

少數股權的剝奪與股利政策： 台灣資本市場的新發現

詹錦宏

長庚大學工商管理系 教授

林明薰*

芯願股份有限公司 副總經理

摘要

本研究發現，公司治理和股權結構在企業股利政策的制定過程中呈現互補作用。藉由動態追蹤資料迴歸模型的分析，本研究探討企業的股利政策是否遵循 La Porta 等人(2000)提出的股利替代模型，亦即公司的股利政策受到過去的股利政策及未來的現金增資計劃之影響。當公司計畫未來發行新股籌措資金時，公司治理較薄弱的企業比公司治理較良好的企業有較高的股利發放率。本研究採用控制權的董事會席位(BSCR)對表決權(VR)的比率(BSCR/VR)來衡量具控制權股東與外部股東之間潛在的代理問題。發現以下三個結論。首先，公司治理良好的企業比公司治理薄弱的企業具有較高的股利發放率。此外，非家族式企業的股利發放率會高於家族式企業。最後，在未來有現金增資計劃的情形下，公司治理薄弱的企業，其股利發放將高於公司治理良好的企業。

關鍵詞：代理問題、公司治理、股利政策、股權結構

*通訊作者：林明薰
聯絡地址：106 台北市大安區敦化南路一段 205 號 8 樓 805 室
電話：(02)2712-0608
E-mail：michelle.mhsun@gmail.com

Expropriation of Minority Shareholders and Dividend Policy: New Evidence from Taiwan

Chin-Horng Chan

Department of Industrial and Business Management
Chang Gung University

Ming-Hsun Lin

Aswish Corporation

Abstract

This paper finds that the corporate governance and ownership structure play complementary roles to each other as companies are making dividend policies. Using a dynamic panel data regression model, we investigate whether a firm's dividend payout is affected by past dividend payout as well as future equity financing that is suggested by the dividend substitute model (La Porta et al., 2000). When firms plan on issuing additional equities in the future, weak corporate governance firms have higher dividend payouts than do strong corporate governance firms. This paper introduces the board seats of controlling rights (BSCR) to the voting rights (VR) ratio as the proxy to measure the potential for agency conflict between controlling and outside shareholders. We find that ownership structure can better describe the relationship between dividend payout and the potential for agency conflict than corporate governance ranking. The dividend payouts of Non-Family firms are affected by the potential for agency conflict, but not affected by last year's dividend payouts. However, the dividend payouts of Family firms are affected by last year's dividend payouts, but not affected by the potential for agency conflict.

Keywords : *Agency problem, Corporate governance, Dividend policy, Ownership structure*

I. Introduction

Studies have documented that corporate governance is a critical factor influencing corporate payout policies and typically emphasize the role of ownership structure regarding this concern (Claessens et al., 2000; Faccio and Lang, 2002; Jiraporn and Ning, 2006; La Porta et al., 1997, 1998, 2000). The separation of ownership and control in modern diffuse ownership corporation is intimately associated with the general problem of agency (Berle and Means, 1932; Farinha and Lopez-de-Foronda, 2009; Jiraporn and Chintrakarn, 2009; Jensen and Meckling, 1976; Jiraporn and Ning, 2006). La Porta et al. (1999) claim that the controlling shareholders typically have considerable power over firms' cash flow rights (CFR), primarily because of the use of pyramids and participation in management. Moreover, a diffused ownership corporation has substantial agency conflicts between insiders (controlling shareholders and managers) and outside investors (shareholders and creditors), particularly minority shareholders (La Porta et al., 2000). For country-level shareholder protection, La Porta et al. (1997, 1998, 2000) document that civil law countries have weaker legal protection for minority shareholders than common law countries; in other words, in civil law countries, insiders have a higher possibility of expropriating outside shareholders and lower legal protection of minority shareholders. Moreover, Mitton (2004) uses firm-level data to examine La Porta et al.'s (2000) models and obtains a result consistent with the suggestion of La Porta et al. (2000).

In addition, the law regime, agency conflict, and corporate governance concerns are strongly associated with the ownership structure. Studies have suggested the concept of a widely held company (La Porta et al., 1999; Claessens et al., 2000); they define it as a corporation in which none of the owners have considerable control rights; the other ownership patterns are with controlling owners. Furthermore, they define the concept of ultimate control, which implies that firms can have more than one significant owner. According to La Porta et al. (1998, 2000), in the United States, corporate ownership is widely diffused and provides strong protection to minority investors; however, Belkhir et al. (2014) investigate 398 publicly traded French firms during 2002–2007 and identify that the separation of control and cash-flow rights is achieved differently in France than that in other countries. Holderness (2016a) using

firm-level observations and broad ownership data find “no evidence that ownership concentration varies systematically with the legal protections for investors”.

Shleifer and Vishny (1997) argue that the essence of the agency problem is the separation of ownership and control. Claessens et al. (2000) indicate that some difficulties exist in measuring voting rights of the controlling shareholders (VR) and CFR because of the presence of cross-holdings. Certain studies have applied the degree of deviation of control from CFR to measure the separation of ownership and control: namely, CFR/VR or VR/CFR (Claessens et al., 2000; Claessens et al., 2002; Ko et al., 2010; La Porta et al., 1999; La Porta et al., 2002; Yeh et al., 2003; Lin et al., 2012).

In this paper, we use two listed companies, both are classified to strong corporate governance group in 2014 ranking, on the TWSE to depict the two ownership structures in Taiwan. First, we introduce Taiwan Semiconductor Manufacturing Corporation (TSMC)—the largest semiconductor original design manufacturer in the world and the firm with the highest market value on the TWSE—as an example of a nonfamily-controlled (or widely held) company. In 2016, Morris Chang, the founding Chairman and CEO of TSMC, owned 0.48% of the outstanding shares; the largest shareholder was a fund owned by the Taiwan Government with 6.38% of outstanding shares. Nevertheless, the Taiwan Government and other institutional investors have supported Morris Chang as the chairman of the board of directors since the company’s foundation. Morris Chang owned approximately 0.48% of the CFR and 0.92% of the voting rights (VR) of TSMC in 2016; the low percentage of Morris Chang’s CFR and VR suggest that he is the ultimate controller who uses the support from government and institutional investors; however, TSMC adopts the widely held type of ownership structure.

By contrast, Formosa Chemical and Fibre Corporation (FCFC) of the Formosa Plastics Group (FPG, one of the largest business groups in Taiwan) is an explanation of family-controlled companies with ultimate owners. Wen-Yen Wang, the chairman and CEO of FPG, is the son of the founder whose family controls FPG. Because the Wang family’s CFR and VR of FCFC is 17.63% and 42.63% in 2016 respectively, the controlling shareholders (i.e., the Wang family)

are the ultimate owners.

However, the ratio of VR/CFR of TSMC and FCFC is 1.92 and 2.42 in 2016 respectively, and the results apparently reveal no significant differences. In addition, La Porta et al. (1999) state that the CFR/VR ratio does not entirely reflect the relationship between controlling and minority shareholders; therefore, in this paper, we use the board seats of controlling rights (BSCR) to VR ratio as the second proxy to measure the potential for agency conflict between controlling and outside shareholders. BSCR is the percentage of seats on the board of directors that is controlled by the controlling shareholders. A higher BSCR/VR ratio implies that the deviation between seats on the board of directors and VR is greater. Firms with higher BSCR/VR ratios have higher potential for agency conflicts. Although the BSCR of TSMC and FCFC was 37.50% and 66.67% in 2016 respectively, the BSCR/VR ratio of TSMC and FCFC was 40.76 and 1.56, respectively. The result demonstrates a significant discrepancy of the BSCR/VR ratio between TSMC and FCFC. Belkhir et al. (2014) argue that the literature on the agency view of the firm is dominated by the results of La Porta et al. (1999): namely, most companies are controlled by few shareholders. In addition, La Porta et al. (2000) provide remarkable insights on the relationship between the agency problem and dividends; they formulate and test two agency hypotheses of dividends from the prospect of country-level corporate governance, which are the outcome and substitute models. The outcome model predicts that stronger minority shareholder rights should be associated with higher dividend payouts, which contradicts the substitute model's prediction. Furthermore, the outcome model predicts that in countries with adequate shareholder protection, companies with more appropriate investment opportunities should have lower dividend payout ratios, whereas the substitute model predicts that in countries with poor shareholder protection, firms with more appropriate investment opportunities might pay out more dividends to maintain reputations. Moreover, Mitton (2004) claims that the negative relationship between dividend payouts and growth opportunities is stronger among firms with more favorable governance, suggesting that firm-level corporate governance and country-level investor protection are counterparts rather than substitutes. Lin and Shen (2012) construct their research based on the La Porta et al. (2000) model and reveal that in Taiwan,

the dividend payout ratio is positively related to investment opportunities in WCG¹ firms; however, it is less related to investment opportunities in firms with reasonable governance. Chae et al. (2009) assert that Korean listed-firms with higher external financing constraints tend to decrease payout ratio by improving their corporate governance. In the context of China, the largest and thriving stock market in emerging countries, Jiang and King (2015) identify that in general, firms' dividend policies are largely driven by regulations, but not due to pressure from shareholders. Benavides, Berggrun, and Perfan (2016) examine dividend payout policy of six Latin countries from 1995 to 2013. They find that the targeted dividend payout ratio is positively related to governance indicators at the country-level, and the firms smooth dividends more in countries with higher governance. Booth and Zhou (2017) find that the structure of financial markets and informed inside financing versus arm's-length financing are the critical reasons that firms in emerging markets do not smooth their dividends. However, Driver et al. (2020) examine dividend policy and investor pressure of FTSE firms, they find that dividend payout is influenced by short-term investor pressure and corporate governance pressure (proxied by the proportion of independent directors). The systematic pressures exist in the UK context for over-payment of dividends, leading to potential underinvestment.

