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Agency Costs of Supply Chain Companies in Asia

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Abstract:
The objective of this study is to investigate various aspects, including endogenous and exogenous corporate factors, affecting the agency costs of supply chain companies in Asia. This study uses two methods: ordinary least squares and panel data fixed effects (FEM and REM). The data were collected by hand from many sources for 2015-2020. After controlling for unobserved sample-specific fixed effects, this paper proves that board size, salary, institutional ownership, audit committee, and independent commissioner have no statistical significance. Meanwhile, the remaining three variables, leverage, state ownership, and C/A, have a significant impact on agency costs. Firms with high levels of debt will be controlled by the debtor, and thus, managers are less likely to commit self-seeking; the government has an incentive to control the company tightly and effectively, and when the firm has more money, it has to incur more agency costs. The results indicate that the adoption of individual corporate governance attributes has no impact on firm-level agency costs within a private and voluntary contracting setting. However, a higher level of compliance with an overall governance index variable, which represents the current requirements, is associated with significantly lower agency costs. Furthermore, the positive influence of voluntary governance compliance on agency costs remains consistent regardless of the firm's ownership structure. Our research results contribute to providing a broader understanding of agency costs within a specific field, such as the supply chain. The findings of this study can be valuable for managers in mitigating conflicts between CEOs and shareholders. Additionally, investors will have additional tools to identify potential businesses for investment, enabling them to avoid companies with excessively high agency costs.

Keywords: agency cost, supply chain companies, ownership.

亚洲供应链公司代理成本

摘要：
本研究的目的是调查影响亚洲供应链公司代理成本的各个方面，包括内生和外生企业因素。本研究使用两

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种方法：普通最小二乘法和面板数据固定效应（有限元法和快速眼动睡眠）。2015-2020年的数据是从多个来源手工收集的。在控制了未观察到的样本特定固定效应后，本文证明董事会规模、薪酬、机构所有权、审计委员会和独立专员不具有统计显着性。同时，剩下的三个变量，杠杆、国家所有权和C/A，对代理成本有显着影响。债务水平较高的企业将受到债务人的控制，因此管理者不太可能谋取私利；政府有动力严格有效地控制公司，当公司拥有更多资金时，它必须承担更多的代理成本。结果表明，在私人和自愿承包环境中，采用个别公司治理属性对公司层面的代理成本没有影响。然而，对代表当前要求的整体治理指标变量的更高程度的遵守与显着降低的代理成本相关。此外，无论公司的所有权结构如何，自愿治理合规对代理成本的积极影响保持一致。我们的研究成果有助于更广泛地了解特定领域（例如供应链）内的代理成本。这项研究的结果对于管理者缓解首席执行官和股东之间的冲突很有价值。此外，投资者将拥有额外的工具来识别潜在的投资企业，使他们能够避开代理成本过高的公司。

关键词：代理成本、供应链公司、所有权。

1. Introduction

Agency problems have recently received the most attention in corporate finance, especially in logistic companies. Saving agency costs minimizes these companies' expenses. In this study, the author wants to emphasize agency costs. Due to the separation of management (agent) and ownership (principal) functions in Asian supply chain enterprises, agency cost is becoming an increasingly important issue for businesses.

Principals are owners of their companies. Agents are hired by the owners and responsible for optimizing the owners' benefits. Agency conflict occurs when managers are more likely to make decisions regarding benefit themselves rather than the shareholders' interests. As a result, this phenomenon may result in higher agency costs; the higher agency costs, the more business activities are affected. Most studies on agency costs are from the United States, Europe, and China. Managerial ownership, according to Alfadhl and Alabdullah (2013), is critical in boosting their motivation and making them interested in maximizing the benefits, allowing their company to lower agency costs. They supposed that managerial ownership has a positive relation to agency costs. Furthermore, according to Handoko (2014), there is a positive association between managerial ownership and agency costs; however, this relationship is not substantial. However, according to Ang et al. (2000), managerial ownership has a large negative impact on agency costs.

