EFFECTS OF INSIDER SHAREHOLDING ON CORPORATE GOVERNANCE IN EMERGING MARKETS: EVIDENCE FROM TAIWAN

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ABSTRACT

Ownership structure is one of the key determinants constituting internal corporate governance, which is especially crucial in emerging markets. This study explores the effects of insider shareholding, an obvious characteristic of ownership structure, on corporate governance. The empirical results demonstrate partial support for the convergence-of-interests argument. This means that a higher insider shareholding structure tends to benefit corporate governance. However, the results also show possible moderating effects from different industrial settings; further studies are needed to deepen the understanding of these effects. Policy implications are provided for legislation and investing in emerging markets.

JEL: G32; G34; G38

KEYWORDS: corporate governance, ownership structure, insider shareholding, agency theory

INTRODUCTION

In recent years, emerging markets have drawn considerable attention for their growth potential. Correspondingly, corporate governance in emerging markets has become a focus of discussion (Kearney, 2012; Claessens & Yurtoglu, 2012). Emerging markets provide different research settings for academic-oriented researchers to re-examine theories and hypotheses derived from developed markets. Meanwhile, demands from the practical application front are also strong. Knowledge on emerging markets is crucial for extending business into these regions and for improving the institutional environment in these regions.

A complete system of corporate governance includes external mechanisms originating from the market and internal mechanisms within corporate organizations. However, emerging markets typically suffer from a lower level of legal protection for shareholders (Lins, 2003), a lack of influential institutional investors and an inactive takeover market (Tsai et al., 2006). Under these conditions, corporate governance systems in emerging markets tend to have a greater reliance on internal mechanisms rather than external ones (Sheu & Yang, 2005).

Taiwan's minimum shareholding requirement for insiders (directors and supervisors) is exactly such a case. According to the Security Exchange Act in Taiwan, the entire body of insiders in a public company must possess at least a certain number of shares of this company, which is presented in Table 1. This legal requirement attempts to strengthen internal corporate governance by regulating ownership structure (Hung & Chen, 2009). Although a similar regulation does not exist in any major country, ownership structure has long been considered a key determinant constituting internal corporate governance (Berle & Means, 1932; Jensen & Meckling, 1976; Fama & Jensen, 1983; Demsetz & Lehn, 1985; Shleifer & Vishny, 1997; Demsetz & Villalonga, 2001; Sanchez-Ballesta & Garcia-Meca, 2007). Insider shareholding is an obvious characteristic of ownership structure (Garcia-Meca & Sanchez-Ballesta, 2011; Gugler et al., 2008). Does a higher insider shareholding really benefit corporate governance? This study examines the effects of insider shareholding on corporate governance. Policy implications are provided based on the empirical results.

The remainder of this paper is organized as follows. The next section reviews the related literature and develops the scope of this research. We then describe our data and methodology and discuss the empirical results. The final section concludes.

Table 1: Taiwan's Minimum Shareholding Requirements for Insiders

Company Paid-in Capital	Entire body of Directors	Entire body of Supervisors
Less than NT$ 0.3 billion	15.00%	1.50%
NT$ o.3 billion - NT$ 1 billion	10.00%	1.00%
NT$ 1 billion - NT$ 2 billions	7.50%	0.75%
NT$ 2 billion and above	5.00%	0.50%

This table shows minimum shareholdings required by Taiwan's Security Exchange Act. According Article 26 of the Act, public companies must file the total combined number of shares held by their directors and supervisors every month. When this number falls below the legally mandated minimum shares, authorities levy a fine and dictate a deadline by which the minimum number must be met.

LITERATURE REVIEW

In their influential 1932 masterpiece, *The Modern Corporation and Private Property*, Berle and Means first discussed the separation of ownership and control (Berle & Means, 1932). Since that time, numerous theoretical and empirical studies have explored the consequences of ownership structure (e.g. 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 shareholding has been repeatedly investigated. Nevertheless, no commonly accepted theory regarding the effects of insider shareholding has been reached.

According to classic agency theory, increased insider ownership naturally helps align insider-owner's interests with those of outside shareholders. Thus, a higher insider shareholding could improve firm performance (Fama & Jensen, 1983; Jensen and Meckling, 1976). This is the convergence-of-interests argument. Many reasons have been provided to explain the positive insider shareholding-performance relationship, e.g. signaling effects (Leland & Pyle, 1977), decreased agency costs of free cash flow (Jensen, 1986), and mitigated problem of managerial myopia (Palia & Lichtenberg, 1999).

