Are Outside Board Chairs Better Than Inside Board Chairs? Evidence From Taiwanese Family Firms

Pei-Ying Chen, Chia-Wei Chen, Bingsheng Yi, and Jose N. Martinez

Abstract

This paper compares the effect of inside and outside board chairs on firm performance using listed family firms in Taiwan from 2000 to 2018. We use Tobin's Q and Return on Assets to measure firm valuation and operating performance. Family firms with an inside board chair exhibit undervaluation but better operating performance compared to family firms with an outside board chair. However, these results are nuanced and complex, with board independence counteracting on inside board chair. The results are robust using different samples and performance measures.

JEL Classification: G30, G32, G39
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I. Introduction

The past decades have seen a large body of research, both theoretically and empirically, on corporate boards and firm performance (see Jensen, 1993; Agrawal & Knoeber, 1996; Dalton et al., 1998; Adams & Ferreira, 2009; Fauver et al., 2017, among others). The evidence shows that board effectiveness is highly related to board composition and corporate governance features. Family ownership is an important feature for many economies globally (La Porta, Lopez-de-Salines, and Shleifer, 1999; Cheng, 2014), and control of the board via a related board chair is an essential aspect of this issue. A large number of prior studies examine CEO duality, and many argue for separating CEO and board chair (Adams, 2017). However, the research on impact of separate board chairs in firm performance is minimal, and the evidence is inconclusive.

The importance and power of family-owned firms are often under-appreciated in the west, where publicly traded firms with diverse public ownership are the typical case. However, the case of family-owned firms is more prevalent in developing economies. In their survey article on corporate governance, Morck, Wolfenzon and Yeung (2005) state that: "Outside the United States and the United Kingdom, large corporations usually have controlling owners, who are usually very wealthy families. Pyramidal control structures, cross-shareholding, and super-voting rights allow such families to control corporations without making a commensurate capital investment. In many countries, a few such families end up controlling considerable proportions of their countries' economies." Bammens, Voordeckers and Van Gils (2011) provide a review of the theoretical and empirical literature on board structure and family firms. Burkart, Panunzi and Shleifer (2003) present an early theoretical model of family firms, highlighting the key issue of separation of family ownership and professional management. The seminal paper by Villalonga and Amit

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(2006), using a sample for Fortune 500 firms, finds that family ownership creates value only when the founder serves as CEO or as board chair with a hired CEO. Firm value is reduced when founder's descendants serve as CEO, indicating the negative effect of potential conflict between family and non-family shareholders. Control right and potential conflict of interests are central issues for family-owned firms (see Morck, Wolfenzon, and Yeung, 2005). In comparing family firms versus non-family firms, Holderness and Sheehan (1988) find a negative valuation effect, measured by Tobin's Q. Anderson and Reeb (2003) find evidence of a non-linear relationship between family holding and firm performance, as well as evidence against the notion that family ownership harms the interest of minority shareholders. Using Fortune 1000 firms in the US, Miller et al. (2007) find that family firm performance results are highly sensitive to how family ownership is defined (whether ownership of family members or relatives is included).

Unlike the corporate governance and ownership structures in developed economies or Western nations, ownership and governance in Eastern Asian or developing nations are highly concentrated. Most large firms are family-owned with their own characteristics. In particular, emerging economies tend to have less developed institutional and regulatory framework (Lin and Chuang, 2011). Notably little research in emerging economies has been done on the role of board chairs (Banerjee et al., 2020). The board chair is a critical position in both the performance of the board and the firm. This study investigates how inside/outside board chairs affect firm performance in publicly listed family firms in Taiwan. Most prior works define "related" individuals as those who are one of the family members or who have blood connection. This criterion is straightforward but ignores the board chairs who are supposedly unrelated (not a member of the founding family) but have a connection with the founding family or the ultimate controller. Samples generated this way may not fully distinguish inside and outside chairs by missing the related assigned as non-relative board chairs. Consequentially, statistical results are weakened because related board chairs are considered as un-related. Our data from the Taiwan Economic Journal (TEJ) does not have such a sampling issue, because TEJ carefully reviews each sample firm's annual report in determining whether a board chair is related to the ultimate controller or not. This reduces potential ambiguity or contamination in our sample and the resulted empirical evidence.

Given the prevalence of family firms and firms with concentrated ownerships in Taiwanese economy, we can empirically investigate the behavior and effect of the ultimate controller via whether an inside or outside board chair is selected. Our empirical evidence sheds light on the pros or cons of the intervention of the ultimate controller in family firms. Following the literature, we use Tobin's Q and Return on Assets to measure firm performance. Tobin's Q is a market-based valuation measure, while Return on Assets is an accounting measure of operating performance.

