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The Earnings Game in Family Firms

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To my parents,
Jacob K. Thomas of Yale University, and
Wim A. van der Stede of the London School of Economics.

"Increasingly, I have become concerned that the motivation to meet Wall Street earnings expectations may be overriding common sense business practices. Too many corporate managers, auditors, and analysts are participants in a game of nods and winks. In the zeal to satisfy consensus earnings estimates and project a smooth earnings path, wishful thinking may be winning the day over faithful representation. As a result, I fear that we are witnessing an erosion in the quality of earnings, and therefore, the quality of financial reporting. Managing may be giving way to manipulation; integrity may be losing out to illusion."

Arthur Levitt Jr., Chairman of the United States Securities and Exchange Commission (SEC),
28 September 1998, New York

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List of Abbreviations

10-K	Form 10-K (SEC required reporting document)
ABEM	Accruals-based earnings management
CEO	Chief executive officer
COGS	Cost of goods sold
CRSP	Center for Research in Security Prices, University of Chicago
DEF 14A	Proxy Statement (SEC required reporting document)
EDGAR	Electronic Data Gathering, Analysis, and Retrieval system
EPS	Earnings per share
GLS	Generalized least squares (statistical linear regression model) estimation method
I/B/E/S	Institutional Brokers' Estimate System
IFRS	International Financial Reporting Standards
OLS	Ordinary least squares (statistical linear regression model) estimation method
R&D	Research & development
REM	Real earnings management
S&P	Standard & Poor's Financial LLC
SEC	United States Securities and Exchange Commission
SEW	Socioemotional wealth
SG&A	Sales, general, & administrative expenses
SOX	Sarbanes-Oxley Act (2002)
US	United States of America
US GAAP	United States Generally Accepted Accounting Principles

1. Introduction

In capital markets, the real currency at which securities are exchanged is information, not monetary units. As information flows between capital market participants – i.e., companies, managers, analysts, and investors – informational advantages imply asymmetries and thereby lead to superior gains for those possessing them (Fama, 1970). In this context, the so-called earnings game describes the extraction of private gains by means of earnings management and analyst forecast guidance. Within the earnings announcement process (of both quarterly and yearly results), the aforementioned participants influence outcomes opportunistically and solely to their benefit, at the cost of financial market integrity. We, together with other researchers as well as practitioners (Bartov & Cohen, 2009; Fuller & Jensen, 2002; Levitt, 1998), refer to this phenomenon as a game since each participant has strong incentives to play it continuously. We illustrate the prevailing circularity by combining relevant publications into a framework in Figure A. While this phenomenon has been widely documented for firms in general, thus far there has been very little research into whether family firms – generally perceived as *good* companies – also participate in this game. Hence, our research is motivated by the question if family firms are behaving better, worse, or similarly when compared to non-family firms in the earnings game context.

This dissertation is the first to research this capital market phenomenon for family firms in great detail. More precisely, the dissertation at hand analyzes various forms of earnings management and forecast guidance in family firms and their counterparts – both of which are key components of the earnings game phenomenon.

In three papers covering connected but different sub-areas of research, we provide powerful evidence to assume that family firms – and in particular those firms where family influence stems from ownership (and not necessarily management) – are significantly less likely

to participate in that game. We attribute this evidence to be a result of family firm-specific long-term incentives and objectives – all embedded in their desire to preserve and enhance their so called socioemotional wealth (SEW). This wealth articulates their ability to profit, e.g., from a superior reputation and image, comparably better ties to external stakeholders, and/or the optionality to hand over a well-governed firm to descending generations (Berrone, Cruz, & Gómez-Mejía, 2012; Berrone, Cruz, Gómez-Mejía, & Larraza-Kintana, 2010; Gómez-Mejía, Takács Haynes, Núñez-Nickel, Jacobson, & Moyana-Fuentes, 2007).

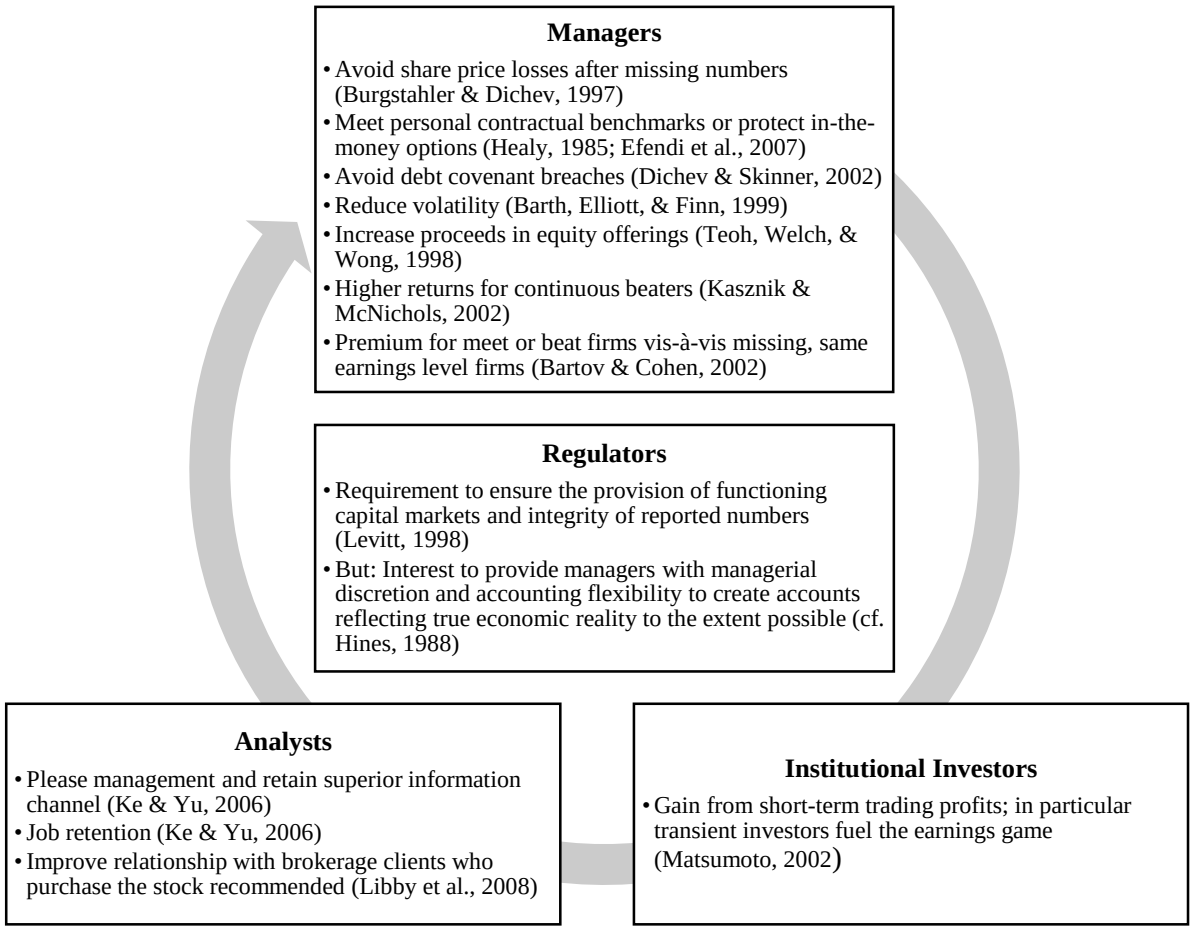

Figure A: The circularity issue in the earnings game. Representation of individual incentives to participate.

Overall, with our results we clearly lean more on the *good* side of family firm research. In prior publications, family firms have been found to benefit from the longer time horizon and better monitoring ability of their founders (Kappes & Schmid, 2013; Kim, Pantzalis, & Park, 2014), or other perks such as a family ownership discount to the cost of debt (Anderson, Mansi, & Reeb, 2003). Family firms have also been proven to invest more in research and development (Schmid, Achleitner, Ampenberger, & Kaserer, 2014) and to better perform financially than non-family firms (Anderson & Reeb, 2003a).

However, our perception of family firms in this dissertation (and overall) is contingent upon the methodologies applied: For many elements of the earnings game, evidence for both family firms and non-family firms looks suspiciously similar (e.g., the degree of earnings smoothing across share price ranges). We thereby also point to more skeptical publications in which family firms are perceived as *bad* corporations in the sense that they are more opaque in their reporting and governance behavior (Anderson, Duru, & Reeb, 2009; Prencipe & Bar-Yosef, 2011; Schmid et al., 2014) or, for example, secure influence via their choice of debt over equity (Schmid, 2013). Suspiciously, prior to negative earnings releases, short-sales of corresponding stocks are found to increase more for family firms than for non-family corporations (Anderson, Reeb, & Zhao, 2012). In contrast to SEW theory, some researchers found family firms to be more short-term oriented as they commit less long-term capital and prefer safe capital expenditures over riskier research and development (R&D) projects (Anderson, Duru, & Reeb, 2012). Concerning overall performance considerations, there is ample evidence that family-internal successions and enduring control has a negative influence on long-term returns (Anderson, Reeb, et al., 2012; Anderson & Reeb, 2004; Bennedsen, Nielsen, Perez-Gonzalez, & Wolfenzon, 2007; Pérez-González, 2006).

In any case and regardless of the objectives associated with family firms, there is little

doubt about both the importance of family firms within an economy and their relevance as capital market participants (see, e.g., Masulis, Pham, & Zein, 2011). Not only do family firms constitute the majority of all firms globally (Burkart, Panunzi, & Shleifer, 2003). Family firms also constitute about one-third of the publicly traded S&P 500 index (Anderson & Reeb, 2003a) and, as we show in this dissertation, almost 40 percent of all S&P 1500 firms. At the same time and surprisingly, academic family firm research does not mirror the importance of those firms: Family firm publications make up less than five percent of the top 3 accounting journals, less than ten percent of the top 3 management journals, and less than five percent of the top 3 finance journals (Reeb, 2015).[1] Partially, this result may be caused by the twofold challenge of using family firms as a research objective.

First, as family involvement can occur on both the managerial and ownership level, the traditional margins of agency relationships have to be expanded substantially. Family firm status plays a significant role within the important agency relationship between managers and owners, which arose from the separation of ownership and control in modern corporations (Fama & Jensen, 1983; Jensen & Meckling, 1976). Additionally, family firm characteristics play a decisive role within shareholder-focused analyses. Consequently, pairing this multi-dimensional framework with an enormous variety of available family firm definitions in the literature makes research on family firms laborious (cf., e.g., Anderson & Reeb, 2003a; La Porta, Lopez-De-Silanes, & Shleifer, 1999; Morck, Shleifer, & Vishny, 1988; Villalonga & Amit, 2006).

Second, once appropriate dimensions and a relevant definition are chosen, identifying

[1] Top 3 accounting journals in this statistic include Journal of Accounting Research, Journal of Accounting and Economics, and The Accounting Review; top 3 management journals include Academy of Management Journal, Academy of Management Review, and Administrative Science Quarterly; top 3 finance journals include Journal of Finance, Journal of Financial Economics, and Review of Financial Studies. Moreover, Reeb (2015) argues in favor of a more rigorous (i.e., econometric and model theory based) approach to family firm research to increase top journal representation.

family firms within a given data set also remains a major mechanical challenge. Are today's managers – in any way – related to the founders of the company in 1860? Who was part of the founding team in 1762? Have there been five, or perhaps even six founders? All those and an almost unlimited variety of comparable questions represent a challenge to be accepted when conducting family firm research and need to be answered by diligent manual research and data collection.

In this dissertation, we investigate a potential family firm status along a number of available dimensions of management and/or ownership roles. Specifically, we identify family firms as those firms which are family-managed and/or family-owned. Family-managed firms are those companies where either the founder or descending family members are involved in management functions (i.e., as chief executive officer (CEO), or board member). For ownership, we use a frequently applied definition in the literature according to which family ownership status is granted to those firms where the founder or its descendants control five or more percent of total voting rights of the company (Anderson & Reeb, 2003a; Villalonga & Amit, 2006). We apply this framework to all constituents of the S&P 1500 index from 1996 to 2010 and create a panel data set with 25,020 firm-year observations, from a total of 1,668 firms. We thereby generate the arguably largest family firm data set available and surpass datasets of most prominent accounting, family firm, and finance publications (Anderson & Reeb, 2003a, 2004; S. Chen, Chen, & Hutton, 2008; Jiraporn & DaDalt, 2009) in both scope and depth.[2] For instance, based on our definition of family firm status, we are able to show that the percentage of family firms gradually decreases from over 40 percent in 1996 to just over 30 percent in

[2] In data collection, we use intervals of five years between 1995 and 2010. We use both inter- and extrapolated data to account for prior findings confirming the stickiness of family firm characteristics (e.g., Franks, Mayer, Volpin, & Wagner, 2012). We exclude 1995 to account for the EDGAR data collection phase-in period, assuring reliable data quality.

2010. Hereby, we specify previous findings substantially (Anderson & Reeb, 2003a).[3]

This dissertation as a whole – and each single paper on a stand-alone basis – now unites pressing research questions in family firm theory with evidence from earnings game academia by employing both well-established and novel accounting and finance methodologies. In the first paper 'The Earnings Game in Family Firms' we show that firms owned by a founder or a descending generation are significantly less likely to provide manipulated (inflated) earnings at results announcement. Investigating the critical area around zero earnings surprises (i.e., those areas where companies just-miss or just-beat analyst earnings targets), we show that those firms persistently deliver negative earnings surprises (i.e., earnings per share (EPS) results are below latest analyst consensus estimates). As however positive earnings surprises are a key component of the earnings game – by allowing investors to achieve positive stock returns (Athanasakou, Strong, & Walker, 2011; Bartov, Givoly, & Hayn, 2002; Matsumoto, 2002) – we attribute an *integrity effect* to family ownership in financial reporting processes. This observation and the resulting argument is based on the notion that, in non-family firms, either (i.) analysts adjust their forecasts downwards to allow for target achievability (Athanasakou et al., 2011; Kasznik & McNichols, 2002), or (ii.) executives manage earnings in order to meet their benchmarks (Burgstahler & Dichev, 1997; Doyle, Jennings, & Soliman, 2013). We also confirm prior findings of smaller absolute forecast errors for family firms (Ali, Chen, & Radhakrishnan, 2007) which either implies better informational quality in family firms, or a better analyst-manager interaction. Therefore, we argue that if (i.) the informational environment is better, but (ii.) firms with family ownership still miss targets, this evidence is purposely produced – i.e., analysts make family-owned firms to miss forecasted earnings benchmarks, or managers in these firms willingly forego the possibility to beat them. As we are the first to observe family-

[3] Anderson & Reeb (2003a) only find families to be present in one-third of all S&P 500 firms.

owned firms missing earnings benchmarks categorically, we argue in favor of higher integrity of family owners in both financial reporting practice and, ultimately, corporate governance overall. Interestingly, our observation does not hold for family-managed firms, implying potential market pressure for family managers to deliver earnings surprises in congruence with non-family firms participating in the earnings game.

We draw two central conclusions from our observations. First, we see substantial benefits of family ownership in large publicly listed, analyst-followed firms. As by our results, we cannot confirm and rather have to contradict arguments connecting family ownership with increased opacity (Anderson et al., 2009), weaker market development (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000), or significant entrenchment (Wang, 2006). Due to their assumed incentive profile (SEW theory) and our ex post evidence, we regard family owners in our data set as more truthful producers of earnings results. We therefore recommend to reconsider the benefits of family ownership in publicly listed firms, in particular for the protection of unsophisticated retail shareholders. Retail investors, largely without any professional financial education or background, represent the only party not being informed about the earnings game taking place. It is a game solely played by market professionals, leaving marginal investors aside (Levitt, 1998).

Second, we point to the requirement of a more differentiated examination of ownership and control, in particular in the family firm context. As our results show, substantial differences between family-managed and family-owned firms exist. Potentially, our results may mirror a different set of objectives and incentives. For example, family managers may exhibit the interest to meet market expectations in order to avoid stock price losses in a similar manner to non-family managers (Burgstahler & Dichev, 1997). Family managers may also be incentivized personally, e.g., by in-the-money options being granted (Efendi, Srivastava, & Swanson, 2007),

or exhibit the desire to look good vis-à-vis other members of the founding family (for example, other same-generation family board members). Hence, family firm characteristics are more complex than initially thought and family firm objectives can no longer be taken for granted and perceived as homogenous throughout.

In our second paper 'The Impact of Financial Governance Legislation on Earnings Management in Family Firms' we examine elements of the earnings game from a more company-internal perspective. Investigating the impact of the introduction of the Sarbanes-Oxley Act (SOX) on earnings management, we show that only family firms reduce the intensity of accruals-based earnings management in the post-SOX world, while accruals-based earnings management persists in non-family corporations. As it was intended by regulators and standard setters, SOX was implemented in 2002 in order to increase financial reporting quality and credibility after a number of prominent accounting and fraud scandals (e.g., Adelphia, Enron, WorldCom). A number of research publications have proven SOX to be highly effective ex post (D. A. Cohen, Aiyesha, & Lys, 2008; J. Cohen, Hayes, Krishnamoorthy, Monroe, & Wright, 2013; Lobo & Zhou, 2006; Wilson, 2013). However, none of the prior publications did control for family effects when investigating SOX effectiveness.

