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The influence of family firm dynamics on voluntary disclosures☆

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ABSTRACT

We examine the voluntary disclosure practices of family firms. Family firms have longer investment horizons and lower agency conflicts between owners and managers. However, they also exhibit higher agency conflicts between controlling and non-controlling shareholders, and greater concerns about their own reputations. We therefore hypothesize that the previously documented association between stock-based incentives and voluntary disclosures is dampened for family firms. In comparison to non-family firms, we find that family firms are less likely to provide management earnings forecasts when their CEO's wealth (linked to the firm) is higher. We note this influence only in larger firms, which is consistent with the finding that larger firms have a significantly higher number of stock-based incentives than smaller firms. Additionally, the main result continues to hold when a family member serves as CEO or on the board of directors. We contribute to the literature by extending the research on stock-based incentives and voluntary disclosure, linking this research to family firms, and providing insight on the conflicting results found in prior family firm research.

1. Introduction

Family firms play a critical role in the economy. A family firm is defined as any company where the founders or their descendants maintain positions in top management, as board members, or are among the company's largest stockholders (BusinessWeek, 2003). Family firms represent approximately 33 and 46% of the Standard and Poor's (S&P) 500 and 1500 index firms, respectively, and cover a broad range of industries. For example, two-thirds of S&P 1500 companies in the following sectors are family firms: high-tech industries (e.g., pharmaceuticals and electronic equipment), wholesale and retail, transportation, and printing and publishing. Family firms also account for over 30% of companies in capital-intensive industries (steel works, machinery, automobile, petroleum, and natural gas), regulated industries (banking and insurance companies), and the business supplies industry (Cheng, 2014). However, our understanding of family firms' influence on voluntary disclosure is limited. In this paper, we investigate the incremental family firm effect concerning the relationship between CEOs' stock-based incentives and voluntary disclosure (management forecasts).

Agency problems emerge when the principal owner of a firm delegates decision-making authority to the firm's managers. The owner can minimize such problems by providing incentives that encourage the managers to align their interests with those of the owner (Schulze, Lubatkin, Dino, & Buchholtz, 2001). One way to align managers' and investors' interests is through stock-based incentives. As a result, manager disclosures can mitigate agency problems, reduce contracting costs, and lower the risks associated with mis-valuation (Healy & Palepu, 2001). In addition, managers with stock-based incentives may voluntarily disclose information to increase the liquidity of the firm's stock, which results in a higher stock price. Nagar, Nanda, and Wysocki (2003) document that stock-based incentives encourage managers to provide private information to shareholders; however, the researchers do not address whether family firm dynamics influence this relationship.

When the owner manages a firm, the cost of decreasing information asymmetry between managers and shareholders, as well as the accompanying moral hazards, are the lowest (Jensen & Meckling, 1976). As a result, a family firm is one of the least costly forms of organizational governance (Daily & Dollinger, 1992; Kang, 2000). The principal source of agency costs for a firm is the separation of ownership and control (Jensen & Meckling, 1976). When the firm is managed by a single owner or group of owners (that is, a family group), these costs are eliminated or minimized. Owner management reduces the disclosure agency problem by naturally aligning the managers' and owners' interests (Schulze et al., 2001). As a result, stock-based incentives to encourage management to voluntarily disclose private information are not as important to family firms as they are to non-family firms.

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Most family firm agency problems exist between controlling and non-controlling shareholders. If a control position is maintained, the family members can use the companies to generate private benefits that are not shared by the other shareholders (Shleifer & Vishny, 1997). Therefore, when family firms engage in private rent-seeking activities, they may be reluctant to disclose their private information to the market for fear of increasing litigation risk.

Jensen and Meckling (1976) indicate that incentive-based compensation should not impact family agent performance because the family's personal wealth is already tied to the value of the firm. Consistent with this argument, family firms tend to build and protect their reputations. Family owners have longer investment horizons than other shareholders and generally consider their ownership to be an asset to pass on to future generations. As William Lauder, grandson of the founder of *Estee Lauder*, commented: "I am committed to the company. It's the vast majority of my personal wealth and my family's personal wealth—and we fully expect to be actively involved with this company going forward" (Byron & Lublin, 2007; Cheng, 2014). With a longer horizon, family owners may be more concerned about the firm's long-term value than their own short-term gain, and therefore may consider the disclosure of timely information to be less important (Salvato & Moores, 2010). Taking all these factors into account, we expect to find that the association between stock-based incentives and voluntary disclosures for family firms is dampened or eliminated.

Our sample is based on the S&P 1500 firms from 1996 to 2000. Following Nagar et al. (2003), we investigate two forms of stock-based incentives: stock-based compensation and CEO ownership of the firm (CEO wealth). We find CEO wealth, but not stock-based compensation, to be associated with the existence and frequency of management forecasts, which are muted for family firms. The dampening effect is further limited to larger family firms, consistent with our prediction that proprietary cost incentive dominates the capital market incentive for family firms. Overall, our findings suggest that stock-based compensation is not as effective as CEO wealth in encouraging disclosure. Moreover, we determine that both are generally ineffective for family firms, and that larger family firms reduce their reliance on stock price-based incentives to encourage managers to disclose private information. In addition, our results pertaining to the likelihood of issuing management guidance and the frequency of management guidance generally hold when a family member serves as CEO or on the board of directors, but are weaker when the family members are the largest shareholder and the agency cost are greater.

Our study contributes to prior research in at least three ways. First, we extend the research on stock-based incentives and voluntary disclosure. The literature on corporate governance shows that managers, when not monitored by shareholders, make decisions that maximize their own wealth but may not be in the best interests of the shareholders (Hope & Thomas, 2008). Voluntary disclosure is one form of shareholder monitoring. Shareholders use stock-based incentives to align the managers' and investors' interests and to encourage management to disclose private information. However, the prior literature on voluntary disclosure tends to treat shareholders as a homogeneous group; research in this area may not be relevant to family firms, since the agency problem between managers and shareholders is less pronounced. Family firms and non-family firms also have different goals and incentives. We demonstrate that CEOs' stock-based incentives to encourage voluntary disclosure are weaker in family firms than in non-family firms.

Second, we establish a link between family firms and the overall research on voluntary disclosure. Shareholders generally prefer more voluntary disclosure and encourage managers to release timely information through equity incentives (e.g., Core, 2001). Prior research does not address the impact of family firms on this relationship. We contribute to this analysis by showing how the differences in agency problems across family firms and non-family firms affect their voluntary disclosure decisions when their CEOs have stock-based incentives. In addition, our study extends Chen, Chen, and Cheng (2008), which document that family firms disclose fewer earnings forecasts and hold fewer conference calls, but provide more earnings warnings than do non-family firms.

Third, we shed light on the conflicting results of prior studies on family firms and voluntary disclosure. Several studies find that family firms are less likely to voluntarily disclose information (e.g., Lakhal, 2005; Chen et al., 2008). These studies argue that the owners of family firms are actively involved in their firms' management, reducing the information asymmetry between themselves and their managers. Therefore, there is less demand from non-family owners for information disclosure (Salvato & Moores, 2010). In contrast, other researchers determine that family firms are more likely to provide voluntary disclosure (Ali, Chen, & Radhakprishnan, 2007; Hutton, 2007). They argue that the less severe agency problems within family firms result in less opportunistic behavior, particularly in terms of the withholding of bad news (Ali et al., 2007). Our study rationalizes the contradictory results of these prior studies and offers additional evidence that different levels and forms of stock-based incentives may impact the association between family firms and voluntary disclosure.

The remainder of this paper is organized as follows. Section 2 reviews the existing literature in this area and develops our hypothesis. Section 3 discusses our research approach and design. Our sample selection, descriptive statistics, and empirical results are presented in Sections 4 and 5. Finally, Section 6 includes our summary and concluding thoughts.

2. Prior research and hypothesis development

In this section, we first discuss prior research relevant to our study. Then, we develop and state our family firm and voluntary disclosure hypothesis.

2.1. Review of prior research

There is long-standing literature on corporate governance that managers, when not monitored by shareholders, will make decisions that maximize their own wealth but may not be in the best interest of shareholders (Hope & Thomas, 2008). From the agency perspective, managers avoid disclosing private information because such disclosure lessens their private control benefits (Nagar et al., 2003). The lack of information disclosure also limits the ability of capital and labor markets to efficiently monitor and regulate managers (Shleifer & Vishny, 1989). Managers only disclose their private information when compelled or it is advantageous.

