

## Family firm and analyst forecasts in an emerging economy

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## Family Firm and Analyst Forecasts in an Emerging Economy

### Abstract

**Purpose** - The purpose of this paper is to examine how family firms affect analyst forecast dispersion, accuracy and optimism and how earnings smoothness as the moderating factor, affects these relationships in an emerging market context.

**Design/methodology/approach** - This paper uses the population sample of firms listed on the Taiwan Stock Exchange from 2009 to 2010 as the research sample, which includes 963 firm-year observations.

**Findings** – The findings show that analysts following family firms are more likely to have more dispersed, less accurate and more optimism biased forecasts than those following nonfamily firms. Earning smoothness is mainly used by nonfamily firms as a signalling strategy to improve analyst forecast quality. In contrast, earnings smoothness is mainly used by families as a garbling strategy, stimulating forecast optimism. Only earnings smoothness in family firms with a high level of family ownership concentration is likely to be signalling-oriented to improve analyst forecast accuracy and mitigate analyst optimism biases.

**Originality/value** – Emerging markets are not only featured by prevailing principal-principal conflicts but also have multiple levels of agency conflicts among large shareholders, minority shareholders and professionally hired managers. This research reveals the multiple governance roles of family owners in affecting analyst forecast quality, including their entrenchment role in extracting private benefits of control through opaque environments and market discipline distortion role in aligning interests between managers and families without prioritising meeting or beating analyst forecasts, both at the cost of minority shareholders. This research further disentangles the intertwined signaling oriented and garbling oriented incentives associated with earnings smoothness under family governance.

**Keywords** Family firms, analyst forecasts, emerging economies

**Paper type** Research paper

## 1. Introduction

Analyst forecasts, as an essential input to an investor's assessment of a firm's fundamental investment value (Sambharya, 2011), are important to market efficiency and investor protection (Jensen and Meckling, 1976; Yu, 2008; Huang *et al.*, 2017). Efficient markets can impose market discipline on both family owners and professionally hired managers in advanced economies with strong institutional environments. Thus analyst forecasts by setting the performance benchmark for both professionally hired managers and family owners to meet or beat, are able to exert pressure on both professionally hired managers and family owners to communicate information with analysts for professional managers' career security concerns as well as family owners' wealth concerns (Graham *et al.*, 2005; Yu, 2008; He and Tian, 2013; Huang *et al.*, 2017).

However, both professionally hired managers and family owners have incentives to suppress information from analysts when they entrench themselves to extract private benefits through organizational opacity (Jensen and Meckling, 1976), which ultimately damages analyst forecast quality (Hope, 2003; Duru and Reeb, 2002; Hutton, 2005; Hassell and Jennings, 1986). Facing the similar trade-off associated with benefits of enhanced transparency to guide analysts for meeting or beating their forecasts and costs of releasing private information to analysts in terms of losing some private benefits of control, family firms and nonfamily firms in advanced economies associated with strong institutional environments should have similar mixed incentives to communicate information to analysts, and thus should have similar analyst forecast outcomes. From a theoretical point of view, it is difficult to differ between family and nonfamily firms and it should not be surprising to find mixed and unclear empirical evidence on the family impacts on analyst forecasts documented in literature focusing on advanced economies.

But many emerging markets are featured with concentrated ownership, poor disclosure quality, and overall weak institutional environments (Claessens *et al.*, 2000). While market discipline may be still effective over professional managers, its discipline impacts on large shareholders can be significantly weakened by large shareholders' pyramid and cross-holding ownership structures (Claessens *et al.*, 2000; Zhang *et al.*, 2013). Within this distorted market discipline environment, professionally hired managers and large shareholders may have different benefit and cost trade-offs associated with meeting or beating analyst forecasts, and thus have large shareholder-professionally hired managers conflicts in terms of communicating information to analysts. But little is known yet how family firms and nonfamily firms may be different in terms of the analyst forecast quality within this distorted market discipline environment. This paper fills the conceptual and empirical gaps by investigating how family control affects analyst forecast dispersion, accuracy and optimism in general, and in particular how earnings smoothness as the moderating factor, affects these relationships in an emerging market context.

Our research contributes to corporate governance and family business literature in a few important ways. First, this research allows us to expand and contextualize nascent understanding of the multiple agency perspective (e.g., Bruton *et al.*, 2010; Filatctchev *et al.*, 2011; Zhang *et al.*, 2013) which considers the multiple governance roles of the same participants in affecting analyst forecast quality. We build on previous literature which suggests largest shareholders can abuse their pyramid and cross-holding ownership structures to entrench themselves and extract private benefits via related-party transactions or tunneling at the cost of minority shareholders (Johnson *et al.*, 2000). Large shareholders by entrenching themselves mitigate market discipline imposed on them, but increase career-related risk for professionally hired managers whose entrenchment is constrained and whose careers are still subject to market discipline (Zhang *et al.*, 2013; 2017). Subject to a

higher level of market discipline than large shareholders but constrained by more limited channels to extract private benefits, professionally hired managers, with their private information, have a higher priority to meet or beat analyst forecasts. Eventually, this may lead to some loss of large shareholders' private benefits of controls. This clearly highlights a setting associated with multiple levels of agency conflicts including large shareholder-minority shareholder conflicts, large shareholder-manager agent conflicts as well as minority shareholders-manager agent conflicts. As a unique type of large shareholders, family shareholders are more likely than nonfamily large shareholders (such as corporate institutions, financial institutions, or states ect) to replace market discipline with family discipline over professionally hired managers to protect family private benefits of control (Claessens *et al.*, 2000; Zhang *et al.*, 2013). We investigate how such distorted market discipline by family control mitigates large family-manager agent conflicts but augments both large family shareholder-minority shareholders and minority shareholders-manager agent conflicts. This research extends previous research on the multiple governance roles played by family owners in affecting management turnover (Zhang *et al.*, 2013) and private information abuse (Filatotchev *et al.*, 2011) by revealing those played by family owners in affecting analyst forecasts.

Second, we investigate the different moderation impacts on family control-analyst forecast quality relationships associated with earnings smoothness under different levels of family ownership concentration. We focus on earnings smoothness as the moderating factor in affecting family control and analyst forecasts for two reasons. First, earnings smoothing is the common practice adopted by management which allows managers to manipulate accounting accruals in order to reduce fluctuations in a time series of reported earnings (Graham *et al.*,2005). Second, it is not clear yet whether earnings smoothness is signalling oriented or garbling oriented, especially within a setting featured by multiple levels of agency

conflicts. This paper explores how the multiple levels of agency conflicts in family firms can be different from those in nonfamily firms, which leads to earnings smoothness in nonfamily firms being used as a signalling strategy, whilst as a garbling strategy in family firms. We further focus on the changing moderation impacts on family control-analyst forecast quality relationships of earnings smoothness under different levels of family ownership concentration. The changing family ownership concentration reveals the relative weight change of the underlying alignment incentives over the dominating entrenchment incentives of family owners in a weak institutional environment and ultimately the changing impacts of earning smoothness on analyst forecast quality. We therefore enhance our understanding of how family firms differ from nonfamily firms in terms of using earnings smoothness as a transmissional mechanism to affect analyst forecasts within a multiple agency conflict framework.

Finally, we test our theoretical assumptions using the population sample of firms listed in Taiwan. Although this paper focuses on a single market, Taiwan is a model for emerging economies. At the same time Taiwan provides a good balanced sample of family firms and nonfamily firms in a much weaker institutional environment, compared with those advanced economies such as the U.S. /U.K. Such a weak institutional environment fertilises multiple levels of agency conflicts (Claessens and Fan, 2002; Zhang et al., 2013), which provides us an experimental opportunity to extend previous research into an emerging market context in order to better understand family multiple governance roles in affecting analyst forecasts.

This paper is organized as follows. Section 2 presents theory and hypothesis development. Section 3 provides sample and data. Section 4 provides empirical findings. Discussions and conclusions are in Section 5.

## **2. Theory and Hypotheses Development**

## *2.1 Analyst forecast quality in family firms versus nonfamily firms*

Agency theory suggests that the separation between ownership and control in many advanced economies with dispersed ownership structures stimulates principal-agency conflicts and rent extraction behaviors by opportunistic managers at the costs of dispersed shareholders (Shleifer and Vishny, 1997). Analysts, as the sophisticated information intermediators linking management to investors, play an important role to promote both market efficiency and effective market discipline over management (Sambharya, 2011; Yu, 2008; Huang *et al.*, 2017). It is not surprising that professionally hired managers, concerned with their salaries and career-related issues in the manager labor market, view analyst earnings forecasts as an important earnings benchmark to meet or beat (Graham *et al.*, 2005; Yu, 2008). In order to meet or beat analyst forecasts, managers have incentives to guide analysts (Cheong and Thomas, 2011) by helping them incorporate more information into their forecasts. These then ultimately become less optimistically biased, more accurate, and less dispersed than unguided ones (Hassell and Jennings, 1986; Duru and Reeb, 2002; Hope, 2003; Hutton, 2005).