In our research we contemplate that prior results may face an unobserved family firm bias as we show that – controlling for family firms – abnormal accruals in the post-SOX world actually increase. It is for both findings – a significant post-SOX reduction of accruals-based earnings management in family firms, and a potential unobserved family firm bias in previous studies – that we deem our results to be meaningful and important to the literature. In our paper, we conclude that family firm behavior in the post-SOX environment is explained by substantial risk aversion. We argue that, due to their particular SEW endowment, family firms do whatever it takes to preserve their superior reputation, their ability to handover a well-run company to

descending generations, a positive relationship with all major stakeholders, or to avoid legal prosecution (Berrone et al., 2012, 2010; Martin, Campbell, & Gómez-Mejía, 2014). As accruals-based earnings management techniques represented a gray area before SOX – and a heavily mined field afterwards – family firms are expected to fear the risks associated with these forms of window-dressing.

Finally, our results also have a remarkable contrary implication. As the SOX introduction had the aforementioned reduction effect on the level of abnormal accruals, we argue that family firms are not *per se* better firms. Rather, family firms indeed required SOX to serve as an exogenous shock for them to significantly reduce earnings management. Our conclusions enrich the previous literature substantially. Although some aspects of earnings management in family firms, their specific SEW endowment, and the SOX implementation have been researched (Berrone et al., 2012; D. A. Cohen et al., 2008; Martin et al., 2014), none of the prior studies combined all three aspects comprehensively.

In the third and final paper of the dissertation we address a highly interesting phenomenon documented in earlier accounting research. EPS forecast errors – i.e., the algebraic difference between reported results and latest analyst consensus estimates – are found to considerably lack variability with share price (Cheong & Thomas, 2011; Degeorge, Patel, & Zeckhauser, 1999). Conceptually, EPS forecast errors should have a mean and median of zero, with deviations increasing in magnitude along with share price growth (e.g., a share valued $100.00, reporting EPS of $10.00 should have higher forecast error bandwidths than a share, worth $1.00, reporting EPS of $0.10). In 'Examining EPS Forecast Errors in Family Firms: Counter-intuitive Evidence from a Price-distributed Analysis' we research this finding for family firms. We use a new methodology to detect managerial myopia; i.e., unlike the majority of researchers (Ali et al., 2007; Anderson, Reeb, et al., 2012; Lang & Lundholm, 1996) we do

not deflate EPS forecast errors by share price to adjust for scale but rather distribute them across price deciles – with surprising results. We show first that family firms and their counterparts equally lack EPS forecast error variability with increasing share price. In other words, large family firms appear to exhibit the same desire as large non-family firms: Providing slightly positive earnings surprises in order to just-beat market expectations.

Second, as median EPS forecast errors of both family and non-family firms become increasingly positive with rising share prices, we show that both firm types profit equally from analyst forecast pessimism. Again, high price firms – family influenced, or not – profit from forecasts systematically below achieved results. Conceptually, the increasing and systematic analyst pessimism can be regarded as an indicator for managerial forecast downward guidance in these firms. A view confirmed by recent research (cf. Cheong & Thomas, 2014). Again, both of our main results per se provide sufficient evidence to question the general validity of the *good firm* image family firms widely possess.

Third and finally, we are able to demonstrate that family firms do anything but intentional smoothing of earnings trajectories. First, we show that family firms make substantially less use of abnormal discretionary accruals. In contrast to non-family firms, the amount of abnormal accruals only increases slightly with scale. For non-family firms, we see an almost exponential increase, with highest abnormal accruals in the largest price decile. Second, we report that, only for family firms, the level of volatility in revenues is mirrored by the volatility of net earnings. In other words, substantial managerial intervention to flatten earnings trajectories is solely observable in non-family firms – which is highly suggestive of opportunistic decision making (Barth, Elliott, & Finn, 1999). Lastly, we prove that managerial intervention is also higher for non-family firms when it comes to street-adjustments of earnings

(vis-à-vis US GAAP results).[4] We see again that for non-family firms the relative volatility in US GAAP earnings is less pronounced in street-adjusted earnings. For family firms in our data set, the level of opportunistic volatility reduction is not as high.

We draw three central conclusions from our examination of price-distributed but undeflated EPS forecast errors in family firms. First, we argue that previous methodologies used to detect earnings management are possibly imprecise in the sense that they may underrepresent the participation of (some) family firms in the earnings game. To be precise, in particular in family firm research a number of previous publications use accounting evidence based on balance sheet metrics to detect earnings management (Achleitner, Guenther, Kaserer, & Siciliano, 2014; Bartov & Cohen, 2009; Martin et al., 2014). As many conclusions are family firm friendly in the sense that they indicate less earnings management in family firms (resulting in the *good* firm image), we argue that these results may need to be reevaluated by the use of alternative methodologies. Assessing earnings management behavior in family firms and counterparts solely based on balance sheet metrics may create a false picture of true economic reality (cf. Hines, 1988).

Second, we see sufficient evidence to argue that family firms – in certain but critical contexts – may not be as different to non-family firms as previously thought. In particular, analyzing a homogenous group of the largest US family firms in the S&P 1500 index, we believe that these firms have more in common with same-size non-family firm counterparts than with the vast majority of smaller (private) family firms. We can imagine that this is a result of same-level market pressure in family firms, or stems from the desire to manage the firm in

[4] Companies report *street-adjusted* numbers to exercise managerial discretion when communicating with an educated stakeholder base (i.e., analysts, investors, and the financial press). Hereby, managers express their understanding of the *true* economic earnings, for example, by excluding one-off charges (restructuring expenses, asset sales, etc.) from accounting numbers (US GAAP earnings). The negative consequences of street-adjustments for accounting standards are documented in the literature (Bradshaw & Sloan, 2002; Levitt, 1998).

conformity to financial market expectations (risk aversion argument). Correspondingly, our results do not hold for smaller non-analyst-followed firms in the same data set. These firms exhibit substantial EPS variation (volatility) across share prices. Hence, we urge to reorder family firms into groups of (1) large publicly traded, analyst-followed entities, (2) non-followed but publicly traded firms, and (3) the remaining group of (often smaller) private family firms. In any case, we are convinced that the universality of the family firm term should be seen with serious doubt and requires recalibration.

Third, a similar call for reassessment can be made for the examination of EPS forecast errors. Many researchers scale forecast errors by share price (Ali et al., 2007; Anderson, Reeb, et al., 2012; Lang & Lundholm, 1996), thereby missing potentially powerful insights on unobserved managerial earnings compression. By leaving forecast errors unscaled and applying this rather juvenile concept to the data, we can imagine to see some of the prior (scaled) findings in a new light.

Fourth and finally, throughout the paper, we have been able to show that the desire of non-family firms to beat analyst expectations is highly pervasive. We come to the conclusion that those firms where families do not play a decisive role in either management or ownership will do whatever it takes to meet analyst-postulated earnings targets. Hence, putting an end to the provision of analyst forecast guidance and earnings management – i.e., the earnings game as a whole – should be a primary objective of policy makers and standard setters. We argue that only by means of significant disruption can the enduring game of target setting and target beating be brought to an end – and financial market integrity finally be reinstalled. Otherwise, the incentives to manipulate (inflate earnings) or to guide forecasts downward (resulting in analyst forecast pessimism) will remain.

The dissertation at hand is structured as follows. The first paper ‘The Earnings Game in

Family Firms' is presented from page 15 onwards. The paper 'The Impact of Governance Legislation on Earnings Management in Family Firms' follows, starting from page 61. Finally, the paper 'Examining EPS Forecast Errors in Family Firms: Counter-intuitive Evidence from a Price-distributed Analysis' ends the main text body from page 99 onwards. For each paper, we include tables and figures in the text body to ease comparability and increase reading comfort. References however, are accumulated across the papers and presented from page 146 onwards. We begin to conclude on page 135. The various limitations of this dissertation are discussed in the conclusion as well as in the final remarks of each paper.

Academic Papers

2. The Earnings Game in Family Firms[†]

ABSTRACT

The role of founding family's ownership and management of public firms has been largely unexplored in the accounting literature. This paper is the first to examine the so called earnings game in family firms. The earnings game describes the extraction of private gains in the earnings announcement process by analysts, sophisticated investors, and managers. Our analysis is based on hand-collected data of founding family involvement in S&P 1500 index constituents from 1996 through 2010. We observe that firms with founding family ownership of greater than five percent of total voting rights are less likely to both beat analyst expectations and, specifically, to report small positive earnings surprises – suggesting a lowered probability of earnings management to meet thresholds. We therefore attribute an *integrity effect* to family ownership in financial reporting processes. These results hold for firms both with and without family members in management roles. In contrast, firms with large family involvement in management (but not necessarily ownership) exhibit opposing behavior. We make significant contributions to the literature examining the role of family ownership and management in financial reporting.

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Keywords: Analyst forecasts, earnings game, family firms, family ownership, family management, forecast error, integrity effect, United States.

2.1. Introduction

In capital markets, participants (companies, managers, analysts, and investors) interact and exchange information on various dimensions. The earnings game, as a capital market phenomenon, describes the extraction of private gains by these participants by means of earnings management or forecast guidance. Within the earnings announcement process outcomes are influenced opportunistically, at the cost of financial market integrity and results accuracy. This paper is the first to research this capital market phenomenon for family firms. We provide powerful evidence to assume that those firms under family ownership are significantly less likely to participate in that game, due to the long-term incentives, objectives, and return superiority they intrinsically face. Surprisingly, the evidence does not support an identical conclusion for firms under family management, further supporting the important benefits of family involvement in the shareholder register. Finally, we also learn that – for non-family firms – meeting benchmarks by earnings management, or forecast guidance, remains a persistent managerial lever.

By concept, family firms are a distinct type of economic entities. Not only does the presence of a founder, a founding, or a descendant family member create special relationships between, and incentives for, owners and managers, but also between different shareholder parties. It is for both levels that the academic view on family firms is split and the question whether family firms are of superior (or inferior) characteristics remains basically unanswered. Anderson and Reeb (2003a) find that family firms are performing better than non-family counterparts - a phenomenon Habbershon and Williams assign to their distinct resource-based endowment (1999). Furthermore, they appear to invest more in R&D (Schmid et al., 2014) and control and decide more long-term overall (Kim et al., 2014). Family firms are also endowed with a specific socioemotional wealth which allows them to avoid excessive short-termism by

focusing on reputational, transgenerational, and broader stakeholder objectives (Berrone et al., 2012; Gómez-Mejía et al., 2007; Martin et al., 2014). On the other hand, family firms are also seen as opaque organizations (Anderson et al., 2009; Schmid, 2013) and family influence is proven to have a negative impact on the choice of debt versus equity (Schmid, 2013) and R&D spending (Anderson, Duru, et al., 2012; Block, 2012). Most strikingly – and somewhat conflicting to their initial findings – Anderson and Reeb (2004) also prove continued (i.e., long-term) family influence to have a negative performance impact (also see Bennedsen et al., 2007; King & Santor, 2008).

Interestingly, the specific role of publicly listed analyst-followed family firms in the earnings announcement process is not researched and existing research predominantly deals with their overall information quality. Family firm corporate disclosures are examined to report a higher earnings quality vis-à-vis non-family counterparts (Ali et al., 2007). Moreover, Wang (2006) presented a balanced view on family influence in information disclosure processes as he defines two competing theories. The *alignment effect* of family ownership after which family firms produce better information, thereby reducing information asymmetries between managers and markets; and the *entrenchment effect* according to which family influence is indeed a source of corporate opacity as inferior information is disclosed in order to maintain influence as significant shareholder (Ali et al., 2007; Wang, 2006; Yang, 2010). Consequently, the earnings game as a complex capital market phenomenon is solely described without further ownership and management type differentiation (Athanasakou et al., 2011; Bartov & Cohen, 2009; Bartov et al., 2002; Fuller & Jensen, 2002; Levitt, 1998).

Hence, this paper adds to the literature in various dimensions, in particular in light of the scope of our hand-collected data set which represents all S&P 1500 index constituents between 1996 and 2010. First, we provide (to the best of our knowledge) the first differentiation

of the earnings game theory regarding the composition of management teams and ownership structures. Second, we provide evidence for a substantial independence of family-owned firms in capital market communication. We interpret their ability in naturally beating analyst forecasts but abstaining from earnings manipulation to just-hit earnings targets as an *integrity effect* of family ownership. However, as these findings appear to not apply to firms under family management, we also encourage family firm researchers – in research to come – to differentiate between the two. It appears that the incentives of ownership and management within owning families (or even for founders, too) do create similar trade-offs as in the classical principal-agent settings we know from the aforementioned agency situations (Fama & Jensen, 1983; Jensen & Meckling, 1976). Third and finally, we deliver new policy implications and ask for a reconsideration of the importance of family shareholders in publicly listed firms. In the past, continued family influence in listed companies has been regarded as a common attribute of less developed financial markets, triggered by the level of investor protection available (La Porta et al., 2000; Wang, 2006). We argue that, as far as the earnings game and the resulting flawed earnings numbers to meet analyst benchmarks are concerned, family influence via equity ownership may indeed be beneficial to regain financial market integrity. In particular, we expect a positive impact on the protection of retail investors, a group of capital market participants persistently not considered in the earnings game. Interestingly, the positive attributes of family involvement vanish where management roles are concerned. We interpret this finding as evidence for an equally high pressure of stock market participants on family and external managers.

This paper is designed as follows. Section 2.2 presents the earnings game in greater detail. Section 2.3 continues with a presentation of our data set and the family firm definition we have applied, while Section 2.4 reports the relevant techniques to detect signs of the earnings

game. Section 2.5 outlines descriptive statistics and a discussion of first findings. Section 2.6 does the same for regression results. In Section 2.7, we briefly conclude.

2.2. The Earnings Game

The earnings game describes the extraction of private gains within the earnings announcement process of publicly listed companies. It is fueled by the various individual incentives all participants in the disclosure process (i.e., managers, analysts, and investors) face. Moreover, it is substantially impacted by the ways financial accounting provides managers with substantial discretion to depict their interpretation of a *true* economic state of a corporation (Hines, 1988; Schipper, 1989). Hence, the earnings game can be verified in a number of ways depending on the actor involved. First, considering the role of managers, (1) earnings management and (2) forecast guidance (expectation management) are commonly used to beat earnings benchmarks when results are released. (1) Earnings management, e.g., cutting R&D expenses prior to the results release in order to report higher profits (Roychowdhury, 2006), is value destructive in the long-run as it hurts the company's competitiveness when high-risk and long-term R&D projects are foregone to increase short-term profits (Mizik, 2010). Moreover, commonly applied tools are the management of accruals and classification shifting. Managers may use balance sheet accruals opportunistically, e.g., by creating excessive restructuring charges to release required amounts in suitable subsequent periods (Healy & Wahlen, 1999; Mizik, 2010; Schipper, 1989). With regard to classification shifting, company executives may employ their managerial discretion and the flexibility of accounting rules to capitalize expenses in the period most favorable (Athanasakou, Strong, & Walker, 2008; Athanasakou et al., 2011). Managers use (2) expectation management and public guidance in order to allow for benchmark achievability at results release (Athanasakou et al., 2011; Bartov & Cohen, 2009). Most

importantly, managers are shown to willingly sacrifice long-term company value in order to meet short-term earnings benchmarks (Bhojraj, Hribar, Picconi, & McInnis, 2009; Graham, Harvey, & Rajgopal, 2005). Managers' behavior, in turn, is based on a set of personal incentives: First, they participate in order to avoid share price losses after missing on numbers (Burgstahler & Dichev, 1997). In fact, meeting analyst benchmarks became their paramount objective in the earnings announcement process in the recent past and ranks, e.g., before sheer accounting profitability (Brown & Caylor, 2005). Second, managers want to meet their own contractual performance benchmarks or protect in-the-money options (Efendi et al., 2007; Healy, 1985). Third, they want to avoid debt covenant breaches (Dichev & Skinner, 2002). Fourth and fifth, they participate in order to reduce stock volatility (Barth et al., 1999) and increase proceeds in equity offerings (Teoh, Welch, & Wong, 1998).