Alternatively, the entrenchment argument asserts that insiders tend to secure their positions, build up a business empire, and resist supervision (Jensen & Ruback, 1983). When insiders possess a higher number of shares, 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), hence assailing corporate governance.

Recently, a stream of articles has suggested that there is a non-linear relationship between insider shareholding and firm performance in an attempt to synthesize the two rival arguments. However, the empirical results are even more diversified because of the inherent complexity of non-linear model. For example, Morck et al. (1988) presented a N-shaped curve with two turning points to portray the relationship; Hermalin and Weisbach (1991) depicted the relationship as a M-shaped curve with 3 turning points; Cui and Mak (2002) found a W-shaped curve with 3 turning points; Davies et al. (2005) specified a fifth-degree function with two maximum turning points and two minimum turning points; Selarka (2005) found a U-shaped curve with one turning point; Hung and Chen (2009) obtained a V-shaped curve.

It's worthy to note here, that most of the above cited studies actually examined firm performance (e.g. return of asset, earnings per share, productivity, and market value-Tubin's *q*) rather than quality of corporate governance. However, firm performance doesn't necessarily synchronize with quality of

corporate governance. Although it's understandable that performance is an innate concern of business or management-related studies and is a research variable more clearly defined and easy to measure. The original concern regarding ownership structure (or insider shareholding) is corporate governance.

Very limited studies explored non-performance effects of ownership structure. Garcia-Meca and Sanchez-Ballesta (2011) investigated the influence of ownership structure on analysts' forecast accuracy for Spanish firms. Because analysts' forecast accuracy is deeply associated with the quality of financial reports, and the quality of financial information is largely determined by quality of corporate governance (Ackert & Athanassakos, 2003), the dependent variable of this study is considered more related to corporate governance. Cullinan et al. (2012) investigated the relationship of ownership structure and accounting conservatism in China. Accounting conservatism itself is actually a governance mechanism serve to lessen information asymmetry to result in better protection of outside shareholders (Lara et al., 2009; LaFond & Roychowdhury, 2008).

Contrary to arguments derived from agency theory, some scholars have asserted that external supervisory mechanisms based on market economic rationality (e.g. potential merge-and-acquisition threats and competitive pressures) and appropriate internal supervision or motivation measures (e.g. internal audits and employee profit-sharing schemes) are sufficient to induce insiders to fulfill their management responsibilities (Demsetz & Lehn,1985; Demsetz & Villalonga, 2001). Stewardship theory has also provided a new notion from the organizational behavior perspective. This theory posits that numerous non-financial incentives (e.g. the pursuit of career achievements, social reputation, and self-fulfillment) influence manager behavior and that managers are not necessarily agents in sole pursuit of self-interest (Muth & Donaldson, 1998).

In summary, existing research articles indicate that insider ownership has complex consequences. To explore its effects on corporate governance, a more realistic strategy is to differentiate industry settings. This study adopts such an approach.

DATA AND 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 Securities Exchange (OTC). Companies listed on TSEC are typically larger in scale, whereas companies traded through OTC are smaller and typically in their early development stage. To compare between the technological industry and the traditional industry, companies in the electronics and biotech segments were labeled "technological," and companies in the textile, steel, construction, food, chemical, and machinery industries were labeled "traditional." The number of effective observations totals 1,156. The breakdown of effective observations are 320 in TSEC-technological, 536 in TSEC-traditional, 168 in OTC-technological, and 132 in OTC-traditional.

Variable Definition and Measurement

Insider shareholding is the independent variable of this study by nature. We defined insider shareholding as the aggregate ownership of directors and supervisors. This definition is consistent with and comparable to those of existing studies. However, thanks to Taiwan's minimum shareholding requirement for insiders, this study designed two additional measures to provide a richer observation on insider shareholding. The

three measures of insider shareholding 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 filed as insufficient shareholding in a given year. According to Taiwan's Security Exchange Act, 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.

Revision of financial information (RFI) and crisis occurrence (CRI) were adopted as proxies of level of corporate governance, which is the dependent variable of this study. RFI is defined as the number of times a company revises its financial predictions and corrects its financial statements in a given year. CRI is a dummy variable. When a company runs into crisis in a given year, CRI is dummy coded as 1, and 0 if no crisis occurs in that year. The TEJ database labels a company as falling into a crisis in one of the following situations: default, bankruptcy, request for a bailout, suspension of operations caused by financial shortcomings, stock market delisting, temporary suspension of trade in the stock market, negative net worth, or financial misappropriation. Because both RFI and CRI are negative indicators, higher values mean that corporate governance is worse.