Our study makes contributions in several ways. First, this study adds new evidence to the limited literature on the impact of separate board chairs on firm performance. Banerjee et al. (2020) review 234 academic articles published in 66 journals over the period from 1980 to June 2020 and call for more research on board chairs in emerging economies. To our knowledge this paper may be the first one examining whether and how inside and outboard chairs will affect firm performance differently among family firms in an emerging economy. With a sample of listed family firms in Taiwan during the period from 2000 to 2018, we find that firms with inside (related) board chair is associated with an undervaluation as measured by Tobin's Q. However, related or inside board chair is associated with higher firm operating performance as measured by Return on Assets. Compared with prior studies, our evidence is based on a much longer period using a greater number of sample firms. Our results are broadly confirmed with additional robustness tests.

Second, most prior studies on board independence examine public firms and the evidence is mixed. Our findings show that board independence is not related to Tobin's Q, but affects Return on Assets significantly and positively in publicly listed family firms. Finally, our paper contributes to the literature on family firm studies and international corporate governance by shedding new light on the role of family involvement in an emerging economy – Taiwan. Most existing family firm studies are on developed countries (Filatotchev, Lien and Piesse, 2005).

The rest of the paper is organized as follows. Section 2 reviews the literature and develop the hypothesis. Section 3 describes the data, variables, research method, and reports the summary statistics. Section 4 reports and discusses the empirical results. Section 5 concludes the paper.

II. Literature Review

In prior studies of corporate governance in general and board structure in particular, existing literature mostly focuses on firms in Western countries (see Jensen and Meckling, 1976; Morck, Shleifer and Vishny, 1988; Rosenstein and Wyatt, 1990, Yermack, 1996; and Miller et al., 2007, among others). Research using samples in emerging markets is limited and the evidence is inconclusive. Using a sample of Swedish firms, Cronqvist and Nilsson (2003) find that family with controlling minority shareholders (CMS's) are associated with significant negative valuation as measured by Tobin's Q. King and Santor (2008) examine Canadian family firms and find family-owned firms using dual-class shares have a 17% lower Tobin's Q than other firms, while family-owned firms with single-class shares have similar valuation as other firms using Tobin's Q but higher operating performance as measured by ROA (Return on Assets).

Regarding emerging economies, using data from eight East Asian economies, Claessens et al. (2002) find evidence that cash-flow ownership of the largest shareholder is positively associated with firm value (positive incentive effect), while there is a negative valuation effect when control rights of the largest shareholder exceed its cash-flow ownership (negative entrenchment effect). Bertrand et al. (2008), using a sample of large Thai family businesses, find evidence of a negative association between firm performance and founder's son's involvement after the founder's death.

Given the early stage of corporate governance development in the emerging economies, it is a valid empirical question as to whether the evidence in prior studies on board structure and corporate governance applies to family-owned firms in emerging economies. Increasing board independence, as an example, may or may not improve board function, since the ultimate controller of the founding family with dominating voting rights can easily assign closely aligned individuals as board members. This is easily and commonly done in the context of a family-owned firm as compared to a typical public company in the west.

Unlike the corporate governance and ownership structures in developed economies or Western nations, ownership, and governance in Eastern Asian or developing nations are highly concentrated. Most large firms are family-owned with its own characteristics. In addition, notably little research in emerging economies has been done on the role of board chairs. The board chair is a critical position in both the board and overall firm. Board chairs perform many important roles, for examples, acting as the company's leading representative which will involve the presentation of the company's aims and policies to the outside world; planning and conducting board meetings effectively by deciding the order of the agenda and ensuring that the board receives accurate, timely and clear information (See https://www.iod.com/news/news/articles/The-role-of-the-chairman) . An outside board chair may provide better monitoring and advising, while an inside board chair may be better for efficient decision-making. It is an unresolved question as to whether

inside board chairs and outside board chairs may impact firm performance differently and which one is better. Withers and Fitza (2017) use a variance decomposition methodology to investigate whether board chairs matter among 6,290 U.S. firm-year observations in 308 different industries. They find that board chair effect accounts for nine percent of the variance in firm performance and explains over and above what is explained by CEO effect. Using S&P 1500 firms, Balsam, Puthenpurackal and Upadhyay (2016) find a positive valuation effect (Tobin's Q) from outside board chair. In contrast, Mobbs (2015) finds that non-CEO inside chairs are associated with significantly higher firm performance measured by Tobin's Q and ROA. Using a sample of Chinese family firms listed from 1999 to 2014. Jiang, Zheng, and Tang (2018) find that non-family board chair is associated with significantly worse performance.