However, managers can entrench themselves (Shleifer and Vishny, 1997; Claessens and Fan, 2002). Despite that in many advanced economies, where it is not common for managers to build complicated pyramid or cross-holding ownership structures to entrench themselves, opportunistic managers can augment their control using dual-class shares and compromise market discipline (Huang *et al.*, 2017). Thus entrenched managers, by compromising market discipline, enhance opportunities to extract private benefits of control, which can outweigh the benefits of meeting or beating analyst forecasts. To extract their private benefits of control, managers can increase earnings opacity (Haw *et al.*, 2004; Gopalan and Jayaraman, 2012), reduce earnings informativeness (Francis *et al.*, 2005), restrict the levels of compensation disclosure (Tinaikar, 2014), and delay loss reporting (Khurana *et al.*, 2013). Opportunistic managers, by damaging the quality of both public and private information received by

analysts, can reduce analyst forecast quality, leading to increased forecast dispersion and reduced accuracy (Hope, 2003) as well as more optimistically biased earnings forecasts (Duru and Reeb, 2002).

Similar to many professionally hired managers, family shareholders in firms from advanced economies with strong institutional environments are also subject to strong market discipline to meet or beat analyst forecasts in order to prevent falls in share price and maintain family wealth. They also have incentives to extract rents within an opaque environment when they are entrenched (Jensen and Meckling, 1976; Shleifer and Vishny, 1997). Therefore, in advanced economies, the trade-off associated with benefits of enhanced transparency to guide analysts for meeting or beating their forecasts for family owners and costs of releasing private information to analysts in terms of losing some family private benefits of control may be similar as the trade-off faced by professionally hired managers in many nonfamily firms. From a theoretical point of view, family firms and nonfamily firms, by having similar mixed incentives to communicate information to analysts, should not have different analyst forecast outcomes.

Different from advanced economies with strong institutional environments, emerging markets are featured with concentrated ownership, poor disclosure quality, and overall weak institutional environments (Claessens and Fan, 2002). Powerful large shareholders, by using their ownership pyramids and cross-holdings, effectively entrench themselves and weaken market discipline (Claessens and Fan, 2002; Zhang *et al.*, 2013; 2017). A weakened market discipline over large family shareholders makes meeting or beating analyst forecasts less beneficial, bearing in mind the complex pyramid and cross-holding ownership structures in place which facilitate their extraction of private benefits through opaque environments (Johnson *et al.*, 2000; Baek *et al.*, 2006). Facing this changed benefit and costs trade-off associated with meeting or beating analyst forecasts, large shareholders clearly put a low



priority on communicating information to analysts in order to protect their private benefits of control, thus stimulating large shareholder-minority shareholder conflicts.

In contrast, professionally hired managers, without available entrenchment mechanisms in many emerging markets, are subject to a higher level of market discipline than large shareholders but constrained by more limited channels to extract private benefits (Zhang *et al.*, 2013; Huang *et al.*, 2017). Facing large shareholder's rent extractions, professionally hired managers can suffer an increased career-related risk (Zhang *et al.*, 2013). This is because the rent extractions by large shareholders in an opaque environment can lead to analysts overestimating the firm's future earnings and ultimately result in managers being tagged as incompetent by both large shareholders and minority shareholders if they do not guide analyst forecasts and eventually miss analyst forecasts (Leuz *et al.*, 2003; Graham *et al.*, 2005). Thus professionally hired managers, facing the benefits of guiding analyst forecasts to mitigate career risk at a reduced cost of losing their limited private benefits of control when they communicate their private information to analysts (i.e. benefit and cost tradeoffs different to those faced by large shareholders), clearly put a high priority on communicating information to analysts. Thus facing the well-recognised principal-principal or large shareholder-minority shareholders conflicts in many emerging markets, large shareholders also stimulate additional conflicts with professionally hired managers regarding their priority in communicating information to analysts. This creates multiple levels of agency conflicts among large shareholders, minority shareholders and professionally hired manager agents (Filatotchev *et al.*, 2011; Zhang *et al.*, 2013).

Within the multiple levels of agency conflicts regarding the priority of communicating information to analysts in emerging markets, we argue that a large family shareholder is more likely to distort market discipline over professionally hired managers than other nonfamily large shareholders in order to mitigate large shareholder-manager agent conflicts in terms of

*not* prioritising the meeting or beating of analyst forecasts. First of all, the concentration of personal and family wealth in family-controlled firms normally creates a preference for wealth distribution (Carney and Gedajlovic, 2002; Miller *et al.*, 2007) and risk taking (John *et al.*, 2008; Faccio *et al.*, 2011) which maximizes the benefits of dominant family owners. Emerging economies generally have low levels of shareholder protection in the legal and regulatory institutions, which provides family owners' strong incentives to extract private benefits of control at the costs of minority shareholders (Peng and Jiang, 2010; Filatotchev *et al.*, 2011; Zhang *et al.*, 2013). Second, family concentrated ownership is more likely to be the result of stock pyramids and cross-ownership (Claessens and Fan, 2002), which creates an opaque and complex information environment to facilitate private rent extraction, mainly via related party transactions or tunneling (Zhang *et al.*, 2015; 2017). Thus family shareholders in emerging markets are more likely to be motivated to distort public and private information disclosure to mislead minority shareholders in order to gain private benefits of control (Zhang *et al.*, 2015; Chen *et al.*, 2008). Third, in order to prevent managers communicating information to analysts, large family shareholders are more likely than other types of large shareholders to reduce managers' job security concerns by replacing market discipline over them with family discipline (Zhang *et al.*, 2013). Quite often, family shareholders occupy key managerial positions (Morck and Yeung, 2003; Filatotchev *et al.*, 2011; Zhang *et al.*, 2013) in order to closely monitor professionally hired managers, which further strengthens family discipline and mitigates market discipline over professionally hired managers. Family owners are found to maintain job security for managers who distort public disclosure in order to facilitate family tunneling activities (Zhang *et al.*, 2013). However, the aligned interests between large family owners and manager agents in *not* prioritising meeting or beating analyst forecasts augments both large family shareholder-minority shareholders conflicts and minority shareholders-manager agent conflicts, leading to unguided analyst forecasts. In

contrast, within many nonfamily firms, facing exploitation by large shareholders at the costs of minority shareholders, professionally hired managers and minority shareholders may have better aligned interests in terms of their priority to communicate information to analysts. The less effective distortions over market discipline over professionally hired managers by large nonfamily shareholders than by large family shareholders reduce information asymmetries between management and analysts, augmenting large nonfamily shareholder-manager agent conflicts but mitigating minority shareholders-manager agent conflicts. Thus, compared with nonfamily firms, family firms should augment information asymmetries and damage analyst forecast quality, leading to wide forecast dispersions, low forecast accuracy and more forecast optimism bias. Therefore, this paper proposes the following hypotheses:

- H1.* Analysts following family firms generate forecasts with wider analyst forecast dispersion than those following nonfamily firms in an emerging economy.
- H2.* Analysts following family firms generate forecasts with lower accuracy than those following nonfamily firms in an emerging economy.
- H3.* Analysts following family firms have more forecast optimism bias than those following nonfamily firms in an emerging economy.

## *2.2 Earnings smoothness used as signaling or garbling strategies by families*

Earnings smoothing is a common practice adopted by management, which allows managers to manipulate accounting accruals in order to reduce fluctuations in a time series of reported earnings (Graham *et al.*, 2005). Previous research has documented that managers have their intertwined incentives to smooth earnings, leading to either signaling-oriented earnings smoothing (Demski, 1998; Subramanyam, 1996) or garbling-oriented earnings smoothing (Lambert, 1984; Lang and Maffett, 2011). Signaling-oriented earnings smoothness, by signaling managerial private information to market participants about future earnings, can reflect the true performance of a firm (Tucker and Zarowin, 2006) and improve the informativeness of earnings (Francis *et al.*, 2004; Cascino *et al.*, 2010). Previous research finds that signaling oriented earnings smoothness makes it easier for financial information users, especially analysts, to infer the fundamental investment value of a firm (Kirschenheiter

and Melumad, 2002) and recognise the quality of the manager (Chaney and Lewis, 1995). Analysts prefer to follow firms with signaling-oriented earnings smoothness (Graham *et al.*, 2005) as this enhances the quality of analysts' common public information, as well as improves the quality of analysts' private information (He *et al.*, 2010). Hence, signaling oriented earning smoothness can relieve adverse selection problems and help analysts better incorporate firm information into their forecasts, leading to reduced information asymmetries between firms and analysts (Verrecchia, 2001; Yang, 2010) and ultimately less dispersed analyst forecasts, more accurate forecasts and fewer optimism biased forecasts.

