Proceedings of the 3rd International Conference on Business and Policy Studies
DOI: 10.54254/2754-1169/75/20241844

Whether the Corporation's Agency Costs Could Be Influenced by Marketization

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Abstract: As several financial Scandals happened in the last two decades, internal control become important in corporate governance. Most scholars illustrate that internal control is the key factor in improving the firm performance by reducing agency costs. The research mainly tests that agency costs, as the mediator of internal control and firm performance, could be influenced by marketization. And use the market index as the creative point in measuring marketization. Then the empirical evidence has been developed by listed corporations from the Shanghai Stock Exchange Market. The results showed that agency costs are effective in reducing the market with higher marketization. Agency costs are less significant in increasing firm value in provinces with lower marketization (governments with higher power over law). The fair value of the information disclosure, strict regulation and monitors, and less power of government over the law on the market are all important factors to influence agency costs.

Keywords: internal control, agency costs, firm performance, marketization

1. Introduction

In the last two decades, several well-known accounting scandals including Enron, WorldCom, and Waste Management caused the loss of billions of dollars [1]. These accounting sandals destroyed companies and ruined peoples' lives. The main reason for accounting scandals is because of weak internal control. In order to reduce the influence caused by these accounting sandals and protect several stakeholders, the US federal government published the Sarbanes-Oxley Act of 2002 [2].

Internal control information disclosure can not only effectively adjust agency problems between managers and shareholders caused by information asymmetry, but also promote the improvement of corporate performance by improving agency efficiency [3]. Agency costs are commonly deemed as mediators of internal control and firm performance. In specific, effective internal control could increase firm performance by reducing agency costs.

Also, this research will mainly test whether agency cost could be influenced by the degree of market regulation. The market index will be used as an important indicator to measure the marketization of each province in China. The market index is well-known in China, as it is an essential project supported by the Chinese government [4]. The market index is an index system to measure the relative progress of marketization in each province in the form of an index in China [4]. Up to now, there has been no research combining market index and agency costs. The degree of

DOI: 10.54254/2754-1169/75/20241844

internal control and agency costs could vary by different region [5]. This research will solve this research gap to detect whether the agency cost is still the mediator of internal control and firm performance under different markets in the Chinese market.

2. Literature Review

The reason internal control could influence firm performance is due to the mediator, and agency cost [6]. Strong internal control could increase firm performance by decreasing agency costs [6]. Jensen and Meckling defined agency cost as the monitoring expenditures by the principal, the bonding expenditures by the agent, and the residual loss [7]. Ying found agency costs could be reduced when internal control has been improved [8]. Florackis used the listed corporation from the London Stock Exchange, which states that decreasing agency costs would have a positive influence on firm performance [9]. Wan and Wang discovered agency costs will increase the cost of corporations and reduce the firm performance, especially in investment [10]. A company must relinquish an investment project even if it has a positive net present value. The reason is the financial constraint due to the high cost of external funding [10].

Chang and Su affirmed that internal control disclosure could increase the firm performance due to the agency cost decreased as mediation [3]. Bush and Smith found internal control, especially information disclosure, could reduce the information asymmetry between internal and external stakeholders of the corporation, then reduce the risks of ethics of senior managers of the corporation, and agency costs could be reduced in the meantime [11]. Rahman et al. found strong internal control could improve corporate' governance and increase the firm value [12].

Beak illustrates During the financial crisis, if the level of internal control of listed companies is relatively high, the agency costs will be lower compared to corporations with weaker internal control. And the market value of the companies with strong internal control will decrease less. A strong internal control could increase the firm performance by decreasing agency cost, and agency cost could be observed as the mediation of internal control and firm performance [13].

Wang demonstrates that the less government intervention, the higher the degree of marketization, and the higher the level of corporate governance, the lower the agency costs [14]. Le Porta found that a country's legal system determines the governance structure and level of the country's companies to a large extent [15]. Effective corporate governance must be based on effective legal protection of investors. Chen also thought agency cost could be influenced by marketization, but no empirical evidence to prove the idea.

However, when they detected the two types of agency cost, namely, equity agency and debt agency cost, they discovered that not all types of agency cost have an influence on firm performance, but only debt agency cost is useful when agency cost is the mediation of internal control and firm performance [13].

