



# Large shareholder ownership types and board governance

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## ABSTRACT

This study examines the relation between large shareholder ownership and board governance in firms. Using a dataset comprising Taiwanese firms, we find that different types of large shareholder ownership influence board governance in different ways. Specifically, we find that greater family ownership is associated with greater outside director proportion on the board and a higher likelihood of CEO-chair combination. The nature of the relation between institutional ownership and board governance depends on whether the institutional owners are foreign or domestic, and active or passive. Our findings collectively suggest that family (institutional) ownership is more associated with an advisory (monitoring) board. Our study contributes to the literature by providing evidence on the multidimensional nature of the relation between large shareholder ownership types and board governance.

## 1. Introduction

Prior studies have documented a positive relation between large shareholder ownership and monitoring of managers (e.g., Shleifer and Vishny, 1986, 1997). According to this literature, the larger the shareholder stakes in a firm, the more shareholders have to gain (lose) from effective (ineffective) management, and so the greater the incentives the shareholders have to monitor management. However, these studies fail to consider the varying effects of different types of large shareholder ownership on monitoring effectiveness in firms. To the extent that different types of large shareholder ownership affect agency costs in different ways, monitoring effectiveness would also vary with these types of ownership, resulting in varying strength of governance mechanisms across firms.

In this study, we examine how two important types of large shareholder ownership, family and institutional (domestic versus foreign and active versus passive), affect two commonly used measures of board governance, namely, the proportion of outside directors on the board and whether the CEO is also chair of the board (Engel et al., 2002; Weisbach, 1988). To generate our predictions, we draw from studies asserting that monitoring by shareholders is less effective if the shareholders do not possess relevant information about firm activities (e.g., Lipton and Lorsch, 1992). Thus, monitoring effectiveness decreases when there is greater information asymmetry between shareholder and manager (hereafter referred to as “information asymmetry”) (Demsetz and Lehn, 1985). We assume that shareholders with larger stakes in the firm can exert greater influence in decision-making (Shleifer and Vishny, 1997), and therefore, the strength of board governance is determined by these shareholders' demands. When information asymmetry is high, large shareholders demand stronger monitoring mechanisms to offset their reduced monitoring effectiveness.

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However, when information asymmetry is low, large shareholders use their influence to implement weaker, less costly, monitoring mechanisms.

Adams and Ferreira (2007) show that boards have two important roles, namely, to advise and monitor management. In their theoretical study, these authors show that firms face a tradeoff between having a more monitoring-intensive board versus a less monitoring-intensive (i.e., more management-friendly) board that provides strategic advice to management. A management-friendly board is optimal when information asymmetry is low. This is because the management-friendly board encourages the CEO to be more willing to share information that could be used by the board to provide advice to management. We use these insights in examining the relations between board governance and the two types of large shareholder ownership in our study. We assert that different types of large shareholder ownership are associated with different levels of information asymmetry, resulting in varying strengths of board monitoring mechanisms. Family owners typically have *long-term associations* with the firm and are focused on *firm survival and reputation* because they want to pass the business on to the next generation (James, 1999; Anderson and Reeb, 2003a). Therefore, they are likely to ensure that the manager also has a long-term horizon to ensure goal congruence. For example, family owners typically place family members in CEO and board positions (Ali et al., 2007), so they are closely involved in and familiar with firm operations.<sup>1</sup> This suggests that greater family ownership is associated with less information asymmetry, and thus less board monitoring. Prior research shows that greater monitoring is associated with more outside director representation on the board (e.g., Weisbach, 1988) and a lower likelihood that the CEO is also chair of the board (e.g., Goyal and Park, 2002). In this situation, greater family ownership is associated with a *lower* proportion of outside directors on the board and a *higher* likelihood of CEO-chair combined roles. A combination of less outside director board representation and a higher likelihood of the CEO being chair of the board represents a monitoring board and provides the necessary reduced *monitoring* environment for family ownership. We call this the *Monitoring Board Hypothesis*.

Based on Adams and Ferreira's (2007) insight on a tradeoff between the advisory and monitoring role of boards, it is conceivable that less emphasis on board monitoring is offset by a greater emphasis on board advising with greater family ownership. Due to close involvement with firm operations by family owners, and thus the ability to monitor management effectively, the owners benefit more from the strategic advice provided by the board rather than its monitoring. Outside directors have a better range of experiences external to the firm that would benefit the firm more than inside directors (Baysinger and Butler, 1985). A combined CEO-chair role is also conducive to an advisory board as the CEO is likely to be more willing to share information that the board can use to advise management, as discussed above (Adams et al., 2005; Brickley et al., 1997; Ghosh et al., 2015). In this situation, greater family ownership is associated with a *higher* proportion of outside directors on the board and a *higher* likelihood of CEO-chair combined roles. A combination of more outside director board representation and a higher likelihood of the CEO being chair of the board represents an advisory board and provides the necessary *advisory* environment for family ownership. We call this the *Advisory Board Hypothesis*. Overall, in our study we examine whether the *Monitoring Board* or *Advisory Board Hypothesis* is empirically supported for family ownership.

We draw from myopic institutions theory (Drucker, 1986; Graves, 1988; Hill et al., 1988; Loescher, 1984; Scherer, 1984) in generating our prediction on the relation between institutional ownership and board governance. According to this theory, institutional owners tend to be *shortsighted* because institutional fund managers must compete for accounts and are evaluated and remunerated based on annual or even quarterly performance. Accordingly, it is assumed that their investments will be based on the same *short-term horizons* (Woolridge, 1988). Due to adopting a short-term horizon, institutional owners are typically not familiar with daily firm operations, and thus there is high information asymmetry. The high information asymmetry leads institutional owners to demand stronger board monitoring via more outside director board representation and separate CEO and chair roles to protect their stakes. We assume in this situation that the monitoring dominates the advisory role by the board because the institutional owners are more interested in protecting their stakes in the first instance. Moreover, it is conceivable that institutional owners have the capacity to make strategic decisions without seeking the advice of boards.

To test our predictions, we use a dataset comprising Taiwanese public companies. An advantage of the Taiwanese setting is that there is a sizeable proportion of family and institutional ownership, domestic versus foreign, and active versus passive, in companies, giving us considerable power to test our hypotheses. Additionally, the ownership structure of firms in Taiwan is different from western countries because family control plays an important role in Taiwanese businesses (Masulis et al., 2011). This aspect especially enables us to examine whether family ownership is associated with an advisory or monitoring board. In contrast, in the U.S., ownership is much more diverse. The Taiwanese setting thus allows us to more robustly test our hypotheses, which are predicated on the notion that large shareholders are dominant players in influencing board selection. Finally, our setting possesses a weak market for corporate control, unlike the U.S., which diminishes the influences of such external market disciplinary (governance) forces on our tests on internal governance.

We find that family ownership has a positive relation with outside director proportion on boards and also with the likelihood that the CEO is a chair of the board (hereafter CEO duality). This finding supports the *Advisory Board Hypothesis*, i.e., family control is associated with an advisory board. Our additional analysis reveals that a family member being the CEO is also associated with more outside director representation on the board and a higher likelihood that the CEO is chair of the board.<sup>2</sup> Also, whether a family

<sup>1</sup> In separate tests, we find that greater family ownership is associated with a higher likelihood that a family member is the CEO. Descriptive statistics (not reported) show that family ownership is 32% when a family member is the CEO, while family ownership is 28% when a professional manager is the CEO. *t*-test statistics reveal statistically significant differences between these two groups. This finding supports our assertion that family ownership is associated with closer involvement in the firm's operations.

member is the CEO affects the relation between family ownership and board governance. Supporting our conjecture that firms with greater family ownership benefit from an advisory board, in separate tests, we find that innovation output, measured as the number of patents and citations, is higher for a given level of innovation input, measured as the level of research and development expenditure.

In contrast, institutional ownership is insignificantly related to board governance. When we partition institutional ownership further into foreign institutional versus domestic institutional ownership, and also active versus passive institutional ownership, we find a positive (negative) relation between foreign institutional ownership and outside director representation on the board (CEO duality) but a negative (insignificant) relation between domestic institutional ownership and outside director representation on the board (CEO duality). If we assume that foreign institutions have less knowledge of local operations compared to domestic institutions, as shown in prior studies (e.g., Choe et al., 2005; Dvorak, 2005), then our finding provides support for our reasoning that greater information asymmetry is associated with stronger internal monitoring mechanisms via more independent boards. Furthermore, we find that active institutional ownership is insignificantly related to outside director proportion on the board but negatively related to the likelihood of CEO duality, indicating a weak positive relation between active institutional ownership and board governance. Passive institutional ownership is negatively related to both outside director board representation and CEO duality, indicating mixed evidence on the relation between passive institutional ownership and board governance. Collectively, our findings provide evidence that different types of large ownership affect board governance in different ways.