The firms usually have complicated and multilevel ownership structures. In Taiwan, the ultimate owners can organize firms' ownership structure in a pyramid and reduce their ownership to be less than their control rights by solidifying their control through cross-shareholdings (i.e., having the firm own shares in its shareholdings). Hence, this paper applies ownership structure and corporate governance to examine the firms' dividend policies. The aforementioned studies (La Porta et al., 1999; Lin and Shen, 2012; Mitton, 2004; Lin et al., 2012) use cross-section data to examine the relationship between agency conflicts and dividend payouts. Nevertheless, the cross-section analysis cannot examine the hypothesis of the dividend substitute model: namely, insiders interested in issuing equity in the future pay dividends to establish a reputation for moderation in expropriating shareholders. We believe that some

¹ In this study, the sample firms are divided into two separate groups, SCG and WCG; SCG represents strong corporate governance company group, as well as WCG is weak corporate governance company group. The definitions of SCG and WCG are revealed specifically on P.14.

econometric methods are more appropriate than this type of static econometric method (e.g., cross-section analysis) to examine the problem of how dividend policy reacts to agency problem. Thus, this paper uses a dynamic panel data regression model to examine the relationship between dividend payouts and corporate governance. Our results reveal more information than those previously obtained and provide new empirical evidence to reconsider the La Porta et al.'s (2000) and Mitton's (2004) hypotheses. We find strong corporate governance firms have higher dividend payouts than weak corporate governance firms in general. Moreover, the non-family control firms have higher dividend payout ratios than the family control firms. When firms plan on issuing additional equities in the future, weak corporate governance firms have higher dividend payouts than do strong corporate governance firms. Hence, for investors who prefer high payout ratio should invest strong corporate governance and non-family control firms. However, when weak corporate governance firms adopt high payout ratio, it may imply that the firms need equities raising in the near future.

This paper contributes some different viewpoints with previous studies. The first, the dynamic panel data model can investigate whether a firm's dividend payout is affected by past dividend payout as well as future equity financing that is suggested by the dividend substitute model (La Porta et al., 2000). Our model more clearly describes the process of dividend decision making by firms than cross-section model (Claessen et al., 2000; La Porta et al., 2000; Mitton, 2004; Lin and Shen, 2012; Lin et al., 2012). The second, in order to accurately describe the relationship between dividend payout and the potential for agency conflict, we introduce a new proxy BSCRVR to our model. BSCRVR explain the potential for agency conflict better than VRCFR. The third, we find that ownership structure can better describe the relationship between dividend payout and the potential for agency conflict than corporate governance ranking.

The remainder of this paper is organized as follows: section 2 presents hypotheses and methodology; section 3 describes the data; section 4 presents the results; and section 5 concludes.

II. Hypotheses and Methodology

Hypotheses

La Porta et al. (2000) argue that firms operating in countries with adequate legal protection of minority shareholders exhibit higher dividends; furthermore, fast-growth firms pay lower dividends than slow-growth firms, *ceteris paribus*. In terms of legal regime attribution, Taiwan is classified as a civil-law country rather than a common-law country by La Porta et al. (2000), implying low legal protection of minority shareholders; hence, firms' dividend policies should fit the dividend substitute model. However, poorly protected shareholders apparently accept whatever dividends they can obtain, regardless of investment opportunities. According to La Porta et al. (2000), shareholders who feel protected would accept low dividend payouts, and high reinvestment rates, from a company with good opportunities because they know that when this company's investments pay off, they could extract high dividends. In contrast, a mature company with poor investment opportunities would not be allowed to invest unprofitably. Consequently, with good shareholder protection, high growth companies should have significantly lower dividend payouts than low growth companies. In contrast, if shareholder protection is poor, we would not necessarily expect such a relationship between payouts and growth since shareholders may try to get what they can—which may not be much immediately.

Mitton (2004) applies firm-level governance rating developed by Credit Lyonnais Securities Asia (CLSA) for 365 firms from 19 emerging markets to study the relation between shareholder protection and dividend payouts. He found that a firm's dividend payout is affected by firm-level corporate governance in a single country. Nevertheless, one of the most crucial concerns in the agency model highlighted in previous studies is how to develop uniform criteria for the determinants of agency problems across firms and countries. La Porta et al. (2000) do not create any governance index; rather, they use two dummies—law origin and anti-director rights—as the proxy for protection of minority shareholders to distinguish country-level corporation governance. Gompers et al. (2003) design a governance index based on the incidence of 24 governance rules from a firm-level perspective. However, Jiraporn and Chintrakarn (2009) argue that Gompers et al.'s (2003) Governance Index

assigns equal weights to all governance provisions, making them a major weakness. Black et al. (2006) highlight the selection bias in Mitton's (2004) studies because of the adoption of governance rating by CLSA.

Taiwanese corporate governance ranking was not developed until 2014; hence, Lin and Shen (2012) apply an endogenous switching model (ESM) to establish a threshold for separating listed manufacturing firms into SCG and WCG groups. The TWSE performed the first ranking of corporate governance for listed firms in 2014 and announced the ranking list in 2015. The structure for the evaluation indicators is mainly based on the six principles of corporate governance released by The Organization for Economic Co-operation and Development (OECD) in 2004 for the design of a total of 92 indicators.

Lin and He (2019) use regression model to analyze the impact of 2015 tax reform on payout policy from 2014 to 2017. They found that dividend payout ratios decreased after 2015 tax reform. Furthermore, family firms cut more cash dividends than non-family firms. The results imply that tax burden of shareholders is an important factor when corporate decides its payout policy. Chu et al. (2018) examine how shareholding structure and outside director tenure influence firm performance for listed firms in Taiwan. They suggested an inverted U-shaped relationship between large shareholding and firm performance.

This paper applies the governance ranking developed by the Corporate Governance Center² of TWSE to divide our sample into SCG and WCG firms. Because the 92 evaluation indicators are not directly related to ownership structure and dividend payouts; we identify ranking list as the exogenous problem of our model. Based on the dividend substitute model (La Porta et al., 2000; Mitton, 2004), the dividend payout ratios should be higher in WCG firms than those in SCG firms, *ceteris paribus*. However, the firms with more favorable growth prospects choose higher dividend payout ratios and issue more equities in the future than the firms with poor growth prospects.

Hence, we develop the following hypotheses H_1 to examine whether the

² The TWSE set up the Corporate Governance Center in 2013 to reveal additional and improved corporate governance information of the listed firms to investors. The homepage of Corporate Governance Center of TWSE is <https://cgc.twse.com.tw/evaluationCorp/listCh>.

dividend payouts of TWSE-listed firms fit the dividend substitute model.

H₁(the dividend substitute model)

H₁-I: The dividend payout ratio of WCG group is higher than that of SCG groups.

H₁-II: The firms with high growth pay higher dividend payout ratios than the firms with low growth.

H₁-III: The firms that pay higher dividends issue more equities in the future.

La Porta et al. (1998) suggest that with poor investor protection, ownership concentration becomes a substitute for legal protection. In Taiwan, corporate dividend payouts are decided in regular shareholders' meetings and the controlling shareholders usually collect the proxy votes of retail shareholders in advance. Consequently, considerable potential is indicated for agency conflicts between insiders who control the board of directors and the outside shareholders. Lin et al. (2012) find that it is negative correlation of the deviation extent of shareholder cash flow rights and controlling rights with cash dividend payouts in TWSE-listed firms. Furthermore, they also indicate that active institutional investors and independent directors of board might increase the dividend payout. Chan and Lin (2018) state that subsequent to the 1998 tax reform, the preference for dividends versus repurchases depends on an investor's status (domestic versus foreign) and personal tax rate, and corporate investors are largely indifferent between dividends and stock repurchases. Driver et al. (2020) also find that the dividend payouts of FTSE firms are influenced by short-term investor pressure and the proportion of independent directors. Therefore, we expect that the dividend payout ratios of nonfamily-controlled firms are higher than that of family-controlled firms. Family control firms may choose to expropriate minority shareholder wealth by preserving firm cash flows that can be misused, thus paying lower dividends, that is, family control shareholders prefer lower dividends to preserve cash flows that they can potentially expropriate, in contrast, nonfamily control firms haven't to expropriate minority shareholder wealth, therefore they have higher dividend payout ratios than the family control firms. In addition, the firms with higher

BSCRVRs make higher dividend payout ratios. Dividends may be paid to assure that managers can work in the best interest of outsiders and thus diminish the agency problem. Additionally, dividends may be the result of efficient contracts that the minority shareholders forced the firm to use the available cash to pursue, thereby limiting managers' suboptimal behaviors. Therefore, firms pay dividends to limit managers' private benefits.

Hence, we develop the following hypotheses H_2 to examine the relationship between ownership structure and dividend payout ratios.

H_2 (ownership structure and dividend payouts)

H_2 -I: The dividend payout ratios of nonfamily-controlled firms are higher than that of family-controlled firms.

H_2 -II: The firms with higher potential agency conflict (BSCRVRs) make higher dividend payout ratios.

Methodology

This paper applies two agency models, outcome and substitute effects, suggested by La Porta et al. (2000) to examine firms' dividend payouts with the agency model.

In this study, we employ dynamic panel data techniques for models with lagged endogenous variables and cross-section fixed effects instead of static panel data regression models. Because the data in our model aren't static, it hasn't to take time fixed effects into consideration, that is to say, all we need to do is just to deal with cross-section fixed effects in a dynamic panel data model. For handling cross-section fixed effects, we estimate with Generalized Method of Moments (GMM) through a transformation method for eliminating this effect, use orthogonal deviations (Arellano and Bover, 1995) to perform a method of removing the individual effects as well. In addition, the employment for weighting matrices in GMM, the White Period Weights to compute Arellano-Bond (Arellano and Bond, 1991) 2-step estimation is enabled in our model.