Institutional ownership is a technique for management to decrease waste and keep agency costs low. According to McKnight and Weir (2009), institutional ownership and agency costs have a positive connection. In contrast, Handiprajitno (2013) explained that agency costs tend to decrease when management's shareholding, foreign ownership, and foreign ownership increase

In terms of state ownership, listed firms with stocks owned in part by the government should not be confused with state-owned corporations as they are true public corporations with the government as one of its shareholders. The government tends to be less proactive in controlling its investments; less firm control mechanisms in state-owned enterprises increase agency costs. In contrast, Song et al. (2015) argued that in companies where the government owns most equity capital, the government has an incentive to control the company tightly and effectively, which can reduce the representation of the company.

It would be a great miss not to mention the existence of an effective audit committee and CEO remuneration, which are also a good corporate governance mechanism to improve the management monitoring. Tran et al. (2018) argue that the relationship between corporate performance and CEO remuneration should be seen as an important incentive mechanism in a successful company. Asia is an emerging market, and the information published in the Asian market shows that effective companies often pay high salaries to CEOs at the end of each year. Thus, the manager has less incentive to take actions that negatively affect the company's performance, which minimizes agency costs. Several studies have shown a negative and strong correlation between performance and CEO remuneration (Murphy, 1985; Ghosh, 2006; Kato & Long, 2006).

Crutchley and Hansen (1989) predicted that using debt will reduce agency conflict. The manager's free cash flow is reduced as the quantity of debt he or she owes grows. They must pay its interest commitments since they are obligated to do so. According to Florackis (2008), leverage has a negative impact on agency costs, as measured by the debt-to-asset ratio.

Uyen and Thoa (2015) said that for investment decisions at a scarcity of investment opportunities, companies need to take maximum advantage of available investment opportunities, which will help them maximize their values. Businesses with an overwhelming percentage of cash are usually more likely to capture investment opportunities. Therefore, from the author's perspective, the manager may want to keep much cash in the company. However, the board of directors or shareholders in the company does not want to keep much cash in the company because they think that outside investors will wonder why managers keep cash there and do not use it. They will suspect that the business has lost investment opportunities or that corporate governance is too weak to know what to do. As a result, those investors sold shares in bulk,

decreasing the company value. There is a strategic conflict between the principal and agent. The second possibility is that holding much cash will make investors suspect that the business has lost investment opportunities or that corporate governance is too weak, not knowing what to do. Therefore, management will control and pay more attention to their actions to avoid unwanted errors and frauds.

In summary, agency costs are more considered in Asian logistic companies, especially when the supply chain is stuck due to Covid-19. Asymmetric information and internal factors such as leverage, institutional ownership, salary and bonus of directors, and state ownership significantly impact agency costs. For these reasons, this study investigates the agency costs of supply chain companies in Asia.

2. Data and Methodology

Data on institutional, state, and managerial ownership were collected by hand from the secondary data, financial statements of non-financial companies. Other data were collected on Datastream (formerly Thomson Reuters) from 2015-2022. A total of 100 companies in Asian countries were collected. The data were analyzed with IBM SPSS version 20, which is a multiple regression linear test that determines the effect of independent factors on the dependent variable. The coefficient of determination, the value of F statistics, and the values of t statistics can all be used to assess the accuracy of the regression function in interpreting the actual value (Ghozali, 2013).

In the multiple regression model, the coefficient of determination R2 reflects the part of the variation in the dependent variable Y that is explained by the independent variable X (the remainder is due to error, including measurement error and other variables absent from the model. In this study, there are many independent variables, so we have to use the adjusted coefficient of determination R2 (adjusted R2) to replace R2 while comparing with the models. This adjustment coefficient helps us to adjust the fit of the model, test models with many independent variables, but some of them do not help to explain the variation of the dependent variable Y.

The research variables are divided into two groups: dependent and independent variables. The dependent variable (Y) is agency cost, which is proxied by the operating expense ratio. The Operating Expense Ratio is one of the financial factors used to calculate a company's Agency Cost. The formula for the operating expense ratio (OpE) is:

OpE = (Sale, General and Administrative Expenses)/(Total Sales)

The research independent variables include leverage, board size, managerial ownership, state ownership, audit committee, institutional ownership, salary and bonus of the general director, independent commissioners, and cash-to-total-assets.