Following company executives, equity analysts form the second group of participants. Analysts – in most case employees of bulge bracket financial institutions with integrated sales divisions, or pure brokerage houses – play a central role in the earnings game by issuing price targets and opinions on future stock performance. Analysts are proven to issue downward revisions of previously postulated price targets prior to earnings announcements in order to allow for positive earnings surprises once actual results are released (Bartov et al., 2002). Analysts might also issue upward revisions over the course of the year, before releasing downward revisions in the period between fiscal-year end and full-year analyst results forecast (Athanasakou et al., 2011). As a result, a majority of companies suspiciously just-hits earnings forecasts while only very few either fail or meet targets with ease (Athanasakou et al., 2008; Degeorge et al., 1999). Analyst incentives are threefold: First, and most importantly, they want to please management and thereby retain superior information channels (Ke & Yu, 2006). Second, they improve the relationship with brokerage clients who, for example, purchase the

stock recommended and gain a positive return once results beat forecasts (Libby, Hunton, Tan, & Seybert, 2008). Finally, providing forecasts allowing for (small) positive stock price reactions is a matter of job retention as forecasts become more accurate per se, and biased forecasts curry favor with both managers and institutional investors (Ke & Yu, 2006).

As the third group investors can be regarded as the fundamental initiators of the earnings game. Especially transient investors with limited and short-run investment periods are participating in order to gain short-term trading profits (Matsumoto, 2002). In contrast, unsophisticated retail investors with no insights about the internal dependencies being prevalent are not considered. They are, in fact, the ultimate losers of the game as they can be assumed to believe in both the results reported and the independence of participants involved.

The consequences of the earnings game being played are evident. Reported numbers no longer reflect the true economic condition of participating companies, further excavating the dictum of financial reporting standards such as US GAAP or IFRS (Bradshaw & Sloan, 2002). As a result, no rational market participant would belief in reported earnings any longer. This, in turn, would lead capital markets to lose the required integrity, thereby inducing their dismissal as a trustworthy tool for capital allocation (Levitt, 1998). In light of these implications, recommendations to end the earnings game are numerous: Graham et al. (2005) postulate an end of short-termism, whereas Levitt (1998) sees cultural change of financial market participants as a predominant prerequisite. More precisely, Fuller and Jensen (2002) urge company executives to avoid the issuance of earnings guidance and expectation managing activities in a way that their stocks trade closer to their intrinsic value. Further but also costly potential remedies may be found in a restriction of accounting flexibility and higher earnings quality requirements.

2.3. Data Set

To test for the relevance of the earnings game in family firms on a broad and significant scale, our panel represents the largest family firm dataset available in the literature, comprised of companies in the most developed financial market globally. We hand-collect family ownership and management information for all constituents of the S&P 1500 index from 1996 until 2010. Though most of the relevant research on family firms is also based on companies listed in the United States, the publications are predominantly limited to the S&P 500 index and cover smaller time spans (Anderson & Reeb, 2003a; Jiraporn & DaDalt, 2009; Wang, 2006). In sum, our panel comprises 25,020 firm-year observations from 1,668 constituents of the index over time. We exclude financial services firms and utilities (984 firms), due to their unique business models and balance sheet structures. Also, spin-offs, carve-outs, and merged corporations (396) are taken out in order to avoid double-counting. The same applies to companies without full ticker information (33).

With regard to the definition of family firms, literature offers an enormous variety of different definitions (Kim et al., 2014; La Porta et al., 1999; Morck et al., 1988), in most cases depending on the degree of management involvement and the percentages of ownership controlled. As other family firm researchers (Ali et al., 2007; S. Chen et al., 2008; Villalonga & Amit, 2006) we have decided to adhere to the approach chosen by Anderson & Reeb (2003a) to a large extent. At the most aggregated level (level 1), we refer to a company as a family firm (FAM_FIRM) if it is family-owned and/or family-managed. We use binary variables throughout, and the binary equals one if a characteristic is fulfilled, and is zero otherwise. At the intermediate level (level 2), we differentiate between family-managed (FF_MGMT) and family-owned (FF_OWNERSHIP) corporations. Family-managed companies are those firms which are managed by the founder(s) and/or founder descendants. Characteristics of family

ownership are fulfilled if either the founder and/or its descendants have accumulated more than five percent of the total voting rights of the company. Finally, on the detailed level (level 3), we differentiate between companies where the founder serves as CEO (FOUNDER_CEO) and/or has a role in the management team, including oversight functions, such as the chairman of the board (FOUNDER_MGMT). Further, we assign a one to those companies where a family descendant serves as CEO (FAM_CEO) or conducts services as a board member (FAM_MGMT).

The information is gathered from filings with the Securities and Exchange Commission (SEC) EDGAR database. We screened 10-K filings to gain information on family involvement in management functions and DEF 14A statements to retrieve corresponding details on the shareholder structure. Also, we research sources such as the Hoover firm profile database, fundinguniverse.com, and company websites in order to identify the founder(s) and potential founder descendants. Then, our family firm panel is merged with yearly financial reporting data (i.e., items from the balance sheet, profit and loss statement, and cash flow statement) from COMPUSTAT. For broker estimates and the subsequent definition of earnings surprises and downward forecast revisions we use data from the Institutional Broker Estimate System (I/B/E/S). We retrieve earnings per share (EPS) data for full-year results, which implies an inclusion of fourth quarter numbers and estimates. Finally, security prices are from the University of Chicago's Center for Research in Security Prices (CRSP).

2.4. Research Design

2.4.1. Hypotheses

Based on previous findings in both earnings game and family firm literature, formulating research hypotheses on potential interaction effects is not as sophisticated as testing

them. Although research on family firms is divided, we are – overall – convinced that long-term objectives outperform short-term incentives in family firms. Specifically, we refer to the socioemotional wealth endowment of family firms and the particular incentives of family owners (Berrone et al., 2012, 2010). Technically, we point to the negative effects of family ownership on magnitudes of both accruals-based and real earnings management (Abdolmohammadi, Kvaal, & Langli, 2010; Achleitner et al., 2014; Yang, 2010). Hence, with regard to earnings forecasts, we expect family firms to be less concerned about meeting analyst benchmarks, as meeting those would require family firms to engage in earnings management, or forecast guidance (*Hypothesis 1*).

Hypothesis 1: Family firms are less likely to deliver earnings surprises as compared to non-family firms.

Also, to examine the critical zone around zero earnings surprises (Athanasakou et al., 2008; Doyle et al., 2013), we formulate our second hypothesis after which only non-family firms are expected to beat earnings targets by fractions (*Hypothesis 2*). Once again, we expect family firms to exhibit higher levels of earnings conservatism and lower incentives to meet earnings benchmarks. Both of these assumptions are ultimately embedded in, and arise from, SEW theory.

Hypothesis 2: Family firms are less likely to experience small earnings surprises (i.e., just-beat analyst benchmarks) as compared to non-family firms.

Consequently, we would expect less downward revisions of earnings forecast in family firms versus non-family counterparts (*Hypothesis 3*). This hypothesis stems from the evidence that downward revisions are used in a strategic manner, allowing firms to beat earnings

benchmarks set by analysts (Athanasakou et al., 2011). Further adding to this assumed capital market distance of family firms we also expect that – in light of increased opacity for family-owned companies (Anderson et al., 2009) – analyst forecast errors are greater for family firms versus non-family firms (*Hypothesis 4*).

Hypothesis 3: Downward revisions are significantly less likely for family firms as compared to non-family firms.

Hypothesis 4: The absolute forecast error is greater for family firms as compared to non-family counterparts.

2.4.2. Measurement

Detecting the earnings game in practice is particularly challenging once family firm characteristics come into play. First, most of the relevant actions take place in the shadows of public financial market communication: Informal meetings between analysts and the management team, unobservable forms of collusion between professional investors, managers, and analysts. Obviously, none of these events and encounters produces reports or records. Hence, the effects need to be demonstrated *a posteriori*. Second, when searching for potential evidence, the effects are in most instances tiny, e.g., miniscule stock price movements deviating from what is assumed a *normal* performance. Consequently, we employ multiple measures in order to provide holistic proof of the earnings game being played less in family firms. To start, we deduct analyst estimates from reported actual earnings for non-family and family firms. Hereby, we can make inferences on the degree of assumed interaction between management and analysts and derive a surprise parameter (SURPRISE). The applied I/B/E/S estimates are

representing the arithmetic average of analyst forecasts at results release to the market.[5] For the ease of interpretation and to control for within-size effects, all parameters are standardized. To address outlier concerns, we also winsorize at a one percent significance level.

$$SURPRISE_{it} = ACTUAL\ (EPS_{it}) - ESTIMATE\ (EPS_{it}) \quad (1)$$

In a subsequent step, we test for significant factors leading to a deviation between reported earnings and previously issued estimates on an absolute basis, commonly referred to as the forecast error (FC_ERROR_ABS).

$$FC\_ERROR\_ABS_{it} = |ACTUAL\ (EPS_{it}) / ESTIMATE\ (EPS_{it})-1| \quad (2)$$

Third, we investigate the degree to which firms are positively hitting earnings benchmarks which we refer to as *meet or beat* expectations. Such a behavior is a sign for earnings game participation (Athanasakou et al., 2008). More precisely, an analyst-management interaction in order to beat earnings targets by a few currency units is best detected in the fractional areas around zero earnings surprises (Athanasakou et al., 2008; Doyle et al., 2013).[6] Therefore, we have constructed three different measures of hitting target tendencies: The just-meet parameter MBE_1, for the earnings interval [$-0.02;$0.02], the broader parameter MBE_2, for the area between [$-0.05; $0.05] earnings surprises, and the widest metric MBE_3, for earnings surprises in the range of 10¢ [$-0.1;$0.1].

Fourth and finally, we test for significant drivers of analysts issuing downward revisions

[5] The definitions can be reviewed in the 'I/B/E/S Glossary – A Guide to Understanding I/B/E/S Terms and Conditions', available, e.g., under http://brunolib.cba.ua.edu/sites/default/files/pdfs/IBES_Glossary.pdf.

[6] In theory, earnings surprises means and medians should be zero (i.e., actuals should equal estimates) as analysts can be assumed to control for any relevant factors themselves and aim to deliver most precise forecasts.

of earnings forecast. According to the literature (Athanasakou et al., 2011; Bartov et al., 2002), downward revisions are an integral part of the earnings game, as they allow managers to jump over the earnings benchmark hurdle. We have modelled downward revisions (DOWN) according to an approach followed by Matsumoto (2002) and applied by others (Athanasakou et al., 2008). First, we estimate an implied earnings forecast (IEF) given past company performance, controlling for share price appreciation, revenue and net income growth, as well as year- and industry-specific effects. For industry categorization, we have adopted a well-established model from previous research (Fama & French, 1997).

$$IEF_{EST.} = (EPS_{it} / EPS_{it-1})\text{-}1_{EST.} = \alpha_0 + \alpha_1 * (EPS_{it-1} / EPS_{it-2})\text{-}1 + \alpha_2 * (PRICE_{it} / PRICE_{it-1})\text{-}1 + \alpha_3 * SALES\_GROWTH_{it} + \alpha_4 * NI\_GROWTH_{it} + \alpha_5 * d.YEAR + \alpha_6 * d.INDUSTRY + \varepsilon_{it} \quad (3)$$

Ordinary least squares (OLS) panel regression in which:

$EPS_{i,t-2,t-1,t}$ = Actual earnings per share (EPS), as reported, for companies in the periods t-2, t-1 and t.

$PRICE_{it}$ = Share price on the respective earnings announcement's closing day

$SALES\_GROWTH_{it}$ = Revenue growth indicator, calculated as percentage change of total revenues of firm i in period t from total revenue of the firm in period t-1

NI_GROWTH_{it} = Net income growth indicator, calculated as percentage change of net income of firm i in period t from net income of the firm in period t-1

d.INDUSTRY = 17 Fama-French industry classifications, based on SIC codes

d.YEAR = Dummy variable for each panel-year (1996-2010)

We have estimated IEF and constructed our measure of an expected forecast (EF). Then, we derive at an unexpected forecast measure (UEF) which is the respective analyst consensus estimation, minus the expected forecast. Finally, we generate the dummy variable DOWN and assign a one for all UEFs smaller than zero, and a zero otherwise:

$$EF_{it} = ACTUAL(EPS_{it-1}) + IEF_{it} \quad (4)$$

$$UEF_{it} = ESTIMATE\ (EPS_{it}) - EF_{it} \quad (5)$$

$$DOWN_{it} = \begin{matrix} 1 & if\ UEF_{it} < 0 \\ 0 & else \end{matrix} \quad (6)$$

2.4.3. Regressions

To test for validity of our hypotheses we apply and adopt well documented approaches from the literature. With regard to the first hypothesis, we add multiple control variables to our dependent variables SURPRISE, MBE_3, MBE_2, and MBE_1, and follow other researches in doing so (Athanasakou et al., 2008). In order to address potential regression attenuation bias concerns, we leave out control variables applied in the regression of analyst downward forecast revisions (Aigner, 1973; Frost & Thompson, 2000; Phillips & Smith, 1991). By the construction of our regressions and the order we apply them we test for the different levels of potential results manipulations. In our first regression, we test for significant effects of family firms in achieving earnings surprises. We estimate a firm-fixed effects regression for the continuous variable SURPRISE. Thereby, we address concerns of endogeneity and are able to isolate the family firm effect to the highest extent possible. The panel identifies a total of 584 events of changes in family firm status, making the application of firm-fixed effects regression models feasible. As controls we add a dummy variable for abnormal accruals (ABN_ACCRUALS) to consider the findings after which high levels of accruals are associated with neutral earnings surprises (Dechow, Richardson, & Tuna, 2000). We further add controls for performance (PERF), profitability (LOSS), and the past ability to hit earnings benchmarks (MBE_PAST_2_{t-1}) to account for findings according to which firms have stronger incentives to meet earnings targets if they did so in the previous period (Athanasakou et al., 2008; Graham et al., 2005). We add size (SIZE) as we assume larger (more established) firms to be more closely connected to capital markets, which implies a higher degree of analyst interactions, i.e., more precise

forecasts. Finally, we also add share prices (PRICE) as dependent variables to account for the finding that forecast errors and forecast error dispersion suspiciously lag expected variability with price scale (Cheong & Thomas, 2011; Degeorge et al., 1999). Parameters are standardized for the ease of interpretation and, in parts, winsorized at a one percent level to account for potential outliers. Finally, standard errors are clustered by firm identifier (Code).

$$SURPRISE_{it} = \alpha_i + \alpha_1 * FAM\_VAR_{it} + \alpha_2 * ABN\_ACCRUALS_{it} + \alpha_3 * PRICE_{it} + \alpha_4 * PERF_{it} + \alpha_5 * SIZE_{it} + \alpha_6 * LOSS_{it} + \alpha_7 * MBE\_PAST\_2_{it-1} + \varepsilon_{it} \quad (7)$$

In which:

$SURPRISE_{it}$ = Actual EPS earnings of firm i in period t, minus analyst consensus EPS earnings forecast for firm i, in period t

FAM_VAR_{it} = Level I, II and III family firm characteristics for firm i, in period t

$ABN\_ACCRUALS_{it}$ = Dummy variable, equaling one for positive abnormal accruals for firm i in period t, and zero otherwise; calculated following an established approach in the literature (Achleitner et al., 2014) and representing further modification of previous models (Ball & Shivakumar, 2006; Dechow & Dichev, 2002; Wang, 2006); see Appendix for detailed calculations.

$PERF_{it}$ = Performance indicator, calculated as net income of firm i in period t, divided by respected amount of total assets

$SIZE_{it}$ = Natural logarithm of total assets of firm i in period t

$LOSS_{it}$ = Dummy variable, equal to one if firm i's net income is smaller than zero in period t, and zero otherwise

$MBE\_PAST\_2_{i,t-1}$ = Dummy variable, equal to one if firm i met or exceeded earnings benchmarks by [0.00; 0.05] in period t-1

Under the second hypothesis, we focus on the most suspicious areas of earnings surprises and use the MBE_1, MBE_2, and MBE_3 parameters as dependent variables. We apply both generalized least squares (GLS), conditional logit, and firm-fixed effects models with comparable properties in terms of standardization, winsorization, and robustness of

standard errors. To identify any effects within the defined bandwidths we have deleted all observations outside the respective intervals (Athanasakou et al., 2011).[7]

$$MBE\_VAR_{it} = \alpha_i + \alpha_1 * FAM\_VAR_{it} + \alpha_2 * PRICE_{it} + \alpha_3 * ABN\_ACCRUALS_{it} + \alpha_4 * PERF_{it} + \alpha_5 * SIZE_{it} + \alpha_6 * LOSS_{it} + \alpha_7 * MBE\_PAST\_2_{it-1} + \varepsilon_{it} \quad (8)$$

In which (solely deviating definitions explained):

MBE_VAR_{it} = Variables MBE_3_{it}, MBE_2_{it} and $MBE\_1_{it,}$ for firm i's earnings surprise intervals between [$-0.1; $0.1], [$-0.05; $0.05], and [$-0.02; $0.02] in period t, respectively

Third, we test for significant tendencies of analysts to issue downward revisions for earnings targets (*Hypothesis 3*). We apply the identical regression design as for the previous hypothesis and solely adjust the dependent variable and the type of regression applied. We introduce the previously derived parameters for downward revisions (DOWN). Also, as for the MBE_2 binary, we estimate a conditional logit regression which allows us to use a firm-fixed effects model in case of dichotomous dependent variables.

$$DOWN_{it} = \alpha_i + \alpha_1 * FAM\_VAR_{it} + \alpha_2 * PRICE_{it} + \alpha_3 * ABN\_ACCRUALS_{it} + \alpha_4 * MBE\_PAST\_2_{it-1} + \alpha_5 * PERF_{it} + \alpha_6 * SIZE_{it} + \alpha_7 * LOSS_{it} + \varepsilon_{it} \quad (9)$$

In which:

$DOWN_{it}$ = Dichotomous variable, equaling one if a firm's estimated annual earnings per share level in period t is lower than estimated (expected) by the firms previous earnings levels, and zero otherwise

[7] As a matter of robustness prove and to provide an alternative measure, we deviated from this approach for the binary variable MBE_2.

