

# Insider Ownership And Firm Performance: A Resource Dependence Perspective

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## ABSTRACT

*The purpose of this study is to examine the empirical relationship between insider ownership and firm performance. Based on resource dependence theory, this study argues that the positive convergence-of-interests effect and the negative entrenchment effect can coexist in various industrial settings. Fixed-effect panel data regression models are applied to a sample of 1,156 effective observations. To reflect the contextual role of resources, we defined industrial settings along with industrial complexity and firm scale dimensions. The empirical results supported our research hypotheses, showing that insider ownership exerts a positive effect on firm performance in a high-complexity and large-scale setting, but a negative effect in a low-complexity and small-scale setting. The results of this study imply that contextual fitness must be deliberately considered to determine effective regulations of corporate governance. In addition, this study contributes a new aspect to related discussion, which synthesizes conflicting theoretical arguments by introducing the contextual role of resources.*

**Keywords:** Ownership Structure; Insider Ownership; Agency Theory; Resource Dependence Theory

## INTRODUCTION

Since Berle and Means (1932) introduced the concern that the separation of ownership and control might lead to agency problems, the ownership structure of firms has been debated in the management and finance fields. Insider ownership, one of the critical dimensions of ownership structure, is among the focal points of this debate and a suggested means to mitigate agency problems because high insider ownership can help align manager interests with shareholder interests (Jensen & Meckling, 1976; Fama, 1980; Jensen & Murphy, 1990; Jensen, 2000).

However, empirical studies have not clarified the relationship between insider ownership and firm performance. Competing theories still exist, including the convergence-of-interests argument and the entrenchment argument, which predict opposite performance consequences of insider ownership. More importantly, differences of social-legal contexts and their profound effects on ownership structure must be appropriately considered. Certain researchers have correctly noted that the widely held firms described in Berle and Means' study do not reflect reality outside the United States and the United Kingdom (Faccio & Lang, 2002; La Porta, Lopez-de-Silanes, & Shleifer, 1999). Even the world's largest listed companies generally have a concentrated ownership structure (Claessens, Djankov, & Lang, 2000; Lins, 2003). In European, Latin American, and East Asian countries, founding partners and their families might continue to control a company many years after its IPO. They and their intimate followers run the business as high-ranking managers and serve as board directors (Bozec, Rousseau, & Laurin, 2008; Roosenboom & Schramade, 2006). In this context, the agency problem subtly changes from being based on conflicting interests between managers and shareholders to being based on conflicting interests between inside owners (inside directors) and outside shareholders.

This study investigated the relationship between insider ownership and firm performance in Taiwan, where the aforementioned context is typical. Following the perspective of resource dependence theory (Pfeffer & Salancik, 1978; Hillman, Withers, & Collins, 2009), this study argues that differences in industrial setting must be considered. The two competing arguments were empirically examined in four industrial settings, defined according to industrial complexity and firm-scale dimensions, using fixed-effect panel regression models. The results showed that the

entrenchment argument prevailed in a high-complexity and large-scale setting, whereas the convergence-of-interests argument prevailed in a low-complexity and small-scale setting. Accordingly, this study contributed a new aspect in the related discussion, arguing that the positive convergence-of-interests effect and the negative entrenchment effect might coexist in various industrial settings.

## **LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT**

### **Insider Ownership and Firm Performance**

Berle and Means were the first to discuss the separation of ownership and control (Berle & Means, 1932). Since then, numerous theoretical and empirical studies have explored the consequences of ownership structure (Cullinan et al., 2012; Taboada, 2011; Delios et al., 2008; Patro, 2008; McConnell et al., 2008; O'Regan et al., 2005; Donnelly & Kelly, 2005). As an obvious characteristic of ownership structure, insider ownership has been repeatedly investigated. Nevertheless, empirical evidence does not provide support for one exclusive testable hypothesis regarding the effects of insider ownership.