Leverage (Lev) shows the proportion of the use of debt by the company or debt-to-total-assets ratio. If high leverage increases the likelihood of firms foregoing valuable investments, a negative correlation between high leverage and performance would be anticipated. Consequently, in the context of the shareholder-debt holder agency problem, leverage proves to be less advantageous. The model of the agency costs of debt supports this notion, suggesting that highly leveraged firms are more prone to encounter the underinvestment problem. In such cases, managers tend to reduce investments with significant potential returns, as these benefits would primarily be reaped by debt holders instead of shareholders (Myers, 1977).

Lev = (Total Debs)/(Total Asset) x 100

Board size (BS) is the number of directors on the board. The influence of board size and composition on board engagement in corporate affairs has been widely emphasized by researchers. The size and composition of the board play a crucial role in determining its effectiveness as a monitor and guide. Furthermore, board size and composition can impact the relationship between insiders, block ownership, and corporate performance, functioning either as a complement or substitute for the ownership structure. Consequently, in our study, we incorporate controls for board size and composition. In this regard, the resource dependence theory suggests that enlarging the board and promoting diversity can have advantageous outcomes by establishing connections with the external environment and broadening the resource base (Pfeffer, 1973; Pearce & Zahra, 1992).

The quantity of stock owned by the board of directors and commissioners is known as managerial ownership (MO). According to Singh and Davidson (2003), MO can be determined using the following formula:

MO = (Total shares owned by board of director and board of comissioner)/(Total number of shares outstanding) x 100%

State ownership (SO) is the amount of share owned by the government.

SO = (Total shares owned by state)/(Total number of shares outstanding) x 100%

The audit committee (AC) is a committee established by the board of commissioners to control corporate management. In this study, AC = the total number of audit committees. The activity of the audit committee is often measured by the number of meetings conducted by the committee. This proxy indicates the level of engagement of the audit committee in auditing and accounting matters as increased meeting frequency allows for more regular interactions with internal auditors. By meeting more frequently, the audit committee can enhance its knowledge and understanding of auditing and accounting issues. Additionally, an active audit committee is better positioned to direct the internal audit function appropriately, promptly addressing any urgent auditing or accounting concerns as they arise. Consequently, a more active audit committee characterized by a higher number of meetings can contribute to a reduction in the

likelihood of financial fraud. In contrast, inactive audit committees that hold fewer meetings are less likely to effectively supervise management (Menon & Williams, 1994). Beasley et al. (2000) found that fraudulent companies, which have misrepresented earnings, tend to have fewer audit committee meetings than legitimate companies. Increased meeting frequency and activity of the audit committee allow for more comprehensive monitoring of accounting procedures, identification of management risks, and oversight of internal controls. Consequently, active engagement of the audit committee has a positive impact on company performance. There is a limited number of studies exploring the relationship between audit committee meetings and business success. However, Hsu (2007) revealed a connection between the frequency of audit committee meetings and company performance.

The quantity of stock owned by financial institutions, institutional legal entities, foreign institutions, trust funds, and other institutions at the end of the year is known as institutional ownership (IO). According to Arianandini and Ramantha (2018), institutional ownership in a company can enhance the effectiveness of oversight provided by institutions. This is achieved by institutions playing a crucial role in monitoring, disciplining, and influencing managerial performance, thereby encouraging cautious decision-making and discouraging opportunistic actions. Institutional ownership refers to the ownership of company shares by institutions such as banks, investment firms, insurance companies, and others. Damayanti and Susanto (2015) suggest that institutional ownership can compel managers to remain attentive to the company's performance and refrain from self-interested behavior, ultimately aiming to maximize shareholder welfare.

IO = (Total shares owned by institution)/(Total number of shares outstanding) x 100%

Salary and bonus of the general director is the total salary and bonus of the general director in a fiscal year.