Corporate managers are usually reluctant to make dramatic dividend

changes and smooth dividend payouts (Lintner, 1956; Healy and Palepu, 1988; Brav et al., 2005). Benavides, Berggrun, and Perfan (2016) find that the firms smooth dividends more in countries with higher governance. When a firm develops a dividend policy, it considers not only the dividend payouts of the current period but also the level of past and future periods. A dynamic panel data model (Arellano & Bover, 1995) that undergoes a partial adjustment process can properly describe the characteristics of dividends. Hence, this paper uses a dynamic panel data model to estimate Lintner's (1956) dividend model. We research time-series and cross-sectional relationships by using the following regression model.

$$\begin{aligned} \text{CDP}_{i,t} = & \alpha_1 \text{CDP}_{i,t-1} + \alpha_2 \text{GS}_{i,t} + \alpha_3 \text{SOSALES}_{i,t} + \alpha_4 \text{SOSALES}_{i,t+1} + \alpha_5 \text{SOSALES}_{i,t+2} + \alpha_6 \\ & \text{VRCFR}_{i,t} + \alpha_7 \text{BSCRVR}_{i,t} + \alpha_8 \text{DIH}_{i,t} + \alpha_9 \text{BVMV}_{i,t} + \alpha_{10} \text{TDRCDP}_{i,t} + \alpha_{11} \\ & \text{LNMV}_{i,t} + \alpha_{12} \text{SRNI}_{i,t} + \varepsilon_{i,t} \quad (1) \end{aligned}$$

where the subscript (i, t) represents firm i in period t. ε represents error term.

The dependent variable used in our model is cash dividend payout ratio (CDP), and we include five factors, CDP (-1), GS, SOSALES, VRCFR, and BSCRVR, as independent variables. First, we use the dividend payout ratios of the previous period, CDP (-1), as an independent variable to involve the effect of smoothing dividends; in addition, we apply a dynamic panel data model with a partial adjustment process to appropriately describe the time-series characteristics of CDP. Second, La Porta et al. (2000) calculate dividend payout ratios and sales growth rate with industry-adjusted measurement and, therefore, we use the growth rate of sales (GS) as a proxy to measure firm's growth opportunity. The dividend substitute model relies crucially on the need for firms to enter the external capital markets for funds. The Taiwan government requires listed firms to create a three-year dividend policy plan; we use the three-year seasoned offerings (Seasoned offerings/Sales, SOSALES) as the proxy for issuing equities in the future to raise funds as another independent variable.

In the context of governance variables, according to La Porta et al. (1999), potential agency problems between ultimate owners and minority shareholders can be evaluated by considering the difference of CFR and VR of the controlling shareholders. La Porta et al. (2002) also suggest that expropriation is costly; therefore, higher cash-flow ownership should lead to lower

expropriation, *ceteris paribus*. Claessens et al. (2000), Fan and Wong (2002), Ko et al. (2010), La Porta et al. (2000, 2002), Lee and Yeh (2004), Yeh et al. (2003), and Lin et al., (2012) have used the difference of cash flow ownership rights and VR of the controlling shareholders (CFR/VR or VR/CFR, we adopt VR/CFR, VRCFR) to evaluate the potential for agency conflicts. Moreover, we use the percentage of seats on the board of directors that the controlling shareholders control to controlling shareholders' voting rights (BSCR/VR, BSCRVR) as the second proxy to evaluate the potential for agency conflicts. BSCRVR could be a better indicator to differentiate dividend policy between family-controlled and nonfamily-controlled firms.

We regress to CDP on VRCFR and BSCRVR under family-controlled and nonfamily-controlled firms. The regression result shows that BSCRVR is significant, but VRCFR is nonsignificant. The regression results are shown in Appendix A. We find that BSCRVR has better explanation for firm's dividend payout than VRCFR. Hence, this paper uses the BSCRVR as the second proxy of agency problem because we aim to develop an improved method of addressing the TSMC (nonfamily-controlled firms) versus FCFC (family-controlled firms) dilemma and it accords with the result that the separation between CFR and VR (VR/CFR) cannot fully reflect the relationship between controlling shareholders and minority shareholders (La Porta et al., 1999).

Finally, we adopt another five factors as control variables in our model. The holdings of retail shareholders might pressure firms to disgorge dividend payouts (Blouin et al., 2007; Graham and Kumar, 2006); hence, we use domestic individual investors' holdings (DIIH) as the first control variable to measure the dividend payout pressure from retail investors. In addition, different industries might be at different stages of growth and maturity that determine their dividend policies. Previous studies (Fama and French, 1997; Grullon et al., 2002) have reported that the dividend payouts of firms with high BV/MV (value stocks) is higher than those of firms with low BV/MV (growth stocks); thereafter, we use the book value to market value ratio (BV/MV, BVMV) as a proxy to measure firm's stages of maturity. In economies where both dividends income and capital gains are taxed at the level of investors, the preference for dividends or capital gains depends on the relative tax rules governing possible tax arbitrage (Miller and Modigliani, 1961; Miller and

Scholes, 1982). Although the tax rate of capital gains in Taiwan was zero percent during 2000–2012, most listed firms continually paid cash dividends; this situation represents a type of dividend puzzle (Black, 1976). Under the imputation tax system, shareholders are taxed on dividends, but they may deduct their share of the corporate tax that the firm has paid from the tax bill. Therefore, firms should consider the tax deductible rate on cash dividend payouts (TDR of CDP, TDRCDP) as a determining factor of dividend payouts. In the United States, most cash dividends are distributed by a few large firms (DeAngelo et al., 2006; Denis and Osobov, 2008; Fama and French, 2001, 2004); therefore, we consider firm size (logarithm of market value, LNMV) as the fourth control variable that affects firms' dividend policy. Finally, during 1970–2000, the listed firms in the United States and EU countries decreased cash dividend payouts but increased the amount of stock repurchases (Grullon and Michaely, 2002; von Eije and Megginson, 2008); therefore, we adopt the stock repurchases to net income (Stock Repurchases/Net Income, SRNI) ratio as the final control variable. Referring to previous studies, we integrate five control variables—DIIH, BVMV, TDRCDP, LNMV, and SRNI—into our dynamic panel data model; Table 1 summarizes the construction of the variables.

III. Data Description

Since the 1980s, stock repurchases have been considered as one of the most essential financial instruments to substitute cash dividends in the United States (Grullon and Michaely, 2002; Skinner, 2008). To prevent manipulation of stock prices by listed firms, Taiwan did not permit listed companies to repurchase their stocks before 2000. A full imputation system was introduced in 1998, whereby dividends paid to domestic individual investors are essentially taxed at the investors' personal tax rate, and retained earnings are taxed at the corporate tax rate. However, in 2015, a partial imputation system was introduced; only 50% of corporate tax paid by firms is deductible for domestic personal investors. The firms usually change their dividend payouts to get tax benefit for shareholders before and after the tax reform is executed (Chan and Lin, 2018). As far as possible, our sample should be collected under the same condition, we have our investigation started from 2000 as the

beginning of implement of stock repurchases in Taiwan. Thus, this study examines the changes of corporate dividend policy in relation to the agency problem from 2000 to 2012. The firms' dividends of the current year are paid in the subsequent year; therefore, the sample firms' dividends of 2012 were paid in 2013. Because the financial statements of banking and insurance firms are markedly different from those of manufacturing firms, we exclude banking and insurance firms from our sample. To evaluate the changes in the corporate dividend policy, we adopt a balanced sample in our model to examine the same firms during our study period even though the survivorship bias must be considered. Our sample comprises 471 domestic nonfinancial firms that were listed on the TWSE in December 2013.

Table 1 Definitions of variables

The summary of the construction of all variables.

CDP	Cash dividend payout, Dividend-to-Earnings
GS(%)	Growth of sales, (Sales revenue) _t -to-(Sales revenue) _{t-1}
SOSALES	Seasoned offering to net sales
VR(%)	Voting rights of the controlling shareholders, either directly or through a chain of holdings
CFR(%)	The cash flow ownership rights of the controlling shareholders
VRCFR	VR-to-CFR
BSCR(%)	The percentage for controlling members on the board of directors
BSCRVR	BSCR-to-VR
DIH(%)	Domestic individual investors' holdings to outstanding shares
BVMV	Book value to market value
TDRCDP(%)	Tax deductible rate of cash dividends
LNMV	Logarithm of firm's market value
SRNI	Stock repurchase to net income

In this study, the outliers are detected by a rule that the value of data greater than the mean value of the variable plus three times the value of standard deviation, or less than the mean value minus three times the value of standard deviation. The numbers of outliers for the ten variables in Equation (1) are small. Because every outlier has its unique meaning containing valuable information to examine and investigate, therefore the data used in our models contain the original outlier data points in this research. We also provide some results of statistical tests for reference shown in the Appendix B.

SCG Firms versus WCG Firms

The TWSE performed the first ranking of corporate governance for the listed firms in 2014 and announced the ranking list in April 2015. The TWSE

disclosed that the top 20% firms are those with SCG and the others are with WCG. This paper divides 471 sample firms into two subgroups according to the TWSE ranking. Of the top 20%, 82 firms belong to the SCG group and the other 389 firms belong to the WCG group.

Columns (2) and (3) of Table 2 present the descriptive statistics of the SCG and WCG firms. The dividend payout ratios of the SCG firms are higher than those of the WCG firms. The median CDP is 52.600% for the SCG firms and only 25.400% for the WCG firms; this observation is consistent with the dividend outcome model that stronger minority shareholder rights are associated with higher dividend payouts (La Porta et al., 2000; Mitton, 2004). The dividend payout ratio of WCG group is higher than that of SCG groups, it is not consistent with Hypothesis H₁-I.

The median VR is 27.530% for the SCG firms and 29.020% for the WCG firms. The median CFR is 15.830% for the SCG firms and 23.670% for the WCG firms. Previous studies (La Porta et al., 1998; La Porta, et al., 1999) have demonstrated that corporate ownership is more concentrated in countries with inferior shareholder protection. However, Holderness (2016a, 2016b) finds no evidence that ownership concentration in firm-level varies systematically with the legal protections for investors. We observe that corporate ownership is more concentrated in WCG firms. The median BSCR is 71.430% for the SCG firms and 66.670% for the WCG firms. The median BSCRVR is 2.441 for the SCG firms and 2.368 for the WCG firms. The median VRCFR is 1.278 for the SCG firms and 1.042 for the WCG firms. For these two agency conflict proxies, the SCG firms have higher potential for agency conflicts than the WCG firms.