However, opportunistic managers can also use earnings smoothing strategies to misrepresent the firm's actual earnings performance and extract their private benefits, which is referred to as a garbling-oriented earnings smoothing strategy (Fudenberg and Tirole, 1995; Zhang *et al.*, 2013). Thus garbling-oriented earnings smoothness may be used to suppress information, especially negative information related to private rent extraction by managers, to market participants, augmenting information asymmetries, enlarging the bid-ask spreads (Habib and Jiang, 2012) and ultimately reducing analysts' overall forecast quality.

Based on our previous analysis, in many advanced economies, both managers and family owners are subject to effective market discipline and have similar signaling incentives to use smoothed earnings to guide analyst forecasts (Francis *et al.*, 2004; Cascino *et al.*, 2010), but also have similar garbling incentives to use smoothed earnings to mislead analyst forecasts when they can entrench themselves. This leads to difficulties in differentiating between family firms and nonfamily firms in terms of the incentives behind their smoothed earnings. However, in emerging economies, managers and family owners are under different market discipline and thus have different incentives to smooth earnings, which in theory, makes it possible to differentiate family firms from nonfamily firms in terms of the incentives behind their smoothed earnings.

We argue that, given the large shareholder-manager agent conflicts within the multiple level of agency conflicts, professionally hired managers in many nonfamily firms are subject to market discipline and thus are more likely to use smoothed earnings to signal their private information about large shareholder's tunneling activities to analysts in order to beat or meet analyst forecast benchmarks for their own career concerns. This can lead to some loss of large shareholders' private benefits of control but better aligns the interests between minority shareholders and professionally hired managers. In contrast, family owners, by replacing market discipline with family discipline over managers and mitigating their job security concerns for serving family interests, better align managers' interests with family owners' interests in terms of their garbling oriented earnings smoothness, which facilitates family owners rent extraction but at the costs of minority shareholders. Hence, this paper suggests that analysts following family firms have better forecast quality and develop the following hypotheses:

- H4.* Analysts following family firms have more dispersed forecasts than those following nonfamily firms when earnings become increasingly smoothed in an emerging economy.
- H5.* Analysts following family firms have less accurate forecasts than those following nonfamily firms when earnings become increasingly smoothed in an emerging economy.
- H6.* Analysts following family firms have more optimism bias than those following nonfamily firms when earnings become increasingly smoothed in an emerging economy.

### *2.3 Changing incentives behind earnings smoothness under different types of family firm with different levels of family ownership concentration*

Agency research suggests that family interests can be better aligned with minority shareholders by higher levels of ownership concentration (Claessens and Fan, 2002; Chen *et al.*, 2005; Ali *et al.*, 2007; Anderson *et al.*, 2009). This is because a high level of family ownership concentration enhances family stewardship and family long-term commitment to their firms (Demsetz and Lehn, 1985; Davis *et al.*, 1997; Schulze *et al.*, 2001; Steier, 2001;

Zellweger, 2007) and this constrains their incentives to extract private benefits (Claessens and Fan, 2002). A high level of family concentrated wealth is particularly sensitive to any price discount due to information asymmetry problems (Shleifer and Vishny, 1997) and this strengthens market discipline over family owners by enhancing the benefits of meeting or beating analyst forecasts. The high level of family ownership concentration, by enhancing family alignments with minority shareholders and exposing family owners to the similar levels of market discipline imposed on professionally hired managers, makes it more likely for family owners to prioritise their aims to meet or beat analyst forecasts and therefore avoid share price discount and thus family wealth shrinkage. This mitigates multiple agency conflicts at all levels, including large family shareholder-minority shareholder conflicts, large family shareholders-manager agent conflicts, as well as minority shareholders-manager agent conflicts. Therefore we expect to find that the earnings smoothness in this type of family firm is more likely to be signalling-oriented to reduce information asymmetries, thus more likely to reduce analysts' overall forecast dispersion, improve analysts' overall forecast accuracy and mitigate analysts' optimism biases.

*H7.* Earning smoothness reduces analyst forecast dispersion in family firms when family ownership concentration is high.

*H8.* Earning smoothness improves analysts forecast accuracy in family firms when family ownership concentration is high.

*H9.* Earning smoothness reduces analysts forecast optimism bias in family firms when family ownership concentration is high.

### **3. Sample and Data**

This paper uses all firms listed on the Taiwan Stock Exchange from 2009 to 2010 as the research sample, which includes 963 firm-year observations. Following the common practice, this paper excludes financial firms because of their different government regulatory framework. After removing the observations with missing values, the final sample has 318 firm-year observations (involving 141 firm observations in 2009 and 177 firm observations in

2010). In our final sample, companies from the electricity industry are the majority (175 firm-year observations, 55.03% of the sample), followed by companies from the cement, steel and construction industries (38 firm-year observations, 11.95% of the sample) and companies from the plastic and rubber industries (23 firm-year observations, 7.23% of the sample). The rest of the sample is widely distributed across other industries.

### *3.1 Family firm*

This paper initially defines family firms as those whose largest shareholder is a family. This paper generates a family dummy variable (Family) equal to 1 if the firm is a family firm, and 0 otherwise. Following Filatotchev et al. (2005), membership of the controlling family is identified by linking corporate insiders including CEO, board members, board chairman, honorary chairman and vice chairman that firstly share a common family name and secondly share the same first name of the largest shareholder from the male side of the family name with the largest owner. After identifying family membership, this paper double confirms the family ownership data with the Taiwan Economic Journal (TEJ) database. This paper achieves consistent family ownership measurement results. TEJ database is a well-established database, which has been widely used by prior literature on family businesses focusing on Taiwan such as Yang (2010) and Zhang et al., (2013).

### *3.2 Analyst forecast quality*

Analyst overall forecast quality outcome is captured using three variables including analyst forecast dispersion and accuracy, as well as the analyst forecast optimism bias (Duru and Reeb, 2002; Hope, 2003; Haw *et al.*, 2010). Analyst forecast dispersion (*Dispersion*) is measured by the standard deviation of all available forecasts for the corresponding fiscal year scaled by the stock price at the beginning of the corresponding fiscal year.

Analyst earnings forecast accuracy (*Accuracy*) is measured by the negative of the absolute difference value between the actual earnings per share (EPS) and the average forecasts among following analysts for the corresponding fiscal year, deflated by the stock price at the beginning of the corresponding fiscal year. The negative signed value is used to facilitate the interpretation that when the measurement value for accuracy increases, the overall forecasts become more accurate. Analyst optimistic forecasts (*Optimism*) is defined as the dummy variable equal to 1 if the signed difference between the consensus forecasts among following analysts and the actual EPS for the corresponding fiscal year is positive and 0 otherwise.

### *3.3 Earnings smoothness*

Following previous literature (Francis *et al.*, 2004; Cascino *et al.*, 2010), earnings smoothness (Smoothness) is measured by the negative signed value of the standard deviation of earnings before extraordinary items over the rolling 5-year windows divided by the standard deviation of cash flow from operation over the same rolling 5-year windows. The negative signed value is to ensure that the increasing measurement value for Smoothness represents an increasingly smoothed earning and thus facilitates our interpretation.

### *3.4 Control variables*

This paper includes the following control variables which can affect analyst forecast activities. To control the monitoring effects associated with block-holders and independent boards in the financial reporting process (Yang, 2010; Zhang *et al.*, 2015), this paper uses a variable *Block* equal to 1 if non-controlling block-holders exist in the firm and 0 otherwise; and a variable *Outdirector* measured by the percentage of independent directors within the board. Following Lehavy *et al.* (2011) and Haw *et al.* (2010), this paper controls forecast complexity and



uncertainties using a variable *Size* calculated as the natural logarithm of total assets, a variable *Growth* calculated as the deviation of the net sales in the current year from the previous year scaled by the net sales in the previous year, and a variable *Lev* calculated as the total liabilities divided by total assets. This paper controls a firm's loss status using a dummy variable *Loss* equal to 1 if the net income in the previous year is negative and 0 otherwise. Older firms are more established with more available information for analysts to forecast (Easley *et al.*, 1998; Zhang *et al.*, 2015). This paper controls this using a variable *Age* calculated as the natural logarithm of the number of years since the firm was incorporated. This paper also uses *Industry* dummy variables to control industry effects following the industry classification provided by TEJ and the time effect using a *Year* dummy variable. The variable definitions and measurement are summarized in Table 1. More specifically, our regression models to be estimated are:

$$\begin{aligned} Analyst_i = & \alpha_i + \beta_1 Family_i + \beta_2 Smoothness_i + \beta_2' Family_i * Smoothness_i + \beta_3 Block_i \\ & + \beta_4 Outdirector_i + \beta_5 Age_i + \beta_6 Size_i + \beta_7 Lev_i + \beta_8 Growth_i + \beta_9 Loss_i \\ & + YearDummies + IndustryDummies \end{aligned}$$

Where  $Analyst_i$  is Analyst forecast dispersion or accuracy or optimism bias as different dependent variables used in different regression models.