Prior research illustrates the role that stock-based incentives play in mitigating this managerial agency problem. Healy and Palepu (2001) discuss that disclosures provide shareholders with an effective monitoring tool, and as a result reduce agency costs. Likewise, Bushman and Smith (2001) argue that monitoring manager behavior is one way to address this conflict, and one apparent monitoring system is through financial disclosures. Ball (2006) argues that managers act more in the interest of shareholders when there is increased transparency. Shareholders use stock-based incentives to encourage voluntary disclose, mitigate information asymmetry, and ultimately align the managers' and investors' interests (Nagar et al., 2003). In other words, managers are more likely to provide voluntary disclosure when their compensation is based on stock price or their wealth is tied to firm value.

Prior research addresses the relationship between family firms and voluntary disclosure. However, the empirical results are inconsistent. Ali et al. (2007) find that S&P 500 family firms report better earnings quality than S&P 500 non-family firms, and are more likely to provide quarterly forecasts. Similarly, Hutton (2007) documents that family firms in the S&P 500 provide better quality disclosure. On the other hand, Ajinkya, Bhojra, and Sengupta (2005) and Karamanou and Vafeas (2005) discover that firms with significant amounts of institutional

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investors and more concentrated insider equity holdings are less likely to present management forecasts. Ho and Wong (2001) find that the percentage of family members on the board is negatively related to disclosure. More recently, Chen et al. (2008) show that family firms in S&P 1500 disclose less earnings forecasts and hold fewer conference calls but provide more earnings warnings.

Combined, the results indicate that stock-based incentives reduce agency problems, and thereby motivate management to voluntarily disclose information. However, inconsistent empirical evidence between family firms and voluntary disclosure suggests that additional investigation is necessary to explore the contradiction (Salvato & Moores, 2010). Additional research is needed to deepen our understanding of the motivations that affect management disclosure behaviors. We fill this void by investigating the incremental effect of family firms on the positive correlation between stock-based incentives and voluntary disclosure.

2.2. Hypothesis development

A manager's decision to voluntarily disclose information is the result of both incentives and the firm's governance structure (Beyer, Cohen, Lys, & Walther, 2010). Self-interested managers are less willing to disclose private information because lack of disclosure reduces the investors' ability to discipline them. As a result, these managers become entrenched, diminishing their chance of job loss (Shleifer & Vishny, 1989). Risk-averse managers are also reluctant to disclose private information unless they are properly compensated (Nagar, 1999).

In order to maximize investment values, investors attempt to understand the dynamic interaction between incentives and governance structure and its effect on managers' disclosure decisions and, ultimately, on firm value (John & Ronen, 1990; Core, 2001). Therefore, investors may incorporate incentive mechanisms to encourage disclosure and to reduce agency costs. Managers with stock-based incentives are more likely to offer disclosures for a number of reasons. First, stock price is immediately impacted, as investors make trade decisions based upon the information. However, the stock price only changes if investors perceive the disclosed information to be relevant. Second, stock-based incentives encourage both good and bad news disclosures. Rational investors respond not only to disclosure but also to non-disclosure, which they perceive as worse news. In other words, it is more beneficial for managers to disclose bad news to investors than to remain silent (Verrecchia, 1983; Nagar et al., 2003). Third, in advance of trading in their own stock holdings, managers may disclose private information to increase the liquidity of the firm's stock and to meet the restrictions required by insider trading. Due to these restrictions, managers have an incentive to voluntarily disclose information in order to correct any undervaluation. Finally, stock-based incentives align managers' and shareholders' interests. Consequently, managers have a greater incentive to disclose information to reduce contracting costs and to lower the risks associated with mis-valuation (Healy & Palepu, 2001).

Nagar et al. (2003) provide evidence of a positive association between stock price-based incentives and voluntary disclosure. While these findings apply to firms in general, family firms are a unique subset of firms where predictions based on agency theory may not be as obvious or consistent with overall findings for a number of reasons. Most importantly, family firms have lower agency conflicts and information asymmetry between owners and managers. Because the family members hold undiversified and concentrated equity in their firms, they are also likely to have a stronger incentive to monitor managers (Demsetz & Lehn, 1985). Consequently, the nonfamily shareholders' demand to monitor managers is reduced (Salvato & Moores, 2010). Additionally, family firms appear to have longer investment horizons and thus mitigate myopic investment decisions by managers (Ali et al., 2007). Therefore, owner management reduces the disclosure agency problem because it naturally aligns the managers' interests with those of the firm (Schulze et al., 2001).

Furthermore, most family firm agency problems exist between controlling and non-controlling shareholders. Founding families generally have large equity holdings in their firms. They dominate the board of directors and may have significant control of the company (Ali et al., 2007). If the family members as a group gain nearly full control, they may use the company to generate private benefits that are not shared by other shareholders (Shleifer & Vishny, 1997).

Another important source of potential family entrenchment is that founding families commonly hold control rights in excess of their cash-flow rights. For instance, based on an empirical study of 3006 U.S. firm-year observations between 1994 and 2000, Villalonga and Amit (2009) find that founding families have an average of 15.3% of the shares (cash flow rights), but control 18.8% of the votes. Founding owners also have more control of their companies due to disproportionate board representation, voting agreements, and pyramidal ownership structures (Cheng, 2014). These controls secure power for family members, and cause them to seek private benefits that mitigate management stock-based incentives to provide voluntary disclosure.

When family firms engage in private rent-seeking activities, they are reluctant to disclose their private information to the market because this potentially raises the risk of litigation. For example, controlling shareholders can obtain private benefits by engaging in related-party transactions (Anderson & Reeb, 2003), freezing out minority shareholders (Gilson & Gordon, 2003), and entrenching management and paying excess compensation (Shleifer & Vishny, 1997). In general, family owners are much more concerned with litigation-related and reputation costs, since the family's reputation is likely to have long-term effects on the family business and on third parties. Additionally, family owners tend to have longer investment horizons. Instead of considering firms as wealth to be consumed during their lifetimes, the founding family members consider their shared ownership to be an asset to pass on to future generations; therefore, they are more concerned with reputation than are the shareholders of non-family firms (Chen et al., 2008).

Prior research also shows that long-term shareholders find disclosure of timely information to be of no value in terms of trading profits. Instead, long-term investors have to bear the potential costs of voluntarily disclosing timely information (McNichols & Trueman, 1994; Chen et al., 2008). In addition, Fuller and Jensen (2002) and Chen et al. (2008) argue that the incentive of disclosing short-term earnings can motivate managers to choose a project with short-term gains while sacrificing long-term performance.

For the above reasons, using stock price-based incentives to encourage managers to disclose private information is not as effective in family firms. We therefore expect a weaker relationship between stock-based incentives and voluntary disclosure for family firms. We specifically investigate voluntary disclosure in the form of management forecasts. Our hypothesis is stated in the alternative as follows:

HA. The positive association between CEO stock-based incentives and management forecasts is less for family firms compared to non-family firms.

3. Research design

Our hypothesis considers whether family firm status affects the relationship of stock-based incentives and voluntary disclosure. Our construct for voluntary disclosure is voluntary management forecasts (existence and frequency), as not all firms disclose their forecasts.

We use two constructs for CEO stock-based incentives: stock-based compensation and the CEO's ownership of the company (hereafter referred to as CEO wealth). First, stock holdings are the amount of the managerial wealth that directly varies with stock price. This proxy therefore assumes that the proportion of CEO wealth tied to share price increases along with the value of shareholdings (Nagar et al.,

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2003). Managers with greater shareholdings benefit from additional disclosures because the market tends to reward better disclosure policies. Consistent with these arguments, Nagar et al. (2003) find that CEO wealth has a significant positive association with disclosure that also appears to be economically significant. Second, stock price-based compensation captures the extent to which managers are periodic traders in firm equity. Managers become buyers when they receive stock or option grants, and they are sellers when their options are close to expiration (Nagar et al., 2003). These managers are concerned about the immediate wealth effects (e.g., Bushman & Indjejikian, 1995). Thus, we argue that the market value of shares captures the relatively long-term incentives of disclosure, whereas stock price-based compensation is related to short-term incentives of disclosure. Therefore, both are important to understanding the disclosure incentive effects.