Finally, under the fourth hypothesis according to which analyst forecast errors are greater for family versus non-family firms, we loosely follow an established equation design (Lang & Lundholm, 1996). We estimate absolute forecast errors with the following firm-fixed effects regression model:

$$|FC\_ERROR\_ABS_{it}| = \alpha_i + \alpha_1 * FAM\_VAR_{it} + \alpha_2 * PRICE_{it} + \alpha_3 * PERF_{it} + \alpha_4 * SIZE_{it} + \alpha_5 * LOSS_{it} + \alpha_6 * MBE\_PAST\_2_{it-1} + \alpha_7 * GROWTH_{it} + \alpha_8 * d.YEAR + \varepsilon_{it} \quad (10)$$

In which:

$FC\_ERROR\_ABS_{it}$ = Absolute forecast error of firm i in period t (in percent), defined as actual EPS earnings subtracted by I/B/E/S analyst consensus EPS forecast for firm i in period t

$GROWTH_{it}$ = Growth indicator, calculated as percentage change of total revenues of firm i in period t from total revenue of the firm in period t-1

2.5. Descriptive Findings

Although descriptive findings conceptually lack the explanatory power of analytical findings (i.e., regression results) they may in fact deliver very interesting initial observations. With regard to certain characteristics of a potential earnings game in family firms this is precisely the case. However, before addressing these observations in detail, we provide an overview of the mean evolution of various family firm characteristics within our panel data set (Table 1). As the following regressions include a number of varying family firm status definitions both understanding their differences and observing their within-panel relevance is highly important.

As already identified in previous works, the share of family firms within the S&P 1500 index diminishes over time. The mean value of 42.39 percent family firms in 1996 gradually decreases to 30.88 percent in 2010 (1). The potential implications of this observation are

twofold: First, venture creativity in the recent past may lack both the quantitative and qualitative output of previous generations of family entrepreneurs. In other words, building successful family firms may have become more difficult. Second and alternatively, founders and/or family descendants may have started to increasingly sell their stakes in third-party transactions, resulting in less firms with family firm status in the panel. Not being able to identify the dominant driver within the scope of this paper, we still note that this finding is in line with firm and ownership maturity theory (Franks et al., 2012). As firms get older, owners and their descendants can be expected to sell their stakes in order to satisfy personal consumption preferences.

Next – when analyzing family firm status precisely – we observe that the latter is predominantly driven by (2) family-managed firms (mean value: 34.41 percent) rather than those under (3) family ownership (26.91 percent). Apparently, family management involvement appears to be more persistent than family ownership. As there is no intuitive explanation for this finding, we precautionary point to the five percent cut-off rate we applied for ownership definitions (cf. Section 2.3), potentially biasing our ownership results.

Finally, as the first three family firm definitions (FAM_FIRM, FF_MGMT, FF_OWNERSHIP) are not mutually exclusive, we also display exclusively derived characteristics. We see that – in comparison to the non-exclusively defined sub-groups – the percentage of (4) joint firms is relatively high (22.75 percent). In other words, in more than half of all family firms the involvement is jointly observable on both the ownership and management level. As this finding is intuitively expected we rather note an unexpected finding for the level of (5) exclusively managed and (6) exclusively owned family firms: On average across the panel, the level of exclusively family-managed firms (11.66 percent) is approximately four times higher than the level of those firms where family involvement only takes place on the

ownership side (4.16 percent). Again – as the paper deals with the earnings game in particular - we cannot provide an ad hoc interpretation of this surprising result. However, we urge for further research on this topic and the fundamental levers of family involvement.

Subsequently, we graph the earnings surprise for family firms and non-family counterparts (Figure 1). First, we find confirmation that hitting analyst benchmarks is a pervasive phenomenon on capital markets – regardless of any specific ownership or management structure (Athanasakou et al., 2008). Focusing on the small area around [-0.1; 0.1] standardized earnings surprises, we see – for both family and non-family firms – that there is a very suspicious tendency to just-hit targets. Even more interesting, the effect is more pronounced for family firms. Further differentiating for level two family firm characteristics (Figures 2 and 3), we see that the family firm-specific effect is most pronounced for those firms with family ownership, rather than firms with family involvement in management. The implications of these findings are both obvious and puzzling. Obvious, as the just-hitting tendency of all firms (regardless of the ownership and management structure) provides large-scale evidence for previous literature findings (Athanasakou et al., 2008; Graham et al., 2005). Either managers accept any cost to meet earnings targets or analyst adjust the latter accordingly. It is difficult to imagine that just-meeting targets coincidently is the reason for a majority of firms to perform well against knowledgeable benchmark setters (analysts).

YEAR	(1) FAM_FIRM	(2) FF_MGMT	(3) FF_OWNERSHIP	(4) MGMT_AND_OWNERSHIP	(5) FF_MGMT_ONLY	(6) FF_OWNERSHIP_ONLY
1996	42.39%	39.03%	30.58%	27.22%	11.81%	3.36%
1997	43.17%	39.75%	31.18%	27.76%	11.99%	3.42%
1998	43.65%	39.69%	31.35%	27.40%	12.29%	3.96%
1999	43.11%	39.15%	30.70%	26.74%	12.41%	3.96%
2000	42.33%	38.07%	30.10%	25.84%	12.23%	4.26%
2001	41.61%	37.29%	29.20%	24.88%	12.41%	4.32%
2002	40.35%	35.97%	28.48%	24.10%	11.87%	4.38%
2003	39.39%	34.83%	27.28%	22.72%	12.11%	4.56%
2004	38.49%	34.05%	26.62%	22.18%	11.87%	4.44%
2005	36.81%	32.43%	25.66%	21.28%	11.15%	4.38%
2006	35.43%	31.24%	24.22%	20.02%	11.21%	4.20%
2007	34.59%	30.46%	23.44%	19.30%	11.15%	4.14%
2008	33.63%	29.44%	22.78%	18.59%	10.85%	4.20%
2009	32.73%	28.30%	21.70%	17.27%	11.03%	4.44%
2010	30.88%	26.50%	20.38%	16.01%	10.49%	4.38%
MEAN	**38.57%**	**34.41%**	**26.91%**	**22.75%**	**11.66%**	**4.16%**

Table 1: Full sample period (1996-2010) overview of mean evolution of various family firm status characteristics. (1) FAM_FIRM equals 1 if a firm is either (3) family-owned (FF_OWNERSHIP) and/or (2) family-managed (FF_MGMT), and zero otherwise. FF_MGMT equals 1 if a firm is either managed by the founder(s) or founder descendants/family members, and zero otherwise. FF_OWNERSHIP equals 1 for firms with more than five percent of total voting rights controlled by either the founder(s) and/or founder descendants/family members, and zero otherwise. For (4) MGMT_AND_OWNERSHIP both family management and ownership characteristics need to be 1. For (5) family presence is solely observed in management functions, not in ownership – for column (6) it is vice-versa.

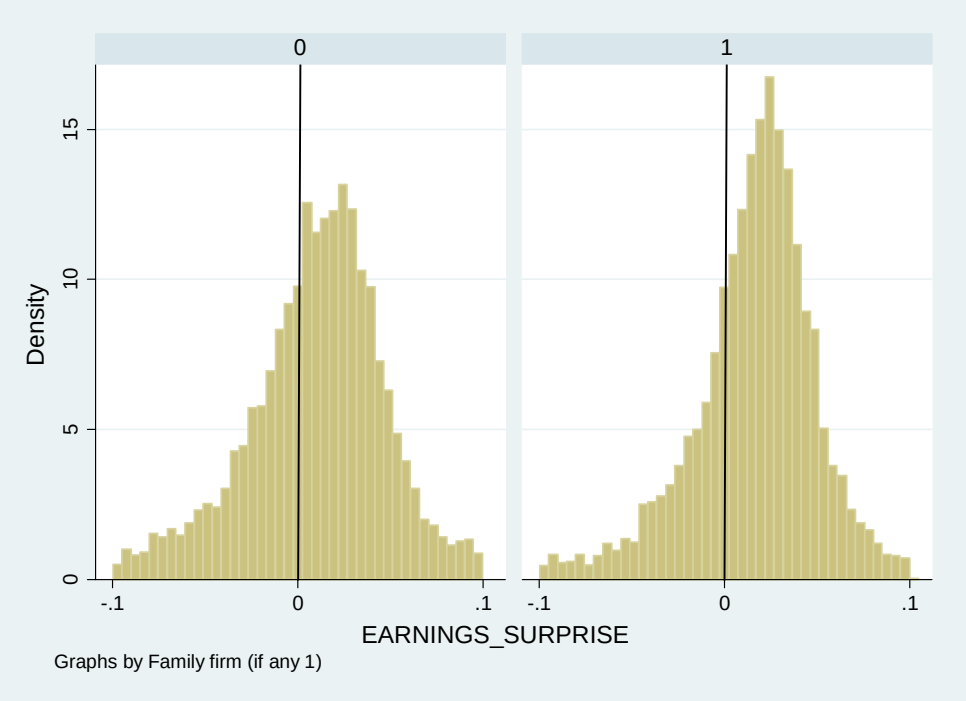

Figure 1: Density distribution of standardized earnings surprise for non-family (0), and family firms (1), over the period 1996 until 2010.

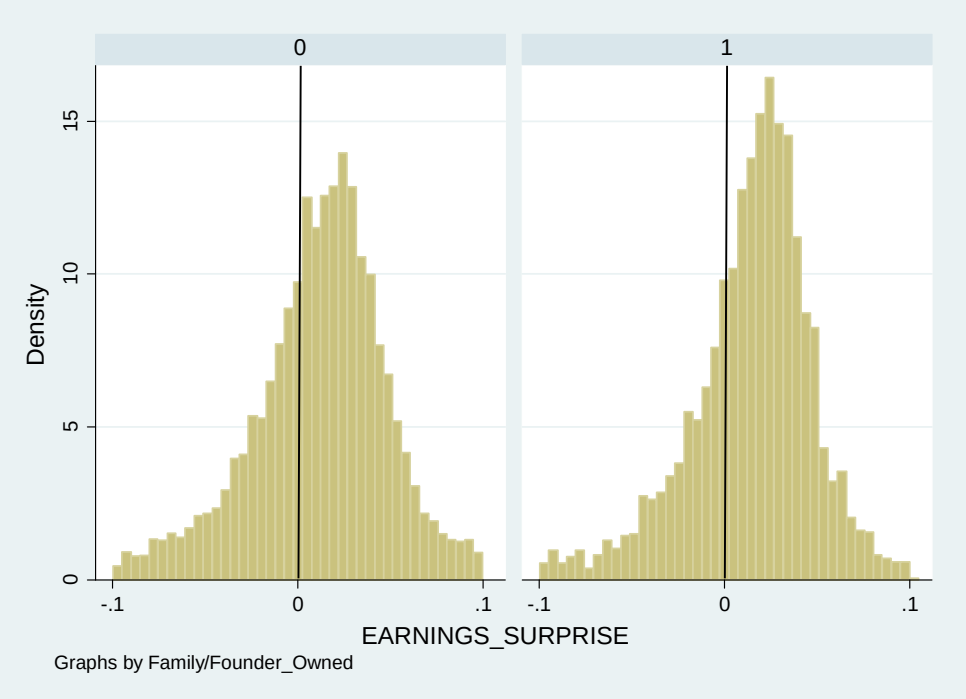

Figure 2: Density distribution of standardized earnings surprise for non-family-owned (0), and family-owned firms (1), over the period 1996 until 2010.

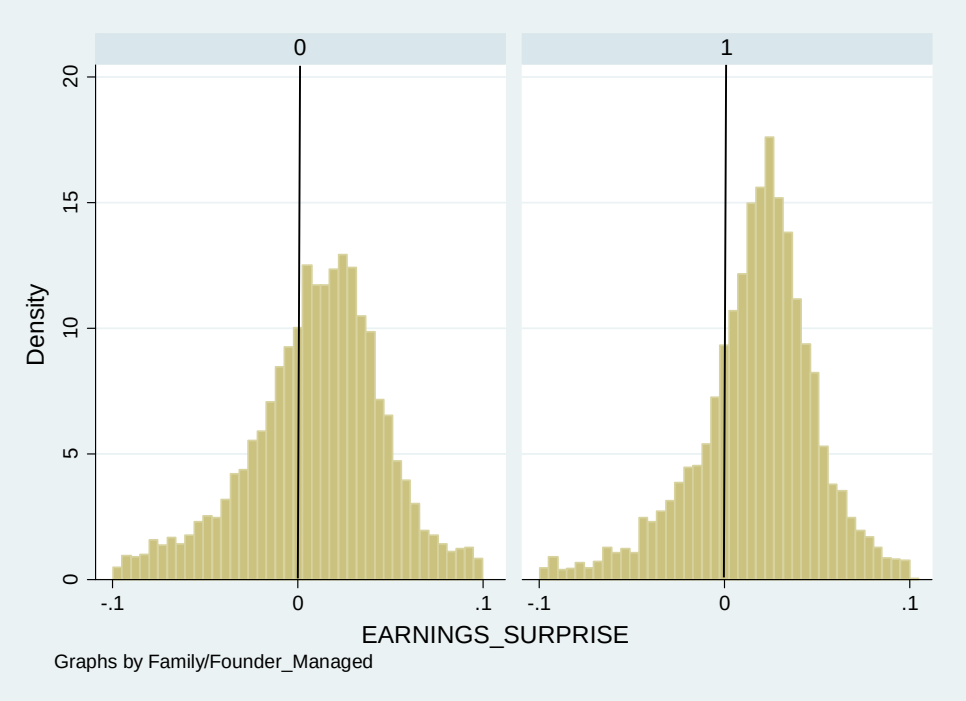

Figure 3: Density distribution of standardized earnings surprise for non-family-managed (0), and family-managed firms (1), for the years 1996-2010.

This finding is striking to the extent that analysts themselves should adjust their forecasts for any company specific characteristics (e.g., size). In other words, one would expect zero (mean) earnings surprises for any listed company. Second, it is puzzling why family firms (and in particular firms with (1) founding family ownership greater than five percent of total voting rights) are beating targets per se (Figure 2). Either, family firms have the ability to beat or at least meet targets with ease, which would imply a systematical under-valuation by analysts. Again, analysts should know the properties of family firms and control for them, especially over 15 reporting periods. Or, family firms are even more prone to participate in the earnings game and to do anything to meet or beat targets – which they would apparently do with great success. This, however, would foil previous research on earnings management in family firms (Jiraporn & DaDalt, 2009) as well as the assumed SEW endowment theory (Berrone et al., 2012).

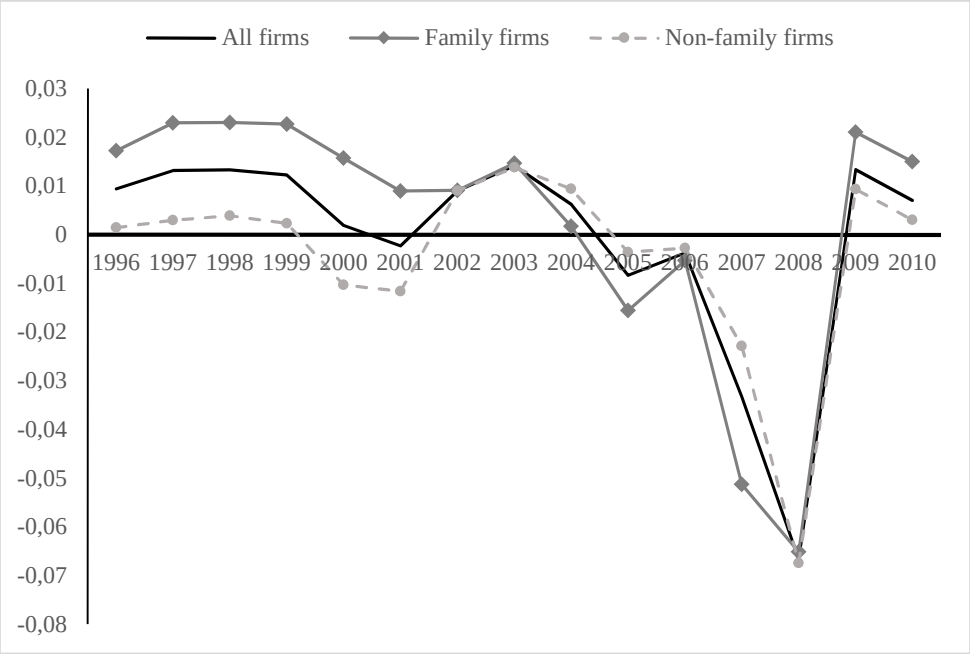

Figure 4: Annual means of standardized earnings surprises for family firms, non-family firms, and the entire sample, for the years 1996 to 2010.