In summary, compared with western countries, where corporate governance is more developed and investors' interests are better protected, Taiwan's corporate governance is still in early developmental stage, investors might not be well protected, and we conjecture that board independence may not be related to firm performance in Taiwanese family firms. Since investors may worry their interests may not be protected in family firms, especially when board chairs are taken up by insiders, market-based performance measure may be negatively related to inside board chair. However, since inside board chairs are better than outside board chairs in making decisions more efficiently, operation-oriented performance measure may be positively related to inside board chairs.

III. Data and Methods

III.1 Data Selection

To examine the relation between inside/outside board chairs and firm performance, we collect firm-year observations of listed family firms traded in Taiwan Stock Exchange (TWSE) during the period from 2000 to 2018. We choose the period starting from 2000 as the information of most variables required in our tests is disclosed annually since then.

To reduce potential bias, we further use the following criteria in selecting data: (1) Financial firms are regulated differently and hence are excluded from our sample. (2) Similarly, government firms are dropped as they operate differently. (3) Since we use firm-year observations, non-calendar-year firms are eliminated. (4) Firms which changed their board chairs within the sample year are dropped.

After the sample selection process, our final data contains 8,066 firm-year observations of 555 listed family firms in Taiwan during the period from 2008 to 2018, representing roughly 62% of non-financial and non-government firms during the period. We note that such a high proportion of family firms as a portion of listed firms in Taiwan, while commonly observed in the East Asian emerging economies, is quite uncommon in the developed western economies.

III.2. Variable Definitions and Summary Statistics

The key variable in this paper is inside/outside board chair. To identify inside/outside board chair, we use a dummy variable *Inside board chair*. It has a value of 1 if the current board chair is an insider, meaning related to the ultimate controller or the founding family, and it is 0 otherwise. Compared with the traditional method in which only immediate family members are identified as inside board chair, in this paper, board chairs who are not family members but are related to the

ultimate controller or the founding family are classified as inside chairs. This allows us to prevent underestimation of the effect from the ultimate controller. As shown in Table 1, mean *Inside board chair* is 0.85, indicating that most family firms assign a related individual as the board chair. This differs from the evidence found in developed nations where most board members are independent.

Table 1: Summary statistics

The sample contains 8,066 firm-year observations of listed family firms traded in Taiwan Stock Exchange (TWSE) during the period from 2000 to 2018. Inside board chair is a dummy indicator. It is 1 if the board chair is related to the ultimate controller and 0 otherwise. Tobin's Q is the book value of assets minus book value of equity plus market value of equity then divided by book value total assets at the end of the year. Return on assets is the net income before taxes, interests, depreciation and amortization divided by total assets. Total assets are in millions of New Taiwanese dollars. Leverage is the total debt scaled by total assets. R&D expenditure is the expense of research and development over sales revenue. Firm age is the number of years since establishment. Institutional (control) ownership is the percentage of shares held by institutions (the ultimate controller). Board independence is the percentage measured by the number of independent directors scaled by the number of board members. P1 and P99 are the 1st and 99th percentiles. All variables are extracted from Taiwan Economic Journal (TEJ).

	Mean	P1	Median	P99
Inside board chair	0.85	0	1	1
Tobin's Q	1.23	0.42	0.93	5.39
Return on assets	7.81	-16.1	7.17	32.5
Total assets	20,070	610	5,751	300,140
Leverage	0.38	0.05	0.37	0.82
R&D expenditure	3.07	0	0.74	25.2
StdDev. of daily stock return	2.42	0.71	2.31	4.60
Firm age	32.9	7	33	63
Institutional ownership	39.2	2.2	36.4	92.9
Control ownership	33.4	4.64	31.6	80.6
Board independence	12.0	0	0	44.4

As mentioned above, we use two widely applied performance/valuation variables in finance and accounting literature to capture the impact from inside versus outside board chairs. We use *Tobin's Q* to proxy for stock market valuation. We use *Return on Assets* as a measure of firm operational performance.

These two proxies for firm performance allow us to evaluate the intervention of the ultimate controller in two ways. First, negative investor sentiment on concentrated ownership and the associated potential agency conflicts in family firms may result in undervaluation. See, for example, Hong and Kacperczyk (2009), and Kim and Venkatachalam (2011), which document undervaluation of so-called "Sin" stocks (weapons, tobacco and alchohol). Such undervaluation can be present even while the operational performance is positive.

By capturing two different aspects of firm performance, this paper may be able to shed light on the prior inconclusive evidence on the performance of family firms. If these two different

measures turn out to have opposite results, it indicates that the ultimate controller may exert different influence on firm performance.

Tobin's Q is calculated as the ratio of the firm's market value to its book value (see Yermack,1996, Coles, Daniel and Naveen, 2008, Adams and Ferreira, 2009, Masulis and Mobbs, 2011, Balsam, Puthenpurackal and Upadhyay, 2016, among others). Market value is calculated as the market price of common shares times the number of shares outstanding. *Return on Assets* is the net income before interests, taxes, depreciation, and amortization (or EBITDA) scaled by total assets. This measure, unlike the net income, eliminates the effect from either financial leverage or asset management (which affects operating income via depreciation and amortization).