Our empirical specification is based on Nagar et al. (2003) who find a positive relationship between stock price-based incentives (stock price-based compensation and CEO wealth) and voluntary disclosure of management forecasts. We expect to find results similar to Nagar et al. (2003). Adapting their model, we add variables to capture family firm status, and the interactions of stock-based compensation and CEO wealth with family firm status.[1] The interactions of the family variable with stock-based incentives are used to test our hypothesis.

Our empirical model is as follows (subscripts are omitted here and elsewhere for brevity).[2]

$$\begin{aligned} MF/NMF = {} & \beta_0 + \beta_1 FF + \beta_2 SBC + \beta_3 SBC * FF + \beta_4 LOGWEALTH + \\ & \beta_5 LOGWEALTH * FF + \beta_6 BADNEWS + \beta_7 RETURN + \beta_8 SDRET + \\ & \beta_9 MB + \beta_{10} LMV + \beta_{11} NSEG + \beta_{12} ANALYSTS + \beta_{13} ISSUE + \\ & \beta_{14} LIT + \varepsilon \end{aligned} \quad (1)$$

Where variables are defined for each year as follows: MF is an indicator variable equal to one if the firm issued a management forecast during the year, and zero otherwise; NMF is the number of management forecasts issued during the year; FF is an indicator variable equal to one if the firm is a family firm (defined as a firm where the founders or descendants continue to maintain top management positions, serve on the board, or be on the firm's largest shareholders (BusinessWeek, 2003)), and zero otherwise; SBC is the ratio of CEO stock-based compensation (the sum of the total value of stock option grants and the value of restricted stock grants) to total compensation for the previous year; LOGWEALTH is the natural log of one plus market valuation of the shares owned (excluding options) by the CEO as of the end of the previous year; BADNEWS is an indicator variable, equal to one if the annual stock return for the year was negative, and zero otherwise; RETURN is the natural log of one plus the annual stock return; SDRET is the standard deviation of daily stock returns over the past year; MB is the ratio of the market value of common equity to book value of common equity as of the end of the previous year; LMV is the natural log of one plus the market value of common equity as of the end of the previous year; NSEG is the number of business segments recorded in Compustat; ANALYSTS is the natural log of one plus number of analysts following the firm as of the end of the previous year; ISSUE is an indicator variable equal to one if the firm issued common shares exceeding 20% of outstanding shares during the current year, and zero otherwise; and LIT is an indicator equal to one if the firm is in a litigious industry, and zero otherwise.[3]

The control variables are included to address the potential for correlated omitted variables. Our predictions for the control variables are consistent with Nagar et al. (2003), as firm performance is expected to be positively associated with voluntary disclosure. The rationale for this prediction is that failure to promptly disclose poor performance (bad news) can lead to investor lawsuits, which is obviously costly to managers (Skinner, 1994). Lang and Lundholm (1993) find that analyst disclosure ratings are positively related to firm performance and the variability of returns. Share returns control for the level of firm performance (Lang & Lundholm, 1993), while standard deviation of returns is highly correlated with the R^2 of annual return-earnings regressions (Kothari, 1992).

The market-to-book ratio proxies for a number of factors including proprietary costs, the information asymmetry between management and investors, and the investment opportunity set (Verrecchia, 1990). Firm size also controls for firm-specific factors (Verrecchia, 1990). We use the natural log because market value of equity is highly skewed. Nagar et al. (2003) indicate that firms with multiple lines of business (greater complexity) are more likely to benefit from increased disclosure. The analyst following variable controls for firm level information production and disclosure tendencies. Soffer, Thiagarajan, and Walther (2000) find that analyst following is positively related to management forecasts. An equity-financing variable controls the firms' financing transaction motives (Frankel, McNichols, & Wilson, 1995). There is an increased motivation for voluntary disclosure when the firm is seeking external funds. We include a variable to capture industry-specific litigation risks. Similar to arguments concerning firm performance, we expect greater disclosure in industries subject to greater litigation risk.

CEO stock-based compensation and CEO wealth are included to capture the positive association between this incentive and voluntary disclosure, as found in Nagar et al. (2003). We include the main effect for the family firm status, but make no predictions based on prior research. Our hypothesis is based on the interaction of stock-based incentives and family firm status. We predict negative coefficients for the interaction terms of family firm status with stock-based compensation ($\beta_3 < 0$) and with CEO wealth ($\beta_5 < 0$), which represent weaker (or muted) associations for family firms.

4. Sample selection and descriptive statistics

Our sample starts with 4415 firm-year observations from 1996 to 2000 with family firm status.[4] This sample is based on the S&P 1500 and is therefore composed of a cross section of firms that are also included in the *Execucomp* database (our source of stock-based incentive data). We eliminate 307 firm-year observations that are missing the financial statement and return data required for our models. Our final management forecast sample is comprised of 4108 firm-year observations (Panel A, Table 1).

Annual frequencies are reported in Panel B, Table 1. Over the five-year period, the number of firms included in the management forecast sample increases from 718 in 1996 to 868 in 2000. The number of family firms per year is relatively constant at approximately 46%.[5] However, the rate of firms issuing management forecasts increases over time from approximately 16% in 1996 to over 39% in 2000.

The frequency distribution for the number of management forecasts per year is displayed in Panel C, Table 1. Most of the firms that issue management forecasts issue them once or twice a year (approximately 75% of the firms issue guidance). Less than 1% of the sample issue guidance more than five times per year.

[1] We exclude insider ownership from their model as our focus is family firms, which by definition represent a common type of insider ownership. Insider ownership is therefore highly correlated with the family firm variable.

[2] Consistent with other management forecast research, the same control variables are used to explain the existence of a management forecast and the number of management forecasts issued during the year.

[3] Industries with the following SIC codes are considered litigious: 2833–2836, 3570–3577, 3600–3674, 5200–5961, 7370–7374, and 8731–8734 (Kwak, Ro, & Suk, 2012).

[4] The initial family firm sample is from Chen et al. (2008). The authors greatly appreciate the generosity of Chen et al. in providing their family firm sample.

[5] While the overall family firm rate is fairly constant at 46%, the actual family firms change as these firms leave and enter the sample. There are only 28 firms in our sample where their family firm status changed.

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Table 1
Sample.

Panel A – sample construction

	Number of firm year observations
Family firm sample (1996 to 2000)[1]	4415
Less observations missing	
Financial statement and return data	(307)
Sample for management forecast tests (H1)	4108

Panel B – frequency distribution by year

Year	Management forecasts	Family firms	Management forecast sample	Accuracy test sample
1996	115	327	718	23
1997	109	371	779	32
1998	168	392	858	62
1999	201	397	885	69
2000	341	392	868	167
Total	934	1879	4108	353
	22.7%	45.7%	100.0%	

Panel C – frequency distribution by number of management forecasts

Number of management forecasts	Firm-year observations	Percent
0	3174	77.2%
1	468	11.4
2	233	5.7
3	101	2.4
4	70	1.7
5	27	0.6
6	12	0.3
7	11	0.3
8	6	0.2
9	3	0.1
≥10	3	0.1
Total	4108	100.0%

[1] Sample of family firms is from Chen et al. (2008).

Table 2
Descriptive statistics – management forecast sample.

Panel A – pooled sample

Variable[1] (N = 4108)	Mean	Standard deviation	25th percentile	Median	75th percentile
MF	0.227	0.419	0.000	0.000	0.000
NMF	0.465	1.125	0.000	0.000	0.000
FF	0.457	0.498	0.000	0.000	1.000
SBC	0.474	0.422	0.103	0.437	0.728
LOGWEALTH	0.060	0.217	0.002	0.007	0.027
BADNEWS	0.367	0.482	0.000	0.000	1.000
LOGRET	0.099	0.435	-0.128	0.121	0.346
SDRET	0.118	0.072	0.076	0.105	0.144
MB	3.862	11.346	1.755	2.593	4.148
LOGMV	7.496	1.473	6.398	7.335	8.443
NSEG	4.796	4.711	1.000	3.000	7.000
ANALYSTS	1.892	1.103	1.386	2.197	2.708
ISSUE	0.562	0.496	0.000	1.000	1.000
LIT	0.260	0.439	0.000	0.000	1.000

Panel B – family firm status

	Non-family firms (N = 2229)		Family firms (N = 1879)	
Variable[1]	Mean	Median	Mean	Median
MF	0.229	0.000	0.226	0.000
NMF	0.499	0.000	0.425**	0.000
SBC	0.525	0.494	0.413***	0.361***
LOGWEALTH	0.016	0.005	0.112***	0.013***
BADNEWS	0.356	0.000	0.380	0.000
LOGRET	0.093	0.123	0.107	0.121
SDRET	0.110	0.098	0.128***	0.114***
MB	3.507	2.471	4.283**	2.726***
LOGMV	7.790	7.685	7.147***	6.920***
NSEG	5.262	3.000	4.242***	3.000***
ANALYSTS	1.925	2.197	1.853**	2.079***
ISSUE	0.560	1.000	0.564	1.000
LIT	0.190	0.000	0.343***	0.000***

*, **, *** difference between the mean (median) non-family and family firms is significant at the 0.10, 0.05, and 0.01 level using a *t*-test of means (Wilcoxon two-sample test).