Two competing theories in the relevant literature involve the effects of insider ownership on firm performance. The convergence-of-interests argument suggests that high insider ownership aligns manager interests with those of outside shareholders, resulting in a positive effect on firm performance. Jensen and Meckling (1976) asserted that managers are likely to become self-constrained and avoid to consuming perquisites when they hold a high stake in the firm because they must bear the costs of such activities in proportion to their shareholdings. A high insider shareholding can resolve the asymmetric information problem related to investment opportunities (DeAngelo & DeAngelo, 1985), reduce agency costs of free cash flow (Jensen, 1986), and mitigate managerial myopia (Palia & Lichtenberg, 1999). Wruck (1988) and Mehran (1995) also provided empirical evidence of the positive relationship between insider ownership and firm performance.

By contrast, the entrenchment argument suggests a negative effect of insider ownership on firm performance because high insider shareholdings shelter insiders from the market influence of corporate control (Fama & Jensen, 1983). Insiders tend to secure their positions, establish a business empire for their personal interests, and resist supervision (Jensen & Ruback, 1983). When insiders possess high shareholding, which increases their discretion and strengthens their positions, they tend to inflate their own power and damage internal supervisory rules to pursue their own interests (Morck et al., 1988; Gugler et al., 2008).

In an attempt to synthesize the two rival arguments, a stream of articles has suggested a nonlinear relationship between insider shareholding and firm performance. However, the empirical results are diversified because of the inherent complexity of nonlinear models (Chou, 2013). For example, Morck et al. (1988) presented an N-shaped curve with two turning points to portray the relationship; Hermalin and Weisbach (1991) depicted the relationship as an M-shaped curve with three turning points; Cui and Mak (2002) observed a W-shaped curve with three turning points; Davies et al. (2005) specified a fifth-degree function with two maximal turning points and two minimal turning points; Selarka (2005) observed a U-shaped curve with one turning point; Hung and Chen (2009) obtained a V-shaped curve.

### **Industrial Setting Effect**

Although agency theory, which is the basis for both of the aforementioned competing arguments, is widely used in research on boards of directors and ownership structure, studies of resource dependence theory that relate external context to boards of directors provide a promising perspective to harmonize the competing theoretical arguments.

Resource dependence theory characterizes the organization as an open system, dependent on contingencies in its external environment (Pfeffer & Salancik, 1978; Hillman, Withers, & Collins, 2009). Organizations constrained by their resource conditions attempt to reduce environmental uncertainty by increasing their control over vital resources (Ulrich & Barney, 1984). From the perspective of resource dependence theory, bringing in resources is exactly the organizational function served by boards and individual directors.

“Resource” is a broad term that includes all types of tangible or intangible items useful for firms. However, critical resources that constitute firm competitive advantage are typically heterogeneous, imperfectly mobile, and difficult to acquire in the market (Wernerfelt, 1984; Barney, 1991; Peteraf, 1993; Crook et al., 2008). Board directors not only bring in capital (as a block shareholder) but also numerous intangibles. Pfeffer and Salancik (1978) named four types of resource that directors could bring in to benefit firms: (a) information in the form of advice and counsel, (b) access to channels of information between the firm and environmental contingencies, (c) preferential access to resources, and (d) legitimacy. All these items are clearly heterogeneous and unavailable in normal markets.

There has been a huge body of literature exploring the relationship between board composition and external context. Mizruchi and Stearns (1988, 1994) provided empirical support for the relationship between firm’s need for financial resources and representation of financial institutions on their boards. Kor and Misangyi (2008) reported a negative relationship between the collective levels of industry experience in top management and the board, implying that the board supplements top management with critical knowledge and skills. Jones et al. (2008) reported that family firms pursuing diversification benefit from specific types of director. These research articles suggested that directors with specific types of resource assist firms in addressing their specific environmental context.

Certain articles within this research stream are particularly relevant to the current study. Pfeffer and Salancik (1978) observed that firms in regulated industries might require more outsiders, particularly those with relevant experience. Provan (1980) observed that firms that invite outside powerful members of the community to join their boards are more capable of acquiring critical resources from the environment than those who do not. Luoma and Goodstein (1999) observed that firms in highly regulated industries have a high proportion of stakeholder directors. Johnson and Greening (1999) observed that stakeholder directors are likely to improve corporate social performance. These studies have suggested that in specific contexts, having outsiders or stakeholders join the boards, which implies a lower insider ownership, benefits firms.

## **Hypotheses**

Based on resource dependence theory, this study argues that the convergence-of-interests argument and the entrenchment argument can coexist in various industrial settings. To reflect the contextual role of resources, we defined industrial settings along with industrial complexity and firm scale dimensions.