To identify the specific effect of insider shareholding, two covariates were used to control statistically for confounding influences on corporate governance. 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 manger or CEO. Duality was dummy coded 1 if duality existed in a given year; otherwise, it was coded 0.

<u>Empirical Models</u>

The data used in this study included cross-sectional and time series longitudinal data of the years observed. A panel data model was adopted to obtain parameter estimates efficiently. The empirical model was adopted to examine the relationship between insider shareholding and the RFI (a proxy of level of corporate governance) as follows:

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

Here, RFI_{it} is the regression dependent variable of company i ($i = 1...n$) at year t ($i = 1...n$); β_1 through β_5 are the parameters to be estimated; and ε_{it} is the random error.

Because CRI is a dummy variable, when used as the regression dependent variable, a logit method was adopted to establish the regression model, and White adjustment (heterogeneous variance adjusted standard error) was adopted to express the estimated results and reduce the regression formula variance heterogeneity problem. The empirical model is:

$$CRI_i \; = \; \alpha_i + \beta_1(ISR_i) + \beta_2(ISD_i) + \beta_3(FIS_i) + \beta_4(DUA_i) + \beta_5(LEV_i) + \varepsilon_i \qquad\qquad (2)$$

EMPIRICAL RESULTS AND DISCUSSION

Descriptive Statistics

Table 2 presents the descriptive statistics. It reveals that insider shareholding structures are different among industrial settings. Companies in traditional industries tend to have higher ISR, higher ISD, and lower FIS, which implies a high and stable insider shareholding. As presents in the table, the *mean* of ISR and ISD for TSEC-technological companies is 0.1563 and 0.1361, respectively. Both are lower than the figures for TSEC-traditional companies (0.1922 and 0.1815, respectively). Likewise, the *mean* of ISR and ISD for OTC-technological companies is 0.2169 and 0.1939, respectively; both are lower than the figures for OTC-traditional companies (0.2479 and 0.1997, respectively). In addition, the technological industry has higher FIS. This echoes that Taiwan's public companies in traditional industry typically develop from family-controlled businesses, and insider-owners of such companies tend to have higher shareholding even after the IPO process.

Different insider shareholding structures can also be found in TSEC companies and OTC companies. OTC companies have a higher ISR (0.2169 for OTC-technological, 0.1563 for TSEC-technological; 0.2479 for OTC-traditional, 0.1992 for TSEC-traditional) and a higher ISD (0.1939 for OTC-technological, 0.1361 for TSEC-technological; 0.1997 for OTC-traditional, 0.1815 for TSEC-traditional). Meanwhile, OTC companies also have a higher FIS (0.6667 for OTC-technological, 0.2406 for TSEC-technological; 0.3712 for OTC-traditional, 0.1063 for TSEC-traditional). The statistics show that insider-owners of OTC companies (typically smaller and/or younger) tend to possess higher shareholding and adjust their shareholding more frequently, which implies a high and unstable insider shareholding.

Table 2: Summary of Descriptive Statistics

	TSEC Companies				OTC Companies			
	Mean		Standard Deviation		Mean		Standard Deviation	
	Technological	Traditional	Technological	Traditional	Technological	Traditional	Technological	Traditional
ISR	0.1563	0.1922	0.0872	0.1485	0.2169	0.2479	0.1430	0.1742
ISD	0.1361	0.1815	0.1426	0.2222	0.1939	0.1997	0.2704	0.2161
FIS	0.2406	0.1063	1.0835	0.7195	0.6667	0.3712	1.6764	0.9839
DUA	0.3719	0.2519	0.4841	0.4345	0.4583	0.2727	0.4998	0.4471
LEV	0.3793	0.4023	0.1484	0.2305	0.4153	0.3963	0.1842	0.2568
CRI	0.0750	0.0448	0.2638	0.2070	0.1488	0.0985	0.3570	0.2991
RFI	0.1281	0.1381	0.5703	0.6172	0.0655	0.1515	0.3308	0.5859

This table shows the descriptive statistics. It reveals that insider shareholding structures are different among industrial settings. Companies in traditional industries tend to have higher ISR, higher ISD, and lower FIS, which implies a high and stable insider shareholding (comparing with technological industries). OTC companies tend to have higher ISR and ISD, accompanied with higher FIS, which implies a high and unstable insider shareholding (comparing with TSEC companies).