[1] Variables are defined for each year as follows: MF is either an indicator variable equal to one if the firm issued a management forecast during the year, and zero otherwise, or the number of management forecasts issued during the year; FF is an indicator variable equal to one if the firm is a family firm (defined as a firm where the founders or descendants continue to maintain top management positions, serve on the board, or be on the firm's largest shareholders (BusinessWeek, 2003)), and zero otherwise; SBC is the ratio of CEO stock-based compensation (the sum of the total value of stock option grants and the value of restricted stock grants) to total compensation for the prior year; LOGWEALTH is the natural log of one plus the market valuation of the shares owned (excluding options) by the CEO (in millions) as of the end of the prior year; BADNEWS is an indicator variable, equals one if the annual stock return for the year was negative, and zero otherwise; RETURN is the natural log of one plus the annual stock return; SDRET is the standard deviation of daily stock returns over the past year; MB is the ratio of the market value of common equity to book value of common equity as of the end of the prior year; LMV the natural log of one plus the market value of common equity as of the end of the prior year; NSEG is the number of business segments reported in Compustat; ANLAYSTS is the natural log of the one plus number of analysts following the firm as of the end of the prior year; ISSUE is an indicator variable equal to one if the firm issued common shares exceeding 20% of outstanding shares during the current year, and zero otherwise; and LIT is an indicator equal to one if the firm is litigious industry (e.g., Kwak et al., 2012), and zero otherwise.

Panel A, Table 2 presents descriptive statistics on firm characteristics for the pooled sample. On average, 22.7% of sample firm-year observations issue management forecasts. These firms issue an average of 2.0 forecasts per year. Almost one-half of the firms (45.7%) are considered to be family firms. Stock-based incentives, whether it is stock-based compensation or share ownership, are considerable.

When compared to non-family firms (Panel B, Table 2), family firms tend to have similar, but more variable returns, greater investment opportunities (market-to-book ratios), and are more likely members of litigious industries. Non-family firms are larger, have more segments, and more analyst following the firm. Therefore, non-family firms are more likely to benefit from disclosure as investors may find it difficult to analyze firms with multiple lines of business and face greater analyst demand for information. Firm-specific factors affecting disclosure, including proprietary costs and information asymmetry between management and investors, as captured by the market-to-book ratio, are greater for family firms than non-family firms. There is no difference between non-family and family firms as to issuing management guidance (although, the number of forecasts per year is slightly greater for non-family firms). Non-family firm CEOs have more stock-based compensation (0.525 vs. 0.413). However, family firm CEOs have greater wealth associated with share ownership (0.112 vs. 0.016). Overall, CEOs at family firms have higher share ownership, whereas CEOs at non-family firms have relatively higher stock-based compensation.

Table 3 presents the Pearson correlation matrix for management forecast model variables. The management forecast variables, MF and NMF, are positively correlated with the stock-based compensation, indicating that CEOs with stock-based compensation are more likely to voluntarily disclose information, consistent with Nagar et al. (2003). Additionally, NMF and MF are negatively associated with the family firm indicator variable, implying that family firms are less likely to provide forecasts, consistent with Chen et al. (2008). Correlations between the explanatory variables are <0.5 with the exception of BADNEWS and LOGRET (correlation of −0.731, p-value < 0.05), which is expected. Our latter inferences should not be affected by multicollinearity.

5. Empirical results

We report the estimation of Eq. (1) to provide evidence as to whether or not family firms mitigate CEOs' stock-based incentives to voluntarily disclose private information (Table 4). We estimate two models varying the dependent variable between whether a management forecast is issued and the number of management forecasts issued during the year. Year fixed-effects are included in both estimations to control

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Table 3
Pearson correlation matrix.

Variables[1] (N = 4108)	2	3	4	5	6	7	8	9	10	11	12	13	14
1. MF	**0.762**	−0.004	**0.056**	0.015	**0.124**	**−0.120**	**0.065**	0.028	**0.112**	**0.153**	**0.272**	**0.162**	**0.045**
2. NMF	1.000	**−0.033**	**0.080**	−0.004	**0.140**	**−0.137**	**0.081**	0.026	**0.130**	**0.164**	**0.224**	**0.177**	**0.051**
3. FF		1.000	**−0.132**	**0.221**	0.025	0.017	**0.129**	**0.034**	**−0.218**	**−0.108**	**−0.033**	0.004	**0.173**
4. SBC			1.000	**−0.046**	0.008	0.012	0.021	**0.061**	**0.245**	**0.078**	**0.100**	0.030	**0.054**
5. LOGWEALTH				1.000	**−0.095**	**0.137**	**0.026**	0.007	**0.253**	−0.006	0.008	−0.024	**0.084**
6. BADNEWS					1.000	**−0.731**	**0.107**	0.004	**−0.040**	**0.129**	−0.018	**0.194**	0.003
7. LOGRET						1.000	**−0.031**	−0.022	−0.010	**−0.091**	0.006	**−0.137**	**0.048**
8. SDRET							1.000	**0.053**	**−0.165**	**0.053**	−0.022	**0.281**	**0.266**
9. MB								1.000	**0.119**	−0.010	**0.051**	**0.055**	**0.087**
10. LOGMV									1.000	**0.179**	**0.261**	**0.031**	0.027
11. NSEG										1.000	**−0.032**	**0.442**	**−0.125**
12. ANALYSTS											1.000	−0.012	**0.093**
13. ISSUE												1.000	**0.064**
14. LIT													1.000

Note: Pearson correlation coefficients significant at the 0.05 level are bolded.
[1] Variables are defined in Table 2.

for inter-temporal effects. We also estimate robust regressions clustering on firms (Peterson, 2009).

We first estimate the management forecast model with the management forecast indicator variable as the dependent variable using Probit. The model is adequately specified with a pseudo R^2 of 21.6%, and a percent concordant exceeding 74%. The significant coefficients on control variables are consistent with prior research. Management forecast likelihood increases with bad news, analyst following, multiple lines of business, and an equity-financing, while decreasing in shareholder returns. However, the estimated coefficient on firm size is negative, revealing a lower likelihood of management forecasts for larger firms, consistent with proprietary cost arguments. The model specification includes a number of other variables that also correlate with firm size (such as analyst following and number of segments) which do indicate an increased likelihood.

The coefficient on LOGWEALTH is positive and significant for the management forecast likelihood model (1.087; p-value < 0.01). This result supports the conclusion of prior research that stock-based incentives reduce managerial reluctance to disclose private information (Nagar et al., 2003). However, we are unable to find support for the stock-based incentives using SBC.[6] We also find that family firm status is not associated with the issuance of management forecasts.

The correlation coefficients in Table 3 demonstrate that family firms are negatively correlated with stock-based compensation but positively correlated with wealth. As a result, including family firms may negatively influence the estimated coefficient of stock-based compensation and minimize the positive association between stock-based compensation and management forecasts. On the other hand, including family firms may positively influence the estimated coefficient of wealth and further amplify the positive association between wealth and management forecasts. Further, CEO stock-based compensation is higher for non-family firms, but CEO wealth is higher for family firms (Table 2, Panel B). Combined, we believe this explains why we find a significant association between wealth and management forecasts but not between stock-based compensation and management forecasts. This evidence also supports the notion that family firm status is important to understanding stock-based incentives and explains why our results differ from Nagar et al. (2003).