Table3 presents the summary statistics for all-sample, governance-sample (consists of subgroups SCG and WCG), and controlling-sample (consists of subgroups Non-Family, Family, and Switch). The median GS is 5.800% for the SCG firms and 3.200% for the WCG firms, implying that SCG firms have better growth opportunities than WCG firms. The median CDP is 52.600% for the SCG firms and only 25.400% for the WCG firms. The firms with high growth pay higher dividend payout ratios than the firms with low growth, it is consistent with hypothesis H₁-II.

However, the WCG firms (10.600%) have higher seasoned offering

(SOSALES) than that of the SCG firms (1.000%). Thus, the need for WCG firms to enter external capital markets for funds is higher than that for SCG firms.

The additional results in Columns (2) and (3) of Table 2 address the relationship between the level of corporate governance and other control variables. Compared with the WCG firms, the SCG firms have large (LNMV) growth stocks (lower BVMV), lower DIIH, and higher TDRCDP.

Nonfamily-controlled Firms versus Family-controlled Firms

Shleifer and Vishny (1997) argue that the large owners in companies prefer to generate private benefits. Claessens et al. (2000) highlight the extensive family control in more than half of East Asian corporations and also report that large family-controlled firms display a significant difference between ownership and control in Korea, Singapore, and Taiwan. In addition to corporate governance, ultimate corporate ownership is another factor influencing the dividend policy. In addition to the previously described data, we divide samples into the following three subgroups according to their ownership structure based on the TEJ² database. First, family-controlled firms (Family); second, nonfamily-controlled firms (Non-Family); and third, switch firms (Switch), in which the company's ownership structure is changed occasionally. If a firm's BSCR exceeds 33.300% and the board of directors includes more than 3 control family members, we assign the firm to the Family group. By contrast, firms that do not meet the criteria are placed into the Non-Family group. If a firm's ownership structure meets the criteria occasionally over the study period, we assign the firm to the Switch group.

The statistics of these three subgroups are presented in Columns (4), (5), and (6) of Table 2. The statistics in Columns (4) and (5) reveal that the Non-Family group has a higher dividend payout ratio than the Family group. The median CDP is 47.600% for the Non-Family group and only 28.400% for the Family group. The dividend payout ratios of nonfamily-controlled firms are higher than that of family-controlled firms, it is consistent with hypothesis H₂-I. The median GS is 5.300% for the Non-Family group and 3.300% for the

² *Taiwan Economic Journal* is a private professional capital data vending company in Taiwan.

Family group. The Non-Family group has higher growth opportunities than the Family group. Thus, firms with higher growth opportunities make higher dividend payouts, it is consistent with hypothesis H₁-II.

Table 2 Mean and median of variables

Column (1) demonstrates all of the sample firms. Column (2) and (3), according to the corporate governance ranking on TWSE, the firms belong to the top 20% ranking as stronger corporate governance (SCG) companies and the others belong to weaker corporate governance (WCG) companies. Additionally, column (4) to (6), this paper divides sample firms into three groups based on the ownership structure: non-family control(Non-Family), family control(Family), and switch between Non-Family and Family(Switch). Column (7) and (8) are median tests of corporate governance(SCG and WCG) and ownership structure(Non-Family and Family).

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Governance(a ₁ ,a ₂)		Control(b ₁ ,b ₂ ,b ₃)		Median Test: Adj. Med. Chi-square		H ₀ : Med. of Non-Family= Med. of Family	
Number of Firms	471	82	389	125	317	29		
	All	(a ₁)SCG	(a ₂)WCG	(b ₁)Non-Family	(b ₂)Family	(b ₃)Switch	H ₀ : Med. of SCG= Med. of WCG	H ₀ : Med. of Non-Family= Med. of Family
CDP	0.331	0.526	0.254	0.476	0.284	0.000	(172.337)***	(86.769)***
Mean	0.411	0.591	0.373	0.489	0.393	0.271		
Median	3.760	5.845	3.200	5.330	3.330	0.000	(15.067)***	(7.582)***
GSI(%)	26.393	11.149	29.607	8.441	33.322	28.029		
Mean	0.000	0.000	0.000	0.000	0.000	0.000	(4.887)**	(1.228)
Median	0.089	0.010	0.106	0.014	0.104	0.251		
SOSALES	70.000	71.430	66.670	62.500	71.430	62.500	(7.865)***	(109.609)***
Mean	68.894	71.844	68.273	63.850	71.181	65.640		
Median	28.890	27.530	29.020	25.410	30.330	22.010	(1.323)	(24.305)***
VR(%)	30.633	29.442	30.884	26.433	32.839	24.627		
Mean	22.490	15.830	23.670	15.800	25.040	17.930	(96.068)***	(148.490)***
Median	25.323	20.482	26.344	19.909	27.890	20.596	(2.747)*	(18.795)***
CFR(%)	2.383	2.441	2.368	2.558	2.304	2.727		
Mean	3.813	4.870	3.590	4.683	2.983	9.136		
Median	1.062	1.278	1.042	1.158	1.044	1.029	(190.165)***	(120.020)***
BSCRVR	1.870	2.797	1.675	2.959	1.376	2.571		
Mean	63.290	45.705	66.290	59.400	64.660	68.090	(255.709)***	(30.975)***
Median	60.898	48.114	63.592	56.818	62.179	64.474	(102.906)***	(50.866)***
DIHH(%)	0.917	0.735	0.962	0.806	0.952	0.917		
BVMV	1.098	0.899	1.140	0.974	1.129	1.294		
Mean	6.400	9.330	5.150	10.320	5.310	0.000	(49.697)***	(68.509)***
Median	10.872	11.848	10.666	12.837	10.362	7.978		
TDRCDP(%)	15.216	16.954	14.958	15.572	15.146	14.376	(758.479)***	(52.773)***
LNMV	15.360	17.053	15.003	15.731	15.301	14.404		
Mean	0.000	0.000	0.000	0.000	0.000	0.000	(5.854)**	(0.076)
Median	0.139	0.199	0.126	0.107	0.155	0.106		

The Adj. Med. Chi-square statistics are given in parentheses, ***denotes significance at the 1% level, ** at the 5% and * at the 10% level.

Table 3 Summary statistics

Variable	(a ₁) Governance - SCG						(a ₂) Governance - WCG					
	Mean	Median	Std Dev	Min	Max	N	Mean	Median	Std Dev	Min	Max	N
CDP	0.411	0.331	0.854	0.000	40.000	6,123	0.373	0.254	0.635	0.000	24.300	5,057
GS(%)	26.393	3.760	983.315	-134.400	75718.490	6,123	29.607	3.200	1081.829	-134.400	75718.490	5,057
SOSales	0.089	0.000	4.237	0.000	328.218	6,123	0.106	0.000	4.662	0.000	328.218	5,057
BSCR(%)	68.894	70.000	20.797	0.000	100.000	6,123	68.273	66.670	20.914	0.000	100.000	5,057
VR(%)	30.633	28.890	17.069	0.190	97.130	6,123	30.884	29.020	16.997	0.190	95.540	5,057
CFR(%)	25.323	22.490	16.953	0.120	97.130	6,123	26.344	23.670	16.918	0.120	90.800	5,057
BSCRVR	3.813	2.383	12.585	0.000	526.316	6,123	3.590	2.368	13.151	0.000	526.316	5,057
VRCFR	1.870	1.062	3.691	1.000	60.840	6,123	1.675	1.042	3.055	1.000	60.786	5,057
DIH(%)	60.898	63.290	22.400	1.340	100.000	6,123	63.592	66.290	21.371	1.340	100.000	5,057
BVMV	1.098	0.917	0.884	0.035	25.000	6,123	1.140	0.962	0.914	0.035	25.000	5,057
TDRCDP(%)	10.872	6.400	12.199	0.000	48.150	6,123	10.666	5.150	12.401	0.000	48.150	5,057
InMV	15.360	15.216	1.529	10.612	21.645	6,123	15.003	14.958	1.241	10.612	19.358	5,057
SRNI	0.139	0.000	2.251	-20.493	121.944	6,123	0.126	0.000	2.045	-20.493	121.944	5,057

Variable	(b ₁) Control - Family						(b ₂) Control - Switch					
	Mean	Median	Std Dev	Min	Max	N	Mean	Median	Std Dev	Min	Max	N
CDP	0.489	0.476	0.765	0.000	24.300	1,625	0.271	0.000	0.551	0.000	6.861	377
GS(%)	8.441	5.330	29.965	-73.020	402.530	1,625	28.029	0.000	200.722	-100.000	2165.710	377
SOSales	0.014	0.000	0.094	0.000	2.224	1,625	0.251	0.000	1.988	0.000	33.764	377
BSCR(%)	63.850	62.500	20.389	8.330	100.000	1,625	65.640	62.500	22.741	0.000	100.000	377
VR(%)	26.433	25.410	16.206	0.370	97.130	1,625	24.627	22.010	14.701	0.190	76.200	377
CFR(%)	19.909	15.800	16.235	0.120	97.130	1,625	20.596	17.950	15.281	0.130	74.810	377
BSCRVR	4.683	2.558	8.146	0.579	116.279	1,625	9.136	2.727	46.818	0.000	526.316	377
VRCFR	2.959	1.158	6.147	1.000	60.840	1,625	2.571	1.029	5.605	1.000	60.786	377
DIH(%)	56.818	59.400	23.691	1.340	100.000	1,625	64.474	68.090	22.111	10.160	99.640	377
BVMV	0.974	0.806	0.713	0.035	8.333	1,625	1.294	0.917	1.869	0.042	25.000	377
TDRCDP(%)	12.837	10.320	11.994	0.000	48.150	1,625	7.978	0.000	12.481	0.000	48.150	377
InMV	15.731	15.572	1.629	11.513	21.645	1,625	14.404	14.376	1.665	10.612	19.718	377
SRNI	0.107	0.000	1.104	-4.337	31.724	1,625	0.106	0.000	0.954	-1.726	16.458	377

(Continued)

Correlation Matrix

The correlation matrix of all sample firms is reported in Column (1) of Table 4. The correlation coefficients between CDP and GS and CDP and SOSALES are extremely low (-0.003 and -0.006 , respectively). The results imply that the dividend payouts are not related to sales growth and seasoned offering. The correlation coefficient of VRCFR is low and positive (0.016), suggesting that the firms with higher potential for agency conflicts might payout higher dividends.