The numbers in Table 1 overall are not dramatically different from those found in prior studies. Mean (median) *Tobin's Q* is 1.23 (0.93), with a range of 0.42 to 5.39, indicating a significant degree of high (over-) versus low (under-) market valuation. Mean (Median) *Return on Assets* is 7.81% (7.17%), with a range of -16.1% to 32.5%.

In addition to above key variables, following prior studies (Morck, Shleifer and Vishny, 1988; Yemack, 1996; Yi, Chen and Lin, 2018, among others), we include the following control variables: *Total assets*, *Leverage*, *R&D expenditure*, *StdDev. of daily stock return*, *Firm age*, *Institutional ownership*, *Control ownership*, and *Board independence*. These variables can be separated into two groups: firm characteristics and corporate governance mechanisms.

Total assets are the value of total assets at the end of the year measured in millions of New Taiwan dollars. The mean *Total assets*, is 20,070, significantly larger than the median (5,751). This is a result of the existence of extremely large firms in Taiwanese economy. Following earlier studies, we use *Total assets* to control for potential size effect.

Leverage is total debt over total assets. Mean (median) *Leverage* is 0.38 (0.37), with a range of 0.05 to 0.82, indicating significant variation in company debt load.

R&D expenditure is research and development expenses scaled by sales revenue. *R&D expenditure* captures a firm's future growth opportunity and affects a company's operating income.

StdDev. of daily stock return, or the standard deviation of daily stock return, is a proxy of the idiosyncratic risk (as versus market risk) of a firm.

The last variable related to firm characteristics is *Firm age*, or the number of years since establishment. A family firm's operation and performance can be highly sensitive to its life cycle. Following similar studies, natural log of *Firm age* is used in the regressions to lower the effect from firms that are many decades old.

For corporate governance mechanisms, the first variable is *Institutional ownership*, representing the percentage of shares held by institutions during the sample year. *Institutional ownership* is associated with better corporate monitoring and better governance.

Control ownership captures the interest alignment between the ultimate controller and other shareholders. Specifically, increased shareholding by the ultimate controller is likely to increase conflicts of interests as well as moral hazard behavior.

Mean (Median) *Institutional ownership* is 39.2% (36.4%), indicating sizable shareholding by institutional investors. The range is 2.2% to 92.9%, a considerable variation. Similarly, mean (Median) *Control ownership* is 33.4% (31.6%), indicating large controlling interests in these firms. There is also a substantial variation, ranging from 4.64% to 80.6%. To reduce impact of outliers, the natural log of these two variables is used in the regressions.

The last control variable, *Board independence*, is the percentage of independent directors on the board. Many Taiwanese family firms do not have any independent director. Hence the median of board independence is 0. Mean *Board independence* is 12%, significantly low as

compared to developed economies, which have board independence rate more than 60% on average (Mishra, 2018).

III.3. Research Methods

We first do univariate tests comparing the difference in Tobin's Q and Return on Assets between firms with insider board chairs firms with outside board chairs. Then we divide the sample into firms without independent board, and firms with independent board, then compare the difference in performance in each subsample firms. The univariate tests give us a snapshot about the potential linkage between board chairs and firm performance. Without controlling for effects of other factors on firm performance, such association may be spurious. As a result, we further investigate how board chairs affects firm performance while controlling for a set of variables that may affect firm performance as documented in prior literature as shown in the following equation.

$$FP_{it} = \beta_0 + \beta_1 BCD_{it} + \gamma' X_{it} + v_{it} \quad (1)$$

where FP_{it} is Firm i's performance in Year t, BCD_{it} is the board chair dummy variable. If Firm i has an inside board chair Year t, then BCD_{it} is equal to 1, otherwise BCD_{it} is equal to 0. X_{it} is a set of control variables, and v_{it} is the error term. To control for impacts of time-invariant unobservable variables on firm performance, we use fixed-effect model in all the regressions.

IV. Empirical Results and Discussions

IV.1. Univariate test results

Table 2 reports our univariate test results. Comparing subsample with inside board chairs to the subsample with outside board chairs, mean (median) *Tobin's Q's* are 1.179 (0.919) versus 1.49 (1.011), with a statistically significant mean difference of -0.311. On average, the *Tobin's Q* is about 20% (1.179 versus 1.490) lower in firms with inside board chairs. The median is about 10% (0.919 versus 1.011) lower. Both differences are statistically significant at the 1% level. This is a definite first evidence of undervaluation of family firms with inside board chair as compared to family firms with outside board chairs. Shleifer and Vishny (1986) suggest that founding family can use their control to extract private benefits at the expense of other/minority shareholders. The fact that the ultimate controller can more effectively control the firm through an inside board chair, thus resulting in a higher degree of conflicts of interests or moral hazard is perceived negatively by the capital markets. In contrast, Villalonga and Amit (2006) find a negative valuation effect only when descendant-CEOs run firms. There is value creation when the founders run the firms.