### **Insert Table 1**

## **4. Results**

Table 2 summarizes descriptive statistics of the variables. In the sample, family-firms account for 182 (57%) observations and nonfamily firms represent the remaining 136 (43%) observations, revealing family control as common practice in Taiwan (Claessens and Fan, 2002). For the average firm in the sample, the analysts' overall forecast dispersion is 0.02, indicating that the average standard deviation of all available forecasts for a given fiscal year accounts for 2% of the corresponding share price. The analysts' overall forecast accuracy is -0.02, indicating that the average absolute difference between the actual EPS from the

consensus forecasts generated by the following analysts for a given fiscal year accounts for 2% of the corresponding share price. In the sample, 134 (42%) observations have forecasts with optimism bias.

Smoothness practice varies considerably across the full sample with an average smoothness level of -0.85, indicating that on average a firm reduces their earnings volatility to 85% of the volatility of their cash flow from operation. Minimum and maximum values are -4.82, and -0.06 respectively, indicating that earnings volatility from the firm with the smallest degree of earnings smoothness is 4.82 times of the volatility of cash flow from operation while earnings volatility from the firm with the biggest degree of earnings smoothness is just 6% of the volatility of cash flow from operation. The large variance across the full sample is also found for firm size and growth rate, with the average firm size of 24,642,915 TW\$ (17.02 after the natural logarithm transformation), minimum and maximum values for firm size being 113,257 TW\$ (13.94 after the natural logarithm transformation) and 1,386,432,863 TW\$ (21.05 after the natural logarithm transformation) respectively; and the average growth rate of 0.16, with minimum and maximum values being -0.82 and 3.39 respectively.

### **Insert Table 2**

Table 3 presents Spearman correlations for the variables. As Table 3 shows, forecast dispersion, accuracy and optimism have low correlations, indicating that they capture different dimensions of analyst forecast quality. Table 3 also shows that, compared to non-family firms, family firms tend to be older, and have fewer block-holders, fewer outside independent directors and higher leverage level. Analysts following family firms tend to generate more dispersed and less accurate forecasts and are more likely to have optimism bias than analysts following nonfamily firms; consistent with hypothesis 1, 2 and 3. The Spearman correlation coefficient for any two independent variables is less than 0.60,

indicating there are no serious multicollinearity issues in the variables. We also conduct VIF analysis, indicating no serious multicollinearity issues.

### **Insert Table 3**

#### *4.1 Multivariate tests*

We use pooled OLS regressions to estimate family impacts on analyst forecast dispersion and accuracy and logit regressions to estimate family impacts on analysts optimism bias. Given analyst optimism bias is a dummy variable the logit model, by adopting a logarithmic transformation on the dummy outcome variable, allows us to model a nonlinear relationship in a linear way. Prior empirical work linking ownership with performance has had to address the endogeneity issue of whether ownership change is a cause of, or a response to, performance change (Demsetz and Lehn, 1985). This is much less problematic for our research because our focus is on how the type of a firm, i.e. family firm or nonfamily firm affects analyst forecast quality and not on how family ownership change affects firm performance. It is less likely that analyst forecast quality change will cause a type change in a firm. To alleviate possible endogenous variables in our analysis, we follow prior literature on analyst forecasts and family control (Espahbodi *et al.*, 2001; Duru and Reeb, 2002; Filatotchev *et al.*, 2011) to carefully select explanatory variables to include them in the logit model. Table 4 shows that family dummy is significantly and positively related with analysts' forecast dispersion and negatively related to forecast accuracy, supporting hypothesis 1, and 2. These results indicate that family owners in emerging markets are entrenched and family firms reduce their following analysts' forecast quality by enlarging the forecast dispersion and reducing the forecast accuracy. Table 4 also shows that family dummy is positively related with analysts optimism bias, but insignificant at the conventional level.

Evaluating the impact of family firms on the analyst forecast dispersion and accuracy suggests that family firms increase the analyst forecast dispersion and reduce accuracy degree

by 55.56% and 40%, respectively. This paper calculates dispersion differential as the coefficient  $\beta_1$  multiplied by family firm dummy, divided by the average forecast dispersion for the nonfamily sample ( $0.01*1/0.018$ ); and accuracy differential as the coefficient  $\beta_1$  multiplied by family firm dummy, divided by the average forecast accuracy for the nonfamily sample ( $-0.008*1/0.02$ ) respectively.

Table 4 shows that earnings smoothness reduces analyst forecast dispersion, enhances analyst forecast accuracy and mitigates analyst optimism bias. The results suggest that enhanced analyst forecast quality is the outcome of signalling oriented earnings smoothness used by managers. This confirms that in Taiwan, market discipline is still effective, in line with Zhang *et al.*, (2013), such that managers prioritise to meet or beat analysts forecasts using signalling oriented earnings smoothness strategies to guide analysts for their own career benefits and reduce the chances that private information, especially that which is negative in nature and related to tunneling, is suppressed by largest shareholders, in line with Zhang *et al.* (2015).

In respect of control variables, the findings show that firms with block-holders have less forecast optimism bias, indicating noncontrolling block-holders' monitoring function over largest shareholders mitigates large shareholder-minority shareholders conflicts, in line with Zhang *et al.* (2015). The findings do not show outside directors having significant effect on analyst forecasts, indicating such governance mechanism, usually effective in advanced economies with strong institutional environments, is not effective in emerging economies. This is in line with Claessens and Fan (2002) and further highlights that board governance effectiveness is conditional on the institutional environment, especially in emerging economies.

Older firms have less dispersed and more accurate forecasts, indicating that more firm historical public information helps analysts improve their overall forecast quality. Large

firms with more growth opportunities and high leverage levels present complex and uncertain forecast tasks, leading to more dispersed and inaccurate forecasts and larger forecast optimism bias. Firms with loss status have more accurate analyst forecasts, indicating that firms with loss status are under strong market discipline and forced to disclose more information publically, such as earnings warnings, in line with Chen *et al.* (2008).

#### **Insert Table 4**

Table 5 reports the interaction results between families and earnings smoothness on analyst forecast quality outcomes. Table 5 Column 3 shows that family dummy significantly and positively interacts with earnings smoothness in affecting analysts' forecast optimism bias, supporting our hypothesis 6. By suppressing more private information, especially negative information related to family tunneling activities, received by analysts, earning smoothness in family firms augments information asymmetries between family owners and analysts and changes the weight of negative private information in the overall amount of private information received by analysts (i.e. the structure of private information), leading to analyst forecast optimism bias. Families' effects in changing the structure of private information found in this research are in line with Zhang *et al.* (2015). In addition, after we add in the interaction term, the coefficient of earnings smoothness remains significant and negative while the previous insignificant positive coefficient of family dummy reported in Table 4 Column 3 becomes significant. This suggests that earnings smoothness is used by professionally hired managers in many nonfamily firms to signal information which mitigates analyst forecast optimism bias. In contrast, within a family firm, a family owner increases the chances that analysts will generate a forecast optimism bias, supporting our hypothesis 3. Taken together, we have some evidence suggesting that strengthening earnings smoothness is more likely to be used by families as a garbling strategy which stimulates

analyst forecast optimism.

### **Insert Table 5**

#### *4.2 Different types of family firms with different levels of ownership concentration*

This paper initially defines family firms as those whose largest shareholder is a family and our findings from Table 4 and 5 are based on this initial definition. Since, in many emerging economies large control stakes are not unusual, minimum thresholds added to define family firms (for example, 20%) are common in the literature (Claessens and Fan, 2002). If we use the more strict family firm definition (say largest shareholder is a family, plus one which controls at least 20% ownership), we may be able to focus on those family firms with incentives more aligned with minority shareholders (Jensen and Meckling, 1976). Results are reported in Table 6 Panel A.