Before corroborating or rejecting *Hypothesis 1* analytically, we provide the distribution of standardized earnings surprises over the panel period (Figure 4). First, we infer that analyst targets are substantially missed in bust cycles, for example the dotcom or in particular the financial crisis of 2007 and 2008. This may either imply less permeable information channels between analysts and management in phases of crisis or a strict non-observance and inability to meet targets by company executives. Second, the difference between family firms and non-family corporations is striking: In boom phases family firms consistently outperform against benchmarks versus non-family firms. In bust phases however, this effect appears to reverse.

2.6. Regression Results

In order to examine the first hypothesis we have regressed earnings surprises (SURPRISE) on level one (FAM_FIRM) and level two (FF_MGMT, FF_OWNERSHIP) family firm characteristics. Table 2 shows results while regressions on level three

characteristics (all remaining family firm characteristics parameters) can be found in the Appendix. We can infer that the descriptive finding, after which family firms have more positive earnings surprises (i.e., Figure 1 would be statistically significant right-skewed), is not supported by empirical evidence. Precisely, (1) firms with family involvement in management and ownership (-0.0120***) as well as (4) family-owned firms (-0.00971***) have significantly smaller earnings surprises than the respective counterparts. As family firms are smaller (cf. Table 10), the power to beat earnings targets may indeed be captured by the highly significant control variables for size (-0.0293*** and -0.0291***). Still, the finding is very relevant: As analysts are fully aware of a company's size when issuing targets, they apparently do not properly adjust for those factors when estimating family firm performance. Interestingly, we do not observe comparable significant evidence for (3) family-managed firms (-0.00531). Second and already in the first regression, we also provide evidence of relevance for the previously derived variable for downward revisions (DOWN). The variable is highly significant, confirming findings of the relevance of downward revisions to deliver positive earnings surprises (Bartov et al., 2002). Hence, we already found first suspicious tendencies but have to reject the first hypothesis. The third relevant finding – a statistically significant negative loading of the share price factor (PRICE) throughout – will be discussed at the end of this section; i.e., when the full picture across all regressions is available.

With regard to the second hypothesis according to which family firms do not positively hit – and in particular just-hit – earnings targets, we report our results in Tables 3 to 5. On the broader scale (Table 3), we not only find (1) family firms to significantly less meet or beat earnings targets than counterparts (-0.0582**). Also, we find the effect to be both significant for (2) family-managed (-0.0467*) and (3) family-owned firms, and to be more significant and stronger for the latter (-0.0563**). We hereby infer a particular tendency of family firms – and

in particular of founding family-owned firms – to abstain from market pressure to meet earnings targets. This finding is particular interesting as our results are based on annual EPS numbers and forecasts which were expected to lack insights vis-à-vis quarterly data (as one could argue quarterly data to be more prone to earnings and/or analyst management than potentially back-logged annual results). In Table 4, we further downsize the range of earnings surprises and use the binary variable MBE_2 as an alternative measure. Although the significance level for family-owned firms vanishes, we gain both important and very surprising insights on family-managed firms: On the slightly more narrow level, (2) family-managed firms seem to significantly meet or beat earnings targets (0.234**) – they do so regardless of the fact if (4) family ownership is considered in the regression or not (0.248**). Overall, the family management impact, in contrast to an insignificance for (3) family-owned firms (0.0759), leads to the evidence that (1) family firms – overall – meet or beat targets in the intermediate range significantly more often (0.281**). As this finding is highly puzzling, we turn our attention to the narrowest range of earnings surprises (Table 5) before discussing our findings in detail. Here, we find somewhat complementary confirmation for prior results. (4) Family-managed firms (0.160*) do significantly just-hit targets whereas family-owned firms significantly miss them (-0.155*). Although these findings do not hold significantly in stand-alone assessments, they hold when analyzed jointly and provide a robustness to the significant findings made beforehand. In order to gain further clarity on the influence of family management, we perform additional and exclusive regressions for family management characteristics in Table 6. We find that the tendency to just-beat targets is again not visible when controlling for (1) family-managed firms alone (0.123), but most importantly stems from firms where family influence is limited to management functions (0.208**). In other words, we find – across all regressions - strong and convincing evidence that, as soon as families are on the shareholder register, firms

do no longer have the desire to meet analyst targets.[8] We can therefore accept *Hypothesis 2* but have to point to a required distinct differentiation between family-managed and family-owned firms within the family firm category.

[8] Technically, we have identified 510 events where family ownership changes across the panel, providing further statistical relevance for the findings of the firm-fixed effects models applied in this paper.

VARIABLES	(1) SURPRISE	(2) SURPRISE	(3) SURPRISE	(4) SURPRISE
DOWN	0.00624***	0.00624***	0.00625***	0.00623***
	(0.00138)	(0.00138)	(0.00138)	(0.00138)
PRICE	-0.0111***	-0.0111***	-0.0111***	-0.0111***
	(0.00222)	(0.00222)	(0.00222)	(0.00222)
FAM_FIRM	-0.00329			
	(0.00401)			
MGMT_AND_		-0.0120***		
OWNERSHIP		(0.00407)		
FF_MGMT			-0.00531	
			(0.00364)	
FF_OWNERSHIP				-0.00971**
				(0.00455)
MBE_PAST_2	-0.000244	-0.000234	-0.000224	-0.000254
	(0.00119)	(0.00119)	(0.00119)	(0.00119)
ABN_ACCRUALS	0.000158	0.000223	9.19e-05	0.000305
	(0.00165)	(0.00165)	(0.00165)	(0.00165)
PERF	0.00221	0.00217	0.00222	0.00220
	(0.00178)	(0.00178)	(0.00178)	(0.00178)
SIZE	-0.0280***	-0.0293***	-0.0282***	-0.0291***
	(0.00264)	(0.00272)	(0.00264)	(0.00273)
LOSS	0.000980	0.000859	0.000980	0.000916
	(0.00325)	(0.00326)	(0.00325)	(0.00326)
Constant	0.0124***	0.0142***	0.0130***	0.0140***
	(0.00243)	(0.00202)	(0.00219)	(0.00224)
Observations	11,386	11,386	11,386	11,386
Firm-fixed effects	yes	yes	yes	yes
Industry-fixed effects†	no	no	no	no
Year-fixed effects†	no	no	no	no
R-squared	0.032	0.033	0.032	0.033
Number of Code	1,219	1,219	1,219	1,219

Table 2: Firm-fixed effects regression model on SURPRISE for (1) family firms (FAM_FIRM), (2) family-managed and family-owned firms (MGMT_AND_OWNERSHIP), (3) family-managed (FF_MGMT) and (4) family-owned firms (FF_OWNERSHIP), for years 1996 to 2010.† Industry- and year-fixed effects as well as other controls (e.g., for revenue growth) have been applied in the estimation of downward analyst revisions regressions and are omitted to avoid regression attenuation bias (Aigner, 1973; Frost & Thompson, 2000; Phillips & Smith, 1991). Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Before interpreting our results holistically, we finish by testing *Hypothesis 3* and *Hypothesis 4*. Starting with the former we depict the regression on overall absolute forecast errors (*Hypothesis 4*) in Table 7. In line with initial findings (Ali et al., 2007), but on a substantially broadened data set, we provide evidence for significantly smaller forecast errors for (2) family-owned firms (-0.0805***) and those where (3) a family CEO is in charge (-0.0968**). This finding is not only highly puzzling as it leads to (1) the rejection of the fourth hypothesis and (2) speaks against an entrenchment effect of family ownership and – as the other controls are not contrarily significant – for family firms overall. Additionally, we found another indication that family-owned firms abstain from participation in the earnings game: If analysts have such a good idea about earnings of family firms it is particularly questionable why this effect persists (with a distinct negative pattern) around zero earnings surprises. In other words, analysts seem to knowingly let fall family-owned firms below the zero earnings surprise line; with the consequence that non-family-owned firms beat targets significantly more often.

Finally, we address the third hypothesis after which family firms face less downward revisions than non-family firms. We show results in Table 8. Downward revisions are significant more likely for (1) family firms (0.217**) and (2) firms under family management (0.198**). As the coefficients for (3) family-owned firms are insignificant we assume again that the former observation is driven by the latter. Consequently we have to reject the third hypothesis. However, we also note that a hypothetical difference between more *opportunistic/strategic* downward revisions to allow for target achievability (potentially more attestable on the quarterly level), and *real* downward revisions to account, e.g., for a worsened economic outlook, may also provoke the observation that family-managed firms receive significantly more downward revisions than counterparts.

At this point in time, we can also conclude on the general observations of share price

(PRICE) influence on the various levels of earnings surprises (SURPRISE, MBE_3, MBE_2, and MBE_1) as important marginalia. As mentioned earlier, we see a highly significant negative influence of share prices on earnings surprises in general (Table 2). However, once the range narrows to more miniscule surprises, the effect reverses and remains still highly significant: Except for the conditional logit regression (Table 4), share price levels have a significant positive impact on all narrowed earnings surprise parameters (Table 3, Table 4, Table 6) as well as a negative effect on absolute forecast errors (Table 7).[9] These findings apply to all regressions of the mentioned tables. Disentangling this seemingly contradicting evidence may provide important confirmation of earlier work on price-scaled forecast errors (Cheong & Thomas, 2011; Degeorge et al., 1999): Our finding supports their notion that forecast errors may very well be price-scaled only up to a level of a few cents around zero earnings surprises. In other words, we can confirm that large stocks show a highly significant tendency to deliver small positive but ceiled earnings surprises – which may induce earnings management once again.

[9] We suppose that the insignificance of PRICE in Table 4 is a result of the applied statistical model.

VARIABLES	(1) MBE_3	(2) MBE_3	(3) MBE_3
DOWN	-0.0187	-0.0190	-0.0194
	(0.0202)	(0.0202)	(0.0202)
PRICE	0.154***	0.154***	0.153***
	(0.0237)	(0.0237)	(0.0236)
FAM_FIRM	-0.0582**		
	(0.0267)		
FF_MGMT		-0.0467*	
		(0.0267)	
FF_OWNERSHIP			-0.0563**
			(0.0283)
MBE_PAST_2	-0.0415**	-0.0415**	-0.0420**
	(0.0200)	(0.0200)	(0.0200)
ABN_ACCRUALS	-0.0201	-0.0202	-0.0187
	(0.0241)	(0.0241)	(0.0241)
PERF	0.0340*	0.0336*	0.0340*
	(0.0182)	(0.0182)	(0.0182)
SIZE	-0.0293**	-0.0280**	-0.0286**
	(0.0138)	(0.0138)	(0.0136)
LOSS	-0.100**	-0.100**	-0.102**
	(0.0457)	(0.0457)	(0.0456)
Constant	0.0804***	0.0733***	0.0722***
	(0.0271)	(0.0265)	(0.0259)
Observations	9,899	9,899	9,899
Firm-fixed effects	no	no	no
Random effects	yes	yes	yes
Industry-fixed effects†	no	no	no
Year-fixed effects†	no	no	no
Number of Code	1,213	1,213	1,213

Table 3: Random effects (GLS) regression model on MBE_3 for (1) family firms (FAM_FIRM), (2) family-managed (FF_MGMT) and (3) family-owned firms (FF_OWNERSHIP), for years 1996 to 2010.† Industry- and year-fixed effects as well as other controls (e.g., for revenue growth) have been applied in the estimation of downward analyst revisions regressions and are omitted to avoid regression attenuation bias (Aigner, 1973; Frost & Thompson, 2000; Phillips & Smith, 1991). Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1) MBE_2	(2) MBE_2	(3) MBE_2	(4) MBE_2
PRICE	-0.0570	-0.0576	-0.0508	-0.0574
	(0.0444)	(0.0445)	(0.0444)	(0.0445)
DOWN	-0.0529	-0.0487	-0.0515	-0.0554
	(0.0553)	(0.0531)	(0.0492)	(0.0535)
FAM_FIRM	0.281**			
	(0.118)			
DOWN#FAM_FIRM	0.0538			
	(0.0839)			
FF_MGMT		0.234**		0.248**
		(0.115)		(0.124)
DOWN#FF_MGMT		0.0515		0.00344
		(0.0838)		(0.109)
FF_OWNERSHIP			0.0759	0.00159
			(0.125)	(0.133)
DOWN#FF_OWNERSHIP			0.0838	0.0849
			(0.0898)	(0.117)
MBE_PAST_2	-0.0177	-0.0173	-0.0154	-0.0175
	(0.0473)	(0.0472)	(0.0473)	(0.0472)
ABN_ACCRUALS	0.0210	0.0226	0.0160	0.0218
	(0.0544)	(0.0544)	(0.0544)	(0.0545)
PERF	0.0731*	0.0733*	0.0756**	0.0735*
	(0.0380)	(0.0381)	(0.0381)	(0.0381)
SIZE	-0.323***	-0.333***	-0.347***	-0.328***
	(0.0774)	(0.0773)	(0.0791)	(0.0789)
LOSS	-0.456***	-0.455***	-0.451***	-0.454***
	(0.0801)	(0.0803)	(0.0802)	(0.0803)
Observations	11,768	11,768	11,768	11,768
Firm-fixed effects	yes	yes	yes	yes
Industry-fixed effects†	no	no	no	no
Year-fixed effects†	no	no	no	no

Table 4: Conditional (fixed effects) logistic regression model on MBE_2 for (1) family firms (FAM_FIRM), (2) family-managed (FF_MGMT), (3) family-owned firms (FF_OWNERSHIP) and (4) both sub-types combined, for years 1996 to 2010, with interaction terms on downward analyst revisions (DOWN).† Industry- and year-fixed effects as well as other controls (e.g., for revenue growth) have been applied in the estimation of downward analyst revisions regressions and are omitted to avoid regression attenuation bias (Aigner, 1973; Frost & Thompson, 2000; Phillips & Smith, 1991). Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1) MBE_1	(2) MBE_1	(3) MBE_1	(4) MBE_1
DOWN	-0.0301	-0.0302	-0.0288	-0.0314
	(0.0312)	(0.0311)	(0.0312)	(0.0310)
PRICE	0.0990**	0.0974**	0.104***	0.0962**
	(0.0391)	(0.0391)	(0.0392)	(0.0391)
FAM_FIRM	0.121			
	(0.0878)			
FF_MGMT		0.123		0.160*
		(0.0860)		(0.0885)
FF_OWNERSHIP			-0.107	-0.155*
			(0.0915)	(0.0932)
MBE_PAST_2	-0.170***	-0.171***	-0.169***	-0.171***
	(0.0337)	(0.0337)	(0.0337)	(0.0336)
ABN_ACCRUALS	-0.0167	-0.0157	-0.0147	-0.0118
	(0.0394)	(0.0394)	(0.0395)	(0.0394)
PERF	0.0371	0.0376	0.0390	0.0383
	(0.0337)	(0.0337)	(0.0340)	(0.0338)
SIZE	-0.169***	-0.170***	-0.203***	-0.192***
	(0.0643)	(0.0650)	(0.0647)	(0.0650)
LOSS	-0.0605	-0.0603	-0.0561	-0.0594
	(0.0741)	(0.0742)	(0.0741)	(0.0741)
Constant	0.0703	0.0750	0.158***	0.109**
	(0.0519)	(0.0489)	(0.0438)	(0.0526)
Observations	4,769	4,769	4,769	4,769
Firm-fixed effects	yes	yes	yes	yes
Industry-fixed effects†	no	no	no	no
Year-fixed effects†	no	no	no	no
R-squared	0.015	0.015	0.014	0.015
Number of Code	1,100	1,100	1,100	1,100