On the other hand, mean (median) *Return on Assets* is higher for the subsample firms with inside board chairs at 7.94 (7.19) versus 7.083 (7.025) for the subsample of firms with outside board chairs. These differences are also statistically significant. This evidence contrasts with other studies on western firms which find, in general, firms with outside board chairs tend to perform better. Makhlouf et al., (2017) find that board independence has a positive effect on firm performance as measured by Return on Assets (ROA), while the effect is positive but insignificant for firm valuation as measured by Tobin's Q. Balsam, Puthenpurackal and Upadhyay (2016), however, find evidence that the positive outside board chair effect is subject to variations in firm characteristics. For example, when using ROA as a measure of performance, they find a negative

relationship between outside chairs and operational complexity. They suggest that inside chairs might be more suitable for firms with high operational complexity.

Table 2: Comparative statistics

The sample contains 8,066 firm-year observations of listed family firms traded in Taiwan Stock Exchange (TWSE) during the period from 2000 to 2018. Inside board chair is a dummy indicator. Tobin's Q is the book value of assets minus book value of equity plus market value of equity then divided by book value total assets at the end of the year. Return on assets is the net income before taxes, interests, depreciation and amortization divided by total assets. Board independence is in percentage measured by the number of independent directors scaled by the number of board members. All variables are extracted from Taiwan Economic Journal (TEJ). ***, ** and * indicate the significance at the 1%, 5% and 10% levels respectively. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels respectively.

		Inside board chair		Difference
		Yes	No	
		(1)	(2)	(1) - (2)
Panel A: All sample				
Tobin's Q	Mean	1.179	1.490	-0.311***
	Median	*0.919*	*1.011*	*-0.092****
Return on assets	Mean	7.940	7.083	0.857**
	Median	*7.190*	*7.025*	*0.165**
N		6,862	1,204	
Panel B: Board independence = 0				
Tobin's Q	Mean	1.115	1.402	-0.287***
	Median	*0.860*	*0.900*	*-0.040****
Return on assets	Mean	7.114	5.720	1.394***
	Median	*6.590*	*5.770*	*0.820****
N		3,877	599	
Panel C: Board independence > 0				
Tobin's Q	Mean	1.261	1.576	-0.315***
	Median	*1.021*	*1.137*	*-0.116****
Return on assets	Mean	9.012	8.433	0.579
	Median	*8.320*	*8.230*	*0.090*
N		2,985	605	

As an independent board can potentially counteract an otherwise powerful inside board chair, to further investigate board independence on firm performance, we classify the whole sample into subsample of firms with zero board independence and firm with positive board independence, the results are reported in Panel B and C in Table 2. Interestingly, and confirming the positive effect of board independence, we observe that mean (median) Tobin's Q is higher for

firms with positive board independence as compared to firms with zero board independence. The same pattern also holds for ROA. In terms of the difference in mean (median) Tobin's Q between firms with inside board chair versus firms with outside board chair, the difference is statistically significant for both zero board independence subsample and the positive board independence subsample. However, the magnitude of the mean (median) difference is smallest for the zero board independence subsample with the full sample in the middle and largest for the positive board independence subsample. This is evidence again of the positive effect of independent board counteracting on inside board chair.

This pattern is even more interesting for ROA. The mean (median) difference between firms with inside board chair and firms with outside board chair is statistically insignificant for the positive board independence subsample, indicating that board independence offsets entirely the effect of an inside board chair in terms of the potential increased operational efficiency. The mean (median) difference in ROA is highly significant and largest in magnitude (among the three panels) for the zero board independence subsample, with firms with inside board chair higher than firms with outside board chair. This is the case when there is no independent board to counteract on a powerful inside board chair.

For firms with inside board chairs, mean (median) *Return on Assets* is roughly 12% (2%) higher than firms without outside board chairs. This may indicate the opposite effect that inside board chairs, with close relationship to the ultimate controller (and the founding family), may be more effective in carrying out operational goals.

Many family-owned large firms in Asian developing nations do not have their shares fully diversified and continue to operate with significant involvement of founders or members of the founding families. While this can be perceived as negative corporate governance, operationally, the concentrated holdings are often able to quickly seize opportunities and execute long-term strategic plans, as compared to large public firms with diversified holdings. They also might have a stronger incentive in protecting the reputation of the family and family assets. (see Sageder, M., Mitter, C. and Feldbauer-Durstmüller, 2018). These are potential reasons why these firms may be operationally more efficient.