This study contributes to the ownership and governance literatures in four ways. First, we show that different types of large shareholder ownership explain the observed variation in governance strength across firms. Second, our study shows that the relation between large shareholder ownership and board governance is multidimensional. Prior research has typically treated this relation as unidimensional. There is a precedent in the literature for a multidimensional relation between institutional ownership and CEO pay. For example, Brickley and Lease (1988) and Kim and Seo (2011) show that different types of institutional ownership affect CEO pay in different ways. Third, our study contributes to the literature on whether firms make a tradeoff between the advisory and monitoring roles of boards (Adams and Ferreira, 2007; Faleye et al., 2011) by suggesting that the dominance of one role over the other could depend on the type of large shareholder ownership.

Finally, our study contributes to the limited but growing number of studies on governance practices in emerging markets. Prior research on the relation between large shareholder ownership and governance has focused on the U.S. A discussion paper by Gillan and Starks (2003) asserts that the legal environment influences the role of institutional shareholders. Thus, the nature of the relation between large shareholder ownership and governance is not clear beyond the U.S. Our study shows that, even in the absence of a sophisticated capital market like the one in the U.S., board governance plays a powerful role in firms in emerging markets. Thus, it is conceivable that governance mechanisms also serve to protect organizational stakeholders other than the stakeholder (e.g., employees and suppliers) in these markets.

Several studies are closely related to our study. Yeh and Woidtke (2005) examine the relation between family ownership, board selection, and firm value. Supporting our reasoning, their evidence suggests that family owners are heavily involved in board selection. However, they do not examine the relation between family ownership and both CEO-chair combination and outside director proportion on the board. A study by Aggarwal et al. (2011) examines the relation between institutional (foreign vs. domestic) ownership and governance strength across 20 common versus civil-law countries. They provide confirmatory evidence that legal protection influences the relation between institutional ownership and governance. However, our study is different from theirs in that we consider family ownership in addition to institutional ownership and treat the relation between large shareholder ownership and governance as multidimensional. Therefore, they do not consider the Advisory Board Hypothesis as we do.

Finally, Li and Srinivasan (2011) show that boards with founder-directors provide more high-powered incentives in the form of pay and retention policies than the average board. However, we examine the relation between family ownership and board governance. While CEO pay and board activities are arguably different dimensions of governance, it is unclear whether they act as complements or substitutes to each other (Rediker and Seth, 1995; Shleifer and Vishny, 1997). Thus, it is not possible to infer our results using Li and Srinivasan's study. Furthermore, while family ownership and founder-directors are related, they are not the same. Our results hold after controlling for the effect of family-CEOs or family-directors. Consistent with much governance research, Li and Srinivasan consider only the monitoring role of boards. Thus, our study makes an incremental contribution to the literature by providing evidence suggesting that large shareholder ownership type plays a role in influencing the advisory versus monitoring role of boards. Another more recent study by Li (2018) shows that an increase in non-family ownership strengthens managerial performance incentives via a higher CEO turnover-performance sensitivity. In particular, this relation is more pronounced in firms with weak governance, thus illustrating a substitutive effect between managerial incentives and governance. Our study complements Li's study by suggesting that her finding of a weakening of managerial performance incentives with greater family dominance could be due to a more advisory environment with greater family influence.

The rest of the paper is organized as follows. Section 2 presents our hypothesis development. Sections 3 and 4 describe the measures and the research design, respectively. We discuss our main results in Section 5. In Section 6, we conduct additional tests and address alternative explanations for our findings. We conclude in Section 7, where we outline our study's limitations and provide suggestions for future research.

<sup>2</sup> A family member at the helm of the firm is likely associated with an advisory rather than a monitoring environment.

## 2. Hypothesis development

Prior theoretical research is inconclusive on whether different monitoring mechanisms act as substitutes or complements to each other to influence managerial behavior (e.g., Hart, 1995; Shleifer and Vishny, 1997). For example, Rediker and Seth (1995) find that different control mechanisms act as substitutes to each other, whereas Hoskisson et al. (2009) argue that they act as complements. According to this literature, large shareholder ownership is one monitoring mechanism that could influence managerial behavior. The larger the stakes in a firm, the greater the extent of monitoring intensity (Shleifer and Vishny, 1986, 1997). Dispersed shareholders have little or no incentive to monitor management. This is because monitoring is costly and a public good, and each shareholder will free-ride in the hope that other shareholders will do the monitoring and s/he would benefit from improved firm performance (Hart, 1995). Shareholders with large stakes are inherently motivated to ensure the success of their stakes and have the power to demand necessary information to monitor management more intensely (Demsetz and Lehn, 1985; Hart, 1995; Shleifer and Vishny, 1997). Thus, large shareholder ownership could mitigate managerial expropriation via intense monitoring and, consequently, such firms tend to have weaker monitoring mechanisms in place.

The above line of reasoning inadvertently assumes that large shareholders are *effective* in monitoring. However, monitoring effectiveness is considerably reduced by information asymmetry (Nayyar, 1990). The notion that monitoring effectiveness depends on the cost of acquiring information is part of a growing body of literature emphasizing information asymmetry (e.g., Duchin et al., 2010). For example, several recent studies show that when boards have greater firm-specific knowledge (e.g., when they are insiders to the firm), information asymmetry between boards and managers is reduced (e.g., Duchin et al., 2010; Linck et al., 2008). Consequently, monitoring effectiveness is enhanced, leading to weaker monitoring mechanisms. On the other hand, when large shareholders do not possess sufficient (credible) information to monitor managers, monitoring effectiveness is considerably reduced. Thus, it is conceivable that these shareholders would demand stronger monitoring mechanisms.

The preceding discussion suggests that the relation between large shareholder ownership and monitoring mechanisms depends on the extent of information asymmetry (agency costs). Below, we discuss how family and institutional ownerships affect board governance based on the extent of information asymmetry. Our theoretical reasoning leads to our hypotheses for this study.

### 2.1. Family ownership and board governance

One type of large shareholder is the family owner. When family ownership is greater, there is a higher likelihood that family members hold important positions on both the management team and board of directors<sup>3</sup> (Anderson and Reeb, 2003b; Chen et al., 2010; Ho and Kang, 2013). Such ownership may be beneficial for the firm as these family members monitor managers to protect their interests or the “family name” because they typically have undiversified and concentrated equity stakes in the firm and will, therefore, enjoy the benefit of good managerial decisions and bear the brunt of bad decisions (Demsetz and Lehn, 1985). Thus, greater family ownership is associated with greater monitoring intensity.

#### 2.1.1. Monitoring board hypothesis

Family owners typically have long investment horizons in the firm, which enables them to acquire detailed knowledge of the firm's operations (James, 1999; Chen et al., 2010; Anderson and Reeb, 2003a). Furthermore, family members are likely to be closely involved in firm operations as the family's wealth is closely tied to firm welfare (Anderson and Reeb, 2003a). Therefore, they typically possess superior firm-specific knowledge to effectively monitor managerial activities, and thus information asymmetry is reduced (Anderson and Reeb, 2003a; Cheng, 2014). The association between greater family control and effective monitoring is empirically supported—family firms have better earnings quality (Wang, 2006), are more likely to warn about bad news (Ali et al., 2007) than non-family firms, and lead firm deviation in IT investment toward increasing firm value (Ho et al., 2017).

The preceding discussion suggests that because of lower information asymmetry, family owners are likely to use their influence to have less monitoring-intensive boards via less outside director proportion on the board and a higher likelihood of the CEO also being the chair of the board. This leads to our first set of hypotheses (stated in the alternate form), which predict a negative relation between family ownership and board monitoring intensity:

**H1a.** Greater family ownership is associated with less outside director representation on the board, *ceteris paribus*.

**H1b.** Greater family ownership is associated with a higher likelihood of the CEO being the chair of the board, *ceteris paribus*.

#### 2.1.2. Advisory board hypothesis

Given the reduced information asymmetry and greater monitoring effectiveness, as discussed above, it is likely that when family ownership is greater, firms emphasize the advisory and not the monitoring role of boards, to help the family owners with their decision-making. Adams and Ferreira (2007) show that there is a tradeoff between the advisory and monitoring roles of boards. A more monitoring-intensive (i.e., less management-friendly) board is less likely to receive necessary information from the CEO for the

<sup>3</sup> For example, Anderson and Reeb (2003b) report that within family firms of the S&P 500, family members occupy nearly 20% of all board seats and hold the CEO post 46% of the time. Using a more recent and comprehensive dataset of the S&P 1500, Ho and Kang (2013) find that 33.7% of CEOs are family members, and 19.3% of the family members serve on firms' boards. As mentioned earlier, we find a positive association between family ownership and the CEO also being a family member in our sample.

board to provide strategic advice, as the CEO may be wary of divulging information that could be used by the board to evaluate the CEO's performance in the board's monitoring capacity.