Table 4 Correlation matrix

Correlation matrix in this research reports the relationship between dependent variable *CDP* and independent variables include *GS*, *SOSALES*, *BSCRVR*, *VRCFR*, *DIH*, *BVMV*, *TDRCDP*, *LNMV*, *SRNI* on all sample firms, corporate governance (Governance) as well as ownership structure (Control) sample firms. Likewise, the same information is provided between *BSCRVR* and *VRCFR*.

	(1)	(2)	(3)	(4)	(5)	(6)
Number of Firms	471	82	389	125	317	29
Variable	All	Governance(a ₁ ,a ₂)		Control(b ₁ ,b ₂ ,b ₃)		
		(a ₁)SCG	(a ₂)WCG	(b ₁)Non-Family	(b ₂)Family	(b ₃)Switch
	CDP	CDP	CDP	CDP	CDP	CDP
GS(%)	-0.003	-0.051	-0.003	-0.043	-0.002	-0.038
SOSALES	-0.006	-0.036	-0.007	-0.064	-0.004	-0.060
BSCRVR	-0.022	-0.031	-0.029	-0.041	-0.036	-0.065
VRCFR	0.016	-0.020	0.028	-0.021	0.026	0.174
DIH(%)	-0.082	-0.017	-0.087	-0.072	-0.067	-0.271
BVMV	-0.078	-0.002	-0.107	-0.062	-0.085	-0.067
TDRCDP(%)	0.314	0.140	0.435	0.332	0.295	0.477
LNMV	0.117	-0.009	0.141	0.065	0.111	0.319
SRNI	0.176	0.258	0.123	0.565	0.130	0.143
	BSCRVR	BSCRVR	BSCRVR	BSCRVR	BSCRVR	BSCRVR
VRCFR	-0.001	0.004	-0.008	-0.033	0.002	-0.022

For the SCG firms, the correlation matrix is presented in Column (2) of Table 4. The correlation coefficient between CDP and GS is negative (-0.051), indicating that the firms with higher sales growth make lower dividend payouts. The correlation coefficient between CDP and SOSALES is negative (-0.036), suggesting that the firms with higher dividend payouts issue fewer equities. Furthermore, the correlation coefficient between CDP and VRCFR is negative (-0.020), implying that the firms with higher potential for agency conflicts might payout lower dividends.

For the WCG firms, the correlation matrix is presented in Column (3) of Table 4. The correlation coefficients between CDP and GS and CDP and SOSALES are extremely low (-0.003 and -0.007 , respectively). The results imply that the dividend payouts of the WCG firms are not related to the sales growth and seasoned offering. The correlation coefficient between CDP and

VRCFR is low and positive (0.028), implying that the firms with higher potential for agency conflicts might payout higher dividends.

IV. Results

Regression Results of All Samples

Regression results of all sample firms are reported in Column (1) of Table 5. The coefficient on CDP (-1) is negative and significant at the 5% level, indicating that managers attempt to maintain smooth dividend payouts from year to year. Dividends are paid on a pro rata basis that benefit outside shareholders relative to the alternative of expropriation or retained earnings (La Porta et al., 2000). Moreover, BSCRVR and VRCFR, the variables of potential for agency conflicts, are negative and significant, implying that the firms with stronger agency conflicts make lower dividend payouts. The hypothesis H₂-II that the firms with higher agency conflict (BSCRVRs) make higher dividend payout ratios is not supported.

The coefficient of DIIH is positive and significant, suggesting that the firms with higher holdings of retail investors payout higher dividends. However, the reason that controlling shareholders increase dividend payouts might be the pressure coming from retail investors (Blouin et al., 2007; Graham and Kumar, 2006).

The coefficient of GS is negative and significant at the 5% level, implying that the firms with higher sales growth rate payout lower dividends. This result is consistent with the dividend outcome model. The coefficients on issuing amounts of seasoned offering in the current and following 2 years are positive and significant, suggesting that the firms pay dividends to establish a reputation for issuing equities in the future. The hypothesis H₁-III is supported.

The additional results in Column (1) of Table 5 present the regression results of other control variables. The coefficient of BVMV is positive and significant, implying the value stocks payout higher dividends than growth stocks. The coefficient of TDRCDP is positive and significant, suggesting that the firms with higher tax-deductible rate make higher dividend payouts. The coefficient of LNMV is positive and significant, indicating that large firms pay

higher dividends than small firms. The coefficient of SRNI is positive and significant, confirming that the firms repurchasing higher treasury stocks make higher dividend payouts. The stock repurchases are complementary to dividends rather than a substitute for them. Furthermore, we calculate the amounts of dividend payouts, seasoned offering, and stock repurchases during 2000–2012. Figure 1 reveals that except 2000, the seasoned offering and stock repurchases did not play the essential financing roles for TWSE-listed firms.

In summary, Column (1) of Table 5 demonstrates that a stronger potential of agency conflicts is associated with lower dividend payouts, thereby reflecting the possibility of insiders to expropriate minority shareholders. By contrast, the higher holdings of retail shareholders are associated with higher dividend payouts that reflect the increased ability of minority shareholders to limit expropriation by insiders. However, the firms with higher sales growth rate make lower dividend payouts. These results are not completely consistent with either the dividend outcome model or the dividend substitute model. Hence, we further divide our sample into SCG and WCG firms.

Regression Results between SCG and WCG Firms

For the SCG firms, the regression results are reported in Column (2) of Table 5. The coefficients of both BSCRVR and VRCFR are negative and significant, implying that the SCG firms with stronger agency conflicts pay lower dividends. The coefficient of DIIH is positive and significant, indicating that the higher holdings of retail shareholders are associated with higher dividend payouts. The coefficient of GS is negative and significant, suggesting that the SCG firms with higher sales growth rate payout lower dividends. These results are consistent with the dividend outcome model. The coefficient of seasoned offering of the current year is nonsignificant. However, the coefficients of SOSALES of the following 2 years are positive and significant. The positive coefficients imply that the SCG firms paying higher dividends issue more equities in the future.

For the WCG firms, the regression results are reported in Column (3) of Table 5. The coefficients of BSCRVR and VRCFR are negative and significant at the 5% and 10% level, respectively. This implies that the WCG firms with

stronger agency conflicts pay out lower dividends. However, the negative relationship between agency conflicts and dividend payouts is weaker in the WCG firms than that in the SCG firms. The coefficient of *DIIH* is positive and significant, indicating that the higher holdings of retail shareholders are associated with higher dividend payouts. The coefficient of *GS* is negative and significant at the 10% level. However, the negative relationship between sales growth rate and dividend payouts is weaker in the WCG firms than in SCG firms. This result is consistent with Mitton (2004) that the negative relationship between dividend payouts and growth opportunities is stronger among firms with adequate governance. The three coefficients of *SOSALES* are positive and significant, implying that the WCG firms with higher dividend payouts presumably issue more equities in the future. Moreover, the need of external capital markets for funds is higher for the WCG firms than that for the SCG firms. This result is consistent with that of Lin and Shen (2012), namely, both dividend payout ratio and investment opportunity are positively related in WCG firms.

Table 5 The results of dynamic panel data regressions

The dynamic panel data regression results for all sample firms are reported in Column (1), for corporate governance factors are reported in Column (2) and (3), for ownership structure factors are reported in Column (4), (5) and (6). The coefficient on CDP(-1) is negative and significant at the 5% level, indicating that managers attempt to maintain smooth dividend payouts from year to year.

		(1)	(2)	(3)	(4)	(5)	(6)
Number of sample firms		471	82	389	125	317	29
Variable	Expect	Governance(a ₁ ,a ₂)			Control(b ₁ ,b ₂ ,b ₃)		
	All	(a ₁)SCG	(a ₂)WCG	(b ₁)Non-Family	(b ₂)Family	(b ₃)Switch	
The dependent variable is CDP							
CDP(-1)	—	-0.149 (-16.574)**	-0.323 (-24.576)**	-0.068 (-9.611)**	-0.002 (-0.589)	-0.264 (-21.636)**	-0.141 (-45.783)**
GS(%)	+	-0.000 (-2.246)**	-0.002 (-3.077)**	-0.000 (-1.718)*	-0.003 (-4.644)**	-0.000 (-1.296)	-0.001 (-2.624)**
SOSALES	+	0.021 (6.200)**	0.115 (0.091)	0.025 (10.298)**	0.009 (0.035)	0.019 (4.964)**	-0.010 (-0.391)
SOSALES(1)	+	0.004 (6.069)**	1.788 (4.795)**	0.005 (10.606)**	-0.045 (-0.324)	0.004 (7.511)**	-0.003 (-0.420)
SOSALES(2)	+	0.004 (8.072)**	1.736 (8.839)**	0.005 (11.818)**	0.231 (1.884)*	0.004 (9.676)**	0.003 (0.612)
BSCRVR	—	-0.012 (-4.302)**	-0.064 (-2.678)**	-0.007 (-4.578)**	-0.015 (-1.978)**	0.031 (0.357)	-0.002 (-3.727)**
VRCFR	—	-0.158 (-2.529)**	-0.101 (-7.798)**	-0.132 (-1.760)*	-0.032 (-2.034)**	-0.121 (-1.362)	-0.006 (-0.392)
DIH(%)	+	0.063 (8.346)**	0.104 (23.320)**	0.040 (6.159)**	0.013 (6.776)**	0.073 (6.432)**	0.016 (5.911)**
BVMV	+	0.532 (4.634)**	1.789 (14.392)**	0.329 (3.627)**	0.152 (3.033)*	0.667 (4.590)**	0.002 (0.054)
TDRCDP(%)	+	0.078 (12.175)**	0.067 (24.253)**	0.079 (25.835)**	0.042 (38.365)**	0.076 (15.403)**	0.020 (9.454)**
LNMV	+	0.665 (6.360)**	1.342 (18.129)**	0.469 (5.518)**	0.347 (7.741)**	0.631 (5.219)**	-0.017 (-0.593)
SRNI	+	0.373 (8.044)**	0.141 (1.775)*	0.489 (32.566)**	0.665 (207.039)**	0.137 (1.518)	-0.007 (-0.831)
<i>S.E. of regression</i>		1.176	1.446	0.967	0.729	1.043	0.368

The *t* statistics are given in parentheses, **denotes significance at the 5% level and * at the 10% level.