From the above research, most scholars have proved agency cost is the mediator of internal control and firm performance, but there are relatively rare scholars has proved that agency cost could be deemed as a mediator under different degrees of marketization.

3. Methodology

3.1. Data collection

The data used in this research is mainly from China Stock Market & Accounting Research (CSMAR) and annual reports released by listed corporations between 2018 and 2020. As there are variety different requirements in data disclosure on the two Chinese stock markets (Shanghai and Shenzhen Stock Exchange), this research will only choose data from the Shanghai Stock Exchange Market (SSE). The data obtained in this research will exclude from three industries, the financial industry, the

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energy industry, and the public service industry, especially utility service corporations. Following this, the data in this research excludes ST corporations and corporations with missing data in the three-year period. Overall, this research includes 346 corporations from 2018 to 2020. Besides, the market indexes are all from Chinese Market Index Database.

3.2. Data Analysis

3.2.1. Internal control

Internal control is measured by internal control deficiency, Internal control is difficult to measure accurately. The most common method is using the internal control deficiencies information directly as an indicator, which disclosure directly on the annual reports [5].

3.2.2. Firm performance

Firm performance will mainly use ROA. ROA, ROE and Tobin 's Q are widely used in existing studies to measure firm performance [16]. Whilst return on equity (ROE) is sensitive to fluctuations in the capital, ROA is relatively stable [17]. ROA can be regarded as a widely used index for measuring a firm's overall performance and to reflect whether the firm utilizes all its assets in an effective and efficient way at the control level [18]. Tobin' s Q is a good measurement of firm performance and is widely used by numerous scholars [18]. However, most scholars in China have chosen not to use Tobin's Q as the measurement of firm performance, as the Chinese stock market has a lower rate of marketization which cannot compare to capitalized market [16]. Moreover, the Chinese security market could not meet the requirement of Tobin's Q because the market value could fairly reveal the real value of a corporation [19].

3.2.3. Agency cost

The scholars commonly used the asset utilization ratio to measure agency cost. The asset utilization ratio measures how effectively the firm's management manages and uses its assets, which is calculated as annual sales divided by total assets [20]. A higher asset utilization ratio means higher agency costs.

3.2.4. Marketization

Marketization will be measured by market indexes. This project is developed by Chinese government in 2018. The project use index to measure each province's marketization. The province with higher market index means the province with relative positive market environment and strict market regulation. There are 31 provinces in China and the top province is Jiangsu Province and last one is Xizang Province, and the middle provinces are Sichuan and Hunan Province.

Table 1: Market indexes of each province in China

	Province	Market Index		Province	Market Index		Province	Market Index
1	Jiangsu	8.51	12	Hubei	6.54	22	Guizhou	4.95
2	Guangdong	8.37	13	Henan	6.39	23	Shanxi	4.8
3	Shanghai	7.97	14	Liaoning	6.37	24	Heilongjiang	4.67
4	Zhejiang	7.95	15	Sichuan	6.19	25	Ningxia	4.45
5	Fujian	7.63	16	Hunan	6.13	26	Neimienggu	4.29
6	Shandong	7.07	17	Hebei	5.89	27	Hainan	4.27
7	Beijing	6.95	18	Shaanxi	5.72	28	Gansu	3.95

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Table 1: (continued).

8	Chongqing	6.87	19	Guangxi	5.34	29	Xinjiang	3.93
9	Tianjin	6.6	20	Yunnan	5.16	30	Qinghai	3.35
10	Jiangxi	6.59	21	Jilin	4.96	31	Xizang	1.56
11	Anhui	6.58						

3.2.5. Control Variables

The six control variables that might be related to firm performance chosen in this model are ownership concentration, operating income growth rate, current ratio, debt asset ratio, firm size, and time to market. The measurement methods are listed in Table 2.

Table 2: Control variables and measurement methods

Code	Control Variable	Measurement Method
OC	Ownership Concentration	Shareholding Ratio of the top Three Shareholders
WETH	Operation Income Growth Rate	Operating Income Increase Compared to Last Year
LIQ	Current Ratio	Current Assets/Current Liabilities (Year End)
LEV	Debt Asset Ratio	Total Liabilities/Total Assets
SIZE	Firm Size	Total Assets in Log
Age	Time to Market	Number of Years in Listed Market
INDU	Industries	Dummy Variables

3.3. Hypothesis

H1: Agency cost is the mediation of the internal control and firm performance.