Table 5: Firm-fixed effects regression model on MBE_1 for (1) family firms (FAM_FIRM), (2) family-managed (FF_MGMT), (3) family-owned firms (FF_OWNERSHIP) and (4) both sub-types combined, for years 1996 to 2010.† Industry- and year-fixed effects as well as other controls (e.g., for revenue growth) have been applied in the estimation of downward analyst revisions regressions and are omitted to avoid regression attenuation bias (Aigner, 1973; Frost & Thompson, 2000; Phillips & Smith, 1991). Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1) MBE_1	(2) MBE_1	(3) MBE_1	(4) MBE_1
DOWN	-0.0302	-0.0321	-0.0345	-0.0363
	(0.0311)	(0.0311)	(0.0311)	(0.0311)
PRICE	0.0974**	0.0967**		
	(0.0391)	(0.0391)		
FF_MGMT	0.123		0.142	
	(0.0860)		(0.0861)	
FF_MGMT_ONLY		0.208**		0.221***
		(0.0810)		(0.0813)
MBE_PAST_2	-0.171***	-0.171***	-0.174***	-0.174***
	(0.0337)	(0.0336)	(0.0337)	(0.0336)
ABN_ACCRUALS	-0.0157	-0.0118	-0.0185	-0.0144
	(0.0394)	(0.0394)	(0.0394)	(0.0394)
PERF	0.0376	0.0376	0.0500	0.0501
	(0.0337)	(0.0337)	(0.0332)	(0.0332)
SIZE	-0.170***	-0.195***	-0.156**	-0.184***
	(0.0650)	(0.0649)	(0.0650)	(0.0649)
LOSS	-0.0603	-0.0605	-0.0673	-0.0673
	(0.0742)	(0.0740)	(0.0746)	(0.0744)
Constant	0.0750	0.0976***	0.0638	0.0922**
	(0.0489)	(0.0365)	(0.0488)	(0.0365)
Observations	4,769	4,769	4,769	4,769
Firm-fixed effects	yes	yes	yes	yes
Industry-fixed effects†	no	no	no	no
Year-fixed effects†	no	no	no	no
R-squared	0.015	0.016	0.013	0.014
Number of Code	1,100	1,100	1,100	1,100

Table 6: Firm-fixed effects regression model on MBE_1 for (1) family-managed firms (FF_MGMT) and (2) non-family-owned family-managed firms (FF_MGMT_ONLY), for years 1996 to 2010. Columns (3) and (4) repeat prior regression design however exclude the control variable for standardized share prices (PRICE) at the respective earnings announcement date.† Industry- and year-fixed effects as well as other controls (e.g., for revenue growth) have been applied in the estimation of downward analyst revisions regressions and are omitted to avoid regression attenuation bias (Aigner, 1973; Frost & Thompson, 2000; Phillips & Smith, 1991). Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1) FC_ERROR_ABS	(2) FC_ERROR_ABS	(3) FC_ERROR_ABS
PRICE	-0.0286***	-0.0288***	-0.0276***
	(0.00870)	(0.00869)	(0.00866)
FF_MGMT		-0.0170	
		(0.0257)	
FF_OWNERSHIP		-0.0805***	
		(0.0277)	
FAM_FIRM	-0.0354		
	(0.0258)		
FOUNDER_CEO			-0.0143
			(0.0237)
FOUNDER_MGMT			-0.0276
			(0.0263)
FAMILY_CEO			-0.0968**
			(0.0446)
FAMILY_MGMT			0.0446
			(0.0397)
MBE_PAST_2	-0.0190**	-0.0192**	-0.0180**
	(0.00766)	(0.00766)	(0.00773)
PERF	-0.0222	-0.0223	-0.0272*
	(0.0139)	(0.0139)	(0.0143)
GROWTH	-0.0152**	-0.0146**	-0.0148**
	(0.00648)	(0.00647)	(0.00671)
SIZE	-0.123***	-0.129***	-0.128***
	(0.0225)	(0.0228)	(0.0233)
LOSS	0.260***	0.259***	0.253***
	(0.0258)	(0.0258)	(0.0259)
Constant	0.0868***	0.105***	0.0809***
	(0.0206)	(0.0213)	(0.0209)
Observations	13,764	13,764	13,495
Firm-fixed effects	yes	yes	yes
Industry-fixed effects	no	no	no
Year-fixed effects	yes	yes	yes
R-squared	0.070	0.071	0.071
Number of Code	1,238	1,238	1,231

Table 7: Firm-fixed effects regression model on absolute forecast errors (FC_ERROR_ABS) for (1) family firms (FAM_FIRM), (2) family-managed (FF_MGMT) and family-owned firms (FF_OWNERSHIP), and (3) firms with either founder or founder descendant/family involvement in management functions (FOUNDER_CEO, FOUNDER_MGMT, FAMILY_CEO, FAMILY_MGMT), for years 1996 to 2010. Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1) DOWN	(2) DOWN	(3) DOWN	(4) DOWN
PRICE	-0.180*	-0.181*	-0.177*	-0.181*
	(0.0932)	(0.0935)	(0.0918)	(0.0935)
FAM_FIRM	0.217**			
	(0.0920)			
FF_MGMT		0.198**		0.193**
		(0.0943)		(0.0964)
FF_OWNERSHIP			0.0780	0.0204
			(0.0957)	(0.0982)
ABN_ACCRUALS	-0.199***	-0.197***	-0.201***	-0.198***
	(0.0500)	(0.0500)	(0.0501)	(0.0501)
MBE_PAST_2	-0.00844	-0.00859	-0.00709	-0.00855
	(0.0466)	(0.0466)	(0.0465)	(0.0466)
PERF	-0.144***	-0.144***	-0.142***	-0.144***
	(0.0390)	(0.0389)	(0.0388)	(0.0389)
SIZE	-0.0152	-0.0211	-0.0339	-0.0184
	(0.0693)	(0.0689)	(0.0700)	(0.0708)
LOSS	0.243***	0.245***	0.246***	0.245***
	(0.0718)	(0.0717)	(0.0718)	(0.0717)
Observations	12,117	12,117	12,117	12,117
Firm-fixed effects	yes	yes	yes	yes
Industry-fixed effects†	no	no	no	no
Year-fixed effects†	no	no	no	no

Table 8: Conditional (fixed effects) logistic regression model on analyst downward revisions (DOWN), for (1) family firms (FAM_FIRM), (2) family-managed (FF_MGMT), (3) family-owned (FF_OWNERSHIP), and (4) both sub-type firms, over years 1996 to 2010.† Industry- and year-fixed effects as well as other controls (e.g., for revenue growth) have been applied in the estimation of downward analyst revisions regressions and are omitted to avoid regression attenuation bias (Aigner, 1973; Frost & Thompson, 2000; Phillips & Smith, 1991). Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

The implications of these findings are revolutionary. First and foremost, we see that family-owned firms are not only less likely to manage earnings but also do they provide evidence to be less involved in the earnings game and a flawed reporting process. We therefore refer to an *integrity effect* of family ownership in the provision of financial results. Most interestingly, and second, this effect is predominantly attestable for family-owned firms and does not apply to firms under family management. With that regard we assume that all family

firms engage less in the earnings game but point again to significant within-family firm differences in the ability (or willingness) to beat analyst estimations. We posit that – for this reason – a differentiation between family-managed and family-owned firms within the broader family firm body is advisable. We further infer that, once family members get involved in management functions, capital market pressure is as high as for any other firm. This, in turn, might lead them to use earnings reporting, management, and analyst-interaction techniques in a similar manner as non-family managers. A distance to the earnings game can therefore only be achieved in the presence of stock ownership of family members. Therefore, we also suppose that family ownership may be one of the levers to achieve market pressure resistance – according to Fuller and Jensen (2002) a fundamental prerequisite to stop the earnings game. Third, and in opposition to literature on market development (La Porta et al., 2000), we see substantial benefits – not disadvantages – once families and founders remain in the shareholder register. Also, opacity concerns for family firms (Anderson et al., 2009) can be neglected, at least as far as ownership structures are concerned. Thereby finally, we see room for policy makers to foster the incentives for and quality of family-firm investors, especially in comparison to transient short-term investors (Matsumoto, 2002). Based on our findings, families and founders may indeed be a tool to reinstall financial reporting integrity (Levitt, 1998) and protect minority shareholders (Anderson & Reeb, 2003b). This implies not only a reduction of the number of earnings games being played but also to support financial reporting standards (US GAAP, IFRS) in their cultural embedding.

2.7. Conclusion

With this paper we have been the first to examine the earnings game in family firms. We have found that, vis-à-vis firms with a dispersed shareholder structure, firms under family

ownership are significantly less likely to participate in the earnings game. As the latter usually results in flawed reported earnings numbers and unwarranted returns to investors, managers and analysts alike, we attribute an *integrity effect* to family ownership.

We have shown that, first, family firms in general perform surprisingly well against analyst consensus earnings benchmarks. Moreover they also outperform against non-family firms in meeting benchmarks more frequently. Consequently testing for significance, we can however show that this descriptive finding is not confirmed empirically: In line with previous findings on family firm characteristics, the effect is attributable to smaller firm sizes of family firms versus non-family counterparts. More precisely, (i.) firms under family ownership and (ii.) firms under both family management and family ownership do deliver significantly less earnings surprises, supporting the hypothesis of less earnings management activities in family firms per se. Second, following Doyle et al. (2013), we have sharpened our focus on various intervals of earnings surprises, down to the miniscule area around zero earnings surprises. Here we expected slight positive deviations in order to allow for what is referred to as *just-beating* of earnings targets, subsequently resulting in positive stock reactions (cf. Burgstahler & Dichev, 1997). Cascading down through the earnings surprise intervals, we show that family ownership generally has a negative effect on the probability of beating and just-beating earnings targets. In conjunction, we also show that absolute forecast errors are significantly smaller for family-owned firms, indicating that analysts knowingly set their targets so that family-owned firms do not meet them. Both results – combined and on a stand-alone basis – indicate that less earnings games are played when founders and/or founder families are in the shareholder register. Strikingly, our findings do not apply to firms with family involvement in management. As we see no reason to believe family managers to willingly participate in collusions with analysts and in the earnings game overall, we even more reiterate on our argument that it is indeed only

family ownership having a distinct significant impact on the earnings and forecast management. Moreover, we rather suppose that family managers – with lacking support from a family dominated shareholder structure – do experience equally high pressure to conform capital market expectations. Alternatively, we can also imagine a distinct desire of family managers to deliver favorable earnings and stock returns vis-à-vis (same-generation) co-founders or family members (for example, on the board, or just in the shareholder register).

Our findings comprise substantial implications. First, in contrast to the market development literature (La Porta et al., 2000), family ownership can be regarded as a resource for financial reporting and communication integrity in the earnings announcement process. Thereby, we find further arguments to support the notion of family ownership as a tool to strengthen (and not extract) wealth of minority shareholders (Anderson & Reeb, 2003b). As family-owned firms abstain from the earnings game, we can assume that numbers are less flawed and more trustworthy versus companies in diverse ownership. Second, we see family owners or anchor investors with a comparable long-term investment horizon as one lever to overcome the earnings game. As short-term return incentives remain usually unvalued, such an investor class may end the earnings game both technically and culturally. Finally, third, we see policy implications, e.g., in fostering family ownership in publicly listed firms through tax advantages or a new, long-term approach to the definition of equity ownership.[10] Family ownership, in this regard, would counter-intuitively lead to higher (and not smaller) degrees of investor protection. This is in particular true once retail investors are concerned, as they are not the traditional beneficiaries of the earnings game and thereby would profit over-proportionally from higher reporting and financial accounting integrity.

[10] Further referring to the article 'The tyranny of the long term. Let's not get carried away in bashing short-termism',
The Economist (Print edition, published 22 Nov 2014).

This paper faces the following limitations. First, as it is the first to address this phenomenon for family firms, the depth and scope of the analysis may very well be extended. For instance, we would expect additional insights and empirical confirmation of our results once extending the analysis to first to third quarter forecasts. Also, second, it may be feasible to extend the choice of earnings game parameters. As expectation management and earnings guidance play an important role, one might use an alternative definition of downward revisions, e.g., based on changes between issued quarterly analyst forecasts over the year. Third and finally – in order to validate our findings and arguments - we recommend to expand this analysis to jurisdictions with less developed markets and lower degrees of investor protection; for example Germany, where family firms play a dominant role in the economy, or the United Kingdom as an intermediate example.

2.8. Appendix

2.8.1. Tables

VARIABLES	(1) SURPRISE
DOWN	0.00624***
	(0.00139)
PRICE	-0.0109***
	(0.00226)
FOUNDER_CEO	0.00485
	(0.00390)
FOUNDER_MGMT	-0.00408
	(0.00421)
FAMILY_CEO	0.00846
	(0.00543)
FAMILY_MGMT	0.00187
	(0.00482)
FOUNDER_MORE_5PC_OWNER	-0.00447
	(0.00486)
FAMILY_MORE_5PC_OWNER	-0.0171***
	(0.00494)
MBE_PAST_2	-0.000228
	(0.00121)
ABN_ACCRUALS	0.000303
	(0.00165)
PERF	0.00239
	(0.00181)
SIZE	-0.0287***
	(0.00284)
LOSS	0.000660
	(0.00324)
Constant	0.0133***
	(0.00258)
Observations	11,064
Firm-fixed effects	yes
Industry-fixed effects†	no
Year-fixed effects†	no
Number of Code	1,205
R-squared	0.033

Table 9: Firm-fixed effects regression model on SURPRISE for (1) any type of founder or family involvement in management functions, and any type of founder of family ownership, for years 1996 to 2010.† Industry- and year-fixed effects as well as other controls (e.g., for revenue growth) have been applied in the estimation of downward analyst revisions regressions and are omitted to avoid regression

attenuation bias (Aigner, 1973; Frost & Thompson, 2000; Phillips & Smith, 1991). Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

VARIABLE	(1) MEAN FAM_FIRM	(2) MEAN NON_FAM_FIRM
FIRM_AGE	35.419	60.545
GROWTH	0.181	0.107
LOSS	0.186	0.218
PERF	0.040	0.029
SIZE	3028.225	5163.211

Table 10: Unstandardized mean values, for years 1996 to 2010. FIRM_AGE defined as panel year, less founding year of the corporation; GROWTH defined as change in revenue from t-1 to t, rebased to total revenues in t-1; LOSS as dummy variable equaling 1 if net income in period t is smaller than zero, zero if otherwise; PERF calculated as percentage of net income of total assets in period t; SIZE as total assets in million ($) in period t. All parameters winsorized at one percent significance level, except for FIRM_AGE and SIZE.

2.8.2. Methodologies

Abnormal Accruals Estimation Method

$$ACC_t = \alpha_0 + \alpha_1 * CFO_{t-1} + \alpha_2 * CFO_t + \alpha_3 * CFO_{t+1} + \alpha_4 * DCFO_t + \alpha_5 * DCFO_t * CFO_t + \alpha_6 * d.YEAR + \alpha_7 * d.INDUSTRY + \alpha_8 * d.INDUSTRY * d.YEAR + \varepsilon_{it} \quad (11)$$

In which:

ACC_t = Net income before extraordinary items less net operating cash flows at time t, scaled by average total assets at the corresponding period

$CFO_{t-1, t, t+1}$= Net operating cash flows at the various time periods, scaled by average total assets at the respective period

$DCFO_t$ = Dummy variable for negative net operating cash flows in period t (1, if $CFO_t - CFO_{t-1} < 0$)

$DCFO_t * CFO_t$ = Proxy for economic losses

d.YEAR = Dummy variable for each year (1996-2010)

d.INDUSTRY = 17 Fama-French industry classifications, based on standard industrial classification (SIC) codes

$$ABN\_ACCRUALS_{it}\ (abs.) = |ACC_{it}\ (obs.) - ACC_{it}\ (est.)| \quad (12)$$

$$ABN\_ACCRUALS_{it}\ (dummy) = \{0,1\},\ for\ all\ ABN\_ACCRUALS_{it} > 0 \quad (13)$$

The accruals model represents an application and modification of well-established models in the literature (Achleitner et al., 2014; Ball & Shivakumar, 2006; Jones, 1991; Wang, 2006).