Table 6 Panel A shows that the previously insignificant interaction relationship, reported in Table 5 Column 2, between family firm dummy and earnings smoothness in affecting analyst forecast accuracy becomes significantly positive. This indicates that this type of family firm, i.e. family as the largest shareholder with at least 20% ownership, has interests better aligned with minority shareholders than family firms with lower ownership concentrations. Thus the earnings smoothness in family firms with a high level of family ownership concentration is more likely to be used by these types of family owners to signal their positive private information in order to address share price discount issues due to the adverse selection problems and is less likely to be used by them to suppress negative private information related to tunneling for private rent extraction. These two forces come together to improve analyst forecast accuracy, supporting our hypothesis 8 and help offset forecast optimism bias (i.e. the initial significant interaction relationship, reported in Table 5 Column 3, between family firm dummy and earnings smoothness in affecting analyst forecast optimism becomes insignificant at the conventional level).

To further reveal the strengthening incentives associated with family owners in family firms with a high level of family ownership concentration, in Table 6 Panel B, we refocus on family firms with those largest family owners having more than median ownership level (50% ownership) in the sample. As Table 6 Panel B shows, when family firms with a very high level of family ownership concentration (at least 50%), the alignment incentives further increase compared with those family firms with at least 20% family ownership concentration level. Thus the earnings smoothness in family firms with a very high level of family ownership concentration not only improves analyst forecast accuracy, but also reduces analyst forecast dispersion, supporting hypothesis 7 and 8, as well as helps to offset forecast optimism bias. Taken together, we find evidence suggesting that earning smoothness in a family firm with a very high level of family ownership concentration is more likely to be used as a signalling strategy rather than a garbling strategy, in line with Cascino *et al.*, (2010).

### **Insert Table 6**

## **5. Discussions and Conclusions**

Different stakeholders such as large shareholders, minority shareholders and professionally hired managers have different trade-offs associated with benefits of enhanced transparency to improve analyst forecast quality and costs of releasing private information to analysts in terms of some loss of private benefits of control. In many emerging markets, when market discipline can be distorted and private rents can be extracted through an opaque information environment by large shareholders, analyst forecasts, by setting the performance benchmark for professionally hired managers to meet or beat, are able to exert pressure on managers to communicate information to analysts for managers' career security concerns but at the cost of large shareholders in terms of some loss of private benefits of control. Under such multiple

levels of agency conflicts, it is relatively unexplored how large family shareholders affect the trade-offs and this paper attempts to answer this important question.

Although previous research has documented multiple governance roles of large family shareholders in affecting management turnover and private information abuse, our understanding of multiple governance roles of family owners in affecting analyst forecast quality is limited. This research investigates how family control affects analyst forecast dispersion, accuracy and optimism in general and in particular how earnings smoothness, as the moderating factor, affects these relationships within a weak institutional environment. We show that large family shareholders lead to more dispersed, less accurate and more optimism biased analyst forecasts. Our research contributes to previous research by revealing the multiple governance roles of large family shareholders in affecting analyst forecasts, firstly their entrenchment role in extracting private benefits of controls through opaque environments and secondly their market distortion role in mitigating family-manager agent conflicts without improving analyst forecast quality, both at the costs of minority shareholders. This analysis, by revealing both family entrenchment and market discipline distortion roles over professionally hired managers to protect family private benefits of control, supports the theoretical arguments by Coff (1999).

This study also extends previous research by revealing the different incentives contained in smoothing earnings to affect analyst forecasts between family and nonfamily firms. We highlight that different multiple levels of agency conflicts between family and nonfamily firms are key to differentiate the impacts of earnings smoothness on analyst forecast quality. The prevailing large shareholder-minority shareholders conflicts and the large shareholder-manager agent conflicts in many nonfamily firms from emerging markets better align interests between minority shareholders and manager agents, leading to signalling oriented earnings smoothness in many nonfamily firms. In contrast, large family



shareholder-minority shareholders conflicts, combined with the better aligned interests between large family shareholder and manager agents stimulates conflicts between minority shareholders and manager agents and leads to garbling oriented earnings smoothness in family firms. However, when families have better aligned interests with minority shareholders and face more effective market discipline, earnings smoothness is more likely to be used as a signalling strategy to improve analyst forecasts. Our analysis helps to disentangle conflicting objectives of family shareholders in communicating information to analysts and their mixed effects on analyst forecast quality. They may play multiple governance roles by enhancing transparency for long-term wealth generation due to their aligned interests and stewardship on the one hand and engaging in an opportunistic wealth distribution in an environment of corporate opacity, due to their entrenchment and market discipline distortion role, on the other. Overall, our research helps to better understand how and why family firms can be different from nonfamily firms in the agency and strategy management literatures.

Our research also has important practical implications for regulators. The findings suggest large family owners can distort market discipline over professionally hired managers for family benefits but at the cost of minority shareholders. Policy makers and regulators should consider how to strengthen an independent management team and avoid market discipline distortion by large family shareholders. As suggested by Desai *et al.* (2006), it is important to increase the supply of high quality and ethical managers to the labor market on one hand and increase the penalty externally imposed on unethical managers on the other, by restricting their entry into the labor market for subsequent employment. To achieve a truly independent management team, regulators can strengthen analysts' scrutiny role to put pressure on management for reliable information disclosure, especially for those who miss analyst forecasts. They can also constrain compensation packages or trigger mandatory management

turnover for those managers who consistently miss analyst forecasts or have poor quality analyst forecasts. This can strengthen the regulative powers to complement the market discipline on professionally hired managers for high quality information disclosure and avoid family discipline distortion. Our research shows the board to be ineffective to influence analyst forecasts. Regulators should consider how best to improve the effectiveness of the board in order to constrain large family shareholders' power over the board (e.g. by setting a mandatory maximum percentage of the board which may be occupied by family members) and mitigate their distortion on market discipline for their own benefits. Finally, our research shows earnings smoothness can be good or bad depending on the corporate governance environment and especially on family owners' incentives in smoothing earnings. Thus in addition to internationally accepted good practice principals and standards of disclosure, policy makers and regulators in emerging economies should also consider to improve the firm-level governance standards on disclosure incentives. Overall, these are important steps in order to strengthen the institutional environment in both regulative and normative aspects (Peng and Khoury, 2009) and to support a consistently effective market discipline on both managers and controlling families and ultimately, promote market development and wealth growth.

## **6. Further Research**

Our findings indicate a rich set of future research possibilities. For example, our research focuses on Taiwan, a model of emerging economies with prevailing large family shareholders. Given family governance impacts can vary across different institutional environments (Peng and Jiang, 2010), further research can investigate how our results can be applied to other emerging economies with a similar institutional environment. These can further enhance our understanding of family governance in a more general way. In addition, we assume there are

prevailing tunneling activities by large shareholders without considering the various types of tunneling activities. Further research can relax such assumptions and investigate how different types of tunneling, by different types of large shareholders and their incentives to smooth earnings, can affect analyst forecast quality. Finally, we have focused on corporate governance factors associated with family control. However, many listed companies in emerging economies also have non-family investors, including corporate institutions, financial institutions, foreign investors and the state. Therefore, a more refined analysis of possible effects of different types of large shareholders would be useful for a better understanding of factors affecting the analyst's information role in emerging economies. For example, is state ownership associated with an increased level of analysts forecasts quality and more signalling oriented earnings smoothness and why? Do foreign investors "export" good corporate governance in terms of better analyst forecast quality and more signalling oriented earnings smoothness? Future research should address these important questions.

## References

- Ali, A., Chen, T. Y. and Radhakrishnan, S. (2007), "Corporate disclosures by family firms", *Journal of Accounting and Economics*, Vol. 44 No. 1-2, pp. 238-286.
- Anderson, R., Duru, A. and Reeb, D. (2009), "Founders, heirs, and corporate opacity in the United States", *Journal of Financial Economics*, Vol. 92, pp. 205-222.
- Baek, J., Kang, J. and Lee, I. (2006), "Business groups and tunneling: Evidence from private securities offerings by Korean Chaebols", *Journal of Finance*, Vol. 61, pp. 2415-2449.
- Bruton, G., Filatotchev, I., Chahine, S. and Wright, M. (2010), "Governance, ownership structure and performance of IPO firms: The impact of different types of private equity investors and institutional environments", *Strategic Management Journal*, Vol. 31 No.5, pp. 491-509.
- Carney, M. and Gedajlovic, E. (2002), "The coupling of ownership and control and the allocation of financial resources: Evidence from Hong Kong", *Journal of Management Studies*, Vol. 39 No. 1, pp. 123-146.
- Cascino, S., Pugliese, A., Mussolino, D. and Sansone, C. (2010), "The influence of family ownership on the quality of accounting information", *Family Business Review*, Vol. 23 No. 3, pp. 246-265.
- Chaney, P. and Lewis, C. (1995), "Earnings management and firm valuation under asymmetric information", *Journal of Corporate Finance*, Vol. 1 No. 1, pp. 319-345.
- Chen, S., Chen, X. and Cheng, Q. (2008), "Do family firms provide more or less voluntary disclosure?" *Journal of Accounting Research*, Vol. 46 No.3, pp. 499-536.
- Chen, Z., Cheung, Y-L., Stouraitis, A., and Wong, A.W.S. (2005), "Ownership concentration, firm performance, and dividend policy in Hong Kong", *Pacific-Basin Finance Journal*,

Vol. 12, pp.431-449.