The independent committee (IC) is made up of commissioners who are neither linked with the board of directors nor have business or personal relationships with them that could interfere with their ability to act independently in the company. The IC is calculated as follows:

IC = (Total number of independent commissioner)/(Total number of commissioners on the board)

Cash-to-total-assets (C/A): Cash and cash equivalents were split by total assets to establish the cash holding ratio. The cash holding ratio of a company was calculated as follows:

C/A = (Cash and cash equivalents)/(Total assets)

3. Results

The results of the F test (simultaneous test) using multiple linear regression indicated a computed *F* value of 6.112 with sig. 0,000 < 0.05, indicating that the variables Lev, IC, BS, MO, IO, the AC, cash-to-total-assets, S&B of the general director, and SO have a simultaneous effect on agency costs.

Table 1. Result of the statistic test: coefficients S[a] (Developed by the author)

Model	**$U_{ji\,t}$**			**Result**
	B	**t**	**Sig**	
(Constant)	0.570	4.500	0.000	
Lev	0.227	-2.389	0.000	Positive effect
BS	0.013	1.266	0.206	Has no effect
MO	0.014	0.308	0.758	Has no effect
AC	0.053	1.440	0.151	Has no effect
SO	-0.118	-2.389	0.151	Negative effect
IO	0.049	1.202	0.230	Has no effect
S&B	-0.21	-1.856	0.064	Has no effect
IC	-0.017	-0.312	0.755	Has no effect
C/A	-0.192	-2.418	0.016	Negative effect
	U_{ji}		0.000	Simultaneous effect
	Adjusted R^2			0.098

The above table presents the statistic results of the t-test (partial test), where Lev-to-agency-costs has the level sig. 0.000 < 0.05 and coefficient value of 0.227, which shows that Lev has positive effect on agency costs. Similarly, SO and C/A have the level sig. 0.017 and 0.016 < 0.05 and coefficient values of -0.118 and -0.192, respectively, which shows that AC and C/A have negative effects on agency costs. BS, MO, AC, IO, S&B, and IC have the level sig. 0.206, 0.758, 0.151, 0.230, 0.064, 0.755 > 0.05, respectively, which shows that BS, MO, SO, IO, S&B, and IC have no effect on agency costs. In this study, the adjusted R2 in the table has a value of 0.098 (9.8%), indicating that the model's ability to describe how the independent factors affect the dependent variable is 9.8%. Other independent variables, aside from research variables, account for the remaining 90.2 percent.

Based on the analysis, the multiple linear regression equation can be expressed as follows:

Agc. Cost = 0,570 + 0.227 Lev - 0,192 C/A - 0,118 SO + e

This study shows that Lev has a positive effect on agency costs. However, these results are inconsistent with previous research. This possibility could be due to the size of the firms or the information mismatch in the Asian market. The larger the debt, the less free cash flow available for managers to invest (Jensen, 1986) because the higher the debt, the more the company is obligated to pay interest on the debt regardless of corporate profits. Management will become cautious and insecure because the risk of an insolvency imbalance can occur at any time. When the investor lacks direction, it is easy to lead to a crisis or if the investor makes a wrong calculation, it makes it difficult to buy and sell, leading to a stagnation of capital, even if not able to manage it in time, it can lead to an empty-handed situation. According to Jensen (1986), the higher Lev, the more likely it is that the business will fall into bankruptcy. Shareholders frequently pressure managers to meet business targets, the most important of which is profit. If the business outcomes are not as predicted, the manager's profit management could be

due to the conflict of interest mentioned above. They may give inaccurate information about the corporate action to deceive shareholders and stakeholders. This is one of the reasons that arise to question the way managers run and increase agency costs. Lev positively but insignificantly affects agency costs (Handoko, 2014).

The finding indicates that SO has a negative effect on agency costs. These results are consistent with previous research. Song et al. (2015) argued that in companies where the government owns most equity capital, the government has an incentive to control the company tightly and effectively, which reduces the representation of the company. The results of this research also show that C/A has a negative effect on agency costs. Owning more cash will give the major shareholders and the board of directors more control over the director's actions. In addition, the majority of cash-to-the-total-assets in many companies has stronger management control to reduce agency costs, which is consistent with Nguyen and Nguyen (2018).