Table 3 presents correlation matrix of independent variables. It can be observed that all the 4 correlation coefficients of ISR and ISD are much higher than others and with statistical significance, which implies a severe collinearity might exist in the regression model. To avoid the collinearity problem, this study adopts variance inflation factor (VIF) to detect the potential problem. According to Hair et al. (2006), the acceptable VIF value should be lower than 10. As Table 4 presents, the all-variable-included mode (Mode 1) tends to have a high VIF value on ISR and ISD. However, when the regression models only include ISR or ISD (Mode 2 and Mode 3), most of VIF value on all variables are lower than 2. Thus, the following empirical analysis only adopts Mode 2 and Mode 3 to run regression models.

Table 3: Correlation Matrix

TSEC Companies

	ISR	ISD	FIS	DUA	LEV	CRI	RFI
ISR		0.9002***	-0.0720*	0.0557	0.1947***	0.0002	0.0332
ISD	0.8763***		-0.0748*	0.0486	0.0994**	-0.0095	-0.0154
FIS	-0.1926***	-0.1629***		0.0158	0.1349***	0.3194***	0.0216
DUA	-0.0501	-0.1177**	0.0141		-0.0091	0.0406	0.0165
LEV	0.0779	0.0820	0.0342	-0.0368		0.3659***	0.1002**
CRI	-0.0781	-0.1312**	0.0902	0.0755	0.2049***		0.1417***
RFI	-0.0204	-0.0648	0.0058	0.1108**	-0.0075	0.1651***	

OTC Companies

	ISR	ISD	FIS	DUA	LEV	CRI	RFI
ISR		0.8869***	-0.0428	0.1584*	0.5825***	0.1144	0.0180
ISD	0.9015***		-0.0041	0.1605*	0.5019***	0.1993**	0.0177
FIS	-0.1267	-0.1479*		0.0284	0.1803**	0.4196***	0.0606
DUA	0.0105	0.0267	0.0905		0.1546*	-0.0882	0.0742
LEV	-0.0943	-0.1619**	0.0623	-0.0971		0.3032***	0.1516*
CRI	-0.2596***	-0.2107***	0.1134	0.1189	0.2593***		0.0013
RFI	-0.1261*	-0.0882	0.1260*	-0.0377	0.0423	0.6691	

*This table shows the correlation matrixes for TSEC and OTC companies respectively. The lower-left corner indicates technology industries, and the upper-right corner indicates traditional industries. *, **, and *** indicate significance at the 10%, 5%, and 1% levels respectively.*

Table 4: Variance Inflation Factor (VIF) Analysis

	TSEC Companies						OTC Companies					
	Technological Industry			Traditional Industry			Technological Industry			Traditional Industry		
	Mode 1	Mode 2	Mode 3	Mode 1	Mode 2	Mode 3	Mode 1	Mode 2	Mode 3	Mode 1	Mode 2	Mode 3
ISR	7.345	1.141	-	7.830	1.367	-	10.619	1.559	-	14.289	4.552	-
ISD	11.518	-	1.361	8.404	-	1.229	5.469	-	1.070	7.815	-	6.063
FIS	1.008	1.008	1.009	1.003	1.003	1.003	1.079	1.082	1.078	1.031	1.025	1.025
DUA	1.107	1.020	1.063	1.013	1.012	1.013	1.068	1.066	1.068	1.065	1.057	1.063
LEV	1.036	1.037	1.033	1.222	1.179	1.113	1.121	1.045	1.044	2.941	2.489	1.626

This table adopts VIF to detect the potential collinearity problem. The all-variable-included mode (Mode 1) is excluded from regression analysis because of its high VIF value on ISR and ISD.

Empirical Results

This study uses RFI and CRI as proxies for level of corporate governance. In Empirical Model (1), RFI is the dependent variable to perform a fixed effect panel data regression. In Empirical Model (2), CRI is the dependent variable to perform a logit mode regression. The empirical results are presented in Table 5, which shows partial support for the convergence-of-interests argument.