- Cheong, F. and Thomas, J. (2011), "Why do EPS forecast error and dispersion not vary with scale? Implications for analyst and managerial behaviour", *Journal of Accounting Research*, Vol. 49 No. 2, pp. 359-401.
- Claessens, S. and Fan, J. (2002), "Corporate governance in Asia: A survey", *International Review of Finance*, Vol. 3 No. 2, pp. 71–103.
- Coff, R. (1999), "When competitive advantage doesn't lead to performance: The resource-based view and stakeholder bargaining power. *Organization Science*, Vol. 10 No.2, pp. 119–133.
- Davis, J. H., Schoorman, F. D. and Donaldson, L. (1997), "Toward a stewardship theory of management". *Academy of Management Review*, Vol. 22 No. 1, pp. 20-47.
- Demsetz, H. and Lehn, K. (1985), "The structure of corporate ownership: Causes and consequences", *Journal of Political Economy*, Vol. 93, pp. 1155–1177.
- Demski, J. (1998), "Performance measure manipulation", *Contemporary Accounting Research*, Vol. 15 No. 3, pp. 261-285.
- Desai, H., Hogan, C. and Wilkins, M. (2006), "The reputational penalty for aggressive accounting: Earnings restatements and management turnover", *Accounting Review*, Vol. 81 No.1, pp. 83–112.
- Duru, A. and Reeb, D. (2002), "International diversification and analysts' forecast accuracy and bias", *The Accounting Review*, Vol. 77 No. 2, pp. 415-433.
- Easley, D., O'Hara, M. and Paperman, J. (1998), "Financial analysts and information-based trade", *Journal of Financial Markets*, Vol. 1, pp. 175-201.
- Espahbodi, R., Dugar, A. and Tehranian, H. (2001), "Further evidence on optimism and underreaction in analysts' forecasts", *Review of Financial Economics*, Vol. 10, pp. 1-21.
- Faccio, M., Marchica, M. T. and Mura, R. (2011), "Large shareholder diversification and corporate risktaking", *Review of Financial Studies*, Vol. 24, pp. 3601–3641.
- Filatotchev, I., Lien, Y. and Piesse, J. (2005), "Corporate governance and performance in publicly listed, family-controlled firms: Evidence from Taiwan", *Asia Pacific Journal of Management*, Vol. 22 No.3, pp. 257–283.
- Filatotchev I., Zhang, X. and Piesse, J. (2011), "Multiple agency perspective, family control and private information abuse in an emerging economy", *Asia Pacific Journal of Management*, Vol. 28, pp. 69-93.
- Francis, J., Schipper, K., LaFond, R., Olsson, P. and Schipper, K. (2004), "Cost of equity and earnings attributes", *The Accounting Review*, Vol. 79 No. 4, pp. 967-1010.
- Francis, J., Schipper, K. and Vincent, L. (2005), "Earnings and dividend informativeness when cash flow rights are separated from voting rights", *Journal of Accounting and Economics*, Vol. 39, pp. 329-360.
- Fudenberg, D. and J. Tirole. (1995), "A theory of income and dividend smoothing based on incumbency rents", *Journal of Political Economy*, No. 103, pp. 75-93.
- Graham, J., Harvey, C. and Rajgopal, S. (2005), "The economic implications of corporate financial reporting", *Journal of Accounting and Economics*, Vol. 40 No. 1-3, pp. 3-73.
- Gopalan, R. and Jayaraman, S. (2012), "Private control benefits and earnings management: evidence from insider controlled firms", *Journal of Accounting Research*, Vol. 50 No.1, pp. 117-157.
- Habib, A. and Jiang, H. (2012), "Managerial ownership-induced income smoothing and information asymmetry", *Pacific Accounting Review*, Vol. 24 No. 2, pp. 211–232.
- Hassell, J. M. and Jennings, R. H. (1986), "Relative forecast accuracy and the timing of earnings forecast announcements", *Accounting Review*, Vol. 61 No.1, pp. 58-75.
- Haw, I. M., Ho, S., Hu, B. and Wu, W. (2010), "Analysts' forecast properties, concentrated ownership and legal institutions", *Journal of Accounting, Auditing, and Finance*, Vol. 25

- No. 2, pp. 235–260.
- Haw, I., Bingbing, H. and Wu, W. (2004), “Ultimate ownership, income management, and legal and extralegal institutions”, *Journal of Accounting Research*, Vol. 42, pp. 423–463.
- He, J., and X. Tian. (2013), “The dark side of analyst coverage: The case of innovation”, *Journal of Financial Economics*, Vol. 109 No.3, pp. 856-878.
- He, W, Sidhu, B. and Tan, H. (2010), “Income smoothing and properties of the information environment of users of financial statements”, in *AAA AAA Annual Meeting and CTLA 2010*, United States of America, San Francisco, 2-4 August.
- Hope, O. (2003), “Accounting policy disclosures and analysts' forecasts”, *Contemporary Accounting Research*, Vol. 20 No. 2, pp. 295-321.
- Huang, S.X., Pereira, R. and Wang C. (2017), “Analysts coverage and the likelihood of meeting or beating analyst earnings forecasts”, *Contemporary Accounting Research*. Doi:10.1111/1911-3846.12289.
- Hutton, A. (2005), “Determinants of managerial earnings guidance prior to Regulation Fair Disclosure and bias in analysts' earnings forecasts”, *Contemporary Accounting Research*, Vol. 22 No.4, pp. 867-914.
- Jensen, M. and Meckling, W. (1976), “Theory of the firm: Managerial behavior, agency costs, and ownership structure”, *Journal of Financial Economics*, Vol. 3, pp. 305–360.
- Johnson, S., La Porta, R., Lopez-de-Silanes, F. and Shleifer, A. (2000), “Tunneling”, *American Economic Review*, Vol. 90, pp. 22-27.
- Khurana, I. K., Raman, K. K. and Wang, D. (2013), “Weakened outside shareholder rights in dual-class firms and timely loss reporting”, *Journal of Contemporary Accounting & Economics*, Vol. 9 No. 2, pp. 203-220.
- Kirschenheiter, M. and Melumad, N. (2002), “Can big bath and earnings smoothing co-exist ad equilibrium financial reporting strategies?” *Journal of Accounting Research*, Vol. 40 No. 3, pp. 761-796.
- Lambert, R. (1984), “Income smoothing as rational equilibrium behavior”, *The Accounting Review*, Vol. 59 No. 4, pp. 604-618.
- Lehavy, R., Li, F. and Merkley, K. (2011), “The effect of annual report readability on analyst following and the properties of their earnings forecasts”, *The Accounting Review*, Vol. 86 No. 3, pp. 1087–1115.
- Leuz, C., Nanda, D. and Wysocki, P. D. (2003), “Earnings management and investor protection: an international comparison”, *Journal of Financial Economics*, Vol. 69 No.3, pp. 505-527.
- Miller, D., Breton-Miller I., Lester R. and Cannella A. (2007), “Are family firms really superior performers?” *Journal of Corporate Finance*, Vol. 13, pp. 829-858.
- Morck, R. and Yeung, B. (2003). “Agency problems in large family business groups”, *Entrepreneurship Theory and Practice*, Vol.27 pp. 367–382.
- Peng, M. and Jiang, Y. (2010), “Institutions behind family ownership and control in large firms”, *Journal of Management Studies*, Vol. 47 No. 2, pp. 253–273.
- Peng, M. W. and Khoury, T. A. (2009), “Unbundling the institution–based view of international business strategy”, In A. Rugman (Ed.). *The Oxford handbook of international business*, 2nd ed. Oxford: Oxford University Press.
- Sambharya, R. B. (2011), "Security analysts' earnings forecasts as a measure of firm performance: An empirical exploration of its domain", *Management Decision*, Vol. 49 No. 7, pp.1160 – 1181.
- Schulze, W. S., Lubatkin, M. H., Dino, R. N. and Buchholtz, A. K. (2001), “Agency relationships in family firms: Theory and evidence”, *Organizational Science*, Vol. 12 No. 2, pp. 99–116.