The findings of this investigation suggest that the BS has no impact on the agency costs. These findings contradict those of Faisal (2004), who believes that the size of the Board has a harmful impact on Agency costs. Because of the small amount, these results may have occurred. According to statistical descriptive statistics, the average number of board members in a company is only five. According to Crutchley and Hansen (1989), the company raises the MO in order to align managerial positions with shareholders' interests, which is in the best interests of shareholders. However, the findings show that MO has no impact on agency costs, which contradicts the research hypothesis. Because of its modest size, it may be explained. According to statistical descriptive statistics, there are 85 firms (out of a total of 100) in which the board of directors and the board of commissioners control less than 10% of the shares. Similarly, AC has no influence on agency costs since the research data sample for AC shows that during the study years, there are 3-4 people in AC in 100 firms, 97 companies have 3 members, and the rest have 4 or 5 individuals. It has been established that the AC was established solely to comply with current requirements. As a result, the AC's efficacy in supervisory functions is less than ideal, yet it has no effect on agency costs.

We provide evidence that state ownership, institutional ownership, and salary and bonus of the general director do not affect agency costs. IO is considered a monitoring party in a company. IO is higher, which leads to efficient use of assets by the company. Additionally, IO is considered a waste prevention measure implemented by the management. However, our study showed that IO does not affect agency costs. This result could be explained because the number of research samples is still limited. Similarly, the S&B of the general director has no effect on agency costs. Based on the agency cost theory, the relationship between operational performance and CEO remuneration should be seen as an important incentive mechanism for the company's success. However, research on this relationship has yielded mixed results. Several previous studies have shown a positive and strong correlation between performance and CEO remuneration (Murphy, 1985; Ghosh, 2006; Kato & Long, 2006). Meanwhile, researchers have found a positive correlation between performance and CEO remuneration (Jensen & Murphy, 1990; Conyon, 1997). Most Asian stock markets are emerging ones. Information published in the Asian market shows that effective companies often pay high salaries to CEOs at the end of each year. However, this phenomenon is not clear for companies in many fields with other policies. Thus, S&B of the general director does not affect agency costs.

Independent directors in the Asian market fulfill regulatory requirements; therefore, their effectiveness in controlling the board's performance is not optimal. This is demonstrated by the fact that out of 100 study data, 53 data have a proportion board of IC of 33%. As a result, our findings support Handoko's (2014) assertion that an IC has no impact on agency costs.

4. Robustness Check with Other Variables

Next, we apply four variables as proxies of agency costs (Assetut - asset utilization ratio, Discexp - discretionary expense ratio, TobinQ, and FCFGrow). Table 2 indicates that only the coefficients for board independence demonstrate consistent and expected signs across all four regression models. This consistency suggests that a higher level of board independence is associated with a reduction in agency costs. However, none of the other individual governance attributes exhibit statistically significant relationships with any of the four proxies used to measure agency costs. Hence, the overall conclusion is that the voluntary adoption of individual governance attributes does not have a significant impact on the agency-cost platform of Asian listed firms.

Table 2. Fixed-effect instrumental variable regressions for agency costs, individual governance attributes, agency-mitigating, and control variables for 2015-2022 (Developed by the author)

	Assetut	**Discexp**	**Tobinq**	**FCFGrow**
Constant	−0.782	6.964□	1.501	−0.088
	(−1.22)	(4.73)	(1.85)	(−0.81)
Board	0.230□	−0.277□□	0.202	−0.057
independence	(2.59)	(−2.08)	(1.51)	(−1.82)
CEO-chair	0.099□□	−0.088	−0.021	0.017
duality	(2.43)	(−1.44)	(−0.33)	(1.21)
Board	−0.074□	−0.245	0.029	−0.013
remuneration	(−2.82)	(−1.74)	(0.67)	(−1.66)
Board size	−0.209□	0.431□	0.112	−0.002
	(−3.11)	(4.91)	(1.25)	(−0.12)
Director	−0.345	−0.949	2.005□	−0.133
ownership	(−0.68)	(−1.69)	(3.41)	(−0.97)
Institutional	−2.845	−0.201	0.774□	−0.061
ownership	(−1.78)	(−0.88)	(3.41)	(−1.13)
Audit	0.080	0.036	0.001	0.023
committee	(1.43)	(0.57)	(0.01)	(1.28)
External	−0.121	0.545	−0.421	−0.024
ownership	(−0.33)	(1.86)	(−1.36)	(−0.36)