IV.2. Regression Results

Findings in Table 2 only give us a snapshot about the potential linkage between inside/outside board chairs, board independence and firm performance. Without controlling for effects of other factors on firm performance, such association may be spurious. In this section we further investigate how board chair and board independence affects firm performance while controlling for a set of variables that may affect firm performance as documented in prior literature.

Table 3 reports the results of fixed-effect regressions of Tobin's Q. Table 4 reports the results with *Return on Assets* as the dependent variable. In regression (1) of both tables, only the measures of firm valuation/performance and year dummy indicators are included. *Inside board chair* is statistically significant and negative in Table 3, while statistically significant and positive in Table 4, confirming the earlier univariate results: that family firms with inside board chairs are undervalued while their operational performance is better.

Inclusion of control variables in regression (2) in both tables does not change the statistical significance, sign, and magnitude of the coefficients of our key independent variable, *Inside board chair*. Both coefficients are in fact a bit larger.

Following our univariate analyses, in regressions (3) and (4), we divide our sample into subsample of firms with zero board independence and firms with positive board independence. Consistent with our univariate results, there is a stark difference between the two subsamples. In Table 3, regression (3), Inside board chair becomes statistically insignificant in firms without independent board, while the coefficient is highly significant, negative, and much larger in magnitude for the subsample of firms with positive board independence. Combining this finding with the univariate results reported in Table 2, what we observe in Table 3 is that, given an inside board chair, while mean Tobin's Q is higher, at 1.261 for the positive board independence subsample (as versus 1.115 for the zero board independence subsample), the negative impact of inside board chair, as indicated by the regression coefficient, is large (-0.989) and significant for the subsample of firms with positive board independence.

In Table 4, for ROA, the similar but opposite stark difference remains. Inside board chair becomes statistically insignificant for the subsample with positive board independence. The coefficient is highly significant, positive, and much larger for the subsample with zero board independence. Again, earlier in Table 2, the mean difference in ROA is only significant for the subsample with zero board independence and insignificant for the subsample with positive board independence. Within the subsample with zero board independence, mean ROA is significantly higher for firms with inside board chair, indicating that inside board chair is only a significant factor in terms of operational performance when there is no board independence. The regression result confirms this. (when Inside board chair is insignificant). It is significant and negative, but substantially smaller in the subsample of firms with positive board independence (when Inside board chair is highly significant, negative, and large). These are clear indications that the role played by inside board chair is also moderated by the role of Control ownership.

In Table 4, we again see this contrast in Control ownership as related to board independence. Control ownership is insignificant for the subsample of firms with zero board independence (when Inside board chair is significant, positive, and large in magnitude), while it is highly significant, positive, and large for subsample of firms with positive board independence (when Inside board chair is insignificant). It almost seems that the effect/role of Inside board chair and Control ownership substitute for each other.

IV.3. Robust tests

To avoid impact of possible outliers, we exclude sample firms whose performance falls in the top (bottom) one percentile. The results are qualitatively similar. To save space, the tables are not included but will be provided upon request. In Table 5, for additional robustness tests, we use two different measures of firm performance. In Panel A of Table 5, we use *Price to book ratio* (PB) to replace *Tobin's Q* as a valuation measure. In Panel B of Table 5, *Operating margin* is used in place of *Return on assets* as an operational performance measure. Compared to *Tobin's Q*, *Price to book ratio*, uses the stock price at the end of the year over the net worth of each share, reduces the potential effect from financial leverage. Net worth is the difference between total assets and total debt. *Operating margin* is operating revenue minus operating costs and expenses then divided by operating revenue. Unlike *Return on Assets*, *Operating margin* focuses on a sample firm's major operation or business.

As a control variable, Board independence is insignificant in Table 3. In Table 4, it is significant, positive, but small in regression (2), but insignificant in regression (4). In Table 3 Control ownership is highly significant and negative for subsample with zero board independence

Table 3: Regression results with Tobin's Q as the dependent variable

The sample contains 8,066 firm-year observations of listed family firms traded in Taiwan Stock Exchange (TWSE) during the period from 2000 to 2018. All regressions are fixed-effect analyses. Tobin's Q is the book value of assets minus book value of equity plus market value of equity then divided by book value total assets at the end of the year. Inside board chair is a dummy indicator. It is 1 if the board chair is related to the ultimate controller and 0 otherwise. Leverage is the total debt scaled by total assets. R&D expenditure is the expense of research and development over sales revenue. Firm age is the number of years since establishment. Institutional (control) ownership is the percentage of shares held by institutions (the ultimate controller). Board independence is in percentage measured by the number of independent directors scaled by the number of board members. All variables are extracted from Taiwan Economic Journal (TEJ). t-values are in parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels respectively.