We examine the interaction of CEOs' stock-based incentives and family firm status to investigate the impact of family firms on stock-based incentives for voluntary disclosure of management earnings forecasts. The estimated coefficient on LOGWEALTH * FF is negative and significant (−0.984; p-value < 0.01). Moreover, the combined coefficient of $\beta_4 + \beta_5$ (the total family firm effect for CEO wealth) is not significantly different from zero. This result suggests that relative to non-family firms, family firms are less likely to provide voluntary disclosure when their CEOs have stock-based incentives in terms of share ownership, and is consistent with our hypothesis that the effect of the incentive is muted for family firms. However, we are unable to find any results using stock-based compensation as a source of stock-based incentives.

We then estimate Eq. (1) with the number of management forecasts issued during the year as the dependent variable. The adjusted R^2 is

Table 4
Management forecast likelihood and frequency
$MF / NMF = \beta_0 + \beta_1 FF + \beta_2 SBC + \beta_3 SBC * FF + \beta_4 LOGWEALTH + \beta_5 LOGWEALTH * FF + \beta_6 BADNEWS + \beta_7 RETURN + \beta_8 SDRET + \beta_9 MB + \beta_{10} LMV + \beta_{11} NSEG + \beta_{12} ANALYSTS + \beta_{13} ISSUE + \beta_{14} LIT + \varepsilon.$

Dependent variable:		MF indicator variable		Number of MFs	
Variable[1] (N = 4108)	Pred.	Estimated coefficient	Wald χ^2	Estimated coefficient	t-Statistic
Intercept	?	−1.995***	103.17	−0.483***	3.82
FF	?	−0.029	0.09	−0.048	0.97
SBC	+	0.047	0.27	0.018	0.33
SBC * FF	H1: −	0.062	0.22	0.086	0.98
LOGWEALTH	+	1.087***	10.80	1.270***	2.66
LOGWEALTH * FF	H1: −	−0.984***	7.83	−1.292***	2.70
BADNEWS	+	0.258***	13.36	0.178***	3.18
LOGRET	−	−0.219**	6.39	−0.235***	3.18
SDRET	+	0.091	0.07	0.122	0.53
MB	+	−0.001	0.71	0.001	1.25
LOGMV	+/−	−0.061**	5.90	0.029*	1.93
NSEG	+	0.027***	18.50	0.019***	3.46
ANALYSTS	+	0.560***	424.35	0.213***	20.71
ISSUE	+	0.308***	13.13	0.177***	3.91
LIT	+	0.077	1.12	0.082*	1.93
Year fixed effects		Yes		Yes	
Pseudo R^2		21.6%			
Percent concordant		74.6%			
Adjusted R^2				15.3%	
Tests of combined coefficients			Wald χ^2		χ^2
$\beta_2 + \beta_3 = 0$		0.109	0.3	0.104	0.7
$\beta_4 + \beta_5 = 0$		0.103	0.4	−0.022	0.1

*, **, *** estimated coefficient is significant at the 0.10, 0.05, and 0.01 level for a two-tail (one-tail with directional prediction) test; Wald χ^2 (t-statistics) are based on Probit (OLS) estimations explaining the MF indicator variable (number of MFs).and standard errors clustered by firm.
[1] Variables are defined in Table 2.

[6] An important difference between our study and Nagar et al. (2003) to maximize our sample size. When we use the three-year average for our stock-based compensation and wealth variables in the management forecast frequency model, we find a significant positive coefficient (0.287; p-value = 0.02) for stock-based compensation (other results are similar to those reported), This result is consistent with Nagar et al. (2003). Upon further investigation, we find the standard deviation of annual measurements of stock-based compensation approximately one-third greater than the three-year average (0.422 vs. 0.324). The lacks of results may therefore be due to increased volatility.

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15.3%. Our control variables are similar to our management forecast model. The number of management forecasts is positively associated with bad news, firm size, multiple lines of business, analyst following, equity-financing, and litigation risk, and it is negatively associated with shareholder returns.

We find that the number of management forecasts is sensitive to CEOs' stock incentives captured by LOGWEALTH (1.270; p-value < 0.01), but not SBC. These results partially reflect with the finding that stock-based incentives reduce managerial reluctance to disclose private information.

The family firm interaction terms are used to test our hypothesis. The estimated coefficient on LOGWEALTH * FF is again negative and significant (−1.292; p-value < 0.01) and the combined coefficient of $\beta_4 + \beta_5$ (the total family firm effect for CEO wealth) is not significantly different from zero. These results imply that CEO wealth is not an effective incentive for family firms, as fewer management forecasts are associated with stock-based incentives. Similar to the management forecast likelihood analysis, stock incentives captured by SBC are not associated with the number of management forecasts issued by family firms.

For both the likelihood of issuing management forecasts and the frequency of management guidance, we find support for our hypothesis using CEO wealth, but not stock-based compensation. The descriptive statistics offer insight into these results. Family firms have significantly greater CEO wealth, while non-family firms have significantly greater stock-based compensation. Therefore, CEO wealth is expected to have a greater impact for family firms than stock-based compensation.

According to our definition, a firm reaches family firm status when the founders or descendants maintain top management positions (family CEOs), serve on the board (family directors), or are the largest shareholders. As previously discussed, Jensen and Meckling (1976) find that the costs of decreasing information asymmetry and the accompanying moral hazards are at their lowest when the CEO is an owner. This may be more important in our setting with stock-based incentives for the CEO. In addition, CEOs are substantially involved in management and their management forecast preferences are normally reflected. With family CEOs, there is no misalignment between management and owners and Type I agency problems (associated with managerial opportunism) should not be an issue (Cheng, 2014). In addition, prior research suggests that family firms perform better when family members collectively act as the CEO (Anderson & Reeb, 2003; Maury, 2006; Andres, 2008). These results further demonstrate that family involvement and control in management can align managers' interests with those of the family firms.

Additionally, Chen et al. (2008) show that after poor performance, family CEOs are less likely to be replaced than professional CEOs. DeFond and Park (1997) suggest that CEO job security concerns can lead to earnings management. Since family CEOs have greater job security, they are less likely to manage earnings expectations via voluntary disclosure of information.

Likewise, when a family member is the CEO or serves on the board of directors, family owners are actively involved in firm management, resulting in lower information asymmetry between themselves and managers (Chen et al., 2008). Moreover, family CEOs and family board members can better monitor managers, and thus the demand for information from nonfamily owners is lower (Bushman, Chen, Engel, & Smith, 2004). Therefore, there are less stock-based incentives to voluntarily disclose information in this situation.

By serving as CEO and/or holding directorship, family owners highly influence corporate decisions and drive firm disclosure toward their preferences (Chen et al., 2008). Consistent with this argument, Villalonga and Amit (2006) document that family ownership is most valuable to the firms when the founder or their descendent serves as the CEO or as the Chairman of the family firm.

Therefore, we expect similar results for the CEO stock-based incentive when family members serve as CEO or on the board of directors. However, our expectation is uncertain when the founder or descendants are the largest shareholders. The basis for our hypothesis is tied to the family member serving some form of management function. With the family member as the largest shareholder, that is not the case. As a result, we expect the largest shareholders are less involved in the operative decisions and are less influential on their disclosure decisions. We individually test the three components of our family firm proxy.

The results for the likelihood of issuing a management forecast are reported in Panel A, Table 5. The models' explanatory power and significant control variables are similar across the three estimates and to the main estimation noted in Table 4. In each estimate, the coefficient on LOGWEALTH is positive and significant, which is consistent with prior research (Nagar et al., 2003) and our primary results. We find significant negative coefficients for the interaction of CEOs' stock incentives for two of our estimates. The estimated coefficients on the interaction of LOGWEALTH with Family CEO is −0.597 (p-value = 0.09) and with Family Directors is −0.832 (p-value = 0.02). The results using the Largest Shareholder are also negative, but not significant (−0.440; p-value = 0.12). These findings support our expectations discussed above that family CEOs and family board members represent firm management, resulting in lower information asymmetry between themselves and managers. Therefore, there are less stock-based incentives to voluntarily disclose information in this situation. The lack of results for the largest shareholders is consistent with their lower degree of involvement in and influence on management and disclosure decisions. Consistent with our overall results, we are unable to find any results using stock-based compensation as a source of stock-based incentives.

We also estimate the frequency of management guidance using each of the family firm status components and report our results in Panel B, Table 5. The results are similar to those illustrated in Table 4. In each estimate, the coefficient on LOGWEALTH is positive and significant, the coefficient on the interaction with the family firm component is negative and significant, and the coefficients including stock-based compensation are not significant.