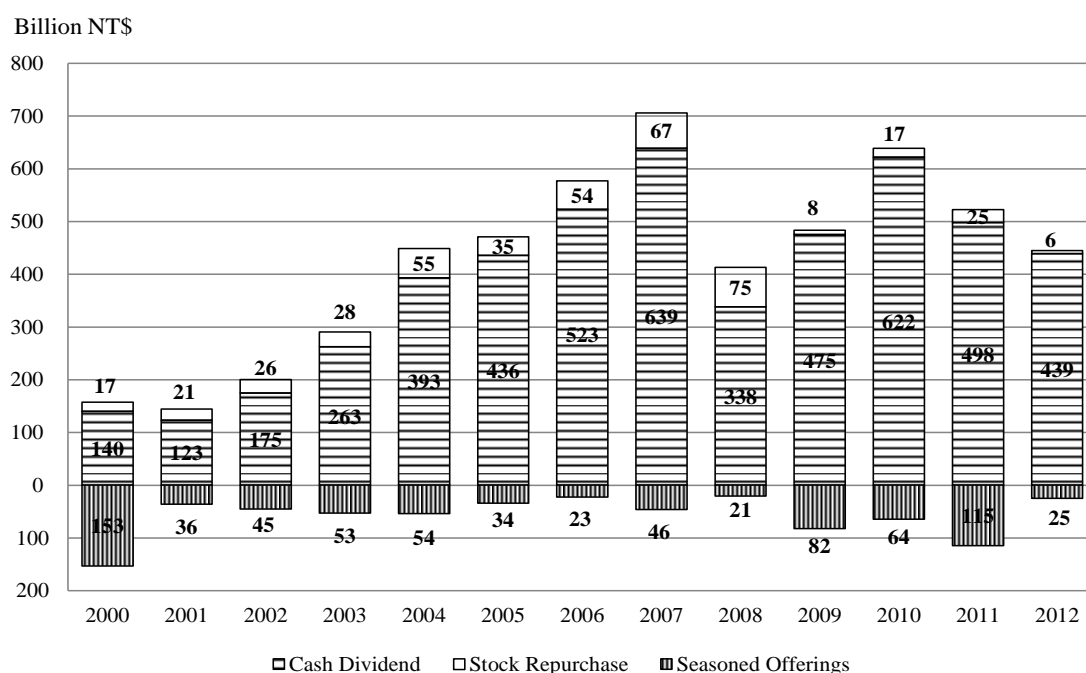


Figure 1 The trend of seasoned offerings in Taiwan capital market

Except 2000, the seasoned offering and stock repurchases did not play the essential financing roles for TWSE-listed firms.

Regression Results of The Different Ownership Structure

Column (4) of Table 5 presents the regression results for the Non-Family group firms. The coefficient of CDP (-1) is nonsignificant, implying that when deciding dividend payouts of the current year, nonfamily-controlled firms do not consider the dividend payouts of the previous year. The coefficients of both BSCRVR and VRCFR are negative and significant, indicating that nonfamily-controlled firms with higher potential for agency conflicts pay out lower dividends. The coefficient of GS is negative and significant, implying that nonfamily-controlled firms with higher sales growth rate pay out lower dividends. The coefficients on seasoned offering are nonsignificant at the 5% level, indicating that the dividend payouts are not associated with issue equities in the future for nonfamily-controlled firms. These results are consistent with the dividend outcome model.

Regression results for the Family group firms are reported in Column (5)

of Table 5. The coefficient on CDP (-1) is negative and significant, implying that family-controlled firms presumably maintain a smooth dividend payout from year to year. However, the coefficients of BSCRVR, VRCFR, and GS are nonsignificant. Thus, for family-controlled firms, dividend payouts are not affected by agency conflicts and sales growth rate. The coefficients of seasoned offering are positive and significant, implying that family-controlled firms with higher dividend payouts issue more equities in the future. The result is consistent with the dividend substitute model.

Regression results for the Switch group firms are reported in Column (6) of Table 5. The coefficient of CDP (-1) is negative and significant, implying that the switch firms smooth dividend payouts from year to year. The coefficient of BSCRVR is negative and significant. By contrast, the coefficient of VRCFR is nonsignificant. Moreover, the coefficient of GS is negative and significant, indicating that the firms with higher sales growth rate pay out lower dividends. The coefficients of seasoned offering are nonsignificant, confirming that dividend payouts and issuing equities in the future have no significant relationship.

We introduce BSCRVR and VRCFR as two proxy variables for the potential for agency conflict to investigate TWSE-listed firms' dividend payouts. We find that BSCRVR and VRCFR have significant explanation for dividend payouts of all, SCG, and WCG firms. BSCRVR and VRCFR also have significant explanation for dividend payouts of Non-Family firms. However, they have nonsignificant explanation for dividend payouts of Family firms. We find that the corporate governance ranking of TWSE cannot clearly describe the relationship between dividend payouts and the potential for agency conflict. By contrast, the ownership structure of firms offers a better indicator to explain the relationship between dividend payouts and the potential for agency conflict. The dividend payouts of Non-Family firms are affected by the potential for agency conflict, but not affected by last year's dividend payouts. However, the dividend payouts of Family firms are affected by last year's dividend payouts, but not affected by the potential for agency conflict. This result is consistent with Lin et al. (2012) and Driver et al. (2020), they find that active investors and independent directors of board might increase the dividend payout.

An Alternative Method

In this paper, we use a dynamic panel data model to examine the agency models of dividends. We identify that the current dividend payouts are affected by the previous year's dividend payouts and the seasoned offerings in the following 3 years. In order to investigate the agency models of dividends without the influence of previous year dividend payouts and future seasoned offerings, we examine cross-sectional relationships using the following static regression model:

$$\begin{aligned} \text{CDP}_{i,t} = & \alpha_0 + \alpha_1 \text{GS}_{i,t} + \alpha_2 \text{SOSALES}_{i,t} + \alpha_3 \text{VRCFR}_{i,t} + \alpha_4 \text{BSCRVR}_{i,t} + \alpha_5 \text{DIIH}_{i,t} + \alpha_6 \\ & \text{BVMV}_{i,t} + \alpha_7 \text{TDRCDP}_{i,t} + \alpha_8 \text{LNMV}_{i,t} + \alpha_9 \text{SRNI}_{i,t} + \alpha_{10} \text{S-Dummy}_{i,t} + \alpha_{11} \text{F-} \\ & \text{Dummy}_{i,t} + \varepsilon_{i,t} \quad (2) \end{aligned}$$

Where, the subscript (i, t) represents firm i in period t. S-Dummy represents whether the firm is strong governance firm or not, F-Dummy represents whether the firm is family-controlled firm or not.

The regression results are reported in Table 6. The R-squared and the adjusted R-squared for Equation (2) are shown in Appendix B. We find that the coefficients of VRCFR and BSCRVR are nonsignificant in all regression models. It implies that if we do not consider the effect of the previous year's dividend payouts and the seasoned offerings in the following 3 years, the VRCFR and BSCRVR cannot explain the current year's dividend payouts well. The dynamic panel data model has better explanation for the dividend substitute model than the cross-section model.

Additionally, we use cross-section data to examine the relationship between dividend payouts and sales growth rate for all firms in each year from 2000 to 2012 in this section. The dependent variable is dividend payout ratio and the independent variable is sales growth rate. We observe that all firms with higher growth opportunities have lower dividend payouts during 2000–2012, except in 2003 (Figure 2). This result is consistent with the dividend outcome model.

Furthermore, we examine the relationship between dividend payouts and sales growth rate for SCG and WCG firms in each year from 2000 to 2012. Figure 3 presents the results of the regression. We report that the SCG firms

have higher dividend payouts than the WCG firms during 2000–2012. Moreover, the SCG firms with higher growth opportunities have lower dividend payouts during 2000–2012, except in 2008 and 2009. The different trends in 2008 and 2009 might be a consequence of the 2008 Lehman Brothers crisis. The SCG firms with higher growth opportunities make higher dividend payouts to avoid stock price reduction during the period of financial crisis. This result is consistent with the dividend outcome model. However, the relationship between growth opportunities and dividend payouts is nonsignificant among the WCG firms.

Table 6 The results of static panel data regressions

In order to investigate the agency models of dividends without the influence of previous year dividend payouts and future seasoned offerings, we examine cross-sectional relationships by using pool regression model (N=6,123). We find that the coefficients of *VRCFR* and *BSCRVR* are nonsignificant in all regression models.

	Governance & Control	Governance	Control
The dependent variable is CDP			
Intercept	-0.358 (-2.257)**	-0.358 (-2.262)**	-0.583 (-3.945)***
GS	0.000 (0.123)	0.000 (0.123)	0.000 (0.077)
SOSales	-0.000 (-0.137)	-0.000 (-0.137)	-0.000 (-0.167)
BSCRVR	-0.000 (-0.493)	-0.000 (-0.502)	-0.000 (-0.478)
VRCFR	0.004 (1.281)	0.004 (1.287)	0.004 (1.430)
DIH	-0.000 (-0.096)	-0.000 (-0.095)	-0.000 (-0.227)
BVMV	0.009 (0.712)	0.009 (0.714)	0.016 (1.250)
TDRCDP	0.022 (25.202)***	0.022 (25.278)***	0.022 (25.143)***
lnMV	0.032 (3.497)***	0.032 (3.498)***	0.048 (5.922)***
SRNI	0.067 (14.956)***	0.067 (14.958)***	0.068 (14.998)***
S	0.121 (3.835)***	0.121 (3.848)***	
F	0.001 (0.057)		-0.007 (-0.313)

The *t* statistics are given in parentheses, ***, **, * denote significance at the 1%, 5% and 10% levels, respectively.