H2: Agency cost has a higher mediation rate in areas with strict regulators (group 1), and will have less significance in areas with non-strict regulators (group 2).

The 346 corporations are divided into two groups, and division is complied with market index released in 2018. Then the 346 corporations are divided into two groups by its province. First group has relative higher market index, are corporate in first 15 provinces (from Jiangsu to Sichuan) and second group is other 16 provinces in China (from Hunan to Xizang).

3.4. Model

The model below will be used to test two hypotheses regarding whether agency cost is the mediation of the internal control and firm performance in strict regulator area and not strict regulation area.

$$ROA_1 = \beta_0 + \beta_1 IC_1 + \beta_2 OC_2 + \beta_3 GWTH_3 + \beta_4 LIQ_{14} + \beta_5 LEV_{15} + \beta_6 SIZE_6 + \beta_7 AGE_7 + \epsilon \quad (1)$$

$$AC_1 = \beta_0 + \beta_1 IC_1 + \beta_2 OC_2 + \beta_3 GWTH_3 + \beta_4 LIQ_{14} + \beta_5 LEV_{15} + \beta_6 SIZE_6 + \beta_7 AGE_7 + \epsilon \quad (2)$$

$$ROA_1 = \beta_0 + \beta_1 ICW_1 + \beta_8 AC_8 + \beta_2 OC_2 + \beta_3 GWTH_3 + \beta_4 LIQ_{14} + \beta_5 LEV_{15} + \beta_6 SIZE_6 + \beta_7 AGE_7 + \epsilon \quad (3)$$

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4. Findings

4.1. Hypothesis 1

From Table 3, agency costs have an average of 1.79 percent, with a minimum of -5.7 and a maximum of 12.03 percent, which means a huge difference exists in terms of agency costs.

Table 3: Descriptive data on agency cost

	Average	St Dev	Min	Max
AC	0.017865	0.033561	-0.05703	0.13025

Table 4: Regression related to hypothesis 1

	Formula 1		Formula 2		Formula 3	
	Coefficients	t Stat	Coefficients	t Stat	Coefficients	t Stat
	-0.122218***	-4.2186	0.0721632***	2.845026	-0.110597***	-3.805
AC					-0.161039***	-2.61438
IC	0.0368131	17.43516	-0.020362	-11.015	0.033534	13.74111
OC	-7.3E-05	-0.64575	9.41E-05	0.950732	-5.79E-05	-0.51542
GWTH	-0.005639	-2.26934	0.0021203	0.97464	-0.005297	-2.14723
LIQ	0.0036926	0.368366	0.0085914	0.978921	0.0050762	0.510015
AGE	-3.72E-05	-0.19251	0.0002342	1.383744	4.998E-07	0.0026
LEV	-0.020296	-1.73393	0.0252333	2.462262	-0.016232	-1.38631
SIZE	0.0125698	3.844209	-0.004158	-1.45259	0.0119001	3.659281
	Adj. R Square 61.45%		Adj. R Square 42.80%		Adj. R Square 62.10%	
	*** Significant at 1%					
	** Significant at 5%					

To test Hypothesis 1, a regression test was performed on model 3, with the results presented in Table 4. From Table 10, internal control is positively related to ROA at 0.0368, at the 1 percent significance level. As such, good internal control could promote better firm performance. From Formula 2, agency cost is negatively related to internal control, as the coefficient is -0.204 at the 1 percent significance level. This indicates that strong internal control could reduce agency costs. From Formula 3, the agency cost is negatively related to ROA at -0.1610, at the 1 percent significance level. Meanwhile, internal control is positively related to ROA at 0.0335, at the 1 percent significance level. To determine whether agency cost is the mediator of internal control and firm performance, the relationship between coefficients will be tested. As mediation theory developed by Baron and Kenny [23], from Table 4, coefficient of IC in three formulas are significant at 1 percent, coefficient of IC of Formula 3 and coefficient of IC of Formula 1 are positive and coefficient of IC in formula 3 is lower than coefficient of IC in formula 1, hence, agency cost is the mediator of internal control and firm performance. Moreover, the mediation ratio is 8.9%.