- Shleifer, A. and Vishny, R. (1997), "A survey of corporate governance", *Journal of Finance*, Vol. 52 No. 2, pp. 737–783.
- Steier, L., (2001), "Next-generation entrepreneurs and succession: An exploratory study of modes and means of managing social capital", *Family Business Review*, Vol.14 No. 3, pp. 259-276.
- Subramanyam, K. (1996), "The pricing of discretionary accruals", *Journal of Accounting and Economics*, Vol. 22, pp. 249-281.
- Tinaikar, S. (2014), "Voluntary disclosure and ownership structure: An analysis of dual class firms", *Journal of Management & Governance*, Vol. 18 No. 2, pp. 373-417.
- Tucker, J. and Zarowin, P. (2006), "Does income smoothing improve earnings informativeness?" *The Accounting Review*, Vol. 81 No. 1, pp. 251-270.
- Verrecchia, R. (2001), "Essays on disclosure", *Journal of Accounting and Economics*, Vol. 32, pp. 97–180.
- Yang, M. (2010), "The impact of controlling families and family CEOs on earnings management", *Family Business Review*, Vol. 23 No. 3, pp. 266-279.
- Yu, F. (2008), "Analysts coverage and earnings management", *Journal of Financial Economics*, Vol. 88 No.2, pp. 245-271.
- Zellweger, T. (2007), "Time horizon, costs of equity capital, and generic investment strategies of firms", *Family Business Review*, Vol. 20 No.1, pp, 1–15.
- Zhang, X., Yang, X., Strange, R. and Zhang, Q. (2017), "Informed trading by foreign institutional investors as a constraint on tunneling: Evidence from China", *Corporate Governance: An International Review*. doi: 10.1111/corg.12206.
- Zhang, X., Piesse, J. and Filatotchev, I. (2015), "Family control, multiple institutional block-holders and informed trading", *The European Journal of Finance*, Vol. 21 No. 10-11, pp. 826-847.
- Zhang, X., Wei, J.T. and Wu, H. H. (2013), "Forced financial information restatements and management turnover: market discipline and large family shareholders' intervention in an emerging economy", *Asia Pacific Journal of Management*, Vol.30 No.4, pp. 1005-1029.

Variables	Definitions	Measurement
Family	Family firms	by linking corporate insiders including CEO, board members, board chairman, honorary chairman and vice chairman that firstly share a common family name and secondly share the same first name of the largest shareholder from the male side of the family name with the largest owner
Dispersion	Analyst earnings forecast dispersion	the standard deviation of all available forecasts for the corresponding fiscal year scaled by the stock price at the beginning of the corresponding fiscal year
Accuracy	Analyst earnings forecast accuracy	the negative of the absolute difference value between the actual earnings per share (EPS) and the average forecasts among following analysts for the corresponding fiscal year, deflated by the stock price at the beginning of the corresponding fiscal year
Optimism	Analyst earnings forecast optimism	adopting a the dummy variable that equals to 1 if the signed difference between the consensus forecasts among following analysts and the actual EPS for the corresponding fiscal year is positive and 0 otherwise
Smoothness	Earnings smoothness	the negative signed value of the standard deviation of earnings before extraordinary items over the rolling 5-year windows divided by the standard deviation of cash flow from operation over the same rolling 5-year windows. The negative signed value is to ensure that the increasing measurement value for Smoothness represents an increasingly smoothed earning and thus facilitates the interpretation.
Block	Blockholders	adopting a dummy variable that equal to 1 if non-controlling block-holders exist in the firm and 0 otherwise
Outdirector Age	Outside directors Firm age	the percentage of independent directors over the board the natural logarithm of the number of years since the firm was incorporated
Size	Firm size	the natural logarithm of total assets
Lev	Firm leverage	the total liabilities divided by total assets
Growth	Firm growth	the deviation of the net sale in the current year from the previous year scaled by the net sale in the previous year
Loss	Firm's loss	adopting a dummy variable equals to 1 if the net income in the previous year is negative and 0 otherwise
Year dummy		adopting a dummy variable equals to 1 if the year is 2009 and 0 otherwise
Industry dummy1		adopting a dummy variable equals to 1 if the industries are cement, steel and construction industry and 0 otherwise
Industry dummy2		adopting a dummy variable equals to 1 if the industries are plastic and rubber industry and 0 otherwise
Industry dummy3		adopting a dummy variable equals to 1 if the industries are electronics industry and 0 otherwise

**Notes:** All data were collected from Taiwan Economic Journal (TEJ) database.

**Table I.**  
Variable  
definitions and  
measurement

	Variable	Obs.	Mean	Median	SD	Min.	Max.
	Family	318	0.57	1.00	0.50	0.00	1.00
	Dispersion	318	0.02	0.01	0.03	0.00	0.30
	Accuracy	318	-0.02	-0.01	0.04	-0.34	0.00
	Optimism	318	0.42	0.00	0.50	0.00	1.00
	Smoothness	318	-0.85	-0.77	0.62	-4.82	-0.06
	Block	318	0.80	1.00	0.40	0.00	1.00
	Outdirector	318	0.12	0.00	0.15	0.00	0.60
	Age	318	3.25	3.26	0.52	1.64	4.17
	Size	318	17.02	16.73	1.43	13.94	21.05
	Lev	318	0.44	0.45	0.17	0.04	0.92
	Growth	318	0.16	0.11	0.41	-0.82	3.39
	Loss	318	0.54	1.00	0.50	0.00	1.00

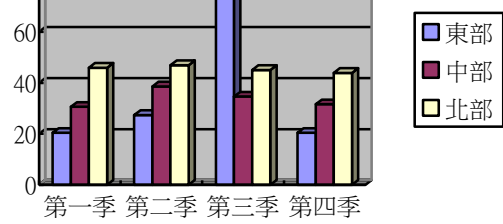
**Table II.**

Descriptive statistics



	Family	Dispersion	Accuracy	Optimism	Smoothness	Block	Outdirector	Age	Size	Lev	Growth	Loss
Family	1.000											
Dispersion	0.159***	1.00										
Accuracy	-0.130**	-0.589***	1.00									
Optimism	0.099**	0.174***	-0.021	1.00								
Smoothness	0.006	-0.092*	0.044	-0.086*	1.00							
Block	-0.123**	-0.021	0.020	-0.117**	-0.090*	1.000						
Outdirector	-0.278***	-0.050	0.050	-0.067	-0.085*	0.095**	1.000					
Age	0.285***	0.084*	-0.003	-0.132***	-0.030	-0.107**	-0.462***	1.000				
Size	-0.018	0.108**	-0.043	0.168***	-0.003	-0.117**	-0.055	0.200***	1.000			
Lev	0.098**	0.172***	-0.113**	0.081*	0.329***	-0.097**	-0.139***	0.188***	0.375***	1.000		
Growth	-0.017	-0.077*	0.131***	0.055	-0.018	-0.018	0.057	-0.045	-0.030	0.103**		
Loss	0.013	-0.292***	0.179***	-0.197***	0.008	-0.026	0.026	0.006	-0.017	-0.027	0.384***	1.000

**Table III.** Spearman correlation matrix  
**Notes:** \*significant at the 10%. \*\*significant at 5%. \*\*\*significant at 1%. N=318.



	1.Dispersion	VIF	2. Accuracy	VIF	3. Optimism	VIF
Constant ( $\alpha$ )	-0.031(-0.791)		-0.053(-1.743)*		-6.995(-3.647)***	
Family ( $\beta_1$ )	0.010(2.125)**	1.22	-0.008(-1.566)*	1.22	0.170(0.599)	1.22
Smoothness ( $\beta_2$ )	-0.006(-1.820)**	1.21	0.007(1.927)**	1.21	-0.458(-2.107)**	1.21
Block ( $\beta_3$ )	0.002(0.619)	1.06	0.003(0.562)	1.06	-0.566(-1.812)**	1.06
Outdirector ( $\beta_4$ )	0.000(-0.003)	1.44	0.016(1.195)	1.44	-0.502(-0.507)	1.44
Age ( $\beta_5$ )	-0.009(-1.572)*	1.88	0.016(2.744)***	1.88	0.385(1.163)	1.88
Size ( $\beta_6$ )	0.004(2.108)**	1.27	0.000(-0.380)	1.27	0.258(2.685)***	1.27
Lev ( $\beta_7$ )	0.013(0.956)	1.40	-0.040(-2.434)***	1.40	-0.182(-0.199)	1.40
Growth ( $\beta_8$ )	0.006(0.846)	1.24	0.005(0.830)	1.24	1.435(1.884)**	1.24
Loss ( $\beta_9$ )	-0.004(-0.558)	2.73	0.010(1.384)*	2.73	-0.112(-0.270)	2.73
Year dummy ( $\beta_{10}$ )	0.012(1.889)	2.95	0.002(-0.787)	2.95	1.517(2.946)***	2.95
Industry dummy1 ( $\beta_{11}$ )	0.010(1.494)**	1.50	-0.004(0.307)	1.39	0.880(1.905)**	1.39
Industry dummy2 ( $\beta_{12}$ )	0.002(0.404)	1.29	0.008(-0.577)	1.29	0.891(1.646)*	1.29
Industry dummy3 ( $\beta_{13}$ )	-0.003(-0.592)	2.08	0.002(1.292)*	2.08	0.179(0.461)	2.08
R2 (%)	11.39	1.63	11.43	1.63	14.17	1.63

**Table IV.** The factors affecting analysts' overall forecast outcome.

**Notes:** \*significant at the 10%. \*\*significant at 5%. \*\*\*significant at 1%. t-Statistics (z-statistics for optimism using logit regression) are given within square braces. The heterosedasticity bias is corrected by using the Huber-White process. Industry dummy following the industry classification provided by TEJ. N=318.