Compared to inside directors on the board, outside directors have a better range of experiences external to the firm to draw from in providing advice to the firm (Baysinger and Butler, 1985). A combined CEO-chair role is also associated with a greater advisory board role to facilitate information sharing for advisory purposes. Here, the CEO would be more willing to share necessary information as s/he is not accountable to a separate chair of the board. In this situation, a combination of more outside director board representation and CEO being chair of the board provides the necessary advisory environment for family ownership. Consequently, family owners are likely to use their influence to have more advisory boards via greater outside director proportion on the board and a higher likelihood of the CEO also being the chair of the board. This leads to our second set of hypotheses (stated in the alternate form), which predicts a positive relation between family ownership and board advising intensity:

**H2a.** *Greater family ownership is associated with more outside director representation on the board, ceteris paribus.*

**H2b.** *Greater family ownership is associated with a higher likelihood of the CEO being the chair of the board, ceteris paribus.*

Overall, our study examines which of the above two competing hypotheses pertaining to family ownership is empirically supported.

## 2.2. Institutional ownership and board governance

Like family ownership, greater institutional ownership is also associated with stronger incentives to monitor managers as the institutions have larger stakes in firms and thus benefit more from good and lose more from bad managerial decisions (Hoskisson et al., 2009; 2002). In their study, Ackert and Athanassakos (2003) show that institutional owners care about agency costs and take appropriate measures to respond to such costs. The more intense monitoring interest associated with institutional ownership is also discussed in other studies (e.g., Hartzell and Starks, 2003). Thus, via proxy fights, vote-no campaigns, or other methods, these investors attempt to discipline managers to undertake actions that are beneficial to the firm as a whole.<sup>4</sup>

According to myopic institutions theory (Drucker, 1986; Graves, 1988; Hill et al., 1988; Loescher, 1984; Scherer, 1984), institutional owners tend to be myopic. Because institutional fund managers must compete for accounts and are evaluated and remunerated based on annual or even quarterly performance, they have short-term horizons (Woolridge, 1988). Institutional owners are typically not closely involved in and, therefore, are less knowledgeable about firm operations due to their shorter horizons. As such, information asymmetry is likely to be higher, and thus monitoring of managers by institutional owners tends to be less effective in curbing potential agency problems. Their short-term horizon may lead institutional owners to demand more monitoring-intensive boards to protect their stakes via more outside director representation on the board and a lower likelihood of CEO-chair combined roles. This leads to our third set of hypotheses (stated in the alternate form), which predict a positive relation between institutional ownership and board monitoring intensity:

**H3a.** *Greater institutional ownership is associated with more outside director representation on the board, ceteris paribus.*

**H3b.** *Greater institutional ownership is associated with a lower likelihood of the CEO being the chair of the board, ceteris paribus.*

We employ a range of tests on a comprehensive set of variables to provide robust evidence on tests of our hypotheses. We discuss our sample and measures next.

## 3. Sample selection and measures used

### 3.1. Sample

Our data comes from two sources. First, we obtain ownership data from the Corporate Database compiled by the Taiwan Economic Journal (TEJ). Second, we collect financial performance information from TEJ's Financial Report Database, which contains data extracted from Taiwanese firms' annual financial reports. Since these databases cover companies listed on the Taiwan Stock Exchange, our sample contains only public companies.<sup>5</sup> After merging the two data sources, our final sample comprises 6687 firm-year observations covering the period from 2006<sup>6</sup> to 2011.

<sup>4</sup> Greater institutional ownership has also witnessed the ousting of CEOs and directors.

<sup>5</sup> In this study, all sample firms are domestic Taiwanese companies. Taiwanese Securities Law requires that, for a company to be deemed a domestic institution, more than half of the company's capital should be provided by Taiwanese nationals or Taiwanese-owned companies. By contrast, a company is labeled as foreign if more than 50% of its capital is provided by foreign investors (either foreign nationals or foreign institutional investors). Based on the Taiwanese government's regulations, no foreign companies are publicly listed and traded in Taiwan.

<sup>6</sup> In 2005, Taiwanese regulators changed the disclosure requirement for executive compensation. Under the new rule, companies are required to disclose overall executive compensation without separately disclosing the CEO's and other executives' compensation. Given that we include CEO incentive compensation as a control variable in our regressions, our sample period starts in 2006.



### 3.2. Definitions of key variables

#### 3.2.1. Dependent variable

**Board governance.** We use two commonly used variables in the literature as our board governance proxies. First, we measure it as the proportion of outside directors to total directors on the board (*Outside director*). Prior research argues that outside directors can monitor more independently and thus reduce agency problems as inside directors are likely to have close relationships with managers (e.g., Baysinger and Butler, 1985; Weisbach, 1988). Studies have also highlighted the greater advisory nature of outside directors, who can effectively provide strategic advice based on their experiences external to the firm (Baysinger and Butler, 1985). Second, following previous studies, we also measure board governance by whether the CEO and chair of the board positions are separate (e.g., Jensen, 1993; Goyal and Park, 2002). When these roles are separate, monitoring of managers is likely to be more intense. Separate CEO-chair roles are also associated with a weaker board advisory role, as a CEO is less likely to divulge information to a separate chair, who may use this information against the CEO, as discussed earlier. We use *CEO duality*, an indicator variable, that equals one if the CEO is also chair of the board, and zero otherwise.

#### 3.2.2. Independent variables

**Ownership concentration:** We use the total holdings by family owners (*Family ownership*) and institutional investors (*Institutional ownership*) divided by the total shares in the firm to measure their respective ownership concentration.

#### 3.2.3. Control variables

Following prior studies, we control for variables that may affect a firm's board governance (e.g., Gillan and Starks, 2003; Randøy and Jenssen, 2004; Iwasaki, 2008; Aggarwal et al., 2011; Borisova et al., 2012). Specifically, following Aggarwal et al., (2011) and Borisova et al., (2012), we use two proxies for firm performance: return on total assets (*ROA*) and stock returns (*Stock return*). *ROA* is the ratio of net income to the year-end book value of total assets, which is a measure of accounting earnings and represents a firm's past profitability generated from the investment by shareholders. In contrast, *Stock return* is a measure of stock performance, which represents annualized daily stock returns and is reflective of expectations about future cash flows. We proxy firm risk by estimating the standard deviation of monthly stock returns for the fiscal year (*Beta*). We control for leverage (*Leverage*), which is defined as the ratio of total liabilities to total assets. In addition, firm age (*Firm age*) is measured as the number of years since the firm was founded. Both R&D intensity (*R&D intensity*) and market-to-book ratio (*Market to book ratio*) are proxies for growth opportunities. *R&D intensity* is calculated by dividing research and development expenditure by total sales. We measure *Market to book ratio* by dividing the market value by the book value of shareholders' equity. Advertising intensity (*Advertising intensity*) is proxied by advertising expenditure divided by total sales. Director stock holdings (*Director shareholding*) are proxied by directors' stock holdings as a proportion of outstanding shares in a firm. Finally, we control for incentive compensation mix (*Short-term compensation*), which is proxied for by the proportion of the sum of bonus and other annual compensation to total compensation. The next section discusses the research design we employ in this study.

## 4. Research design

We run the following regression to test our hypotheses<sup>7</sup>:

$$\begin{aligned}
 BDGOV_{i,t} &= \beta_0 + \beta_1 \text{Family ownership}_{i,t} + \beta_2 \text{Institutional ownership}_{i,t} + \beta_3 \text{ROA}_{i,t} + \beta_4 \text{Stock return}_{i,t} + \beta_5 \text{Beta}_{i,t} + \beta_6 \text{Leverage}_{i,t} + \beta_7 \\
 &\quad \text{Firm age}_{i,t} + \beta_8 \text{R\&D intensity}_{i,t} + \beta_9 \text{Market to book ratio}_{i,t} + \beta_{10} \text{Advertising intensity}_{i,t} + \beta_{11} \text{Director shareholding}_{i,t} + \beta_{12} \\
 &\quad \text{Short-term compensation}_{i,t} + \beta_{13} \text{YEAR2} + \beta_{14} \text{YEAR3} + \beta_{15} \text{YEAR4} + \beta_{16} \text{YEAR5} + \text{INDUSTRY Indicator Variables} + \varepsilon
 \end{aligned} \tag{1}$$

where *i* denotes the firm, and *t* denotes the year. The dependent variable *BDGOV* denotes board strength and captures either of our two board governance measures: *Outside director* and *CEO duality*. To test our first and second hypotheses, we examine the coefficient  $\beta_1$  on *Family ownership*, which measures the relation between family ownership and the proportion of outside directors on the board or the likelihood of CEO duality. According to our first hypothesis (the *Monitoring Board Hypothesis*), family ownership is negatively related to board monitoring intensity. Thus, finding  $\beta_1$  to be negative where the dependent variable is *Outside director* (H1a) and positive where the dependent variable is *CEO duality* (H1b) supports the *Monitoring Board Hypothesis* and not its competing hypothesis, the *Advisory Board Hypothesis* (the second hypothesis). In contrast, according to the *Advisory Board Hypothesis*, family ownership is positively related to board advising intensity. If  $\beta_1$  is positive for both *Outside director* (H2a) and *CEO duality* (H2b), it supports the *Advisory Board Hypothesis* and not the *Monitoring Board Hypothesis*.