4.2. Hypothesis 2

Table 5: Regression on group 1

	Formula 1		Formula 2		Formula 3	
	Coefficients	t Stat	Coefficients	t Stat	Coefficients	t Stat
Intercept	-0.07163***	-2.47737	0.073817***	2.777406	-0.05911***	-2.03738

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Table 5: (continued).

AC					-0.16973***	-2.61915
IC	0.032637	15.02675	-0.01987	-9.95091	0.029266	11.68145
OC	-6.6E-05	-0.57277	0.000116	1.096603	-4.6E-05	-0.40505
GWTH	-0.00532	-1.80872	1.36E-05	0.005044	-0.00532	-1.82703
LIQ	0.000462	0.045657	0.00847	0.910218	0.0019	0.189355
AGE	-0.00012	-0.61867	0.000157	0.87892	-9.3E-05	-0.48596
LEV	-0.02488	-2.05596	0.035138	3.159216	-0.01891	-1.5518
SIZE	0.008526	2.597597	-0.00489	-1.62135	0.007696	2.358211
	Adj. R Square 58.70%		Adj. R Square 42.89%		Adj. R Square 59.56%	
	*** Significant at 1%					
	** Significant at 5%					

Table 6: Regression on group 2

	Formula 1		Formula 2		Formula 3	
	Coefficients	t Stat	Coefficients	t Stat	Coefficients	t Stat
Intercept	-0.448***	-4.34624	0.07136***	0.781144	-0.43873***	-4.22115
AC					-0.12995	-0.84406
IC	0.050368	8.703838	-0.02344	-4.57034	0.047322	6.925487
OC	-3.8E-05	-0.11984	0.000102	0.359212	-2.5E-05	-0.07816
GWTH	-0.00034	-0.06484	0.003397	0.739337	0.000105	0.02015
LIQ	0.013449	0.47374	0.014449	0.574272	0.015327	0.536802
AGE	-0.0001	-0.15455	0.000412	0.695522	-5E-05	-0.07392
LEV	0.006978	0.221836	-0.00986	-0.3537	0.005696	0.180409
SIZE	0.042029	3.668136	-0.00228	-0.22411	0.041734	3.630927
	Adj. R Square 73.98%		Adj. R Square 38.33%		Adj. R Square 73.84%	
	*** Significant at 1%					
	** Significant at 5%					

To test Hypothesis 2, a regression test was performed on the three formulas after dividing them into two groups. The first group, as shown in Table 5, is the group with a higher market index rate. Conversely, the second group, as shown in Table 6, is the group with a lower market index rate. From Table 5, the results are same with the results in Hypothesis 3. Internal control is positively related to ROA and firm performance, at 0.32637 at the 1 percent significance level. Meanwhile, internal control is negatively related to agency cost, at -0.02344 at the 1 percent significance level. In the case of Formula 3, internal control is positively related to firm performance at 0.047322 at the 1 percent significance level whilst agency cost is negatively related to firm performance at -0.12995 at the 1 percent significance level. As for the mediation test, the coefficient of internal control in Formula 3 is lower than that in Formula 1, and the coefficient of agency cost is significant at the 1 percent level. Therefore, agency cost passed and is the mediation of internal control and firm performance, and mediation ratio is 10.3 percent.

From Table 6, which relates to the group with the lower market index rate, internal control is positively related to ROA and firm performance at the 1% significance level, and the coefficient is 0.50368. There is a negative relationship exists at -0.2344 between internal control and agency cost, at the 1 percent significance level. In terms of Formula 3, internal control is positively related to firm performance at 0.47322 and agency cost is negatively related to firm performance at -0.12995.

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However, the coefficient between internal control and firm performance is significant at the 1 percent level, the p value between agency cost and firm performance is higher than 0.05, which is not significant and the coefficient has no statistical significance. Consequently, the mediation test did not pass for group 2. Agency cost is the mediator between internal control and firm performance yet only the group with higher market index passed the mediation test and the group with lower market index failed to pass the second test. In the well-regulated province, internal control could entail lower agency costs in order to enhance firm performance

5. Discussion

The difference between the two groups is the market regulator. In the first group, the provinces had strict regulations on the market and corporations. However, the provinces in the second group are economically backward; these provinces have relatively less strict regulators compared to provinces in group 1.