Combined, our results are in line with our expectations. These additional findings reinforce our analysis using family firm status, as the results for likelihood of issuing management guidance and frequency of management guidance generally hold over the various family firm status components. These results further suggest that each of the components is important and our main results are not driven by any one of the components.[7]

Our sample spans the S&P 1500 and therefore includes a variety of firm sizes. However, firm size is known to influence disclosure practices (Nagar et al., 2003). Firm size affects disclosure through two ways - information asymmetry between management and investors and proprietary costs (e.g., Verrecchia, 1990).

First, larger firms have more market-based incentives to increase disclosure to reduce information asymmetry (Verrecchia, 1990). Frankel et al. (1995) document that larger firms have a greater demand for external capital and tend to voluntarily disclose more information to reduce information asymmetry. Similar to this argument, Ajinkya et al. (2005) show that firm size is positively related to forecast disclosures. Further, Nagar et al. (2003) find that firm size is a significant determinant of forecast frequency.

Second, proprietary costs also have an effect on disclosure decisions (Nagar et al., 2003). Firms with greater proprietary costs are less likely to disclose (Berger & Hann, 2007). Prior research uses firm size as a proxy for proprietary costs such that larger firms have greater

[7] We also perform two additional tests (untabulated). We find that the basis for the family firm status (CEO, director, or largest shareholder) is not incrementally informative beyond the overall family firm status. We also consider an alternative approach where we exclude observations where a family member is the CEO (and separately when a family member is a director or the largest shareholder) and re-estimate the original models. In each case, we are unable to find results using stock-based compensation, but the CEO wealth results continue to hold.

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Table 5
Family CEO, directors, and largest shareholders.

Panel A: likelihood of management guidance

FFVAR:		Family CEO		Family director		Largest shareholder	
Variable[1] (N = 4108)	Pred.	Estimated coefficient	Wald χ^2	Estimated coefficient	Wald χ^2	Estimated coefficient	Wald χ^2
Intercept	?	−1.905***	105.73	−1.922***	101.87	−1.923***	111.05
FFVAR	?	−0.217**	4.65	−0.154	2.66	−0.305***	7.82
SBC	+	0.036	0.21	0.013	0.02	0.026	0.13
SBC * FFVAR	H1: −	0.119	0.54	0.142	1.08	0.269	1.85
LOGWEALTH	+	0.822**	3.73	0.990***	7.06	0.664**	3.65
LOGWEALTH * FFVAR	H1: −	−0.597*	1.84	−0.832**	4.53	−0.440	1.43
BADNEWS	+	0.266***	14.17	0.263***	13.71	0.261***	13.64
LOGRET	−	−0.214***	5.94	−0.213***	5.97	−0.222***	6.38
SDRET	+	0.175	0.28	0.136	0.17	0.111	0.10
MB	+	−0.001	0.65	−0.001	0.65	−0.001	0.58
LOGMV	+/−	−0.070***	7.85	−0.067***	7.03	−0.066***	7.11
NSEG	+	0.027***	17.32	0.027***	18.34	0.027***	17.55
ANALYSTS	+	0.561***	421.01	0.562***	423.58	0.560***	419.04
ISSUE	+	0.305***	12.66	0.310***	13.01	0.312***	13.26
LIT	+	0.091	1.57	0.092	1.61	0.080	1.18
Year fixed effects		Yes		Yes		Yes	
Pseudo R^2		21.8%		21.7%		21.9%	
Percent concordant		74.8%		74.8%		74.8%	

Panel B: frequency of management guidance

FFVAR:		Family CEO		Family director		Largest shareholder	
Variable[1] (N = 4108)	Pred.	Estimated coefficient	t-Statistic	Estimated coefficient	t-Statistic	Estimated coefficient	t-Statistic
Intercept	?	−0.441***	3.12	−0.443***	3.01	−0.461***	3.87
FFVAR	?	−0.131**	2.25	−0.117**	−2.03	−0.151***	2.64
SBC	+	0.040	0.73	0.011	0.18	0.036	0.79
SBC * FFVAR	H1: −	0.036	0.33	0.107	1.12	0.095	0.68
LOGWEALTH	+	0.750*	1.59	1.001**	2.04	0.556**	1.86
LOGWEALTH * FFVAR	H1: −	−0.694*	1.46	−0.984**	1.98	−0.519**	1.73
BADNEWS	+	0.181***	3.23	0.180***	3.21	0.176***	3.13
LOGRET	−	−0.231***	3.10	−0.232***	3.13	−0.239***	3.25
SDRET	+	0.173	0.68	0.151	0.60	0.145	0.63
MB	+	0.000	0.73	0.000	0.57	0.000	0.85
LOGMV	+/−	0.024	1.38	0.026*	1.44	0.027**	1.82
NSEG	+	0.019***	2.99	0.020***	3.06	0.020***	3.47
ANALYSTS	+	0.215***	16.84	0.216***	17.01	0.215***	20.70
ISSUE	+	0.175***	3.30	0.177***	3.35	0.178***	3.93
LIT	+	0.087*	1.62	0.091**	1.69	0.077**	1.85
Year fixed effects		Yes		Yes		Yes	
Adjusted R^2		15.4%		15.4%		15.4%	

*, **, *** estimated coefficient is significant at the 0.10, 0.05, and 0.01 level for a two-tail (one-tail with directional prediction) test; Wald χ^2 (t-statistics) are based on Probit (OLS) estimations explaining the MF indicator variable (number of MFs).and standard errors clustered by firm.

[1] FFVAR takes on the value of one of the following indicator variables: family member is a CEO, family member is a director, and a family member is the largest shareholder. Other variables are defined in Table 2.

proprietary costs (Nagar et al., 2003; Bamber & Cheon, 1998). Therefore, larger firms may disclose less. Clearly firm size is important to disclosure.

Both market-based costs and proprietary costs are more important for larger firms than smaller firms. As such, there is less of a stock-based incentive for small firms to disclose. As a result, we expect the relationship between stock-based incentives and the disclosure proxies to be significant for larger firms (similar to the main analysis) but not for smaller firms.

Family firms' unique ownership structure influences their voluntary disclosure practices (Chen et al., 2008). Family owners have longer investment horizons than other shareholders (e.g., Anderson & Reeb, 2003; Villalonga & Amit, 2006). Family firm owners are responsible for the proprietary costs and/or the costs resulting from managers' emphasis on short-term rather than long-term performance (Chen et al., 2008) and have to bear more proprietary costs. In addition, family owners are actively involved in firm management, which lowers information asymmetry between themselves and managers. For these reasons, proprietary cost incentive is expected to dominate the capital market incentive for family firms. As proprietary costs increase with family firms (larger family firms), family firms prefer less public voluntary disclosure than non-family firms. In this case, family firms would mitigate stock-based incentives to provide management forecasts in large firms. We expect the estimated coefficients on the interaction terms to be negative for larger firms, which corresponds with the main analysis. We do not expect the coefficients on the interaction terms to be significant for smaller firms.

Combined, it is important to gauge whether our main results are driven by firm size in our sample. We therefore classify firms as large (small) if its total assets are greater (smaller) than median assets each year. We then repeat the analyses by separately analyzing large and small firms to determine if firm size drives our results.

The firms classified as small and large are significantly different (Table 6). Not surprisingly, family firms are significantly more common among smaller firms (59% vs. 33%). The larger firms also show significantly greater stock-based compensation (0.537 vs. 0.411, p-value < 0.01) and CEO wealth (0.082 vs. 0.038, p-value < 0.01). However, within firm size classifications, family firms report greater CEO wealth and stock-based compensation. The percentages of firms making management forecasts among small firms (family and non-family) and

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Table 6
Mean descriptive statistics by firm size.

Variable[1]	Overall	Smaller firms	Larger firms	Difference
N	4108	2055	2053	
MF	0.227	0.200	0.255	−0.055***
NMF	0.465	0.376	0.554	−0.179***
FF	0.457	0.586	0.329	0.257***
SBC	0.474	0.411	0.537	−0.126***
LOGWEALTH	0.060	0.038	0.082	0.044***
BADNEWS	0.367	0.400	0.334	0.066***
LOGRET	0.099	0.081	0.118	−0.037***
SDRET	0.118	0.135	0.101	0.034***
MB	3.862	4.015	3.710	0.305
LOGMV	7.496	6.497	8.496	−1.999***
NSEG	4.796	4.179	5.413	−1.234***
ANALYSTS	1.892	1.706	2.078	−0.372***
ISSUE	0.562	0.602	0.521	0.081***
LIT	0.260	0.329	0.191	0.139***

*, **, *** difference between the mean difference is significant at the 0.10, 0.05, and 0.01 level using a *t*-test of means.
[1] Variables are defined in Table 2.

large non-family firms are similar (20% to 24%), while larger family firms have a higher rate (29%). The larger firms, especially the larger family firms, also have a greater number of management forecasts per year.