			Board independence	
			= 0	> 0
	(1)	(2)	(3)	(4)
Inside board chair	-0.180**	-0.188**	0.134	-0.989***
	(-2.05)	(-2.16)	(0.96)	(-9.97)
Log (total assets)		0.332***	0.745***	-0.096**
		(7.42)	(9.37)	(-2.07)
Leverage		0.267	-0.715***	0.861***
		(1.62)	(-2.63)	(4.84)
R&D expenditure		0.001	-0.012	-0.001
		(0.40)	(-1.15)	(-0.38)
StdDev. of daily stock return		0.003	0.006	0.004*
		(1.04)	(0.13)	(1.90)
Log (firm age)		-1.750***	-5.058***	-0.285*
		(-9.25)	(-11.11)	(-1.71)
Log (institutional ownership)		0.074	-0.057	0.270***
		(1.63)	(-0.76)	(5.76)
Log (control ownership)		-0.638***	-0.807***	-0.124*
		(-10.39)	(-8.51)	(-1.65)
Board independence		-0.001		-0.003
		(-0.74)		(-1.30)
Year dummies	Yes	Yes	Yes	Yes
R^2	0.01	0.02	0.02	0.04
N	8,066	8,066	4,476	3,590

Table 4: Regression results with Return on Assets as dependent variable

The sample contains 8,066 firm-year observations of listed family firms traded in Taiwan Stock Exchange (TWSE) during the period from 2000 to 2018. All regressions are fixed-effect analyses. Return on assets is the net income before taxes, interests, depreciation and amortization divided by total assets. Inside board chair is a dummy indicator. It is 1 if the board chair is related to the ultimate controller and 0 otherwise. Leverage is the total debt scaled by total assets. R&D expenditure is the expense of research and development over sales revenue. Firm age is the number of years since establishment. Institutional (control) ownership is the percentage of shares held by institutions (the ultimate controller). Board independence is in percentage measured by the number of independent directors scaled by the number of board members. All variables are extracted from Taiwan Economic Journal (TEJ). t-values are in parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels respectively.

			Board independence	
			= 0	> 0
	(1)	(2)	(3)	(4)
Inside board chair	0.956***	1.031***	1.668***	0.242
	(2.32)	(2.62)	(3.33)	(0.33)
Log (total assets)		2.351***	1.942***	4.103***
		(11.65)	(6.80)	(12.12)
Leverage		-15.374***	-16.812***	-15.248***
		(-20.65)	(-17.25)	(-11.78)
R&D expenditure		-0.019***	-0.295***	-0.008
		(-3.65)	(-7.93)	(-1.53)
StdDev. of daily stock return		0.026*	1.065***	0.021
		(1.71)	(6.00)	(1.42)
Log (firm age)		-7.643***	-3.926**	-6.456***
		(-8.95)	(-2.40)	(-5.34)
Log (institutional ownership)		2.138***	2.258***	0.920***
		(10.44)	(8.37)	(2.70)
Log (control ownership)		1.492***	0.490	3.492***
		(5.38)	(1.44)	(6.37)
Board independence		0.036***		0.026
		(4.17)		(1.39)
Year dummies	Yes	Yes	Yes	Yes
R^2	0.02	0.12	0.14	0.11
N	8,066	8,066	4,476	3,590

Table 5 Robustness tests: Alternative performance measures

The sample contains firm-year observations of listed family firms traded in Taiwan Stock Exchange (TWSE) during the period from 2000 to 2018. All regressions are fixed-effect analyses. PB ratio is the stock price at the end of the year over the net worth of each share. Net worth is the difference between total assets and total debt. Operating margin is the net income before taxes, interests, depreciation and amortization divided by total assets. Inside board chair is a dummy indicator. It is 1 if the board chair is related to the ultimate controller and 0 otherwise. Leverage is the total debt scaled by total assets. R&D expenditure is the expense of research and development over sales revenue. Firm age is the number of years since establishment. Institutional (control) ownership is the percentage of shares held by institutions (the ultimate controller). Board independence is in percentage measured by the number of independent directors scaled by the number of board members. All variables are extracted from Taiwan Economic Journal (TEJ). t-values are in parentheses. ***, ** and * indicate the significance at the 1%, 5% and 10% levels respectively.