Group 1, a relatively developed economic area has a complete business system. As reported by China Minsheng Bank, the development of each province in China has a significant difference as most business and financial corporations are in Beijing and Shanghai. Beijing and Shanghai have multiple business corporations and the whole business industry chain [21]. Most business corporations are in economically developed provinces, including consultants, investment banks, and auditing firms from China and foreign countries. These corporations can provide prompt services in order to make the corporation operate efficiently and effectively.

Corporations in developed economic provinces can realize their inefficient projects and existing problems in time, and resolve them within a short period of time to increase firm performance. Corporations in developed economic areas have relatively strict auditing. As stated by China Minsheng Bank, most corporations in Beijing and Shanghai use the Big Four leading auditing firms in China as auditing corporations [21]. Large audit corporations that have a relatively strict audit process can reveal the real problem existing in the current period of corporations. In addition, strict audit processes could promote the companies' concentration on internal control and prevent financial fraud [22]. Corporations in developed areas have a strict audit process which can push corporations to pay more attention to internal control and also work harder to improve financial statements in order to ensure that most corporations will have an effective and efficient operation.

Corporations in developed areas are highly determined by the market. As reported by China Minsheng Bank, corporations in developed economic areas are regulated by competition and market, rather than government operation [21]. As a result, corporations in the developed area cannot fabricate fake revenue expenses to reduce costs, and most business actions are regulated by an intense competition market [21]. However, in developing economic areas, corporations are highly related to the government, and the government can use improper actions to adjust their cost and revenue to meet financial growth requirements. La Porta pointed out that in civil law countries, the government using its power to directly intervene in the economy is relatively serious. The situation where the government's power exceeds the law greatly weakens the function of the law to protect the interests of investors [15]. In China, the provinces, especially those with lower market indexes, are serious in the situation that government power exceeds the law. Each province has its performance level set up by the Chinese government at the beginning of the year [21]. Additionally, corporations in developed economic areas are monitored and facilitated by competition and the market (Ibid). In contrast, corporations in developing areas do not comply with objective regulations (Ibid). As a result, its internal control is weak or agency cost is high, and it also has ways to increase its firm value or performance by governmental adjustment [21].

Overall, corporations in developed economic areas must follow strict rules to have higher firm performance and attain their targets. To ensure that these corporations' development complies with

DOI: 10.54254/2754-1169/75/20241844

objective rules, and the empirical result from Table 14, the well-regulated market, agency cost is the mediator of internal control and firm performance, which is consistent with most scholars' research [3]. However, firms in developing areas can receive considerable benefits from the government [19], ensuring that a substantial number of measurement methods in that area might be less related.

6. Conclusion

From empirical results, agency cost is the mediator of internal control and firm performance. In the higher market index area, agency cost is significantly negatively related to internal control and firm performance, but in the lower market index area, agency cost is not significantly related to internal control and firm performance. The primary reason behind this situation is the regulations in China vary in different provinces.

This study combines the agency cost and marketization, and fills the gap of agency cost as the mediator in different regions with varying levels of regulatory rigor, and found the regulator is a serious problem in the Chinese stock market, and the Chinese government needs to concern and improving on published strict regulations with strict punishment and increase the magnitude of the monitor to establish a healthy, positive and high-speed growing market.

The major restriction in this research is data is limited to the collection. As there is a limited resource in annual reports. The data source is limited to access and lots of corporations in China hard to find annual reports and internal control annual reports. That led to the sample size is not sufficient enough to detect the relationship between internal control and firm performance. The reasons include regulators that are not strict in the Chinese market and limited authorized sources in the Chinese internal control market. Besides, the period covered in this research is from 2018 to 2020. As COVID-19 has crushed in 2020 and destroyed lots of countries' economies, the firm performance and firm value (ROA and Tobin's Q) are influenced by COVID-19 rather than internal control. So, the result might not be fair evaluated.

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