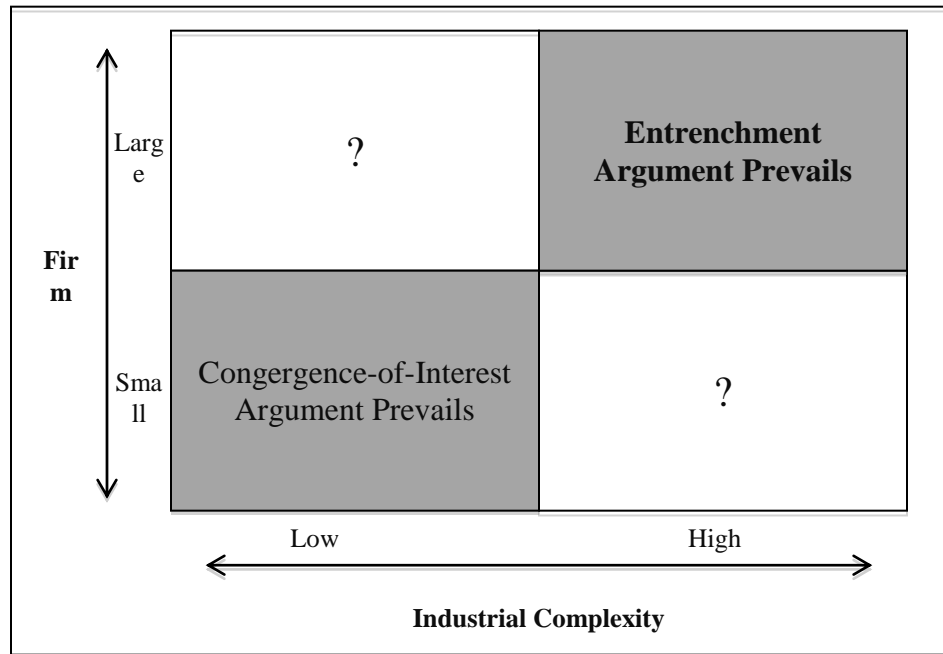
To thrive in industries with a high-complexity context, where business circumstances are highly dynamic, technology and related knowledge progress at a rapid pace, or the vertical and horizontal relations among firms are intricate, firms tend to invite more outsiders or stakeholders to join their boards to obtain access to necessary heterogeneous resources. Besides, a high-complexity context inevitably magnifies information asymmetry and provides additional opportunities for insider entrenchment. This is particularly likely when insiders possess high ownership. Therefore, in a high-complexity context, high insider ownership tends to produce worse firm performance. This assertion is consistent with the entrenchment argument.

Firm scale is an obvious contextual dimension related to resource demand. When firm scale is small, all types of resource demand are relatively easy to satisfy, either in terms of quantity or quality, which makes directorship typically only based on capital contribution. In addition, the simple organizational hierarchy and the narrow business scope of small firm leave less room for insider manipulation. Therefore, in a small-scale context, high insider ownership tends to enhance firm performance. This assertion is consistent with the convergence-of-interests argument.

This theoretical deduction is synthesized in Figure 1, which shows that the negative entrenchment effect is predicted to prevail in a high-complexity and large-scale setting, whereas the positive convergence-of-interests effect is predicted to prevail in a low-complexity and small-scale setting. Therefore, we proposed the following two hypotheses. The other two settings are gray areas where the effect of insider ownership on performance is decided by contradicting strengths along industrial complexity and firm scale dimensions.

**Hypothesis 1:** Insider ownership exerts negative effect on firm performance in a high-complexity and large-scale context.

**Hypothesis 2:** Insider ownership exerts positive effect on firm performance in a low-complexity and small-scale context.



**Figure 1.** Coexistence of Coverage-of-Interests and Entrenchment Arguments

**METHODOLOGY**

**Data and Sample**

The data used in this study were drawn from the Taiwan Economic Journal (TEJ) database. Annual data were collected from January 1, 2004 to December 31, 2007 to avoid the effects of legal regulation revision. To ensure completeness of annual data, sample companies were restricted to those listed before January 1, 2004 and continuously listed through December 31, 2007. Sample companies were listed on the Taiwan Stock Exchange Corporation (TSEC) or were traded through the Over-the-Counter (OTC) Securities Exchange. Companies listed on the TSEC are typically larger in scale, whereas companies traded through OTC are smaller and typically in their early development stage. The current thresholds that have been listed on the TSEC constitute a contributed capital of at least 600 million TWD (approximately 20 million USD) and have been established and in operation for at least 3 years. Therefore, the TSEC companies were labeled as “large-scale,” whereas OTC companies were labeled as “small-scale.”