To test this study's third hypothesis, we examine the coefficient  $\beta_2$  on *Institutional ownership*, which measures the relation between institutional ownership and our two board governance measures. If  $\beta_2$  is positive where *Outside director* is the dependent variable

<sup>7</sup> Following prior studies (e.g., Osborne and Overbay, 2004), we delete studentized residuals with absolute values greater than or equal to three to exclude outliers before we run the regressions.

**Table 1**  
Industry distribution by two-digit SIC code for Taiwan Stock Exchange.

Industry	No. of Firm-Years	Percent
Electronics	3,787	56.63
Chemicals	435	6.51
Electric & Machinery	347	5.19
Others	338	5.05
Construction	329	4.92
Textiles	299	4.47
Biotechnology	220	3.29
Steel, Iron	156	2.33
Transportation	130	1.94
Food	124	1.85
Department Stores	103	1.54
Cable Appliance	85	1.27
Tourism	66	0.99
Rubber	65	0.97
Utility	65	0.97
Cement	42	0.63
Paper, Pulp	42	0.63
Automobile	30	0.45
Glass, Ceramics	24	0.36
Total	6,687	100

(H3a), and negative where *CEO duality* is the dependent variable (H3b), it supports the third hypothesis of a positive relation between institutional ownership and board governance. We next discuss the descriptive statistics for our sample and results for tests of our hypotheses.

## 5. Results

### 5.1. Descriptive statistics

Table 1 summarizes the industry distribution for our full sample. As shown in Table 1, Electronics is the largest industry sector as it accounts for more than half our sample (56.6%). Table 2 presents descriptive statistics for key variables for our sample. As seen in Table 2, 29.2% of CEOs hold the position of chair of the board, which is higher than the 16% of the Chinese listed companies in year 2000 as reported by Firth et al. (2007). However, the percentage of outside directors (15.7%) is lower than in Hong Kong (40.6%) as

**Table 2**  
Descriptive statistics.

	Mean	Standard Deviation	Min.	Max.
<i>Outside director</i>	0.1575	0.1688	0	0.6667
<i>CEO duality</i>	0.2922	0.4548	0	1
<i>Family ownership</i>	29.6634	17.4000	0.7500	97.7400
<i>Institutional ownership</i>	15.3251	17.0613	0	100
<i>ROA</i>	3.4555	10.3324	−204.9464	59.3301
<i>Stock return</i>	25.2454	94.9688	−94.2787	1025.3220
<i>Beta</i>	0.8867	0.3387	−1.4961	4.0692
<i>Leverage</i>	41.2873	17.6198	1.2711	98.2656
<i>Firm age</i>	25.4820	12.2929	0	65.0000
<i>R&amp;D intensity</i>	3.3716	8.6726	0	316.8800
<i>Market to book ratio</i>	1.5795	1.2498	0.0717	16.6623
<i>Advertising intensity</i>	0.5698	2.0399	0	47.1163
<i>Director shareholding</i>	19.8125	13.1026	0	87.83
<i>Short-term compensation</i>	22.5203	21.1858	0	100

This table reports the summary statistics for the sample used in this study during the period from 2006 to 2011. *Outside director* is the proportion of outside directors on the board. *CEO duality* is an indicator variable which equals one if the CEO is the chair of the board, and zero otherwise. *Family ownership* is the total number of shares held in the company by family owners divided by the total number of shares. *Institutional ownership* is the total number of shares held in the company by institutional investors divided by the total number of shares. *ROA* is the ratio of net income to the year-end book value of total assets. *Stock return* is the annualized daily stock returns. *Beta* is the standard deviation of monthly stock returns for the fiscal year. *Leverage* is the ratio of total liability to total assets. *Firm age* is the difference between 2011, the final year in the sample period, and the firm's year of incorporation. *R&D intensity* is the ratio of research and development expenditure to total sales. *Market to book ratio* is the ratio of market value to the book value of shareholders' equity. *Advertising intensity* is the ratio of advertising expenditure to total sales. *Director shareholding* is the directors' stock holdings as a proportion of outstanding shares in a firm. *Short-term compensation* is the proportion of short-term incentive compensation to total compensation.

**Table 3**  
Pearson correlation matrix of main test variables.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.0000													
0.0055	1.0000												
(0.6558)													
−0.0285**		1.0000											
(0.0196)													
0.0052		−0.0490***	1.0000										
(0.6725)		(0.0003)											
0.0725***		0.0540***	0.1151***	1.0000									
(0.0000)		(0.0000)	(0.0000)										
−0.0156		0.0096	0.0127	0.0359***	1.0000								
(0.2034)		(0.4347)	(0.2972)	(0.0033)									
0.0727***		−0.0109	−0.2250***	0.0788***	0.0801***	1.0000							
(0.0000)		(0.3728)	(0.0000)	(0.0000)	(0.0000)								
−0.1073***		−0.0333***	0.0355***	0.0086	−0.0132	−0.0285**	1.0000						
(0.0000)		(0.0065)	(0.0037)	(0.4811)	(0.2790)	(0.0196)							
−0.4478***		−0.0162	0.1335***	−0.0422***	−0.0201	−0.0753***	0.1313***	1.0000					
(0.0000)		(0.1852)	(0.0000)	(0.0006)	(0.1002)	(0.0000)	(0.0000)						
0.1522***		0.0330***	−0.1184***	−0.0167	−0.0304**	0.0566***	−0.2590***	−0.2301***	1.0000				
(0.0000)		(0.0070)	(0.0000)	(0.1712)	(0.0000)	(0.0000)	(0.0000)	(0.0000)					
0.1866***		−0.0209*	0.1186***	0.2718***	0.3835***	0.0650***	−0.1016***	−0.2378***	0.1499***	1.0000			
(0.0000)		(0.0881)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)				
0.0042		0.0150	0.0806***	−0.0148	−0.0104	−0.0386***	−0.0057	0.0205*	0.0104	0.0595***	1.0000		
(0.7327)		(0.2208)	(0.0000)	(0.2269)	(0.3955)	(0.0136)	(0.6414)	(0.0942)	(0.3939)	(0.0000)			
0.0124		−0.0896***	0.0026	0.0563***	0.0083	−0.1909***	−0.0341***	−0.0696***	−0.0462***	0.0531***	0.0322***	1.0000	
(0.3100)		(0.0000)	(0.8319)	(0.0000)	(0.4951)	(0.0000)	(0.0053)	(0.0000)	(0.0002)	(0.0000)	(0.0084)		
−0.0525***		−0.0407***	0.0082	0.1190***	0.0091	0.0681***	−0.0372***	0.1107***	−0.0916***	0.0603***	−0.0088	0.0255**	1.0000
(0.0000)		(0.0009)	(0.5005)	(0.0000)	(0.4574)	(0.0000)	(0.0023)	(0.0000)	(0.0000)	(0.0000)	(0.4743)	(0.0368)	

This table reports the Pearson correlations among the main variables used in this study during the period from 2006 to 2011. 1. *Outside director* is the proportion of outside directors on the board. 2. *CEO duality* is an indicator variable which equals one if the CEO is the chair of the board, and zero otherwise. 3. *Family ownership* is the total number of shares held in the company by family owners divided by the total number of shares. 4. *Institutional ownership* is the total number of shares held in the company by institutional investors divided by the total number of shares. 5. *ROA* is the ratio of net income to the year-end book value of total assets. 6. *Stock return* is the annualized daily stock returns. 7. *Beta* is the standard deviation of monthly stock returns for the fiscal year. 8. *Leverage* is the ratio of total liability to total assets. 9. *Firm age* is the difference between 2011, the final year in the sample period, and the firm's year of incorporation. 10. *R&D intensity* is the ratio of research and development expenditure to total sales. 11. *Market to book ratio* is the ratio of market value to the book value of shareholders' equity. 12. *Advertising intensity* is the ratio of advertising expenditure to total sales. 13. *Director shareholding* is the directors' stock holdings as a proportion of outstanding shares in a firm. 14. *Short-term compensation* is the proportion of short-term incentive compensation to total compensation. \*\*\*, \*\*, and \* denote significance at the 1%, 5% and 10% levels, respectively.



**Table 4**

The relationship between ownership structure and board governance.