Empirical Model (1) shows the following results. For TSEC-technological companies, both ISR and ISD have a negative coefficient with statistical significance ($p=0.0225$ and $p=0.0261$, respectively). The same results can be found in OTC-traditional companies where both ISR and ISD are significantly negative ($p= 0.0068$ and $p=0.0695$, respectively). This phenomenon implies that a higher level of corporate governance (lower RFI) comes with a higher insider shareholding structure; this supports the convergence-of-interests argument. However, the same results cannot be found in TSEC-traditional companies and OTC-technological companies. For TSEC-traditional companies, ISR has a significantly positive coefficient. However, its p-value is only 0.0779, which is not a strong anomaly. Firm scale has opposite moderating effects for companies in technological industry and traditional industry. As OTC companies are typically smaller in scale comparing with TSEC companies. It can be observed that the insider shareholding-corporate governance relationship is not significant for OTC-technological companies but significant for TSEC-technological companies. Conversely, the relationship is significant for OTC-traditional companies but insignificant for TSEC-traditional companies.

The results of Empirical Model (2) demonstrate a more consistent relationship between insider shareholding and the level of corporate governance. However, statistical significance can only be observed in technological industries. For TSEC-technological companies, the p-value for ISR and ISD is 0.0837 and 0.0047, respectively. For OTC-technological companies, the p-value for ISR and ISD is 0.0385 and 0.0677, respectively. For both TSEC- and OCT-traditional companies, p-values are insignificant.

Other than ISR and ISD, the empirical results on FIS are notable. In both Empirical Models (1) and (2), FIS is consistently significant in traditional industries, which tend to have higher insider shareholding. In Empirical Model (1), FIS p-values are 0.0404 (Mode 2) and 0.0417 (Mode 3) in TSEC-traditional companies, and 0.0177 (Mode 2) and 0.0685 (Mode 3) in OTC-traditional companies. Similar results can be found in Empirical Model (2). For TSEC-traditional companies, the FIS p-values are 0.0176 (Mode 2) and 0.0175 (Mode 3); for OTC-traditional companies the FIS p-values are 0.0003 (Mode 2) and 0.0001 (Mode 3). However, FIS does not relate to the level of corporate governance in technological industries, irrespective of whether it is TSEC or OTC, even though technological industries tend to have lower insider shareholding.

Taiwan's minimum shareholding requirement, which establishes a bottom line for insider shareholding and requires all public companies to file their insider shareholding figures every month, actually creates a signal to the stock market. However, the empirical results on FIS do not support the idea that insufficient shareholding has a consistent effect in different industrial settings. Two implications can be drawn from this part of empirical result. First, the critical volume for insider shareholding might vary among industrial settings. If so, the minimum insider shareholding requirement could raise dispute for its fairness. Second, for investors in the Taiwan stock market, the mandatorily revealed information about insider shareholding is more meaningful for traditional industries, which tend to have a higher insider shareholding structure.