	1. Dispersion	VIF	2. Accuracy	VIF	3. Optimism	VIF
Constant ( $\alpha$ )	-0.028 (-0.714)		-0.059 (-1.975)**		-7.841(-3.966)***	
Family ( $\beta_1$ )	0.007(0.975)	3.50	-0.002(-0.255)	3.50	0.908(1.917)**	3.50
Smoothness ( $\beta_2$ )	-0.004(-1.194)	1.82	0.005(-1.226)	1.82	-0.809(-2.763)***	1.82
Family*Smoothness ( $\beta_2'$ )	-0.003(-0.524)	3.82	0.007(1.171)	3.82	0.837(1.905)**	3.82
Block ( $\beta_3$ )	0.003(0.641)	1.06	0.003(0.531)	1.06	-0.599(-1.892)**	1.06
Outdirector ( $\beta_4$ )	0.000(0.031)	1.45	0.015(1.134)	1.45	-0.609(-0.616)	1.45
Age ( $\beta_5$ )	-0.009(-1.585)*	1.88	0.017(2.798)***	1.88	0.422(1.271)	1.88
Size ( $\beta_6$ )	0.004(2.014)**	1.29	0.000(-0.221)	1.29	0.286(2.911)***	1.29
Lev ( $\beta_7$ )	0.014(0.976)	1.41	-0.041(-2.496)***	1.41	-0.255(-0.281)	1.41
Growth ( $\beta_8$ )	0.005(0.841)	1.24	0.005(0.889)	1.24	1.406(1.957)**	1.24
Loss ( $\beta_9$ )	-0.004(-0.555)	2.73	0.010(1.394)*	2.73	-0.080(-0.201)	2.73
Year dummy ( $\beta_{10}$ )	0.012(1.916)**	3.00	-0.006(-0.841)	3.00	1.532(3.012)***	2.96
Industry dummy1 ( $\beta_{11}$ )	0.011(1.485)*	1.37	0.000(-0.027)	1.37	0.642(1.377)*	1.50
Industry dummy2 ( $\beta_{12}$ )	0.002(0.422)	1.29	-0.004(-0.614)	1.29	0.833(1.480)*	1.29
Industry dummy3 ( $\beta_{13}$ )	-0.003(-0.580)	2.19	0.008(1.265)	2.19	0.166(0.426)	2.08
R2 (%)	11.47	2.00	11.72	2.00	14.90	2.00

**Table V.** The interaction between families and earnings smoothness

**Notes:** \*significant at the 10%. \*\*significant at 5%. \*\*\*significant at 1%. t-statistics (z-statistics for optimism using logit regression) are given within square braces. The heterosedasticity bias is corrected by using the Huber-White process. Industry dummy following the industry classification provided by TEJ. N=318.

Panel A	Largest family shareholders have more than 20% ownership						
	1. Dispersion	VIF	2. Accuracy	VIF	3. Optimsim	VIF	
Constant ( $\alpha$ )	-0.024(-0.562)		-0.063(-1.850)**		-6.402(-3.321)***		
Family ( $\beta_1$ )	0.002(0.282)	3.31	0.007(0.939)	3.31	-0.692(-1.480)*	3.31	
Smoothness ( $\beta_2$ )	-0.004(-1.089)	1.89	0.001(0.290)	1.89	-0.278(-1.180)	1.89	
Family*Smoothness ( $\beta_2'$ )	-0.003(-0.525)	3.78	0.016(2.298)**	3.78	-0.470(-1.100)	3.78	
Block ( $\beta_3$ )	0.002(0.560)	1.07	0.003(0.577)	1.07	-0.622(-1.987)**	1.07	
Outdirector ( $\beta_4$ )	-0.005(-0.428)	1.42	0.018(1.391)*	1.42	-0.462(-0.473)	1.42	
Age ( $\beta_5$ )	-0.008(-1.420)*	1.86	0.016(2.754)***	1.86	0.410(1.239)	1.86	
Size ( $\beta_6$ )	0.003(1.867)**	1.26	0.000(-0.008)	1.26	0.245(2.502)***	1.26	
Lev ( $\beta_7$ )	0.014(1.007)	1.40	-0.040(-2.543)***	1.40	-0.130(-0.141)	1.40	
Growth ( $\beta_8$ )	0.006(0.821)	1.25	0.006(0.920)	1.25	1.440(1.872)**	1.25	
Loss ( $\beta_9$ )	-0.003(-0.388)	2.80	0.007(0.986)	2.80	-0.090(-0.220)	2.80	
Year dummy ( $\beta_{10}$ )	0.013(1.933)**	3.00	-0.008(-1.115)	3.00	1.577(3.044)***	3.00	
Industry dummy1 ( $\beta_{11}$ )	0.013(1.962)**	1.37	-0.002(-0.232)	1.37	0.996(2.100)**	1.37	
Industry dummy2 ( $\beta_{12}$ )	0.003(0.651)	1.29	-0.003 (-0.378)	1.29	0.939(1.750)**	1.29	
Industry dummy3 ( $\beta_{13}$ )	-0.002(-0.473)	1.99	1.241(1.241)	2.19	0.046(0.117)	2.19	
<b>Table VI. Sensitivity tests</b>	R2	10.10		12.65	1.99	14.58	1.99

Panel B	Largest family shareholders have more than 50% median level ownership					
	1. Dispersion	VIF	2. Accuracy	VIF	3. Optimism	VIF
Constant ( $\alpha$ )	-0.021(-0.529)		-0.063(-1.852)**		-6.868(-3.542)***	
Family ( $\beta_1$ )	-0.007(-0.826)	3.23	0.021(1.682)**	3.23	0.116(0.151)**	3.23
Smoothness ( $\beta_2$ )	-0.005(-1.432)*	1.29	0.005(1.288)*	1.29	-0.468(-2.093)**	1.29
Family*Smoothness ( $\beta_2'$ )	-0.013(-1.348)*	3.25	0.031 (2.419)***	3.25	0.124(0.152)	3.25
Block ( $\beta_3$ )	0.002(0.537)	1.08	0.003(0.597)	1.08	-0.584(-1.859)**	1.08
Outdirector ( $\beta_4$ )	-0.004(-0.324)	1.42	0.017(1.373)*	1.42	-0.600(-0.618)	1.42
Age ( $\beta_5$ )	-0.008(-1.357)*	1.92	0.015(2.576)***	2.96	0.403(1.212)	1.92
Size ( $\beta_6$ )	0.003(1.820)**	1.26	0.000(0.052)	1.26	0.252(2.626)***	1.26
Lev ( $\beta_7$ )	0.015(1.090)	1.41	-0.042(-2.264)***	1.41	-0.173(-0.187)	1.41
Growth ( $\beta_8$ )	0.004(0.632)	1.32	0.009(1.469)*	1.32	1.463(1.919)**	1.32
Loss ( $\beta_9$ )	-0.003(-0.431)	2.76	0.009(1.177)	2.17	-0.101(-0.246)	2.76
Year dummy ( $\beta_{10}$ )	0.013(1.959)**	2.96	-0.007(-0.939)	2.96	1.534(2.983)***	2.96
Industry dummy1 ( $\beta_{11}$ )	0.014(1.986)**	1.40	-0.002(-0.326)	1.40	0.904(1.914)**	1.40
Industry dummy2 ( $\beta_{12}$ )	0.005(-1.348)*	1.29	-0.007(-1.010)	1.29	0.926(1.698)**	1.29
Industry dummy3 ( $\beta_{13}$ )	-0.003(-1.348)*	2.17	0.008(1.326)*	2.17	0.161(0.407)	2.17
R2 (%)	10.02	1.91	12.31	1.91	14.09	1.91

**Notes:** \* significant at the 10%. \*\*significant at 5%. \*\*\*significant at 1%. t-Statistics (z-statistics for optimism using logit regression) are given within square braces. The heteroscedasticity bias is corrected by using the Huber-White process.

**Table VI.** Sensitivity Industry dummy following the industry classification provided by TEJ. For simplicity, the results for control variables are tests (continued) not reported. N=318.