	<i>Outside director</i>		<i>CEO duality</i>	
	(1)		(2)	
	Coeff.	t	Coeff.	t
<i>Constant</i>	0.3044***	31.1727	0.4989***	16.3540
<i>Family ownership</i>	0.0106***	4.1091	0.0181**	2.3707
<i>Institutional ownership</i>	0.0030	1.4686	−0.0071	−1.1560
<i>ROA</i>	0.0094***	4.3555	−0.0038	−0.5923
<i>Stock return</i>	−0.0085**	−3.3489	−0.0099	−1.3031
<i>CEO duality</i>	−0.0050	−1.2133	−0.0442	−1.2133
<i>Beta</i>	0.0018***	5.2670	−0.0161***	−15.8917
<i>Leverage</i>	−0.0003**	−2.5117	−0.0013***	−3.7311
<i>Firm age</i>	−0.0058***	−34.2763	−0.0010*	−1.8267
<i>Advertising intensity</i>	0.0007	0.7652	0.0054*	1.9067
<i>Director shareholding</i>	−0.0009***	−4.3873	−0.0042***	−7.2102
<i>Short-term compensation</i>	−0.0192**	−2.0123	−0.0659**	−2.3175
<i>Industry effects</i>	INCLUDED			
<i>Year effects</i>	INCLUDED			
<i>Observation</i>	6687		6687	
<i>R-squared</i>	0.21		0.04	

This table reports the results of the relationship among both family and institutional ownerships and board governance (including the proportion of outsider directors on the board and CEO duality). Column 1 examines the effects of family and institutional shareholder ownerships on the proportion of outside directors on the board. Column 2 examines the effects of family and institutional shareholder ownerships on CEO duality. *Outside director* is the proportion of outside directors on the board. *CEO duality* is an indicator variable which equals one if the CEO is the chair of the board, and zero otherwise. *Family ownership* is the total number of shares held in the company by family owners divided by the total number of shares. *Institutional ownership* is the total number of shares held in the company by institutional investors divided by the total number of shares. *ROA* is the ratio of net income to the year-end book value of total assets. *Stock return* is the annualized daily stock returns. *Beta* is the standard deviation of monthly stock returns for the fiscal year. *Leverage* is the ratio of total liability to total assets. *Firm age* is the difference between 2011, the final year in the sample period, and the firm's year of incorporation. *R&D intensity* is the ratio of research and development expenditure to total sales. *Market to book ratio* is the ratio of market value to the book value of shareholders' equity. *Advertising intensity* is the ratio of advertising expenditure to total sales. *Director shareholding* is the directors' stock holdings as a proportion of outstanding shares in a firm. *Short-term compensation* is the proportion of short-term incentive compensation to total compensation. *Industry* and *Year* indicator variables are included in the regressions but not reported for brevity. \*\*\*, \*\* and \* denote significance at the 1%, 5% and 10% levels using a two-tailed test, respectively.

reported by [Cheng and Firth \(2005\)](#) and Continental Europe (23.4%) as reported by [Croci et al. \(2012\)](#).

[Table 2](#) also summarizes statistics on ownership concentration. Family ownership accounts for 29.7% of the firms' equity, indicating strong family control in Taiwanese companies. In addition, consistent with [Cheng and Firth \(2005\)](#), we find that institutional investors hold an average of 15.3% of the firms' equity. The average firm age of our sample is about 25 years. Finally, the average shareholdings of directors are 19.8%, and the proportion of short-term incentive compensation to total compensation is 22.5%.

## 5.2. Correlation

[Table 3](#) presents the Pearson correlation matrix of the dependent variables and independent variables. The correlations among the independent variables are generally less than 0.7. It is worth noting that the largest correlation (0.6153) is between family ownership and director stock holdings. This bivariate association is consistent with the evidence provided in prior research that family members more likely to serve on the board as directors (e.g., [Ali et al., 2007](#)). For our regressions below, we compute collinearity diagnostics, specifically, the variance inflation factor (VIF) to check for multicollinearity. All of the VIF values are under 10, suggesting that serious multicollinearity problems are unlikely in our study ([Belsley et al., 1980](#)).

## 5.3. Regression analysis

In this section, we discuss our regression results on the relations between the two categories of large shareholder ownership and board governance.

### 5.3.1. Family ownership

Our regression results for tests of our hypotheses on family ownership are presented in [Table 4](#). Columns 1 and 2 of [Table 4](#) show positive relations between *Family ownership* and *Outside director* (significant at 1% level) and *CEO duality* (significant at 5% level), respectively. Ceteris paribus, when family ownership increases by 1%, the outside director proportion on the board increases by 1.06%, and the likelihood of CEO duality increases by 1.81%. Thus, family ownership affects board governance via a higher proportion of outside directors and a higher likelihood of the CEO-chair role. This evidence provides empirical support for the *Advisory*

*Board Hypothesis* (second hypothesis) and not its competing hypothesis, the *Monitoring Board Hypothesis* (first hypothesis).

### 5.3.2. Institutional ownership

In contrast to family ownership, *Institutional ownership* is insignificantly related to *Outside director* and *CEO duality* according to the results presented in columns 1 and 2 of Table 4, respectively. Thus, we do not find evidence supporting our third hypothesis that *Institutional ownership* is related to board governance.

## 6. Additional tests

### 6.1. Partitioning institutional ownership into foreign institutional ownership and domestic institutional ownership

In this section, we conduct additional tests to examine whether finer partitions of institutional ownership (i.e., foreign institutional ownership (*Foreign institutional ownership*) vs. domestic institutional ownership (*Domestic institutional ownership*)) affect board governance in different ways.<sup>8</sup>

Although prior research is inconclusive on whether foreign investors or domestic investors have an informational advantage for share trading purposes (Dvorak, 2005), we posit that the information asymmetry between foreign institutional investors and managers is greater than that between their domestic counterparts and managers due to less local knowledge of business operations. Thus, if our theoretical reasoning based on large shareholder ownership affecting board governance via information asymmetry is justified, we would find a stronger positive relation between *Foreign institutional ownership* and board governance compared to the relation between *Domestic institutional ownership* and board governance.

Columns 1 and 2 of Panel A, Table 5 show that, while *Foreign institutional ownership* has a positive relation with *Outside director* (significant at 1% level) and a negative relation with *CEO duality* (significant at 1% level), *Domestic institutional ownership* is negatively related to *Outside director* (significant at 10% level) and insignificantly related to *CEO duality*. Ceteris paribus, when foreign institutional ownership increases by 1%, the proportion of outside directors on the board increases by 0.67%, and the likelihood of CEO duality decreases by 2.93%. Also, when domestic institutional ownership increases by 1%, the proportion of outside directors on the board decreases by 0.42%. Our evidence is consistent with Aggarwal et al. (2011), supporting our conjecture that foreign institutional ownership is associated with stronger monitoring by boards compared to domestic institutional ownership. These findings also show that it is important to partition institutional ownership into different types, as the nature of the relation between institutional ownership and board governance differs across these the different partitions of such ownership.

The statistically significant relations between outside director board proportion and both foreign institutional and domestic institutional ownership are in contrast to the insignificant direct relation between institutional ownership and outside director proportion on the board documented in Table 4. This insignificant relation between institutional ownership and outside director board representation may be attributable to the opposing effects of foreign institutional ownership (positive relation) versus domestic institutional ownership (negative relation) on outside director representation. Foreign institutional and domestic institutional ownership generally have opposite relations with board governance to each other. A possible explanation for these contrasting findings is that domestic institutions possess more knowledge about local conditions than foreign institutions, which leads to less information asymmetry between the CEO and domestic institutional investors.

### 6.2. Partitioning institutional ownership into active institutional ownership and passive institutional ownership

Another way to partition institutional owners is into those who are active in monitoring and those who are passive. We examine whether active versus passive institutional ownership influence board governance in different ways. Following prior studies (e.g., Brickley and Zimmerman, 2010; Aggarwal et al., 2011), we measure active institutional ownership as involvement by governments, overseas organizations, and other legal entities that are less likely to be influenced by the company but display monitoring activity. Passive institutional ownership includes financial institutions, legal entities or companies, and trust companies that may have financial relationships with the company.<sup>9</sup>

Columns 1 and 2 of Panel B, Table 5 show that *Active institutional ownership* has an insignificant relation with *Outside director* and a negative relation with *CEO duality* (significant at 1% level), while *Passive institutional ownership* is negatively related to both *Outside director* (significant at 1% level) and *CEO duality* (significant at 1% level). Ceteris paribus, when active institutional ownership increases by 1%, the likelihood of CEO duality decreases by 2.22%. In contrast, when passive institutional ownership increases by 1%, the likelihood of *Outside director* and *CEO duality* decreases by 1.35% and 5.43%, respectively.

<sup>8</sup> Foreign institutional ownership includes the sum of holdings of the following foreign institutions divided by total shareholdings: foreign financial institutions, foreign corporates, and foreign trust funds. Domestic institutional ownership includes the sum of holdings of the following domestic institutions divided by total shareholdings by government institutions: domestic financial institutions, domestic trust funds, and domestic corporates. The proportions of *Foreign institutional ownership* and *Domestic institutional ownership* in our sample are 7.29% and 8.03%, respectively.

<sup>9</sup> Active institutional ownership includes the sum of holdings of the following institutions divided by total shareholdings: government institutions, foreign corporates, and other legal entities. Passive institutional ownership includes the sum of holdings of the following institutions divided by total shareholdings: financial institutions, corporates, and trust corporates. The proportions of *Active institutional ownership* and *Passive institutional ownership* in our sample are 8.34% and 6.99%, respectively.

Table 5

Additional test for the relationship between ownership structure and board governance.