Continuation of Table 2

Dividend yield	1.121	−0.674	−2.1213	0.473
	(3.97)	(−1.56)	(−4.97)	(4.99)
R^2	0.074	0.078	0.053	0.055

Notes: and denote significance at the 1% and 5% levels, respectively. The regression models include year dummy variables; however, the coefficients for these variables are not presented in Table 2. Z-statistics calculated using robust standard errors are reported in parentheses. Regression coefficients and corresponding Z-statistics in italics are associated with endogenous variables.

Table 2 provides empirical evidence supporting the notion that a firm's ownership structure influences the agency environment. However, this evidence primarily pertains to external substantial shareholders and is particularly pronounced in models employing the Tobin's Q ratio as a measure of agency cost propensity. Specifically, the findings indicate a statistically significant quadratic relationship between director share ownership and Tobin's Q ratios. The results suggest that entrenchment effects and escalating agency costs are observed when director ownership levels exceed approximately 37%. Furthermore, using the Tobin's Q ratio as a proxy, the analysis reveals that increased institutional share ownership significantly reduces agency costs, while higher levels of ownership by significant external shareholders (above approximately 24%) foster alignment between agency interests and subsequently lead to lower agency costs.

It appears that companies with higher dividend yields exhibit higher agency costs, which contradicts the expected relationship. However, the presence of a statistically significant positive correlation between firm dividend yields and asset use ratios contradicts this finding. Furthermore, when employing the panel-Tobit model with the FCFGrowth proxy variable, none of the individual governance or ownership factors exhibit statistical significance.

The results of the estimations are displayed in Table 3. Let us first focus on the compliance index variable. In all four presented models, the variable exhibits the expected (hypothesized) direction and is statistically significant in three of the models. This finding indicates that companies in the sample that have privately contracted governance systems closely aligned with the principles and recommended practices of the corporate governance council experience significantly lower levels of agency costs. Extrapolating this result suggests that Asian listed companies would benefit from transitioning to a governance framework characterized by reduced agency costs through the adoption or adherence to the current code of practice, particularly the components represented in the compliance index variable.

Table 3. Fixed-effect instrumental variable regressions for agency costs, governance compliance index, agency-mitigating, and control variables for 2015-2022 (Developed by the author)

	Assetut	**Discexp**	**Tobinq**	**FCFGrow**
Constant	−2.112	4.954	1.648	−0.179
	(−8.78)	(11.36)	(3.57)	(−2.04)
Compliance index	0.016	−0.069	0.064	−0.011
	(1.19)	(−2.78)	(2.43)	(−2.51)
Square of director ownership	0.113	0.402	−2.914	0.182
	(0.25)	(0.49)	(−3.34)	(0.83)
Director ownership	0.129	−0.763	2.071	−0.090
	(0.43)	(−1.39)	(3.56)	(−0.68)
Square of external ownership	−0.566	−1.129	0.942	−0.033
	(−2.66)	(−2.93)	(2.31)	(−0.39)
External ownership	0.285	0.567	−0.496	−0.012
	(1.81)	(1.99)	(−1.64)	(−0.18)
Dividend yield	0.873	−0.956	−1.978	0.482
	(4.14)	(−2.50)	(−4.88)	(5.07)
Firm size	0.142	−0.185	−0.037	0.008
	(11.58)	(−8.30)	(−1.58)	(1.95)
Leverage	0.007	−0.063	−0.135	−0.010
	(0.11)	(−0.57)	(−1.14)	(−0.33)
Institutional ownership	−0.089	−0.120	0.695	−0.048
	(−0.77)	(−0.57)	(3.11)	(−0.90)
R^2	0.188	0.070	0.054	0.052

Notes: and denote significance at the 1% and 5% levels, respectively. The regression models include year dummy variables; however, the coefficients for these variables are not presented in Table 3. Z-statistics calculated using robust standard errors are reported in parentheses. Regression coefficients and corresponding Z-statistics in italics are associated with endogenous variables.