2.8.3. List of Variable and Abbreviation Definitions

ITEM	(1) VAR.	(2) ABBREV.	(3) DESCRIPTION
10-K		x	Form 10-K, required to report by the SEC
ABN_ACCRUALS	x		Dummy variable, equaling one for positive abnormal accruals for firm i in period t; and zero otherwise
ACTUAL	x		Actual EPS result of the company
CEO		x	Chief executive officer
CFO	x		Net operating cash flows at various time periods, scaled by average total assets at the respective period
COMPUSTAT		x	Database of financial, market and non-market information
CRSP		x	Center for Research in Security Prices, University of Chicago (also acronym for the database created at the center)
DCFO	x		Net operating cash flows at the various time periods, scaled by average total assets at the respective period
DEF 14A		x	Proxy statement, required to report by the SEC
DOWN	x		Dichotomous variable, equaling one if a firm's estimated annual earnings per share level in period t is lower than estimated (expected) by the firms previous earnings levels, and zero otherwise
EDGAR		x	EDGAR (Electronic Data Gathering, Analysis, and Retrieval system)
EF	x		Expected forecast, which is actual EPS of the prior period, plus IEF
EPS		x	Earnings per share
ESTIMATE	x		Estimated I/B/E/S arithmetic mean broker consensus estimate (at results release)
FAM_FIRM	x		Binary variable; one if a firm is family-managed (FF_MGMT) or family-owned (FF_OWNERSHIP); zero otherwise
FAM_VAR	x		Placeholder for variables for level one (FAM_FIRM), level two (FF_MGMT, FF_OWNERSHIP) and level three (all detail classifications available) family firm characteristics for firm i, in period t
FAMILY_CEO	x		Binary variable; one if a firm is managed by a founder descendant/family as CEO (FAMILY_CEO); zero otherwise
FAMILY_MGMT	x		Binary variable; one if a firm is managed by a founder descendant/family via a management oversight function (FAMILY_MGMT); zero otherwise

FC_ERROR_ABS	x		Absolute value of percentage difference between ACTUAL and ESTIMATE of the company
FF_MGMT	x		Binary variable; one if a firm is managed by the founder as CEO (FOUNDER_CEO) or via a management oversight function (FOUNDER_MGMT); also 1 if a firm is managed by a founder descendant/family as CEO (FAMILY_CEO) or in management oversight function (FAMILY_MGMT); zero otherwise
FF_MGMT_ ONLY	x		Dummy variable, equal to one if a firm is family-managed (FF_MGMT) but not family-owned (FF_OWNERSHIP); zero otherwise
FF_OWNERSHIP	x		Binary variable; one if a founder controls more than five percent of total voting rights or a founder descendant/family controls more than five percent of total voting rights; zero otherwise
FIRM_AGE	x		Panel-year, less founding year of the corporation
FOUNDER_ CEO	x		Binary variable; one if a firm is managed by the founder as CEO; zero otherwise
FOUNDER_ MGMT	x		Binary variable; one if a firm is managed by the founder via a management oversight function (FOUNDER_MGMT); zero otherwise
GLS		x	Generalized least squares, statistical linear regression model, estimation method
GROWTH	x		Net operating cash flows at the various time periods, scaled by average total assets at the respective period
I/B/E/S		x	Institutional Brokers‘ Estimate System
IEF	x		Implied earnings forecast, estimated by a regression on past performance parameters
IFRS		x	International Financial Reporting Standards
INDUSTRY	x		17 Fama-French industry classifications, based on SIC codes
MBE_1	x		Just-meet and beat parameter at earnings surprise interval [$-0.02;$0.02]; continuous variable
MBE_2	x		Meet and beat parameter at earnings surprise interval [$-0.05;$0.05]; dichotomous variable
MBE_3	x		Meet and beat parameter at earnings surprise interval [$-0.1;$0.01]; continuous variable
MBE_PAST_2	x		Dummy variable, equal to one if firm i met or exceeded earnings benchmarks by [0.00; 0.05] in period t-1
MBE_VAR			Placeholder for variables MBE_1, MBE_2, and MBE_3, for a company’s earnings surprises
MGMT_AND_ OWNERSHIP	x		Dummy variable, equal to one if a firm is family-managed (FF_MGMT) and family-owned (FF_OWNERSHIP); zero otherwise
NI_GROWTH	x		Net income growth indicator, calculated as percentage change of net income of firm i in period t from net income of the firm in period t-1

OLS		x	Ordinary least squares, statistical linear regression model, estimation method
PRICE	x		Share price at the earnings announcement date of the company
R&D		x	Research & development
S&P		x	Standard & Poor‘s Financial LLC
SALES_ GROWTH	x		Revenue growth indicator, calculated as percentage change of total revenues of firm i in period t from total revenue of the firm in period t-1
SEC		x	United States Securities and Exchange Commission
SIZE	x		Natural logarithm of total assets of firm i in period t
SURPRISE	x		Actual EPS result of the company, less estimated I/B/E/S arithmetic mean broker consensus estimate (at results release)
UEF	x		Unexpected earnings forecast, which is the respective analyst arithmetic mean consensus estimation, minus the expected forecast
US GAAP		x	United States Generally Accepted Accounting Principles
YEAR	x	x	Dummy variable for each panel-year (1996 to 2010)

3. The Impact of Financial Governance Legislation on Earnings Management in Family Firms[†]

ABSTRACT

This paper examines the effect of financial governance legislation on earnings management in family firms. Investigating the impact of the Sarbanes-Oxley Act (SOX) in the United States, we find that only family firms substantially reduce accruals-based and real-earnings management in the post-SOX world. We conclude that increased risk aversion to preserve their socioemotional wealth (SEW) endowment (e.g., in the form of a family firm reputation) is the key motivation for family firms to manage earnings more conservatively after SOX is implemented. Our results clearly indicate that it is also the introduction event itself – serving as an exogenous shock – that stimulates the reduction in accruals-based earnings management to occur. Surprisingly, we cannot observe a similar impact for all firms in general. As our analysis is based on a hand-collected data set of S&P 1500 index constituents for the years 1996 to 2010 we regard our findings as highly relevant. We posit that the widely assumed effectiveness of SOX (introduced in 2002) may be implicitly driven by unobserved family firm bias, requiring a more differentiated approach to the definition of ownership and control. Finally, we show that risk aversion in family firms is not solely a behavioral assumption but also quantifiable with empirical analysis.

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Keywords: Accruals-based earnings management, family firm, real-earnings management, Sarbanes-Oxley, SEW, socioemotional wealth, SOX, United States.

3.1. Introduction

Over the last two decades, research on both family firms and earnings management has proliferated as distinct academic streams. Our paper contributes to the literature by not only pairing the two streams in one comprehensive analysis, but further by observing catalysts (here: financial legislation) leading to lower levels of earnings management in family firms overall. We find that the introduction of Sarbanes-Oxley Act (SOX) in 2002, the leading regulatory legislation to increase accounting quality in the last decades, has led only family firms – and not their non-family counterparts – to substantially reduce accruals-based earnings management. We also find that real-earnings management (e.g., cutting R&D expenses to increase short-term profits while sacrificing long-run competitiveness) is lower in family firms throughout our panel, but in particular in the post-SOX era. We posit that both is a result of increased risk aversion of family firms in order to protect their socioemotional wealth (SEW) in terms of family firm reputation, recognition, and incentives to hand-over a well-run company to a descending generation. We also question if numerous research publications on overall SOX effectiveness (Bartov & Cohen, 2009; D. A. Cohen et al., 2008; Lobo & Zhou, 2006; Wilson, 2013) suffer from an unobserved family firm bias in ownership and control – requiring a more detailed family firm-specific investigation.

Within family firm research, the fundamental point of tension is found in the age-old conflict between ownership and control in modern corporations (Fama & Jensen, 1983; Jensen & Meckling, 1976). Ultimately, this principal conflict embedded in agency theory spills into numerous but insightful sub-areas of research: Governance-related investigations under transgenerational and heir aspects (Anderson et al., 2009; Anderson, Duru, et al., 2012; Anderson, Reeb, et al., 2012; Anderson & Reeb, 2003a, 2003b; Bennedsen et al., 2007; Bertrand, Johnson, Samphantharak, & Schoar, 2008) as well as behavioral analysis of family

firms in financing, investing, and capital structure decisions (Anderson, Duru, et al., 2012; Anderson, Reeb, et al., 2012; Block, 2012; S. Chen, Chen, Cheng, & Shevlin, 2010; Schmid et al., 2014). Also, much research has been devoted to performance assessment: It is not only verified that family firms constitute a significant share of corporations within the S&P 500 index, but also proven that they provide a distinct return superiority vis-à-vis non-family firms (Anderson & Reeb, 2003a). In recent years, a new stream within family firm research emerged, referred to as SEW theory. It examines the various family firm-specific motives beyond pure financial welfare of firm owners, e.g., a successful hand-over to founder descendants, preservation of a family firm reputation, or tightened firm ties to stakeholders and the broader society (Berrone et al., 2012, 2010). We also enhance SEW theory by showing that typical signs of family firm behavior (e.g., risk aversion) may arise as an event response rather than being permanently present in the notional form of a specific family firm *identity*.

With regard to earnings management, research is divided into a market response stream – focusing on abnormal returns around earnings announcements (Bartov et al., 2002; Brown & Caylor, 2005; Burgstahler & Dichev, 1997; Kasznik & McNichols, 2002) – as well as a financial accounting stream. The latter concentrates on both real-earnings management ('REM', e.g., increasing profits by cutting R&D expenses (Mizik, 2010), thereby sacrificing long-term company value) and accruals-based earnings management ('ABEM', e.g., creating hidden restructuring reserves and accruals to release these positions in subsequent periods; e.g., Dechow & Skinner, 2000). The persistence of earnings management as an accounting phenomenon is pervasive, as several studies show (Roychowdhury, 2006). Moreover, executives are willing to knowingly sacrifice long-term company value in order to meet short-term targets and hence use earnings management as a suitable lever (Graham et al., 2005).

The pairing of both streams in our paper (i.e., an examination of earnings management

in family firms) combines highly heterogonous institutional settings – family investors versus diversified ownership, and managers versus owners – into a comprehensive incentive framework. However, literature is not as developed as both the relevance of family firms and the value impact of earnings management suggest. Researchers reported a positive relation between earnings quality and managerial ownership but did not test for family-linked ownership characteristics (Warfield, Wild, & Wild, 1995). Jiraporn and DaDalt (2009) provide one of the few examinations for the United States (US) and suggest that earnings management is less likely to take place in family firms. Congruent results were reported for the family firm dominated German business environment (Achleitner et al., 2014). Finally, a link between SEW theory and ABEM in family firms has been confirmed (Martin et al., 2014). However, an event-driven study – also including REM practices – has (to the best of our knowledge) not yet been performed.

This paper, in turn, intends to provide insights on both the magnitude and the reasoning for earnings management in family firms. First, we hypothesize that earnings management in family firms is less persistent than in non-family firms. In line with current literature, family firms are assumed to have longer term investment horizons, reputational incentives, and transgenerational objectives as the SEW theory suggests (Berrone et al., 2012, 2010; Kappes & Schmid, 2013); all of which lead family firms to report profits in the most accurate and diligent way. Second, we suggest that the lower persistence of earnings management in family firms is not automatically a result of the supposed SEW objectives but requires specific events to serve as an exogenous shock – e.g., the introduction of SOX in 2002. Finally, as SOX targets financial reporting accuracy and thereby solely affects the use of ABEM, we hypothesize that no substitution (complementary) effects between ABEM and REM occur – due to the value decreasing nature of the latter managerial tool. To validate these hypotheses, our paper is based

on the perhaps largest family firm dataset available. We have hand-collected family firm ownership and management characteristics for index constituents of the S&P 1500 index for the years 1996 to 2010. Therefore, we not only extend the scope of previous publications (Anderson & Reeb, 2003a; Wilson, 2013) significantly but also expect to draw meaningful conclusions on large publicly listed family firms overall.

We find first that family firms use significantly less REM and ABEM practices post SOX implementation than non-family firms. As a SOX response, family firms reduce their levels of ABEM practices significantly; their level of REM is significantly lower throughout the panel and slightly so in the post-SOX period. This evidence suggests a significant risk aversion of family firms which implies an *a posteriori* adherence to key SEW objectives, e.g., long-term wealth preservation or reputation conservation after the implementation.

Second, our results also indicate that family firms are not per definition less likely to manage accruals but rather require an exogenous shock to make that behavior to occur. Thus, a potential family firm *bonus* – e.g., in firm reputation or assumed earnings quality – cannot be granted without in-depth analysis.

Third, our findings provide additional but also controversial proof of the effectiveness of strict financial and accounting regulation: For our dataset we cannot confirm prior findings after which SOX has substantially increased earnings quality (Bartov & Cohen, 2009). In all of our various ABEM regressions the coefficient of the post-SOX dummy is neither negative nor significant. Hence, we cannot confirm the hypothesis that the integrity of financial reporting practices and the quality of earnings metrics – the areas SOX has tried to address – has substantially improved. We can say though that prior findings on SOX effectiveness (Bartov & Cohen, 2009; J. Cohen et al., 2013; Lobo & Zhou, 2006; Wilson, 2013) may be biased substantially by unobserved family firm characteristics.

The remainder of this paper is organized in the following order: Section 3.2 outlines the motivation and development of our research hypotheses, while Section 3.3 presents the US data sample. Section 3.4 then discusses our research design, i.e., the measurements for REM and ABEM, while Section 3.5 provides descriptive statistics. We discuss results and implications in Section 3.6 and briefly conclude thereafter. We perform tests of robustness in Section 3.8. Complementing regression analysis are referenced in the Appendix (Section 3.9).

3.2. Motivation and Research Hypotheses Development

3.2.1. Family Firms

Using family firms as objects of empirical research is complicated as the views on definitions, objectives, and functionality of family firms are highly antithetic. Being a family firm is in most instances a question of magnitude of ownership and managerial control of the founder(s), the founding family, and/or founder descendants. Morck, Shleifer, and Vishny (1988) defined family firms as firms with a founder or family member in a top management position. La Porta, Lopez-De-Silanes, and Shleifer (1999) used an ownership-linked definition after which a family firm has an individual or a family as ultimate owners, whose direct or indirect voting rights exceed a 20 percent threshold level. Anderson and Reeb (2003a) used fractional equity ownership of the founding family per se and/or a family representation on the board of directors – a definition frequently, though not exclusively, applied in subsequent research (e.g., Villalonga & Amit, 2006).

The views on family firm objectives and functionality are similarly differentiated and justify a more detailed examination in our paper. On the one hand, family firms appear as superior in performance (Anderson & Reeb, 2003a) and exhibit longer investment horizons and invested more in R&D than non-family counterparts (Kappes & Schmid, 2013; Schmid et al.,

2014). Also, they were shown to be more efficient in monitoring company management (Kim et al., 2014). This point gives rise to what Wang (2006) referred to as the *alignment effect*: Family-owned firms produce better financial information and provide higher earnings and reporting quality and thereby reduce information asymmetries between insiders and market participants (Ali et al., 2007; Fama, 1970). But there is also evidence of the exact contrary: What Wang (2006) called the *entrenchment effect* describes a tendency of family-owned firms to disclose inferior information to outsiders while securing dominating family influence via large stockholding blocks. Similarly, family ownership is also seen as a significant source of corporate opacity (Anderson et al., 2009; Schmid et al., 2014). Moreover, worsening financial performance with increasing family influence via family-internal succession arrangements has been reported (Anderson & Reeb, 2004; Bennedsen et al., 2007). When investment decisions are concerned, Block (2012) found lower levels of R&D investments in family firms vis-à-vis non-family corporations. Family firms commit less long-term investment capital and prefer low-risk capital expenditures over riskier R&D projects (Anderson, Duru, et al., 2012). Although the SEW theory has shed light on non-financial motives of family firms (e.g., reputational, social, and transgenerational incentives) and the founders of the theory claim SEW to be the distinct differentiator between non-family and family firms (Berrone et al., 2012)[11], exogenous shocks – making the impact of SEW on decision-making to occur – are hard to examine. Additionally, as SEW research is well-embedded into strategic management theory, most research is of behavioral character while event-driven empirical financial market research is under-represented.

[11] Berrone et al. (2012) labelled the SEW dimensions as family control and influence, identification of family members with the firm, binding social ties, emotional attachment of family members, and renewal of family bonds to the firm through dynastic succession ('FIBER factors').

3.2.2. Earnings Management

In capital markets, members (companies, managers, analysts, regulators, institutional and retail investors) interact and exchange information. If stock prices (as the regulating element) do not incorporate all information at hand, asymmetries arise and different states of market efficiency are established (Fama, 1970). Consequently, managers face diverse incentives to manage earnings when reporting to the outside world (Barth et al., 1999; Burgstahler & Dichev, 1997; Dichev & Skinner, 2002; Efendi et al., 2007; Healy, 1985; Teoh et al., 1998). Graham et al. (2005) showed that managers knowingly sacrifice long-term value in order to meet earnings benchmarks. The tools at hand are both REM and ABEM – and they are used at considerable magnitudes (Ball & Shivakumar, 2006; Mizik, 2010; Roychowdhury, 2006). ABEM is perceived as less dangerous than REM (Wilson, 2013) since, by accounting theory, accruals zero out in the long-run. REM, for instance, may imply a reduction of R&D or marketing expenses, ultimately leading to a loss of long-run market competitiveness.

As mentioned before, controversial research is available for earnings management in family firms. Jiraporn and DaDalt (2009) found that the levels of earnings management are significantly lower in family firms, confirming the alignment effect theory (also see Achleitner et al., 2014). However, there is evidence that in the institutional setting of East Asia, where family-dominated businesses constitute a large part of the economy, corporate opacity increases while earnings quality decreases (Fan & Wong, 2002) – favoring the entrenchment effect theory of family ownership. There is also evidence of higher ABEM activities in Japanese family firms versus counterparts (T.-Y. Chen, Gu, Kubota, & Takehara, 2014).