	<i>Outside director</i>		<i>CEO duality</i>	
	(1)		(2)	
	Coeff.	T	Coeff.	t
Panel A: Partitioning institutional ownership into foreign and domestic institutional ownership.				
Constant	0.3032***	31.0721	0.4932***	16.1878
Family ownership	0.0092***	3.5413	0.0183**	2.3631
Foreign institutional ownership	0.0067***	3.1204	−0.0293***	−4.5818
Domestic institutional ownership	−0.0042*	−1.9480	0.0092	1.4393
Controls	YES		YES	
Industry & Year effects	YES		YES	
Observation	6687		6687	
R-squared	0.21		0.05	
Panel B: Partitioning institutional ownership into active and passive institutional ownership.				
Constant	0.2913***	29.6480	0.4812***	15.8113
Family ownership	0.0138***	5.3006	0.0375***	4.8583
Active institutional ownership	−0.0021	−1.0175	−0.0221***	−3.6878
Passive institutional ownership	−0.0135***	−5.8050	−0.0543***	−7.9128
Controls	YES		YES	
Industry & Year effects	YES		YES	
Observation	6666		6666	
R-squared	0.22		0.06	
Panel C: The relationship between family CEO and board governance				
Constant	0.2889***	31.7258	0.4144***	15.4242
Family CEO	0.0193***	4.2291	0.3564***	29.7190
Institutional ownership	0.0017	0.8652	0.0067	1.2022
Controls	YES		YES	
Industry & Year effects	YES		YES	
Observation	6687		6687	
R-squared	0.21		0.15	

This table reports the results of additional test for the relationship between ownership structure and board governance. Panel A examines whether foreign institutional ownership and domestic institutional ownership affect board governance. Panel B examines whether active institutional ownership and passive institutional ownership affect board governance. Panel C examines the impact of family CEOs and professional CEOs on board governance. *Outside director* is the proportion of outside directors on the board. *CEO duality* is an indicator variable which equals one if the CEO is the chair of the board, and zero otherwise. *Family ownership* is the total number of shares held in the company by family owners divided by the total number of shares. *Institutional ownership* is the total number of shares held in the company by institutional investors divided by the total number of shares. *Foreign institutional ownership* is the total number of shares held in the company by foreign institutional investors divided by the total number of shares. *Domestic institutional ownership* is the total number of shares held in the company by domestic institutional investors divided by the total number of shares. *Active institutional ownership* is the total number of shares held in the company by active institutional investors divided by the total number of shares. *Passive institutional ownership* is the total number of shares held in the company by passive institutional investors divided by the total number of shares. *Family CEO* equals to one if a family member is the CEO, and equal to zero otherwise. Control variables, *Industry* and *Year* indicator variables are all included in the regressions but not reported for brevity. \*\*\*, \*\* and \* denote significance at the 1%, 5% and 10% levels using a two-tailed test, respectively.

Overall, consistent with our expectation, we find some evidence of a positive relation between active institutional ownership and board governance. However, although passive institutional ownership appears to be associated with a lower likelihood of CEO duality, it is negatively associated with outside director proportion on the board; thus, the relation between passive institutional ownership and board governance is inconclusive.

### 6.3. The impact of family CEO on board governance

Our main findings show a positive relation between family ownership and the percentage of outside directors on the board and the likelihood of CEO-chair duality. It is plausible that these findings are unique to Taiwanese companies. Based on a survey of 800 CEOs from 22 emerging economies, Mullins and Schoar (2016) show that professional (i.e., non-family) CEOs of family firms have fewer control rights than other CEOs, and are unlikely to become chair of the board and name directors. It is also possible that the positive relation between family CEO and CEO duality we document may be attributable to family CEOs' private benefits of control outweighing the associated risk-bearing costs (Zingales, 1995; Burkart et al., 2003). Thus, it is conceivable that a family member at the helm of the firm influences the relation between family control and board governance. In this section, we further examine the impact of family CEOs and professional CEOs on board governance. We label *Family CEO* as equal to one if a family member is the CEO, and equal to zero otherwise. Thirty-six percent of the firms in our sample comprise family CEOs.

Panel C of Table 5 provides the results for the relation between family CEOs and board governance. Columns 1 and 2 of Panel C

indicate positive relations between *Family CEO* and *Outside director* and *CEO duality* (both significant at 1% level), respectively, consistent with the results reported for family ownership in Table 4.

Our findings on family ownership collectively support insights from stewardship theory that advocate an advisory rather than a monitoring environment within which managers operate. According to this perspective, managers are viewed as stewards who are motivated to act in the best interests of their firms and thus do not need to be monitored intensely. Since family owners are closely involved with the firm, they may be less concerned with monitoring the manager as they are with providing the manager with the necessary advisory environment. Also, because the interests of family owners and family CEOs are closely aligned, family owners are likely to demand that board members provide strategic advice rather than monitor the CEOs (Corbetta and Salvato, 2004; Davis et al., 2010). As suggested by Anderson and Reeb (2003a), when a CEO is a family member, s/he is more likely to have interests closely aligned with those of family owners compared to a professional CEO. Thus we conclude that our findings on family ownership do not provide robust evidence supporting our first hypothesis based on agency theory; rather, they support insights from stewardship theory.

#### 6.4. The board advisory role of family ownership

If the *Advisory Board Hypothesis* works, we should expect firms with higher family ownership to benefit from board advising, especially for firms with a more advisory board (i.e., combined CEO and chair role and more outside directors). The investigation of this prediction may help to further confirm the *Advisory Board Hypothesis*.<sup>10</sup> To examine the effect of an advisory board on firms with greater family ownership, we searched the literature to identify optimal strategies for such firms. If an advisory board is optimal, we will observe better implementation of an optimal strategy with an advisory board for these firms. Duran et al. (2016) conducted a comprehensive meta-analysis of 108 empirical studies focused on 42 countries from 1981 to 2012 on the relation between family firms and innovation. They report that family firms invest less in innovation, although they have an increased conversion rate of innovation into output, showing greater innovation efficiency, and ultimately higher innovation output, compared to non-family firms. The authors attribute the reduced investment in innovation by family firms to the risk-averse orientation of family owners related to protecting family wealth.

To test whether firms with greater family ownership benefit from a more advisory board, we collect data on research and development expenditure (innovation input), as well as the number of patents and number of citations (innovation output) for our sample of firms. We conduct a series of regressions using this data. In the first regression, we use the level of research and development investment, *R&D investment*, as the dependent variable and the following as the main independent variables in our regression: *Family ownership*; *Outside director*; *CEO duality*; and their two-way and three-way interactions. We also include the control variables used in Duran et al. (2016) and Chu et al. (2019). Column 1 of Table 6 shows that the coefficient on the three-way interaction term between *Family ownership*, *Outside director*, and *CEO duality* is negative and significant ( $-38.915$ ; 10% level), indicating that the level of R&D investment is lower for firms with greater family ownership when the CEO is chair and there is a greater outside director proportion on the board (i.e., an advisory board).

In column 2 of Table 6, we show the results of a Poisson regression where the number of patents is the dependent variable and the same set of independent variables as in column 1 of Table 6 is included. Additionally, *R&D investment* is included as an additional control variable. Thus, this regression captures innovation efficiency or yield, specifically, the number of patents (i.e., innovation output) given the level of research and development expenditure (innovation input). The coefficient on the three-way interaction term between *Family ownership*, *Outside director*, and *CEO duality* is positive and significant ( $1.846$ ; 1% level). This indicates that for firms with greater family ownership that have CEOs who are chairs, and more outside directors on their boards, the number of patents is higher given the investment in research and development (i.e., innovation efficiency is higher). Similarly, column 3 of Table 6 shows that the coefficient on the three-way interaction term between *Family ownership*, *Outside director*, and *CEO duality* is positive and significant ( $2.114$ ; 1% level). Overall, our results show that an advisory board benefits firms with greater family ownership via greater innovation output. The findings also provide additional evidence supporting the *Advisory Board Hypothesis* when the large shareholder is a family owner.

#### 6.5. Endogeneity

Prior studies have alluded to the possibility that the relation between large shareholder ownership and governance is endogenous (e.g., Aggarwal et al., 2011). An argument is that different types of large shareholders, in particular, institutional shareholders, could be attracted or discouraged from investing in the firm based on its quality of governance. According to these studies, it is possible that foreign institutions self-select into firms with stronger monitoring mechanisms, especially given the greater information asymmetry they face (e.g., DeFond et al., 2011; Florou and Pope, 2012). If this holds, then our assumption that large shareholders can influence governance and the causal direction of the relation between foreign institutional ownership and board governance can be called into question, and our results could be viewed as documenting mere associations. In addition, endogeneity may also be an issue for family ownership, because the founding CEO or successor CEO serving as chair of the board may induce them to hold more shares in their own company, leading to high family ownership.<sup>11</sup> Details of handling endogeneity issues are provided as follows:

<sup>10</sup> We thank an anonymous reviewer for this suggestion.