A one standard deviation increase in the compliance index results in a reduction of 0.099 in the discretionary expense ratio for the sample firms, which accounts for approximately 31% of the standard deviation in discretionary expense ratios. This indicates the considerable economic significance of increasing compliance on agency cost levels. Furthermore, the standard deviations of Tobin's Q ratios and the FCFGrow variable experienced changes of 14.83% and 16.37%, respectively, for the other statistically significant dependent variables. These figures suggest that changes in governance compliance have relatively substantial incremental implications for agency cost levels. The overwhelming statistical significance of the compliance index variable underscores the importance for businesses to prioritize governance reform measures from a comprehensive and holistic perspective, rather than solely focusing on the results presented in Table 3.

Similar to the findings in Table 2, the conclusions drawn from the other variables in the models are as follows. In the three models, external ownership has a considerable impact on agency costs, and this effect is nonlinear in the model that uses discretionary spending ratios as the agency cost proxy. Once again, the influence of the firm ownership structure is the most obvious when using the Tobin's Q ratio as the proxy. Notably, the standard deviation is now positive and statistically significant in the asset utilization ratio model, which aligns with the idea that greater firm risk reduces agency costs. The coefficients for the other variables related to agency mitigation and control also generally support the findings in Table 2.

5. Conclusion

We apply panel data from Datastream to examine the impact of many variables such as state ownership, managerial ownership, and institutional ownership on the agency costs of supply chain companies listed on

the Asian stock market. Because the ordered probit method is not the best fit for observing agency costs, this study used ordinary least squares and panel data fixed effects (FEM and REM). In addition, the panel data allowed us to use a fixed-effects method that controls for unobserved samples. In general, the results of the fixed-effects method suggest that many variables such as board size, salary, institutional ownership, Audit Committee, and independent commissioner have no significant impact on agency costs.

In sum, after controlling for unobserved sample-specific fixed effects, this paper proves that only three variables such as leverage, state ownership, and C/A have a significant impact on agency costs. This result is consistent with the findings of Harvey et al. (2004), Song et al. (2015), Nguyen and Nguyen (2018). First, a possible reason for this result is that increasing debt increases leverage, thereby increasing the risk of business bankruptcy. Firms with high levels of debt will be controlled by the debtor, and thus, managers are less likely to commit self-seeking. Second, because the government owns most equity capital, it has an incentive to control the company tightly and effectively, which can reduce the representation of the company. Finally, businesses with an overwhelming cash ratio are more likely to capture investment opportunities. However, holding much cash will cause investors to suspect that the business has lost investment opportunities or that corporate governance is too weak to know what to do. Therefore, the board of directors will control and pay more attention to the actions of the board of managers to avoid unexpected mistakes and fraud. As a result, a company tends to keep as much cash in the company as possible, resulting in low agency costs.

The adoption of individual corporate governance attributes does not appear to influence firm-level agency costs in a private and voluntary contracting setting. However, a higher level of compliance with an overall governance index variable, which reflects the current requirements, is associated with significantly lower agency costs. Furthermore, the positive impact of voluntary governance compliance on agency costs remains consistent regardless of the firm's ownership structure. These findings carry important implications for businesses not only in Asia but also worldwide.

The results of this study have important policy implications. This implies that shareholders can control the operation expenditure of a supply chain company by supervising the leverage and cash-to-assets ratio. By promoting a decrease in cash and an increase in debt, the shareholder can reduce agency costs. Alternatively, the government should also increase its presence or maintain a high percentage of ownership that will encourage managers to improve the performance of the companies.

6. Limitations and Further Study

The study was conducted during the COVID-19 pandemic, which may have affected the results due to the unique circumstances of remote learning.

The study only included firms listed on the Ho Chi Minh Stock Exchange, which may limit the generalizability of the findings to other firms.

The study did not consider the impact of external differences or non-control variables such as compensation, ethic, and culture.

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