* in Non-Big 4 is 0.039, ***. Both of these are significant, but the sensitivity of heterogeneity risk to equity incentives for firms that the Big Four audit departments have examined is higher than that of firms that the Big Four audit departments have not examined. It means that adopting the same equity incentive will increase the heterogeneity risk rate of the four significant trials more than that of the Non-Big4.

Table 7. Further Analysis II

	(1) High Cap	(2) Low Cap
<i>Stock_t</i>	0.054*** (4.06)	0.032*** (3.52)
<i>Size_t</i>	-0.066*** (-16.23)	-0.043*** (-8.33)
<i>Age_t</i>	-0.011 (-0.97)	-0.021** (-2.29)
<i>Roa_t</i>	-0.012 (-0.18)	-0.056 (-1.04)
<i>Lev_t</i>	0.235*** (11.04)	0.057*** (3.24)
<i>Frs_t</i>	0.117*** (5.53)	0.096*** (4.60)
<i>Growth_t</i>	0.023*** (5.37)	0.017*** (3.85)
<i>CrossList_t</i>	0.040*** (3.66)	0.079*** (4.75)
_cons	2.497*** (26.83)	2.187*** (19.82)
<i>N</i>	9095	10822
Industry_fixed_effect	YES	YES
Year_fixed_effect	YES	YES
r2_a	0.344	0.239

Table 8. Further Analysis III

	(1) Big4	(2) High Analyst	(3) NON Big4	(4) Low Analyst
<i>Stock_t</i>	0.086** (2.12)	0.045*** (4.54)	0.039*** (5.07)	0.023** (2.06)
<i>Size_t</i>	-0.067*** (-9.11)	-0.062*** (-20.38)	-0.053*** (-20.65)	-0.052*** (-14.25)
<i>Age_t</i>	-0.024 (-0.87)	-0.014 (-1.55)	-0.018** (-2.43)	-0.017 (-1.56)
<i>Roa_t</i>	-0.188 (-1.26)	-0.049 (-0.83)	-0.052 (-1.22)	-0.066 (-1.16)
<i>Lev_t</i>	0.282*** (4.72)	0.208*** (10.46)	0.115*** (7.78)	0.075*** (4.17)
<i>Frs_t</i>	-0.003 (-0.05)	0.056*** (2.90)	0.114*** (7.32)	0.156*** (7.32)
<i>Growth_t</i>	0.027 (1.54)	0.025*** (4.84)	0.019*** (5.93)	0.016*** (3.98)
<i>CrossList_t</i>	0.049** (2.47)	0.027** (2.27)	0.049*** (4.16)	0.059*** (4.40)
_cons	2.551*** (12.71)	2.525*** (34.80)	2.320*** (40.08)	2.271*** (27.83)
<i>N</i>	1331	9915	18586	10002
Industry_fixed_effect	YES	YES	YES	YES
Year_fixed_effect	YES	YES	YES	YES
r2_a	0.404	0.355	0.283	0.247

On the other hand, a High Analyst means an enterprise with more consultants; a Low Analyst is of Low significance. The regression results in Table 8 show that the heterogeneity risk of companies with more consultants is also more sensitive to equity incentives. Because an enterprise has further analysts, more people will participate in the decision-making of the market operation of the enterprise. Managers cannot operate independently of the company's stocks they hold at will, nor can they adjust them in time, which ultimately makes it difficult to reduce or eliminate the heterogeneity risk.

5. Conclusion

Using the data of A-share listed corporations, we investigate the impact of equity incentive on idiosyncratic risk of its corresponding corporation. We find that equity incentive is positively associated with corporate the idiosyncratic risk, which suggests that the implication of equity incentive would increase idiosyncratic risk and appears to hamper corporate governance. Further analysis shows that the equity incentive would significantly and positively impact the idiosyncratic risk of non-SOE companies but would not infect that of the SOE companies. In addition, we find that the firms with better corporate governance, which have Big-4 auditors or more analysts, would make the impact of equity incentives more pronounced. When the stock incentive is adopted for management, managers may resort to unconventional means to promote the stock price rise. Besides, the managers would probably manipulate the stock price by inflating the corporate earnings, which resembles a deficiency of the corporation's internal control. As a result, the worsening internal control would increase the idiosyncratic risk of the firm.

As mentioned before, the implication of equity incentive by the cooperation would increase its idiosyncratic risk, which appears to hamper its corporate governance. The result of this study sheds the negative effect of equity incentives on the internal governance of a company. This could remind directors and shareholders of corporations that incentive policy-making might hamper the development of the corporations; thus, firms should be deliberate about equity incentive policy. In addition, corporate policymakers should ponder on methods to make full use of this incentive policy as well as how to consummate corporate governance.

References

- [1] Loderer, C. & Martin, K., 1997. Executive stock ownership and performance tracking faint traces. *Journal of Financial Economics*, 45, 223-255.
- [2] McConnell and Servaes, 1990, "Additional Evidence on Equity Ownership and Corporate Value", *Journal of Financial Economics*, Vol.27, pp.596-612 - References - Scientific Research Publishing
- [3] Liu, G. and Wang, J., 2000. Atlantis-press.com. Available at: <<https://www.atlantis-press.com/article/125910891.pdf>> [Accessed 13 June 2021].
- [4] Hollis Ashbaugh-Skaife et al. "The Effect of SOX Internal Control Deficiencies on Firm Risk and Cost of Equity". *Journal of Accounting Research* 47.1(2009): 1-43.
- [5] Maria Ogneva and K. R. Subramanyam and K. Raghunandan. "Internal Control Weakness and Cost of Equity: Evidence from SOX Section 404 Disclosures". *The Accounting Review* 82.5(2007): 1255-1297.
- [6] Aggarwal, R.K., and, A.A. Samwick. 2006. Empire Builders and Shirkers: Investment, Firm Performance and Managerial Incentives. *Journal of Corporate Finance*, 12(3): P489 - 515
- [7] Hall, B.J., Liebman, J.B., 1998. Are CEOs really paid like bureaucrats? *Quarterly Journal of Economics* 113, P653 - 691.
- [8] Jensen, M.C., and Meckling, W.H., 1976. Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, 3 (4) : P305 - 60
- [9] Panousi, V., and D. Papanikolaou. 2012. Investment, Idiosyncratic Risk, and Ownership. *Journal of Finance*, 67(3) : P1113 - 1148
- [10] Aboody, D. and Kasznik, R. "CEO stock option awards and the timing of corporate voluntary disclosures". 2000, Vol.29 (1), p.73-100

- [11] Agrawal A, Cooper T. “Accounting scandals in IPO firms: do underwriters and VCs help?”. Journal of economics & management strategy, 2010-12, Vol.19 (4), p.1117-1181