<sup>11</sup> We thank an anonymous reviewer for this insight.

**Table 6**  
The relationship among family ownership, corporate governance and innovation

	(1)	(2)	(3)
	<i>R&amp;D Investment</i>	<i>Patent</i>	<i>Citation</i>
<i>Constant</i>	−720.385*** (−12.077)	−36.754 (−0.001)	−38.604 (−0.000)
<i>Family ownership</i>	−3.942 (−1.370)	0.241*** (23.219)	0.327*** (6.090)
<i>Outside director</i>	53.099*** (3.899)	−0.809*** (−19.508)	−2.082*** (−9.088)
<i>CEO duality</i>	2.927 (0.570)	−0.595*** (−19.877)	−0.187* (−1.668)
<i>Family ownership* CEO duality</i>	13.343*** (2.631)	−0.423*** (−13.996)	−0.082 (−0.671)
<i>Family ownership* Outside director</i>	−28.056** (−2.388)	−1.071*** (−27.648)	−1.304*** (−6.258)
<i>CEO duality*Outside director</i>	12.925* (1.776)	0.995*** (30.925)	0.822*** (5.884)
<i>Family ownership* CEO duality*Outside director</i>	−38.915* (−1.844)	1.846*** (19.984)	2.114*** (4.991)
<i>Market to book ratio</i>	7.018*** (3.753)	0.121*** (19.305)	0.079** (1.972)
<i>R&amp;D ratio</i>		0.097*** (70.899)	0.086*** (10.078)
<i>ROA</i>	−14.211*** (−5.693)	−0.072*** (−7.640)	0.457*** (7.478)
<i>Leverage</i>	−0.543*** (−4.441)	−0.000 (−0.787)	−0.002 (−0.771)
<i>Size</i>	51.797*** (35.884)	0.875*** (241.102)	0.947*** (48.898)
<i>Sale growth</i>	0.266 (0.596)	−0.292*** (−13.709)	−1.299*** (−9.188)
<i>Cash</i>	61.253*** (3.801)	−0.011 (−0.174)	−1.186*** (−3.416)
<i>Tangibility</i>	5.915 (0.463)	−0.622*** (−11.701)	−0.797*** (−2.824)
<i>Capital expenditure</i>	−21.206 (−0.600)	0.583*** (4.521)	4.519*** (6.727)
<i>Firm age</i>	−0.480*** (−2.582)	0.017*** (24.978)	0.010*** (3.053)
<i>Industry &amp; Year effects</i>	YES	YES	YES
<i>N</i>	6687	6687	6687
<i>adj. R<sup>2</sup></i>	0.215	—	—
<i>chi2</i>	—	171,354.80***	7808.19***

This table shows the results of the relationship among family ownership, board governance and innovation. *R&D investment* is the R&D expenditure divided by 1,000,000. *Patent* is the number of patents granted to the company. *Citation* is the number of citations received on the company's patents granted. *Family ownership* is the total shareholdings by family owners divided by the total shares. *Outside director* is the proportion of outside directors on the board. *CEO duality* is an indicator variable which equals to one if the CEO is the chair of the board, and zero otherwise. *R&D ratio* is the R&D expenditure divided by total assets. *Market to book ratio* is the ratio of market value to the book value of shareholders' equity. *ROA* is return on asset. *Leverage* is the ratio of total liability to total assets. *Size* is the natural logarithm of total assets. *Sale growth* is the growth rate of sales. *Cash* is the cash holding divided by total assets. *Tangibility* is the total property, plant, and equipment divided by total assets. *Capital expenditure* is the capital expenditure divided by total assets. *Firm age* is the number of year incorporation. *Size* is the natural logarithm of net sales. *Free cash flow* is equal to cash from operations minus capital expenditures. Industry and year indicator variables are included in the regressions but are not reported for brevity. \*\*\*, \*\* and \* denote significance at the 1%, 5% and 10% levels using a two-tailed test, respectively.

#### 6.5.1. The causality of the main effect of family ownership on board governance

To address the possibility that our results for family ownership are influenced by family members, we remove family CEOs or family chairs from the sample. The results for testing the relation between family ownership and board governance after excluding family CEO or family chair are presented in Panel A of Table 7. We find an insignificant relation between family ownership and outside director proportion on the board and a positive relation between family ownership and CEO-chair likelihood (0.0248, significant at 5% level). The insignificant relation between family ownership and outside director proportion on the board is in contrast to the positive relation we document when the family CEO or family chair is included in the sample as in our main tests above, suggesting that a family CEO or family chair (*Family CEO duality*) may play a moderating role on the relation between family ownership and outside director proportion on the board.

To test this, we conduct a regression on our full sample (not excluding the family CEO and family chair) including *Family CEO duality* and its interaction with *Family ownership*. The results of this regression are provided in Column 1 of Panel B, Table 7 and show

**Table 7**

The relationship between family ownership and board governance.

	<i>Outside director</i>		<i>CEO duality</i>	
	(1)		(2)	
	Coeff.	t	Coeff.	t
Panel A: The relationship between family ownership and board governance – Excluding family CEO or family chair.				
<i>Constant</i>	0.3271***	23.4108	0.4965***	10.7154
<i>Family ownership</i>	−0.0015	−0.3754	0.0248**	2.0534
<i>Institutional ownership</i>	0.0063**	2.2307	0.0002	0.0276
<i>ROA</i>	0.0087***	3.2214	0.0225***	2.6670
<i>Stock return</i>	−0.0049	−1.3945	−0.0075	−0.6857
<i>CEO duality</i>	−0.0116**	−1.9763		
<i>Outside director</i>			−0.1120**	−1.9763
<i>Controls</i>	YES		YES	
<i>Industry &amp; Year effects</i>	YES		YES	
<i>Observation</i>	3018		3018	
<i>R-squared</i>	0.21		0.09	
Panel B: The moderating effect of family CEO or family chair on the relationship between family ownership and outsider director proportion.				
<i>Constant</i>	0.2736***	(24.237)	0.471***	(13.115)
<i>Family ownership</i>	0.0042	(1.218)	−0.024**	(−2.319)
<i>Institutional ownership</i>	0.0021	(1.056)	−0.013**	(−2.216)
<i>Family CEO duality</i>	−0.0020	(−0.515)	0.028**	(2.382)
<i>Family ownership × Family CEO duality</i>	0.0203***	(5.409)	0.038***	(3.234)
<i>Controls</i>	YES		YES	
<i>Industry &amp; Year effects</i>	YES		YES	
<i>Observation</i>	6687		6687	
<i>R-squared</i>	0.241		0.019	

Panel A of this table shows the results of the relationship between family ownership and board governance, excluding family CEO or family chair. In Panel A, Column 1 examines the effects of family ownership on the proportion of outside directors on the board after excluding family CEO or family chair. Column 2 examines the effects of family ownership on CEO duality after excluding family CEO or family chair. Panel B shows the results of the moderating effect of family CEO or family chair on the relationship between family ownership and the proportion of outside directors on the board. *Outside director* is the proportion of outside directors on the board. *CEO duality* is an indicator variable which equals to one if the CEO is the chair of the board, and zero otherwise. *Family ownership* is the total shareholdings by family owners divided by the total shares. *Institutional ownership* is the total shareholdings by institutional investors divided by the total shares. *Family CEO duality* is an indicator variable which equals one if family members are CEO or the chair of the board, and zero otherwise. Control variables, industry and year indicator variables are included in the regressions but are not reported for brevity. \*\*\*, \*\* and \* denote significance at the 1%, 5% and 10% levels using a two-tailed test, respectively.

that the coefficient of the interaction between *Family CEO duality* and *Family ownership* is positive (0.0203, significant at 1% level) where *Outside director* is the dependent variable. In addition, Column 2 of Panel B shows that the coefficient of the interaction between *Family CEO duality* and *Family ownership* is positive (0.038, significant at 1% level) when *CEO duality* is the dependent variable. Therefore, whether the CEO or chair of the board is a family member plays a moderating role on the relation between family ownership and outside director proportion on the board and CEO duality.<sup>12</sup>

#### 6.5.2. Estimating Instrumental Variables for institutional ownership

To control for potential endogeneity between institutional ownership and board governance, we identify instrumental variables (IVs) that sufficiently explain institutional ownership but are uncorrelated with the error terms in our estimations. Similar to Aggarwal et al. (2011), we include the following variables as instruments: (1) Dividend payment (*DIV*): A dummy variable that takes the value of one if a firm pays dividends in the current year, and zero otherwise. (2) Morgan Stanley Capital International All Country World Index (*MSCI*): A dummy variable that takes the value of one if a firm is a member of the MSCI ACWI in year *t*, and zero otherwise. (3) Share turnover (*TURN*): The number of transactions divided by the number of shares outstanding. Following Aggarwal et al. (2011), in specification Instrumental Variable (1) we use *DIV* as an instrumental variable for institutional ownership and domestic institutional ownership. We also use *MSCI* as an instrumental variable for foreign institutional ownership. In specification Instrumental Variable (2), we employ both *DIV* and *MSCI* as instrumental variables for foreign institutional ownership. In specification Instrumental Variable (3), we employ both *DIV* and *TURN* as instrumental variables for foreign institutional ownership. Finally, in specification Instrumental Variable (4), *DIV*, *MSCI*, and *TURN* are used as instrumental variables for foreign institutional ownership.