Table 5: Effects of Insider Shareholding on Corporate Governance

	TSEC Companies				OTC Companies			
	Technological Industry		Traditional Industry		Technological Industry		Traditional Industry	
	Mode 2	Mode 3	Mode 2	Mode 3	Mode 2	Mode 3	Mode 2	Mode 3
Empirical Model (1):	$RFI_{it} = \alpha_{it} + \beta_1(ISR_{it}) + \beta_2(ISD_{it}) + \beta_3(FIS_{it}) + \beta_4(DUA_{it}) + \beta_5(LEV_{it}) + \varepsilon_{it}$							
ISR	-0.0081 (0.0225)**		0.0023 (0.0779)*		0.0004 (0.2273)		-0.5058 (0.0068)***	
ISD		-0.0033 (0.0261)**		0.0001 (0.2358)		0.0022 (0.1262)		-0.1190 (0.0695)*
FIS	0.0003 (0.5041)	0.0003 (0.5082)	0.0002 (0.0404)**	0.0000 (0.0417)**	0.0000 (0.4028)	0.0001 (0.2152)	0.0066 (0.0177)**	0.0042 (0.0685)*
DUA	0.0037 (0.1139)	0.0037 (0.1257)	-0.0003 (0.1699)	-0.0001 (0.2529)	-0.0000 (0.5017)	-0.0000 (0.9645)	0.0021 (0.4378)	0.0018 (0.4186)
LEV	-0.0125 (0.0094)***	-0.0112 (0.0102)**	0.0000 (0.1664)	0.0000 (0.4794)	0.0009 (0.2248)	0.0010 (0.1637)	0.3714 (0.0132)**	0.1940 (0.0302)**
Adj. R^2	0.3293	0.3241	0.3368	0.3384	0.1029	0.1016	0.1686	0.1418
F value	2.8867***	2.8433***	2.9828***	2.9978***	1.4259*	1.4200*	1.7377**	1.6014**
D-W value	2.5122	2.5163	2.8034	2.8114	2.6730	2.6660	2.9185	2.9015
Empirical Model (2):	$CRI_i = \alpha_i + \beta_1(ISR_i) + \beta_2(ISD_i) + \beta_3(FIS_i) + \beta_4(DUA_i) + \beta_5(LEV_i) + \varepsilon_i$							
ISR	-4.5165 (0.0837)*		-1.5196 (0.5454)		-11.8032 (0.0385)**		-0.4409 (0.7224)	
ISD		-6.9662 (0.0047)***		-0.8376 (0.5617)		-10.4813 (0.0677)*		0.5959 (0.3949)
FIS	0.1372 (0.2122)	0.0993 (0.3648)	0.8303 (0.0176)**	0.8153 (0.0175)**	0.0871 (0.5149)	0.0561 (0.6533)	0.4232 (0.0003)***	0.4457 (0.0001)***
DUA	0.6060 (0.1641)	0.4905 (0.2721)	1.0843 (0.0853)*	1.0687 (0.0836)*	0.9001 (0.0656)*	0.7475 (0.1245)	-0.3190 (0.4252)	-0.3271 (0.4093)
LEV	5.6492 (0.0013)***	5.7488 (0.0012)***	12.5025 (0.0000)***	12.4751 (0.0000)***	4.6785 (0.0023)***	4.1598 (0.0049)***	1.8494 (0.0449)**	1.3262 (0.1372)
McF R^2	0.1141	0.1461	0.4900	0.4893	0.2322	0.2151	0.2672	0.2723
LR value	19.4586***	24.9114***	96.0496***	95.9033***	32.8189***	30.4003***	22.6947***	23.1311***

*This table shows 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. The overall empirical results are in favor of the convergence-of-interests argument. In the results of Empirical Model (1), both ISR and ISD have a negative coefficient with statistical significance for TSEC-technological companies and OTC-traditional companies, implies that a higher level of corporate governance (a lower RFI) comes with a higher insider shareholding structure. The results of Empirical Model (2) demonstrate a more consistent relationship between insider shareholding and the level of corporate governance. However, statistical significance can only be observed in technological industries. In both Empirical Models (1) and (2), FIS is significant in traditional industries but not significant in technological industries. That means the insufficient insider shareholding doesn't have a consistent effect in different industrial settings.*

CONCLUDING COMMENTS

This study examines the effects of insider shareholding on corporate governance. Existing theories provide two rival arguments regarding consequences of insider shareholding. The convergent-of-interests argument predicts a positive effect resulting from increased insider shareholding, while the entrenchment argument predicts a negative effect. What the effects most previous empirical researches investigated is on firm performance, e.g. return of assets, market value of the firm (usually measured by Tubin's q), productivity, and earnings per share. This study refocuses research concern on the quality of corporate governance, which is the original concern of the discussion of ownership structure.

Taking advantage of Taiwan's minimum insider shareholding requirement, this study designs two additional measures, ISD and FIS, along with the commonly used ISR to provide a richer observation on insider shareholding. RFI and CRI were adopted as proxies of level of corporate governance. The empirical results are in favor of the convergence-of-interests argument. Meanwhile, the inconsistency implies that industrial setting (firm scale and technological characteristic) might have moderating effects on the relationship of insider shareholding and corporate governance. Further studies are needed to deepen the understanding of these effects.

Though the positive convergence-of-interests effect is supported, it remains a technical difficulty to find appropriate minimum requirements for insider shareholding. Because the moderating effects of industrial setting are not very clear and the ever-changing business environment makes these effects even more complex and dynamic, the mandatory minimum insider shareholding inevitably raises dispute for its fairness. Nevertheless, it helps align the interests between insider-owners and outside shareholders, and ultimately, protects minority stock investors. For emerging economies who attempt to improve their overall corporate governance in a relative short-term, the legislative policy turns out to be a result of pro-and-con.

Corporate governance is a multi-dimension construct. In this study, RFI and CRI, the adopted proxies of level of corporate governance, each can only catch a part of reality. Given its importance for academic research and policy design, a more comprehensive and precise measurement is urgently needed for the future studies.

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