We then estimate Eq. (1) separately for small and large firms and report both our likelihood and number of management forecast results in Table 7. For small firms (Panel A), neither the stock-based compensation nor wealth incentive is associated with the likelihood or frequency of issuing management guidance overall or for family firms. The combined coefficients in both estimations are also not significant. Smaller firms have less of a stock-based incentive to disclose. The ability to find an effect is therefore more difficult with less of an incentive and our lack of results is consistent with the lower power associated with our test.

It is a different story for larger firms (Panel B). CEO wealth is associated with increased likelihood of firms issuing management forecasts and the number of them issued during the year. This evidence is generally consistent with the disclosure incentive for large firms. Family firm status influences the CEO wealth incentive. The negative coefficients for the family firm interaction with CEO wealth in both models suggest that the disclosure incentive effect is muted for family firms. This result is consistent with our prediction that proprietary cost incentive dominates the capital market incentive for family firms. In fact, the combined coefficients are again not significantly different from zero. This result suggests that among larger firms, family firms are less likely to provide voluntary disclosures when the CEO has significant wealth in firm ownership. Our results and support for our hypothesis are driven by larger firms. However, we do not find a significant coefficient on stock-based compensation for either larger or smaller firms, perhaps due to the competing incentives for large firms.[8]

As discussed in the following paragraphs, we also perform a number of sensitivity tests and find our results robust. First, we control for the industry fixed-effects. The results are slightly weaker but are still significant and consistent with previous findings. Our results also hold when controlling for the dot.com bubble occurring in 2000.

Second, we estimate our models only with firms that reported stock-based compensation at least once over the sample period (3836 firm-year observations). Our results are not affected.

Third, we employ alternative specifications of stock-based incentives. For wealth, we use the market valuation of the shares owned (excluding options) by the CEOs. We also modify CEO wealth to include the value of options held by the CEOs in addition to the value of actual shares held. We re-define our compensation variable as the sum of the Black-Scholes value of stock option grants, the value of restricted stock grants, and the change in the value of prior stock grants.[9] In each case, the results are consistent with those reported.

Table 7
Small and large firm analyses.

Panel A – small firms (N = 2055)

Dependent variable:		MF indicator variable		Number of MFs	
Variable[1]	Pred.	Estimated coefficient	Wald χ^2	Estimated coefficient	t-Statistic
Intercept	?	−1.442***	17.22	0.103	0.63
FF	?	−0.196	2.43	−0.163***	2.64
SBC	+	−0.038	0.08	−0.034	0.42
SBC * FF	H1: −	0.192	0.97	0.107	1.04
LOGWEALTH	+	0.128	0.00	0.283	0.23
LOGWEALTH * FF	H1: −	−0.628	0.08	−0.429	0.35
BADNEWS	+	0.418***	17.52	0.230***	3.39
LOGRET	−	0.007	0.00	−0.059	0.70
SDRET	+	−1.149*	3.16	−0.403	1.56
MB	+	−0.012*	2.87	0.000	0.33
LOGMV	+/−	−0.095*	2.86	−0.032	1.22
NSEG	+	0.032***	8.06	0.019**	2.32
ANALYSTS	+	0.518***	136.33	0.190***	11.85
ISSUE	+	0.278**	3.98	0.102**	1.72
LIT	+	0.086	0.86	0.043	0.98
Year fixed effects		Yes		Yes	
Pseudo R^2		16.1%			
Percent concordant		71.6%			
Adjusted R^2				11.1%	
Tests of combined coefficients			Wald χ^2		χ^2
$\beta_2 + \beta_3 = 0$		0.154	0.3	0.073	0.3
$\beta_4 + \beta_5 = 0$		−0.500	0.3	−0.146	0.3

Panel B – large firms (N = 2053)

Dependent variable:		MF indicator variable		Number of MFs	
Variable[1]	Pred.	Estimated coefficient	Wald χ^2	Estimated coefficient	t-Statistic
Intercept	?	−2.438***	49.60	−0.818***	3.28
FF	?	0.181	1.59	0.076	0.87
SBC	+	0.104	0.82	0.062	0.85
SBC * FF	H1: −	−0.098	0.26	0.066	0.45
WEALTH	+	1.093***	14.08	1.365***	2.71
WEALTH * FF	H1: −	−1.060***	11.38	−1.466***	2.90
BADNEWS	+	0.023	0.05	0.040	0.42
LOGRET	−	−0.543***	11.90	−0.534***	3.50
SDRET	+	3.273***	15.10	3.113***	3.57
MB	+	0.009**	4.26	0.006*	1.50
LOGMV	+/−	−0.060	2.10	0.038*	1.40
NSEG	+	0.026***	10.69	0.017*	2.29
ANALYSTS	+	0.614***	295.98	0.219***	15.78
ISSUE	+	0.311***	8.14	0.228***	3.38
LIT	+	0.081	0.41	0.131*	1.46
Year fixed effects		Yes		Yes	
Pseudo R^2		29.2%			
Percent concordant		78.6%			
Adjusted R^2				20.6%	
Tests of combined coefficients			Wald χ^2		χ^2
$\beta_2 + \beta_3 = 0$		0.006	0.9	0.128	0.3
$\beta_4 + \beta_5 = 0$		0.033	0.8	−0.101	0.2

*, **, *** estimated coefficient is significant at the 0.10, 0.05, and 0.01 level for a two-tail (one-tail with directional prediction) test; Wald χ^2 (t-statistics) are based on Probit (OLS) estimations explaining the MF indicator variable (number of MFs) and standard errors clustered by firm.
[1] Variables are defined in Table 2.

[8] We also estimate the management forecast frequency model using the three-year average for our stock-based compensation and wealth variables. Results are similar to those reported in Table 7 except that we now find significant positive coefficients on the three-year average SBC for both large firms (0.302; p-value = 0.04) and small firms (0.300; p-value = 0.09), consistent with Nagar et al. (2003).

[9] This test addresses the possible interacting effects of changes in ownership and current stock compensation awards (Nagar et al., 2003).

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Fourth, we add insider and institutional ownership as additional control variables (the sample is reduced to 3745). As indicated in Chen et al. (2008), family owners differ from nonfamily insider and institutional owners. Family owners tend to consider their ownership as an asset to pass on to future generations, whereas nonfamily insiders generally hold shares for a shorter period. Therefore, family owners tend to have longer investment horizons than nonfamily insiders. Again, all of our test variables are as reported and we conclude that inferences in the main analyses are robust.

Finally, we consider the influence of management reputation. In developing our hypothesis, we stated that family firms are concerned with family reputation. It is therefore possible that our results are driven by management reputation as opposed to family firm status. We therefore include two controls for management reputation based on prior research. The first measure is computed as the industry-adjusted ROA and capture CEO ability (Baik, Farber, & Lee, 2011). The second measure is management ability derived from Demerjian, Lev, and McVay (2012). In both cases, our reported results are not affected.

6. Summary and conclusion

Chen et al. (2008) show that family firms represent a large portion of the S&P 1500 index firms (approximately 46%). Nagar et al. (2003) find that voluntary disclosures are positively related to both stock-based compensation and the value of firm shares held by the CEO. We extend this research by examining the impact of family firms on voluntary disclosure practices in the presence of CEO stock-based incentives.

Family owners commonly have longer investment horizons and are more concerned with their reputations than are non-family firms. CEOs of family firms, which may be family members themselves, typically have similar traits. Stock-based incentives are therefore not expected to affect the performance of the family agents, whose interests are already aligned with those of the owners (Schulze et al., 2001). In addition, the unique characteristics of family firms imply that the agency problem mainly exists between controlling and non-controlling shareholders. As family owners commonly control the firm, they have the power to seek private benefits that mitigate management's stock-based incentives to disclosure information. Using management forecasts as the proxy for voluntary disclosure, we find that family firm status offsets the stock-based incentives (in terms of CEO wealth) intended to motivate managers to offer more timely voluntary disclosures. In addition, we individually test the three components of our family firm proxy and find similar results when family members serve as CEO or on the board of directors. We further find that large family firms are driving these results, which reflects the idea that larger firms provide significantly greater stock-based incentives than do smaller firms.