Specifications IV(1) in Panel A of Table 8 present the results of the first-stage regressions that use total, domestic, and foreign institutional ownership as the dependent variables. All explanatory variables are lagged by one period. Regressions include the control variables (coefficients not shown) used in Table 4, industry and year dummies. The first-stage regression results support the

<sup>12</sup> In separate tests (not reported for brevity), we find that firms with family CEOs or family chairs have less CEO turnover.



**Table 8**

The relationship between ownership structure and board governance considering instrumental variables.

Panel A: First-stage regressions of institutional ownership						
	Instrumental Variable (1)			Instrumental Variable (2)	Instrumental Variable (3)	Instrumental Variable (4)
	Institutional ownership	Foreign institutional ownership	Domestic institutional ownership	Foreign institutional ownership	Foreign institutional ownership	Foreign institutional ownership
<i>DIV</i>	0.064** (2.15)		−0.068** (−2.56)	0.080*** (3.11)	0.128*** (4.61)	0.081*** (3.15)
<i>MSCI</i>		1.544*** (34.72)		1.537*** (34.53)		1.532*** (34.37)
<i>TURN</i>					−0.024*** (−3.37)	−0.010 (−1.53)
<i>Controls</i>	YES	YES	YES	YES	YES	YES
<i>Industry &amp; Year effects</i>	YES	YES	YES	YES	YES	YES
<i>N</i>	6687	6687	6687	6687	6687	6687
<i>adj. R<sup>2</sup></i>	0.120	0.335	0.281	0.336	0.218	0.336
<i>F-test of instruments</i>	4.629	1205.15	6.537	608.185	15.948	406.314
<i>p value</i>	0.032	0.000	0.010	0.000	0.000	0.000

  

Panel B: The relation between ownership structure and outsider director proportion					
Instrumental Variables	Independent Variables		Dependent Variables	Coeff.	t Value
<i>Instrumental Variable (1)</i>	<i>Institutional ownership</i>	→	<i>Outside director</i>	0.1044***	4.5802
<i>Instrumental Variable (1)</i>	<i>Foreign institutional ownership</i>	→	<i>Outside director</i>	−0.0123**	−2.3848
<i>Instrumental Variable (1)</i>	<i>Domestic institutional ownership</i>	→	<i>Outside director</i>	−0.0947***	−2.9173
<i>Instrumental Variable (2)</i>	<i>Foreign institutional ownership</i>	→	<i>Outside director</i>	−0.0098*	−1.9036
<i>Instrumental Variable (3)</i>	<i>Foreign institutional ownership</i>	→	<i>Outside director</i>	0.0829***	5.0930
<i>Instrumental Variable (4)</i>	<i>Foreign institutional ownership</i>	→	<i>Outside director</i>	−0.0102**	−1.9953

  

Panel C: The relation between ownership structure and CEO duality.					
Instrumental Variables	Independent Variables		Dependent Variables	Coeff.	t Value
<i>Instrumental Variable (1)</i>	<i>Institutional ownership</i>	→	<i>CEO duality</i>	−1.5478***	−24.8431
<i>Instrumental Variable (1)</i>	<i>Foreign institutional ownership</i>	→	<i>CEO duality</i>	−0.0865***	−5.6761
<i>Instrumental Variable (1)</i>	<i>Domestic institutional ownership</i>	→	<i>CEO duality</i>	−1.7812***	−19.4656
<i>Instrumental Variable (2)</i>	<i>Foreign institutional ownership</i>	→	<i>CEO duality</i>	−0.0865***	−5.6934
<i>Instrumental Variable (3)</i>	<i>Foreign institutional ownership</i>	→	<i>CEO duality</i>	−0.7883***	−16.9079
<i>Instrumental Variable (4)</i>	<i>Foreign institutional ownership</i>	→	<i>CEO duality</i>	−0.0866***	−5.6991

This table shows the relationship between ownership structure and board governance by including instrumental variables. Panels A and B show the results of the relationship between ownership structure and board governance by including the following instrumental variables (Aggarwal et al., 2011): 1. *DIV* is a dummy variable that takes the value of one if a firm pays dividends in the current year, and zero otherwise. 2. *MSCI* is a dummy variable that takes the value of one if a firm is a member of the MSCI ACWI in year *t*, and zero otherwise. 3. *TURN* is the number of transactions divided by the number of shares outstanding. Following Aggarwal et al. (2011), in specification *Instrumental Variable (1)* we use *DIV* as an instrumental variable. In specification *Instrumental Variable (2)* we use *DIV* and *MSCI* as an instrumental variable. In specification *Instrumental Variable (3)* we use *DIV* and *TURN* as an instrumental variable. In specification *Instrumental Variable (4)* we use *DIV*, *MSCI*, and *TURN* as an instrumental variable. *Outside director* is the proportion of outside directors on the board. *CEO duality* is an indicator variable which equals one if the CEO is the chair of the board, and zero otherwise. *Family ownership* is the total shareholdings by family owners divided by the total shares. *Institutional ownership* is the total shareholdings by institutional investors divided by the total shares. *Foreign institutional ownership* is the sum of shareholdings of foreign institutions divided by total shareholdings. *Domestic institutional ownership* is the sum of shareholdings of domestic institutions divided by total shareholdings. Control variables, industry and year indicator variables are included in the regressions but are not reported for brevity. \*\*\*, \*\*, and \* denote significance at the 1%, 5% and 10% levels using a two-tailed test, respectively.

view that foreign ownership is positively associated with MSCI membership, and that total and domestic institutions are attracted by dividend-paying stocks. F-tests reported at the bottom of Panel A indicate that the hypotheses that instruments can be excluded from the first-stage regressions are strongly rejected. This suggests that the instruments are not weak.

Panel B of Table 8 presents the results for tests on the relation between large shareholder ownership and outside director proportion considering the possibility that institutional ownership is endogenous. We find a positive relation between *Institutional ownership* and *Outside director*, and a negative relationship between *Domestic Institutional ownership* and *Outside director*, which are

consistent with our predictions. Panel C of Table 8 shows the results for tests on the relation between large shareholder ownership and CEO duality after considering the instrumental variables. We can see that all the effects of institutional, foreign, and domestic ownership are significant and negatively related to CEO duality. Therefore, the results in Table 8 are stronger than our main results, providing robust evidence of our results once endogeneity has been addressed.

## 7. Conclusion

This paper provides comprehensive evidence on how different types of large shareholder ownership affect board governance. Specifically, we examine how family and institutional (domestic versus foreign; active versus passive) ownerships affect board governance. Our results show that the relation between large shareholder ownership and board governance is multidimensional. Consistent with the *Advisory Board Hypothesis*, we find evidence that greater family ownership is associated with more outside director board representation and a higher likelihood of CEO duality, which represents an advisory board. We also provide evidence that firms with greater family ownership benefit from a more advisory board via higher innovation output.

The relation between institutional ownership and board governance is multidimensional, and depends on finer partitions of institutional ownership. We find that both foreign institutional ownership and active institutional ownership have a positive relation with board governance. However, domestic institutional ownership has a negative relation and passive institutional ownership has an ambiguous relation with board governance.

In our study, we assume that large shareholders work in the best interests of the firm. A limitation of our study is that we do not consider the agency costs imposed by large shareholders. For example, large shareholders can use their voting power and control rights to select board members who would support their decisions that are related to expropriating wealth from minority shareholders (negative entrenchment effect). Another limitation is that our study focuses on only two, albeit commonly used, board governance variables; however, we view our work as an initial attempt to analyze the effect of large shareholder ownership on board governance. One line of future inquiry is to investigate the relation between ownership structure and other aspects of managerial controls (e.g., audit committee, reporting transparency). Another limitation is that we provide evidence in only one setting, Taiwan, an emerging market with weak legal protection for shareholders. As we indicated above, insights from studies like Gillan and Starks (2003) and Aggarwal et al. (2011) reveal that the nature of the large shareholder ownership-governance relation could differ across different legal environments.

In addition, our study also shows that different governance mechanisms can act as both substitutes and complements in different contexts, specifically, the type of large shareholder ownership. To delve deeper, future research could investigate whether firms make a tradeoff between their vital board functions and under what contexts stewardship and agency theories, which have opposing assumptions and predictions, can better describe the relationship between different types of large shareholder ownership and board governance. Finally, our theoretical reasoning assumes that large shareholders are able to influence governance in firms. However, we do not provide the mechanism via which they are able to exert such influence, for example, whether foreign and active institutions are able to achieve stronger governance “through their voice” or do they “vote with their feet”. We leave the examination of this mechanism to future research.

## Declaration of Competing Interest

None.

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