To account for industrial characteristics, this study compared technological and traditional industries to detect the effects from industrial complexity. In Taiwan, companies in the electronics and biotech segments are generally dynamic and R&D-intensive, and hence were labeled as “high-complexity”; companies in the relatively static and non-R&D-driven textile, steel, construction, food, chemical, and machinery segments were labeled as “low-complexity” to reflect their industrial characteristics. Effective observations totaled 1,156. The breakdown of effective observations were 320 in high-complexity and large-scale settings, 536 in low-complexity and large-scale settings, 168 in high-complexity and small-scale settings, and 132 in low-complexity and small-scale settings.

## Variable Definition and Measurement

Insider ownership was the independent variable in this study. We defined insider ownership as the aggregate shareholding of directors and supervisors, a definition that is consistent with and comparable to that of existing studies. However, thanks to Taiwan's minimum shareholding requirement for insiders, this study designed two additional measures to provide a richer observation of insider shareholding. Thus, the three measures of insider ownership used in this study were insider shareholding ratio (ISR), insider shareholding deviation (ISD), and frequency of insufficient shareholding (FIS). ISR is the aggregate shareholding of directors and supervisors over the weighted average outstanding common stock in a given year. This is a fundamental and commonly used measure of insider ownership. ISD refers to the difference between ISR and the legally required minimum shareholding ratio in a given year. ISD is a positive number when the aggregate insider shareholding is higher than the legal requirement. Conversely, a negative ISD shows that the aggregate insider shareholding falls below the legal requirement. FIS is the number of months a firm has filed as insufficient shareholding in a given year. According to Taiwan's Security Exchange Act, all public companies must file their aggregate insider shareholding every month. Companies are fined if their aggregate insider shareholdings are lower than the minimum legal requirements. Thus, the value of this indicator ranges from 0 to 12, which is the number of times in a given year that a company is fined for insufficient aggregate insider shareholding.

Earnings per share (EPS) and return on assets (ROA) were adopted as proxies of firm performance respectively, which is the dependent variable of this study. To identify the specific effect of insider ownership, two covariates were used to control statistically for confounding influences on firm performance. Leverage (LEV) denotes the ratio of total debts to total assets, which was included to account for the possibility that creditors are able to lessen managerial agency problems (McConnell & Servaes, 1995; Harvey et al., 2004). Duality (DUA) denotes a situation in which the board chair concurrently holds the position of general manager or CEO. Duality was dummy coded 1 if duality existed in a given year and 0 otherwise.

## Empirical Models

The data used in this study included cross-sectional and time series longitudinal data of the years observed. The fixed-effect panel data models were adopted to examine the relationship between insider ownership and firm performance as follows:

$$EPS_{it} = \alpha_{it} + \beta_1(ISR_{it}) + \beta_2(ISD_{it}) + \beta_3(FIS_{it}) + \beta_4(DUA_{it}) + \beta_5(LEV_{it}) + \varepsilon_{it} \quad (1)$$

$$ROA_{it} = \alpha_{it} + \beta_1(ISR_{it}) + \beta_2(ISD_{it}) + \beta_3(FIS_{it}) + \beta_4(DUA_{it}) + \beta_5(LEV_{it}) + \varepsilon_{it} \quad (2)$$

Here,  $EPS_{it}$  and  $ROA_{it}$  are the regression dependent variables of company  $i$  ( $i = 1 \dots n$ ) at year  $t$  ( $t = 1 \dots n$ );  $\beta_1$  through  $\beta_5$  are the parameters to be estimated, and  $\varepsilon_{it}$  is the random error.