Panel A: Dependent variable – PB ratio

		Board independence	
		= 0	> 0
	(1)	(2)	(3)
Inside board chair	-0.489***	-0.109	-1.566***
	(-5.60)	(-1.41)	(-7.74)
Log (total assets)	-1.215***	-0.409***	-2.542***
	(-27.08)	(-9.27)	(-26.80)
Leverage	2.699***	1.348***	4.373***
	(16.30)	(8.96)	(12.06)
R&D expenditure	-0.001	-0.019***	-0.001
	(-1.10)	(-3.27)	(-0.69)
StdDev. of daily stock return	0.011***	0.286***	0.009**
	(3.26)	(10.42)	(2.05)
Log (firm age)	0.119	-0.729***	0.407
	(0.63)	(-2.89)	(1.20)
Log (institutional ownership)	0.787***	0.503***	1.271***
	(17.28)	(12.08)	(13.32)
Log (control ownership)	-0.262***	-0.044	-0.461***
	(-4.25)	(-0.83)	(-3.00)
Board independence	-0.002		-0.009*
	(-1.19)		(-1.77)
Year dummies	Yes	Yes	Yes
R^2	0.03	0.06	0.04
N	8,066	4,476	3,590

Panel B: Dependent variable – Operating margin

		Board independence	
		= 0	> 0
	(1)	(2)	(3)
Inside board chair	12.031***	26.693***	-0.044
	(3.21)	(3.83)	(-0.05)
Log (total assets)	0.273	-0.831	0.360
	(0.14)	(-0.21)	(0.81)
Leverage	-1.053	-12.944	-0.312
	(-0.15)	(-0.95)	(-0.18)
R&D expenditure	-0.015	-0.282	-0.015**
	(-0.30)	(-0.54)	(-2.06)
StdDev. of daily stock return	0.068	7.086***	0.004
	(0.48)	(2.87)	(0.19)
Log (firm age)	2.077	16.630	0.267
	(0.26)	(0.73)	(0.17)
Log (institutional ownership)	-8.567***	-18.617***	-0.128
	(-4.39)	(-4.96)	(-0.29)
Log (control ownership)	-2.741	-4.860	0.342
	(-1.04)	(-1.03)	(0.47)
Board independence	0.052		0.048*
	(0.63)		(1.90)
Year dummies	Yes	Yes	Yes
R^2	0.01	0.01	0.01
N	8,066,	4,476	3,590

The results in Table 5 again confirm our earlier findings. In Panel A of Table 5, *Inside board chair* is negatively associated with *Price to book ratio* at the 1% significance level, indicating undervaluation. It is insignificant for the subsample of firms with zero board independence, but is negative, large, and highly significant for the subsample of firms with positive board independence. In Panel B of Table 5, the *Inside board chair* is positively associated with *Operating margin* at the 1% significance level. It is positive, large, and highly significant for the subsample of firms with zero board independence, and insignificant for the subsample of firms with positive board independence. These results are evidence that supports the robustness of our general empirical findings.

V. Conclusion

In Eastern Asia and many other emerging economies, family firms are common and prevalent. Capital markets in these areas are relatively immature, institutional and regulatory framework tend to be less developed, and founders or founding families continue to keep controlling interests in their businesses or corporations. This paper investigates the impact of inside versus outside board chairs on firm performance in publicly listed family firms in Taiwan from 2000 until 2018. We use two variables to measure firm performance: market-based measure - Tobin's Q, and the accounting-based measure - Return on assets. Our results indicate that inside board chair is significantly negatively related to Tobin's Q; yet significantly positively related to Return on assets. Specifically, this relation could be altered by board independence and even substituted by control ownership measured as shares held by the ultimate controller. For example, firms with inside board chairs and without independent board members have the worst Tobin's Q, while firms with outside board chairs and independent board members have the best Tobin's Q and Return on assets is significantly positively related to board independence. While family firms and concentrated ownership are pretty common in Taiwan, board independence has become mandatory just in recent years, so most firms only keep their percentage of independent directors at the required level (20%), which is significantly lower than developed economies whose corporate boards contain more than 60% independent board members on average, also much below the 33% board independence rate required in other emerging economies such as India and Malaysia (OECD, 2021). This phenomenon combined with our findings suggest that regulators in Taiwan may need to adjust the policy regarding board independence and encourage firms to have more independent members on their boards.

This study adds to the limited literature on board chairs and firm performance in emerging markets by documenting a significant and robust relationship between board chairs and firm performance, but similar to prior studies, our study does not reveal much on the causality in the relationship between board chairs and firm performance. More studies are needed to provide clear implications to firms and regulators. Inside board chairs have both positive and negative impact on firm performance, there is no "One size fits all" policy. Firms should choose board chair best suiting their characteristics and needs no matter whether the board chair comes from inside or outside, and regulators should not require firms to adopt the same corporate governance structure unless sufficient theoretical and empirical studies have provided conclusive evidence. The future studies may examine how firms choose their board chair, and how firm performance will change after change in board chair (inside board chair becomes outside board chair and vice versa).

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