Finally, we examine the relationship between dividend payout and sales growth rate for nonfamily-controlled firms and family-controlled firms, respectively, from 2000 to 2012. The regression results are reported in Figure 4. We observe that nonfamily-controlled firms have higher dividend payout ratios than family-controlled firms. In general, nonfamily-controlled firms have higher potential of agency conflicts and disgorge higher dividend payout ratios. However, we do not observe a consistent trend between growth opportunities and dividend payouts for nonfamily and family-controlled firms during 2000–2012.

V. Conclusion

The Taiwan stock market is classified as having a poor legal shareholder protection by La Porta et al. (2000) and, therefore, the corporate dividend policy should be consistent with the substitute model (H_1). However, La Porta et al. (2000) adopt the cross-section analysis, which is used in previous studies (e.g., Lin and Shen, 2012; Mitton, 2004) that cannot examine the hypotheses suggested by La Porta et al. (2000). Thus, this paper uses a dynamic panel data regression to examine the relationship between dividend payouts and corporate governance. We identify a negative relationship against the substitute model; in other words, SCG firms have higher dividend payouts, whereas WCG firms make lower dividend payouts. The Hypothesis H_1 -I that the dividend payout ratio of WCG group is higher than that of SCG groups is not supported. A negative relationship between dividend payouts and growth opportunities is observed for the SCG firms. However, the relationship between growth opportunities and dividend payouts is nonsignificant among the WCG firms. The hypothesis H_1 -II that the firms with high growth pay higher dividend payout ratios than the firms with low growth is partially supported.

Furthermore, both WCG firms and SCG firms with higher dividend payouts issue more equities in the future. The hypothesis H_1 -III that the firms which pay higher dividends issue more equities in the future is supported. In general, concerning the examination of the dividend agency model hypotheses, results reveal the substitute model (H_1) is only partially supported.

Concerning the relationship between ownership structure and dividend

payouts (H_2), the results reveal hypothesis H_2 -I that the dividend payout ratios of nonfamily-controlled firms are higher than that of family-controlled firms is supported. The coefficients of BSCRVR and VRCFR are negative and significant, implying that the firms with stronger agency conflicts make lower dividend payouts. The hypothesis H_2 -II that the firms with higher agency conflict (BSCRVRs) make higher dividend payout ratios is not supported. Moreover, the dividend payouts are not associated with issuing equities in the future for nonfamily-controlled firms. The family-controlled firms with higher dividend payouts issue more equities in the future.

However, if we use cross-section data to examine the relationship between agency conflict and dividend payouts, regardless of whether a firm is SCG firm or WCG firm, it follows the dividend outcome model.

La Porta, et al. (1999) have demonstrated that corporate ownership is more concentrated in countries with inferior shareholder protection. Mitton (2004) claims that firm-level corporate governance and country-level investor protection are counterparts rather than substitutes. However, Holderness (2016a) finds no evidence that ownership concentration in firm-level varies systematically with the legal protections for investors.

We find that the corporate governance ranking of TWSE cannot clearly describe the relationship between dividend payouts and the potential for agency conflict. By contrast, the ownership structure of firms offers a better indicator to explain the relationship between dividend payouts and the potential for agency conflict. In addition, the SCG, nonfamily-controlled, large and value stocks firms have higher dividend payouts, whereas the WCG, family-controlled, small and growth stocks firms have lower dividend payouts. The dividend policy of TWSE-listed firms can be explained by the outcome model, rather than the substitute model. Claessens et al. (2000) claim that not only corporate governance, but also ultimate corporate ownership is another factor influencing the dividend policy. Overall, the firm-level corporate governance and ownership structure play complementary roles for TWSE-listed firms in developing dividend policy.

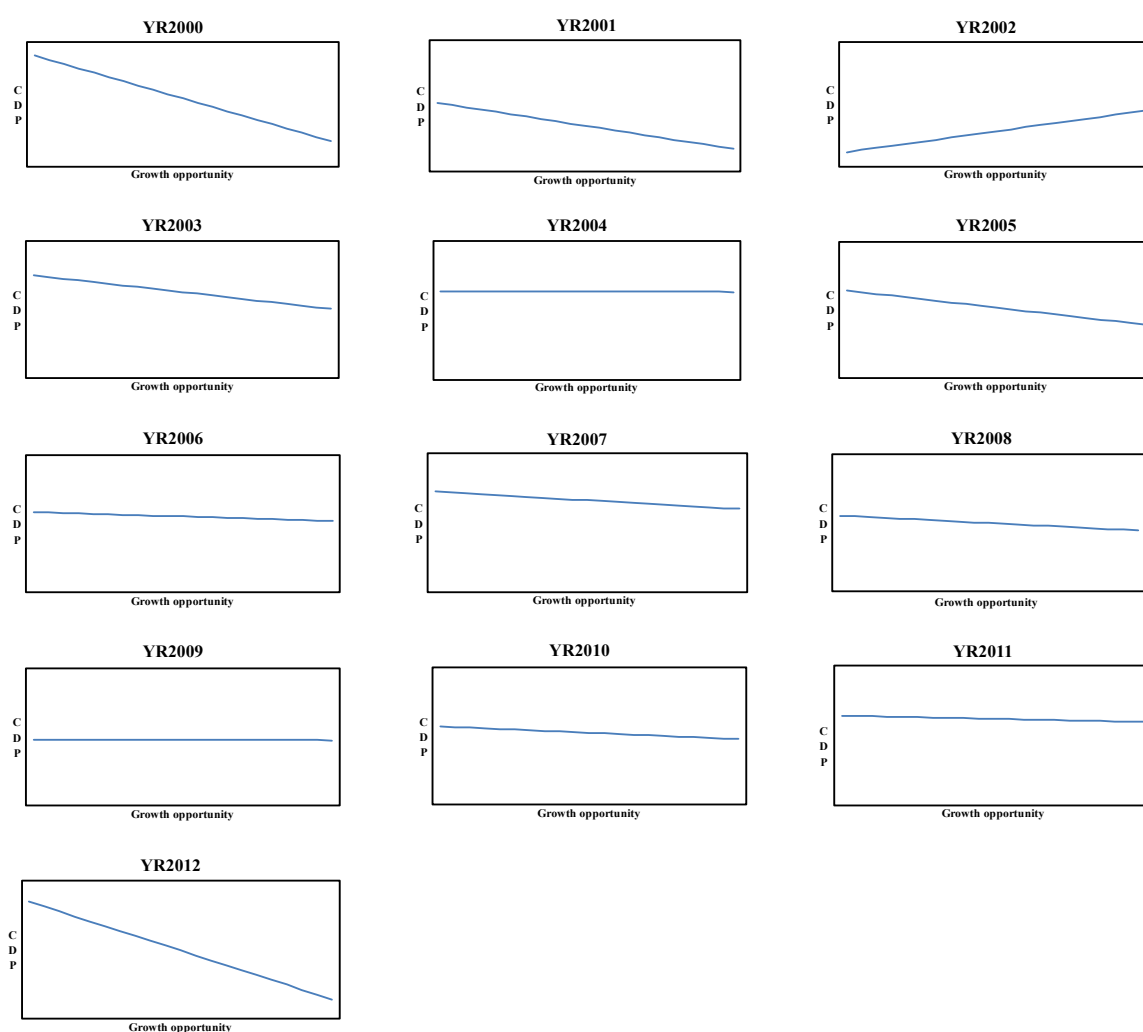


Figure 2 The relationship between dividend payout ratio and growth opportunity for all sample firms from 2000 to 2012

We observe that all firms with higher growth opportunities have lower dividend payouts during 2000–2012, except in 2003. This result is consistent with the dividend outcome model.