## EMPIRICAL RESULTS

### Descriptive Statistics

Table 1 presents the descriptive statistics and the correlation matrices of independent variables, revealing that insider ownership structures differed among industrial settings. Companies in a low-complexity setting tended to have high ISR, high ISD, and low FIS, which implied high and stable insider shareholding. As presented in the table, the means of ISR and ISD for companies in a high-complexity and large-scale setting were 0.1563 and 0.1361, respectively. Both were lower than the figures for companies in a low-complexity and large-scale setting (0.1922 and 0.1815, respectively). Similarly, the means of ISR and ISD for companies in a high-complexity and small-scale setting were 0.2169 and 0.1939, respectively; both were lower than the figures for companies in a low-complexity and small-scale setting (0.2479 and 0.1997, respectively). In addition, the low-complexity setting (Panel B and Panel D) had lower FIS (compared with Panel A and Panel C). This confirms that Taiwan's listed companies in traditional industries typically develop from family-controlled businesses, and insider-owners of such companies tend to have high shareholding even after the IPO process.

Various insider ownership structures were also observed along the firm scale dimension. Small-scale companies (Panel C and Panel D) had a higher ISR (0.2169 and 0.2479, respectively) and a higher ISD (0.1939 and 0.1997, respectively) than large-scale companies did (Panel A and Panel B). Small-scale companies also had a high FIS (0.6667 in Panel C and 0.3712 in Panel D). The statistics showed that Taiwanese insider-owners of small-scale companies tended to possess high shareholding and adjust their shareholding more frequently, which implied a high but unstable insider shareholding.

Regarding the correlation matrices of independent variables in Figure 1, all of the four correlation coefficients of ISR and ISD were much higher than others with statistical significance, which implied that a severe collinearity might exist in the regression model. After running a variance inflation factor (VIF) analysis, the all-variable-included mode of regression was excluded because of high VIF values on ISR and ISD (higher than 10). Instead, the regression models that included ISR (Mode A) and ISD (Mode B) were adopted in the following empirical analysis.

**Table 1.** Descriptive Statistics and Correlation Matrix

<b>Panel A: high-complexity/large-scale</b>									
	Mean	Standard Deviation	ISR	ISD	FIS	DUA	LEV	EPS	ROA
ISR	0.1563	0.0872	1.0000						
ISD	0.1361	0.1426	0.8763***	1.0000					
FIS	0.2406	1.0835	-0.1926***	-0.1629***	1.0000				
DUA	0.3719	0.4841	-0.0501	-0.1177**	0.0141	1.0000			
LEV	0.3793	0.1484	0.0779	0.0820	0.0342	-0.0368	1.0000		
EPS	1.4999	2.9184	0.0523	0.0149	-0.0899	0.0446	-0.2306***	1.0000	
ROA	0.0442	0.1015	0.0612	-0.0014	-0.0553	-0.0216	-0.3422***	0.8800***	1.0000
<b>Panel B: low-complexity/large-scale</b>									
ISR	0.1922	0.1485	1.0000						
ISD	0.1815	0.2222	0.9002***	1.0000					
FIS	0.1063	0.7195	-0.0720*	-0.0748*	1.0000				
DUA	0.2519	0.4345	0.0557	0.0486	0.0158	1.0000			
LEV	0.4023	0.2305	0.1947***	0.0994**	0.1349***	-0.0091	1.0000		
EPS	0.7371	1.8591	0.1140***	0.1522***	-0.0432	-0.0002	-0.1891***	1.0000	
ROA	0.0205	0.0638	0.2141***	0.2258***	-0.0890**	-0.0574	-0.0490	0.8119***	1.0000
<b>Panel C: high-complexity/small-scale</b>									
ISR	0.2169	0.1430	1.0000						
ISD	0.1939	0.2704	0.9015***	1.0000					
FIS	0.6667	1.6764	-0.1267	-0.1479*	1.0000				
DUA	0.4583	0.4998	0.0105	0.0267	0.0905	1.0000			
LEV	0.4153	0.1842	-0.0943	-0.1619**	0.0623	-0.0971	1.0000		
EPS	-0.3144	2.6489	0.1257	0.1730**	-0.0749	-0.0343	-0.2797***	1.0000	
ROA	-0.0382	0.1733	0.2097***	0.2427***	-0.1369*	-0.0238	-0.1700**	0.8348***	1.0000
<b>Panel D: low-complexity/small-scale</b>									
ISR	0.2479	0.1742	1.0000						
ISD	0.1997	0.2161	0.8869***	1.0000					
FIS	0.3712	0.9839	-0.0428	-0.0041	1.0000				
DUA	0.2727	0.4471	0.1584*	0.1605*	0.0284	1.0000			
LEV	0.3963	0.2568	0.5825***	0.5019***	0.1803**	0.1546*	1.0000		
EPS	0.9189	2.4479	0.1866**	0.2404***	-0.3673***	0.0010	-0.0085	1.0000	
ROA	0.0224	0.0964	0.1128	0.1053	-0.4278***	0.0073	-0.1281	0.8766***	1.0000