Overall, we contribute to the literature by providing additional evidence on the relationship between executive compensation and voluntary disclosure. We also shed light on the inconsistent results of prior studies of family firms and voluntary disclosures. Our findings indicate that family firms' long investment horizon, the agency costs between controlling and non-controlling shareholders, and concerns about litigation and reputation costs influence CEOs' stock-based incentives to voluntary disclosure.

Data availability

Data is obtained from the publicly available sources listed in the paper.

References

Ajinkya, B., Bhojra, S., & Sengupta, P. (2005). The association between outside directors, institutional investors and the properties of management earnings forecasts. *Journal of Accounting Research*, *43*, 343–376.

Ali, A., Chen, T., & Radhakprishnan, S. (2007). Corporate disclosures by family firms. *Journal of Accounting and Economics*, *44*(2), 38–86.

Anderson, R., & Reeb, D. (2003). Founding-family ownership and firm performance: Evidence from the S&P 500. *Journal of Finance*, *58*, 1301–1328.

Andres, C. (2008). Large shareholders and firm performance: An empirical examination of founding-family ownership. *Journal of Corporate Finance*, *14*, 431–445.

Baik, B., Farber, D., & Lee, S. (2011). CEO ability and management earnings forecasts. *Contemporary Accounting Research*, *28*(5), 1645–1668.

Ball, R. (2006). International financial reporting standards (IFRS): Pros and cons for investors. *Accounting and Business Research*, *36*, 5–27.

Bamber, L., & Cheon, M. (1998). Discretionary management earnings forecast disclosures: Antecedents and outcomes associated with forecast venue and forecast specificity choices. *Journal of Accounting Research*, *36*, 167–190.

Berger, P. G., & Hann, R. (2007). Segment profitability and the proprietary and agency costs of disclosure. *The Accounting Review*, *82*, 869–906.

Beyer, A., Cohen, D., Lys, T. Z., & Walther, B. R. (2010). The financial reporting environment: Review of the recent literature. *Journal of Accounting and Economics*, *50*, 296–343.

Bushman, R., & Indjejikian, R. (1995). Voluntary disclosures and trading behavior of corporate insiders. *Journal of Accounting Research*, *33*(2), 293–316.

Bushman, R., & Smith, A. (2001). Financial accounting information and corporate governance. *Journal of Accounting and Economics*, *32*, 237–333.

Bushman, R., Chen, Q., Engel, E., & Smith, A. (2004). Financial accounting information, organizational complexity and corporate governance systems. *Journal of Accounting and Economics*, *37*, 167–201.

BusinessWeek (2003). *Family, Inc.* (November 10).

Byron, E., & Lublin, J. S. (2007). Lauder Scion on way out, P&G executive on way in. *The Wall Street Journal* (Retrieved from http://www.wsj.com/articles/SB119457080431587357).

Chen, S., Chen, X., & Cheng, Q. (2008). Do family firms provide more or less voluntary disclosure? *Journal of Accounting Research*, *46*, 499–536.

Cheng, Q. (2014). Family firm research – A review. *China Journal of Accounting Research*, *7*(3), 149–163.

Core, J. (2001). A review of the empirical disclosure literature: Discussion. *Journal of Accounting and Economics*, *31*, 441–456.

Daily, C., & Dollinger, M. (1992). An empirical examination of ownership structure in family and professionally-managed firms. *Family Business Review*, *5*(2), 117–136.

DeFond, M., & Park, C. (1997). Smoothing income in anticipation of future earnings. *Journal of Accounting and Economics*, *23*, 115–139.

Demerjian, P., Lev, B., & McVay, S. (2012). Quantifying managerial ability: A new measure and validity tests. *Management Science*, *58*(7), 1229–1248.

Demsetz, H., & Lehn, K. (1985). The structure of corporate ownership: Causes and consequences. *Journal of Political Economy*, *93*, 1155–1177.

Frankel, R., McNichols, M., & Wilson, G. (1995). Discretionary disclosure and external financing. *The Accounting Review*, *70*, 135–150.

Fuller, J., & Jensen, M. (2002). Just say no to wall street: Putting a stop to the earnings game. *Journal of Applied Corporate Finance*, *14*, 41–46.

Gilson, R., & Gordon, J. (2003). Controlling shareholders. *Working paper # 228*. New York: Columbia Law School, The Center for Law and Economic Studies.

Healy, P., & Palepu, K. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, *31*, 405–440.

Ho, S., & Wong, K. (2001). A study of the relationship between corporate governance structures and the extent of voluntary disclosure. *Journal of International Accounting, Auditing and Taxation*, *10*, 139–156.

Hope, O., & Thomas, W. (2008). Managerial empire building and firm disclosure. *Journal of Accounting Research*, *46*, 591–626.

Hutton, A. (2007). A discussion of corporate disclosure by family firms. *Journal of Accounting and Economics*, *44*, 287–297.

Jensen, M., & Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*, 305–360.

John, K., & Ronen, J. (1990). Information structures, optimal contracts and the theory of the firm. *Journal of Accounting, Auditing and Finance*, *5*(1), 61–95.

Kang, D. (2000). *The impact of family ownership on performance in public organizations: A study of the U.S. fortune 500, 1982–1994.* Academy of Management Meetings.

Karamanou, R., & Vafeas, N. (2005). The association between corporate boards, audit committees, and management earnings forecasts: An empirical analysis. *Journal of Accounting Research*, *43*, 453–473.

Kothari, S. (1992). Price-earnings regressions in the presence of price leading earnings. *Journal of Accounting and Economics*, *15*, 173–202.

Kwak, B., Ro, B., & Suk, I. (2012). The composition of top management with general counsel and voluntary information disclosure. *Journal of Accounting and Economics*, *54*, 19–41.

Lakhal, F. (2005). Voluntary earnings disclosures and corporate governance: Evidence from France. *Review of Accounting and Finance*, *4*, 64–85.

Lang, M., & Lundholm, R. (1993). Cross-sectional determinants of analyst ratings of corporate disclosures. *Journal of Accounting Research*, *31*, 246–271.

Maury, B. (2006). Family ownership and firm performance: Empirical evidence from western European corporations. *Journal of Corporate Finance*, *12*, 321–341.

McNichols, M., & Trueman, B. (1994). Public disclosure, private information collection, and short-term trading. *Journal of Accounting and Economics*, *17*, 69–94.

Nagar, V. (1999). The role of the manager's human capital in discretionary disclosure. *Journal of Accounting Research*, *37*(Supplement), 167–181.

Nagar, V., Nanda, D., & Wysocki, P. (2003). Discretionary disclosure and stock-based incentives. *Journal of Accounting and Economics*, *34*, 283–309.

Peterson, M. (2009). Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies*, *22*(1), 435–480.

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Salvato, C., & Moores, K. (2010). Research on accounting in family firms: Past accomplishments and future challenges. *Family Business Review*, *23*(3), 193–215.
Schulze, W., Lubatkin, M., Dino, R., & Buchholtz, A. (2001). Agency relationships in family firms: Theory and evidence. *Organization Science*, *12*(2), 99–116.
Shleifer, A., & Vishny, R. (1989). Management entrenchment. *Journal of Financial Economics*, *25*, 123–139.
Shleifer, A., & Vishny, R. (1997). A survey of corporate governance. *Journal of Finance*, *52*, 737–783.
Skinner, D. (1994). Why firms voluntarily disclose bad news. *Journal of Accounting Research*, *32*, 28–60.
Soffer, L., Thiagarajan, R., & Walther, B. (2000). Earnings pre-announcement strategies. *Review of Accounting Studies*, *5*, 5–26.
Verrecchia, R. (1983). Discretionary disclosure. *Journal of Accounting and Economics*, *5*, 179–194.
Verrecchia, R. (1990). Information quality and discretionary disclosure. *Journal of Accounting and Economics*, *12*, 365–380.
Villalonga, B., & Amit, R. (2006). How do family ownership, control, and management affect firm value? *Journal of Financial Economics*, *80*, 385–417.
Villalonga, B., & Amit, R. (2009). How are U.S. family firms controlled? *Review of Financial Studies*, *22*, 3047–3091.

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