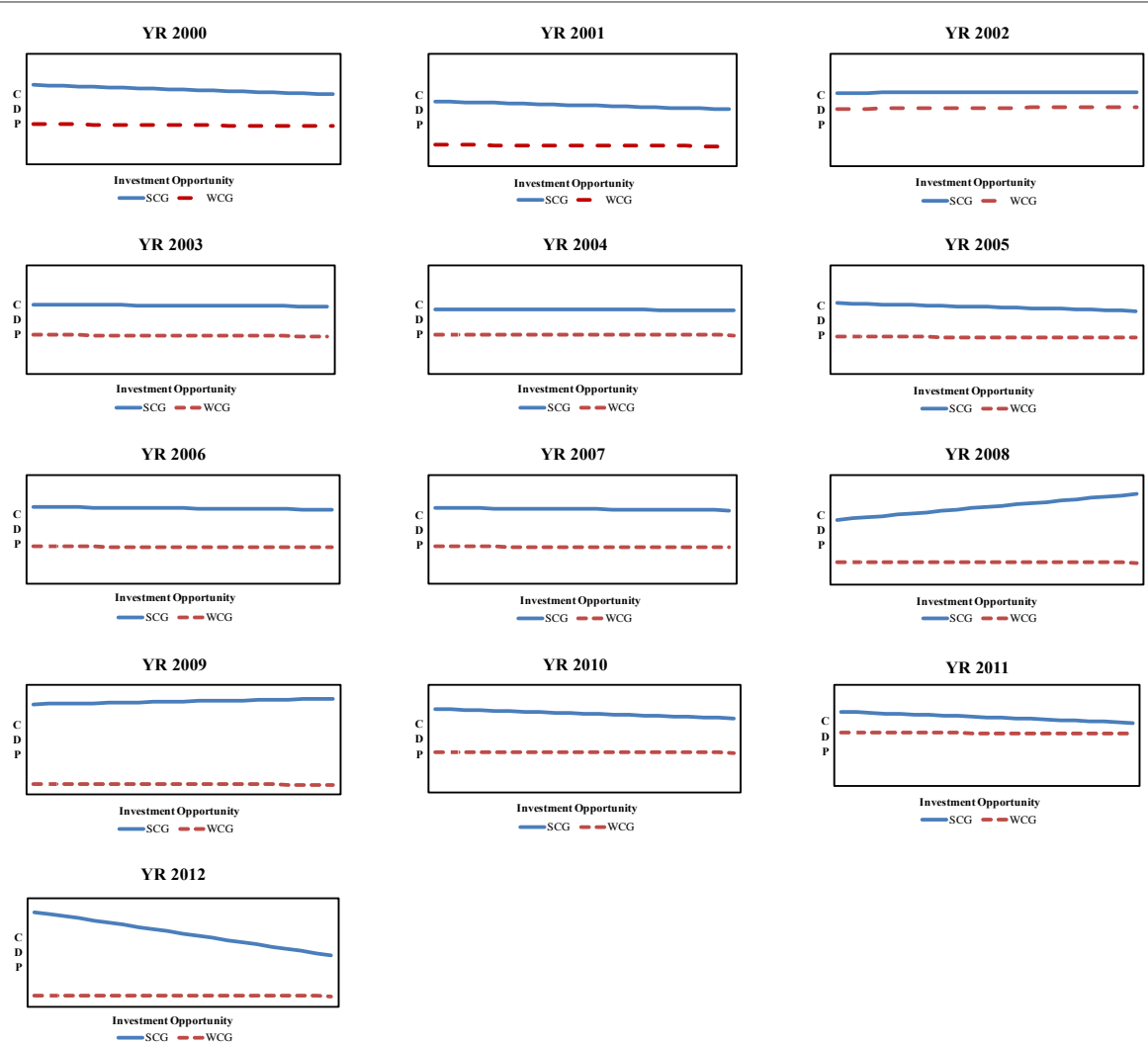


Figure 3 The relationship between dividend payout ratio and growth opportunity for SCG firms and WCG firms from 2000 to 2012
 This research finds that the SCG firms have higher dividend payouts than the WCG firms during 2000–2012.

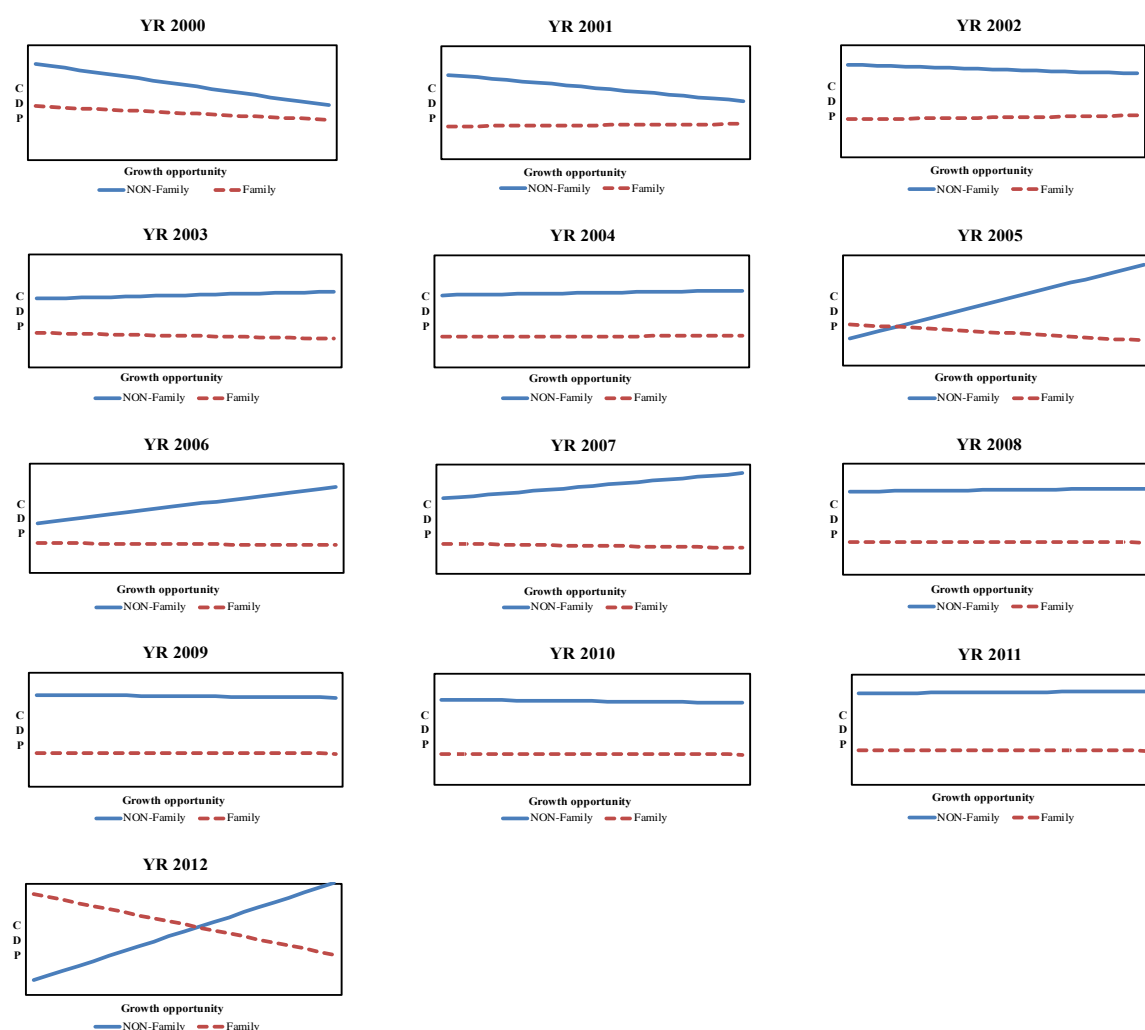


Figure 4 The relationship between dividend payout ratio and growth opportunity for Non-Family control firms and Family control firms from 2000 to 2012

Nonfamily-controlled firms have higher dividend payout ratios than family-controlled firms. In general, nonfamily-controlled firms have higher potential of agency conflicts and disgorge higher dividend payout ratios. However, we do not observe a consistent trend between growth opportunities and dividend payouts for nonfamily and family-controlled firms during 2000–2012.

Appendix A

We use the percentage of seats on the board of directors that the controlling shareholders control to controlling shareholders' voting rights (BSCR/VR, BSCRVR) as the second proxy to evaluate the potential for agency conflicts. We regress to CDP on VRCFR and BSCRVR under family-controlled and nonfamily-controlled firms. The regression result shows that BSCRVR is significant, but VRCFR is nonsignificant. We find that BSCRVR has better explanation for firm's dividend payout than VRCFR.

The dependent variable is CDP	
Intercept	0.462 (20.649)***
BSCRVR	-0.002 (-2.019)**
VRCFR	0.002 (0.769)
F	-0.069 (-2.850)***

The *t* statistics are given in parentheses, *** and ** denote significance at the 1% and 5% levels, respectively.

Appendix B

We use EViews to process our panel data regression models.

$$\begin{aligned}
 CDP_{i,t} = & \alpha_1 CDP_{i,t-1} + \alpha_2 GS_{i,t} + \alpha_3 SOSALES_{i,t} + \alpha_4 SOSALES_{i,t+1} + \alpha_5 SOSALES_{i,t+2} + \alpha_6 \\
 & VRCFR_{i,t} + \alpha_7 BSCRVR_{i,t} + \alpha_8 DIIH_{i,t} + \alpha_9 BVMV_{i,t} + \alpha_{10} TDRCDP_{i,t} + \alpha_{11} LNMV_{i,t} \\
 & + \alpha_{12} SRNI_{i,t} + \varepsilon_{i,t} \quad (1)
 \end{aligned}$$

where the subscript (*i*, *t*) represents firm *i* in period *t*. ε represents error term.

Equation (1) is a Dynamic Panel Date Regression Model: Panel Generalized Method of Moments and Orthogonal Deviations transformation; Constant added to instruments including GS, SOSALES, SOSALES (1), SOSALES (2), BSCRVR, VRCFR, DIIH, BVMV, TDRCDP, LNMV, SRNI.

Also, Cross-section is fixed (orthogonal deviations).

Equation(1)	Governance	Control
	SCG	Non-Family
Mean dependent var	-0.067	-0.059
S.E. of regression	1.446	0.729
J-statistic	55.997	62.296
S.D. dependent var	0.935	0.791
Sum squared resid	1517.429	591.264
Instrument rank	66	66
	WCG	Family
Mean dependent var	-0.037	-0.041
S.E. of regression	0.967	1.043
J-statistic	84.368	58.137
S.D. dependent var	0.590	0.630
Sum squared resid	3260.683	3090.277
Instrument rank	66	66
	Switch	
Mean dependent var		0.005
S.E. of regression		0.386
J-statistic		17.018
S.D. dependent var		0.325
Sum squared resid		37.176
Instrument rank		29

$$\begin{aligned}
 CDP_{i,t} = & \alpha_0 + \alpha_1 GS_{i,t} + \alpha_2 SOSALES_{i,t} + \alpha_3 VRCFR_{i,t} + \alpha_4 BSCRVR_{i,t} + \alpha_5 DIIIH_{i,t} + \alpha_6 \\
 & BVMV_{i,t} + \alpha_7 TDRCDP_{i,t} + \alpha_8 LNMV_{i,t} + \alpha_9 SRNI_{i,t} + \alpha_{10} S\text{-Dummy}_{i,t} + \alpha_{11} F\text{-} \\
 & \text{Dummy}_{i,t} + \varepsilon_{i,t} \quad (2)
 \end{aligned}$$

Where, the subscript (i, t) represents firm i in period t. S-Dummy represents whether the firm is strong governance firm or not, F-Dummy represents whether the firm is family-controlled firm or not.

Equation (2) is a Panel Date Regression Model: Panel Least Squares and adopt Fixed Effect.

Equation(2)	Governance	Control
	SCG	Non-Family
R-squared	0.065	0.453
Adjusted R-squared	0.043	0.444
	WCG	Family
R-squared	0.219	0.174
Adjusted R-squared	0.215	0.169
		Switch
R-squared		0.431
Adjusted R-squared		0.390

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