This table shows the descriptive statistics and the correlation matrixes of research variables in the four industrial settings. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels respectively.

### **Insider Ownership and Firm Performance**

The results of empirical analysis are presented in Table 2. EPS and ROA are the dependent variables used to perform fixed-effect panel data regression in empirical Models 1 and 2 respectively. The results of the two empirical models were relatively consistent, revealing a diverse relationship of insider ownership and firm performance among industrial settings.

For companies in a high-complexity and large-scale setting, the results of empirical Model 1 present negative coefficients with statistical significance on ISR (-3.4299) and ISD (-1.6516). Similar results were obtained using empirical Model 2, which presented negative coefficients on ISR (-0.1835) and ISD (-0.0920) with statistical significance. These results suggested that high insider ownership exerts a negative effect on firm performance, which supports Hypothesis 1 and coincide with the entrenchment argument.

Conversely, for companies in a low-complexity and small-scale setting, the results of empirical Model 1 presented positive coefficients on ISR (9.9342) and ISD (1.5757) with statistical significance, and empirical Model 2 presented positive coefficients on ISR (0.4937) and ISD (0.1604) with statistical significance. These results showed that high insider ownership exerts a positive effect on firm performance, which supports Hypothesis 2 and concur with the convergence-of-interests argument.

A similar conclusion can be drawn from the empirical results of FIS. Given that FIS is an indirect measurement observing insider shareholding from an opposite direction, high FIS implies low insider ownership. In Table 2, all the FIS coefficients in a low-complexity and small-scale setting are negative with statistical significance, which suggests a positive effect on firm performance. By contrast, in a high-complexity and large-scale settings, all the FIS coefficients were positive, although they did not reach statistical significance.

Regarding the predicted gray areas, the high-complexity and small-scale setting and the low-complexity and large-scale setting, both empirical Models 1 and 2 presented positive coefficients on ISR and ISD with statistical significance, implying that a positive convergence-of-interests effect prevailed in the two settings. However, the positive FIS coefficients support the negative entrenchment effect. The conflicting results confirm the predictions presented in Figure 1.

The empirical results of DUA showed diverse tendencies on large-scale and small-scale companies. For large-scale companies, the coefficients of DUA were all negative, whereas the DUA coefficients of small-scale companies were all positive, implying that the effect of the controversial CEO duality also contingents on industrial context. The empirical results of LEV were consistently negative for all the tested industrial settings, suggesting an inverse relationship between leverage and performance.

Table 2: Effects of Insider Ownership on Firm Performance in Different Industrial Settings

Panel A: Empirical Model (1) – EPS as the dependent variable								
	High-Complexity/ Large-Scale		Low-Complexity/ Small-Scale		High-Complexity/ Small-Scale		Low-Complexity/ Large-Scale	
	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B
ISR	-3.4229 (0.0022)***		9.9342 (0.0000)***		9.4940 (0.0000)***		5.9776 (0.0000)***	
ISD		-1.6516 (0.0025)***		1.5757 (0.0137)**		6.0918 (0.0006)***		1.2041 (0.0927)*
FIS	0.0329 (0.5400)	0.0414 (0.4308)	-0.3971 (0.0008)***	-0.4286 (0.0006)***	0.2293 (0.0523)*	0.2340 (0.1061)	0.2211 (0.0405)**	0.1126 (0.0687)*
DUA	-0.2074 (0.3004)	-0.1946 (0.3304)	0.4038 (0.0284)**	0.3870 (0.0573)*	1.2227 (0.0002)***	1.0588 (0.0003)***	-0.2512 (0.0826)*	-0.2169 (0.1446)
LEV	-5.7713 (0.0000)***	-5.5237 (0.0000)***	-9.7717 (0.0000)***	-5.9960 (0.0001)***	-3.4731 (0.0012)***	-3.7869 (0.0003)***	-1.9885 (0.0000)***	-2.3085 (0.0000)***
Adj. R <sup>2</sup>	0.8903	0.9236	0.7721	0.7893	0.8356	0.8643	0.8977	0.8977
F	32.2029***	47.4544***	13.3281***	14.6281***	19.8591***	24.6307***	35.2701***	35.2573***
D-W	2.2894	2.2996	2.2163	2.1823	2.4385	2.3730	2.2935	2.3219
Panel B: Empirical Model (2) – ROA as the dependent variable								
	High-Complexity/ Large-Scale		Low-Complexity/ Small-Scale		High-Complexity/ Small-Scale		Low-Complexity/ Large-Scale	
	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B	Mode A	Mode B
ISR	-0.1835 (0.0000)***		0.4937 (0.0000)***		0.7020 (0.0000)***		0.3173 (0.0000)***	
ISD		-0.0920 (0.0013)***		0.1604 (0.0001)***		0.6192 (0.0000)***		0.0625 (0.0000)***
FIS	0.0030 (0.2469)	0.0030 (0.2652)	-0.0124 (0.0159)**	-0.0098 (0.0625)*	0.0086 (0.1007)	0.0137 (0.0606)*	0.0032 (0.0103)	0.0004 (0.1802)
DUA	-0.0066 (0.5319)	-0.0063 (0.5472)	0.0015 (0.7802)	0.0046 (0.3678)	0.0777 (0.0000)***	0.0876 (0.0000)***	-0.0036 (0.0001)***	-0.0017 (0.0423)**
LEV	-0.2490 (0.0000)***	-0.2368 (0.0000)***	-0.4758 (0.0000)***	-0.3215 (0.0000)***	-0.3457 (0.0000)***	-0.3544 (0.0000)***	-0.0598 (0.0000)***	-0.0639 (0.0000)***
Adj. R <sup>2</sup>	0.8098	0.8126	0.9520	0.9469	0.7822	0.7576	0.9324	0.8831
F	17.3684***	17.6658***	73.1788***	65.8522***	14.3310***	12.5962***	54.8526***	30.4927***
D-W	2.3759	2.3530	2.5018	2.4673	2.5257	2.4191	2.2471	2.2872

This table shows the regression results based on Empirical Model (1) and (2). The number before the ( ) is the coefficient; the number within the ( ) is the p-value. \*, \*\*, and \*\*\* denote the 10%, 5%, and 1% significant level respectively.

In general, the results of the two empirical models are quite consistent, revealing that the relationship between insider ownership and firm performance varies among industrial settings.

Both empirical models present negative ISR coefficients, negative ISD coefficients with statistical significance, and positive FIS coefficients in high-complexity/large-scale setting, implying support on Hypothesis 1.

Both empirical models present positive ISR coefficients, and positive ISD B coefficients and negative FIS coefficients with statistical significance in low-complexity/small-scale setting, implying support on Hypothesis 2.



The empirical results on DUA show a different tendency between large-scale and small-scale companies. For large-scale companies, the coefficients of DUA are all negative, while the DUA coefficients of small-scale companies are all positive. The empirical results on LEV are consistently negative for all the tested industrial settings.

## CONCLUSION

This study examined the empirical relationship between insider ownership and firm performance in Taiwan, where the agency problem is typically based on conflicting interests between inside owners (inside directors) and outside shareholders. Based on resource dependence theory, this study argued that the relationship in concern might vary among diverse industrial settings. The empirical results supported this argument, showing that high insider shareholding exerts a positive effect in a high-complexity and large-scale setting, and a negative effect in a low-complexity and small-scale setting. Accordingly, this study contributes a new aspect to this discussion, arguing that the positive convergence-of-interests effect and the negative entrenchment effect can coexist in various industrial settings. This argument implies considering contextual-fitness in searching for effective regulations of corporate governance. In addition, the empirical results of this study provide a reference for the debate on the appropriateness of stock options and other equity-related items in director/executive pay packages, which is a widely adopted but controversial practice.

## AUTHOR INFORMATION

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