The costs of engaging in both ABEM and REM practices are manifold. They range from explicit costs (e.g., fines, restatements, and lawsuits) to implicit costs (e.g., loss of confidence, reputation, and suboptimal resource allocations) to both the firm and its stakeholders (Lerman,

2015). Specifically, excessive earnings management is found to reduce market capitalization upon discovery (Karpoff, Lee, & Martin, 2008) and to induce suboptimal fixed asset investment decisions (McNichols & Stubben, 2008). Generally, earnings management appeared to increase – not decrease – volatility in decision-making processes leading to distorted resource allocations (Kedia & Philippon, 2009).

3.2.3. Sarbanes-Oxley Act

Following a wave of the largest fraud and accounting scandals in several of the most prominent US corporations (Enron, WorldCom, Adelphia), on July 30, 2002, the US administration enacted the Sarbanes-Oxley Act (SOX). Widely regarded as one of the tightest accounting and financial reporting standard-setting laws, SOX aimed at increased accuracy of financial information and reports (by establishing personal liability of senior management), more severe penalties for fraudulent activities, and increased independence of outside/independent directors and financial auditors (cf. Bartov & Cohen, 2009).

The effectiveness of tightening accounting standards to reduce ABEM is already documented although negative secondary effects occur – e.g., in the form of increased *a posteriori* REM (Ewert & Wagenhofer, 2005). In particular, the effectiveness of SOX to restore financial market integrity, which was negatively affected by the practice of earnings management (Levitt, 1998), is widely documented (J. Cohen et al., 2013). Smith (2012) finds that short-term abnormal returns around earnings announcement decrease, further supporting the notion of higher earnings quality in the post-SOX era (Bartov & Cohen, 2009). For the purpose of purely internal earnings management, Wilson (2013) finds only a moderate reduction of ABEM, but a significant increase in REM activities. To the best of our knowledge, studies on the distinct interaction of earnings management, family firm characteristics, and the

implementation of SOX have not yet been published.

3.2.4. Research Hypotheses

Concluding on the dominant research streams outlined before, we assume as the first hypothesis (*Hypothesis 1*) that the level of earnings management (REM, as well as ABEM) is lower for family firms compared to non-family firms. The hypothesis best summarizes major previous findings (e.g., Achleitner et al., 2014; Jiraporn & DaDalt, 2009), motives of SEW theory, and objectives of family firms. Thus, we expect family firms to avoid losses to both long-term enterprise value and SEW.

Hypothesis 1: Family firms conduct less earnings management (REM/ABEM) than non-family firms over the full sample period.

Most importantly, under the second hypothesis (*Hypothesis 2*), we predict that the level of accruals-based earnings management in family-firms is substantially lower in the post-SOX era. In line with existing research on the impact of SOX implementation (D. A. Cohen et al., 2008; Lobo & Zhou, 2006), family firms are expected to reduce ABEM. In contrast to non-family firms, we assume family firms not only to formally comply with the new regulatory standard but also to protect their specific SEW endowment and long-term legal capacity.

Hypothesis 2: Family firms use less ABEM practices in the post-SOX era than before.

Finally, under our third hypothesis (*Hypothesis 3*), we test for substitution (complementary) effects between ABEM and REM in the post-SOX world. On average, and in line with family firm theory, we do not expect distinct substitution (complementary) effects, as REM is even more value-decreasing than ABEM and not specifically targeted by SOX.

Hypothesis 3: Family firms do not respond to the newly imposed regulatory legislation with a substitution (completion) of REM practices for (with) ABEM techniques in the post-SOX world.

3.3. Data Sample

Our panel data set comprises detailed ownership and management information of the constituents of the US S&P Composite 1500 index over the period from 1996 to 2010. Historically, most research has been concentrated on the S&P 500 index (Anderson & Reeb, 2003a; Wang, 2006). Although research has expanded in recent years to include S&P 1500 firms (T.-Y. Chen, Dasgupta, & Yu, 2014; Jiraporn & DaDalt, 2009), we provide the largest panel so far, with 15 years and a total of 25,020 observations. From the 3,081 constituents of the index over time, we have excluded financials and utilities (984 firms), and companies originated by spin-offs, carve-outs, and mergers (396). Financials and utilities face different regulatory regimes vis-à-vis other industrials and have distinct balance sheet and ownership characteristics, frequently leading to an exclusion in family firm research applications (also see Achleitner et al., 2014; Anderson & Reeb, 2003a). The 396 companies created by non-founding events are excluded as no founder information is available. Finally, companies without full ticker information and misclassified information where excluded (33), resulting in a total of 1,668 firms in our sample. The ownership information has been gathered from the Securities and Exchange Commission (SEC) database EDGAR, where both 10-K Filings and Definition 14A reports have been analyzed. Information on the company founders and their descendants (family members) has been collected from the Hoover firm profile database, the website fundinguniverse.com, and an open internet search on company websites. Subsequently, the family firm database has been enriched with various firm-specific balance sheet control variables, available from COMPUSTAT.

3.4. Measuring Earnings Management in Family Firms

3.4.1. Accruals-based Earnings Management (ABEM)

In order to reflect economic reality in the most orderly fashion, the financial accounting profession has established accruals-based accounting as a modern sub-discipline vis-à-vis traditional cash accounting. When a firm provides multi-period services to a customer but receives payments only at the end of the service provision, accruals-based accounting allows the firm to recognize the services provided as 'accrued income' (whereas in cash accounting, revenues are only recognized when the cash is actually received). Although this method should increase earnings quality conceptually, it also increases accounting flexibility, thereby making it subject to managerial myopia and potential manipulation. Hence, it is necessary to observe abnormal levels of accruals in order to identify ABEM. In the first place, to estimate a normal level of accruals for the sample constituents, we apply the following model on a firm-fixed effects panel regression:[12]

$$ACC_{it} = \alpha_i + \alpha_1 * CFO_{t-1} + \alpha_2 * CFO_t + \alpha_3 * CFO_{t+1} + \alpha_4 * DCFO_t + \alpha_5 * DCFO_t * CFO_t + \alpha_6 * d.YEAR * d.INDUSTRY + \varepsilon_{it} \quad (1)$$

In which:

ACC_t = Net income before extraordinary items less net operating cash flows at time t, scaled by average total assets at the corresponding period

[12] Robust standard errors are clustered by the firm variable (Code). As a matter of robustness, we also perform ordinary least square (OLS) regressions in the estimation of the various earnings management variables (ACC_ABEM, REM_AGG, and the detailed measures) and report these results in Table 9. In all those estimations we add industry-fixed effects, using 17 Fama-French industry classifications (Fama & French, 1997) based on standard industrial codes (SIC). However, we do not control for any item twice in order to avoid potential regression attenuation bias (Frost & Thompson, 2000; Phillips & Smith, 1991). We feel equipped to apply a firm-fixed effects regression outline in the variable estimation process as (1) the error term is, by concept, uncorrelated with the dependent variable. For the subsequent family firm regressions, (2) the coefficient on the firm-fixed effects is expected to be insignificant, thereby not impacting our specific coefficients of interests (i.e., the family firm variables) on a directional or significance level. We hereby also address potential concerns of errors-in-variables bias (Griliches & Hausman, 1986; Rossi, 2013).

$CFO_{t-1, t, t+1}$= Net operating cash flows at the various time periods, scaled by average total assets at the respective period

$DCFO_t$ = Dummy variable for negative net operating cash flows in period t (1, if $CFO_t - CFO_{t-1} < 0$)

$DCFO_t * CFO_t$ = Proxy for economic losses

d.YEAR = Dummy variable for each year (1996-2010)

d.INDUSTRY = Dummy variable for 17 Fama-French industry classifications (Fama & French, 1997)

The model represents further adaptation of the one used by Wang (2006), which in itself is based on the discretionary accruals models developed by Ball and Shivakumar (2006), and Dechow and Dichev (2002). In comparison to the linear accruals model developed by Jones (1991), the former non-linear model explains three times more variation in accruals by incorporating the asymmetry in recognition of unrealized gains and losses (Dechow & Dichev, 2002). After estimating a normal level using firm-fixed effects, we subtract this estimate from the accruals amount observed to obtain a discretionary level of accruals (ACC_ABEM). Hereby, we treat both positive and negative deviations, i.e., the absolute values, as evidence for ABEM. All our regression variables are winsorized at the one percent significance level. In our regression, we also control for year-specific effects by using dummies for each panel year.

3.4.2. Real-earnings Management (REM)

In comparison to ABEM – which, by economic theory is not value-destructive as cash flows equal income streams in the long-run – REM is a highly questionable tool to 'improve' earnings results. REM, e.g., reducing R&D spending prior to results releases, positively affects earnings in the short-run. However in the long-run, firm value will be destructed as the firm loses market competitiveness (Mizik, 2010; Roychowdhury, 2006). The willingness of executives to sacrifice long-term value by REM to meet short-term earnings benchmarks is

documented (Graham et al., 2005). To verify REM in family firms we use well established measurement methods for three indicators of REM (Achleitner et al., 2014; Roychowdhury, 2006): The amounts of abnormal discretionary cash flow from operations (DISC_CFO), discretionary expenses (DISC_EXP), and discretionary production costs (DISC_PROD) – all of them calculated against a normal level of the respective items and aggregated in a combined measure (REM_AGG).[13]

Negative discretionary cash flows are commonly perceived as an indicator of earnings management as managers can artificially reduce prices at the end of a period to accelerate revenues (and profits) at the cost of competitiveness in subsequent periods. Hence, the net cash inflow is – due to the discount – lower than the sales level implies. Thus, following Roychowdhury (2006) in principle, negative deviations from the following normal level firm-fixed effects estimation are regarded as an indicator for earnings management:

$$\frac{CFO_t}{A_{t-1}} = \alpha_i + \alpha_1 * \frac{1}{A_{t-1}} + \alpha_2 * \frac{S_t}{A_{t-1}} + \alpha_3 * \frac{\Delta S_t}{A_{t-1}} + \alpha_4 * d.YEAR * d.INDUSTRY + \varepsilon_{it} \quad (2)$$

In which:

CFO_t = Net operating cash flows at the period t

A_{t-1} = Total assets in t-1 (lagged total assets)

S_t = Total revenues in t

ΔS_t = Delta sales between total revenues in period t and t-1, respectively

d.YEAR = Dummy variable for each year (1996-2010)

d.INDUSTRY = Dummy variable for 17 Fama-French industry classifications (Fama & French, 1997)

[13] Normal levels are those estimated by the various regression outlines. Discretionary levels are both positive and negative deviations from the levels implied by the regressions.

As for discretionary accruals, we control for year-specific effects and calculate the abnormal discretionary level by subtracting the normal level from the observed data. Also, we winsorize extreme accounting observations at the one percent significance level.

With regard to the second item, discretionary expenses (DISC_EXP), we assume that managers can increase current-period profitability by artificially reducing sales, general, and administrative expenses (SG&A) as well as R&D spending – to a level below the one implied by the amount of sales incurred. Hence, negative abnormal discretionary expenses are interpreted as earnings-increasing managerial action. Again, all observations are winsorized at the one percent level to address outlier concerns. We calculate the normal level of DISC_EXP as Roychowdhury (2006) and include year controls in the following firm-fixed effects estimation:

$$\frac{\text{DISC\_EXP}}{A_{t-1}} = \alpha_i + \alpha_1 * \frac{1}{A_{t-1}} + \alpha_2 * \frac{S_{t-1}}{A_{t-1}} + \alpha_3 * \text{d.YEAR} * \text{d.INDUSTRY} + \varepsilon_{it} \quad (3)$$

In which:
DISC_EXP = Discretionary expenses, ∑ (SG&A + R&D expenses in period t)
A_{t-1} = Total assets in t-1 (lagged total assets)
S_{t-1} = Total revenues in period t-1
d.YEAR = Dummy variable for each year (1996-2010)
d.INDUSTRY = Dummy variable for 17 Fama-French industry classifications (Fama & French, 1997)

Finally, we calculate an abnormal level of production costs (DISC_PROD). Managers are assumed to manage earnings upward if they increase cost of goods sold (COGS) beyond the level implied by reported sales. Thereby, unit costs decrease (assuming no increase in total cost of production) and profitability rises at the cost of future profits (Achleitner et al., 2014). We

identify managerial action as earnings management when reported production costs positively deviate from a normal level, estimated by the following firm-fixed effects regression:

$$\frac{PROD_{t-1}}{A_{t-1}} = \alpha_i + \alpha_1 * \frac{1}{A_{t-1}} + \alpha_2 * \frac{S_t}{A_{t-1}} + \alpha_3 * \frac{\Delta S_t}{A_{t-1}} + \alpha_4 * \frac{\Delta S_{t-1}}{A_{t-1}} + \alpha_5 * d.YEAR * d.INDUSTRY + \varepsilon_{it} \quad (4)$$

In which:

$PROD_t$ = Total costs of production in t, defined as $\sum$ ($COGS_t$ + Δ $INVENTORIES_t$), where Δ $INVENTORIES_t$ indicates changes in inventories, i.e., [t - (t-1)]

A_{t-1} = Total assets in period t-1 (lagged total assets)

S_t = Total revenues in period t

Δ S_t / Δ S_{t-1} = Change in revenues, i.e., [t – (t-1)] / [(t-1) – (t-2)]

d.YEAR = Dummy variable for each year (1996-2010)

d.INDUSTRY = Dummy variable for 17 Fama-French industry classifications (Fama & French, 1997)

After calculating the three distinct measures we follow Achleitner et al. (2014) and calculate a combined measure of REM (REM_AGG) by taking the aggregate of DISC_CFO, DISC_EXP, and DISC_PROD:

$$REM\_AGG = -DISC\_CFO - DISC\_EXP + DISC\_PROD \quad (5)$$

3.4.3. Family Firm Definition

As literature is divided about the definition of family firms in general, we test for three levels of family firm characteristics. The first level merely differentiates between family firms and non-family firms by using the dummy FAM_FIRM: The binary variable equals one in case

the company is either family-owned and/or family-managed, and zero otherwise. Hereby we follow the definition used by Anderson and Reeb (2003a) which constitutes a dominant definition within family firm research. Level two family firm classification differentiates between family-managed and family-owned firms and the respective negative attributes (non-family-managed/non-family-owned). FF_MGMT defines those firms which are either managed by the founder and/or by the founder's descendants/family members. FF_OWNERSHIP however, is equal to one for those firms where the founder and/or its family members (descendants) control more than five percent of the total voting rights of the corporation, and is zero otherwise. Subsequently, on level three, we investigate each attribute in detail. Within family management characteristics, we distinguish between involvements of the founder as chief executive officer (FOUNDER_CEO) and a founder role within management in general (FOUNDER_MGMT). For other family members, we control for family descendant CEOs (FAM_CEO) and/or family member board involvement (FAM_MGMT). Finally, we differentiate between founder-owned (FOUNDER_MORE_5PC_OWNER) and/or family-owned (FAMILY_MORE_5PC_OWNER) companies. We apply a five percent threshold level for each attribute, based on the share of voting rights obtained (zero if no characteristic is fulfilled).

3.4.4. Regression Design

In order to test our formulated research hypothesis (*Hypothesis 1*), according to which family firms conduct less earnings management than non-family firms over the full sample period, we regress our measures of REM and ABEM in the following equation, using parameters as applied by Wang (2006) and Achleitner et al. (2014):

$$EM\_VAR_{it} = \alpha_i + \alpha_1 * FAM\_VAR_{it} + \alpha_2 * LOSS_{it} + \alpha_3 * SIZE_{it} + \alpha_4 * GROWTH_{it} + \alpha_5 * PERF_{it} + \alpha_6 * LEV_{it} + \varepsilon_{it} \quad (6)$$

In which:

EM_VAR_{it} = Earnings management variables REM_AGG, DISC_CFO, DISC_EXP, DISC_PROD or ACC_ABEM, as defined above

FAM_VAR_{it} = Level one, two, and three family firm characteristics

$LOSS_{it}$ = Dummy variable, one if firm i's net income is smaller than zero in period t

$SIZE_{it}$ = Natural logarithm of total assets of firm i in period t

$GROWTH_{it}$ = Growth indicator, calculated as total revenue of firm i in period t, less total revenue of firm i in period t-1, divided by total revenues of firm i in period t-1

$PERF_{it}$ = Performance indicator, calculated as net income of firm i in period t, divided by respective amount of total assets

LEV_{it} = Leverage indicator, calculated as total (long-term) debt of firm i in period t, scaled by the amount of total assets of the respective firm in the corresponding period

In contrast to many family firm research applications using OLS estimations (e.g., Achleitner et al., 2014), we apply a firm-fixed effects (within estimator) regression throughout our analysis. Hereby, we not only address endogeneity concerns as we eliminate the impact of time-invariant features of the predictor variables on the dependent variable. Also, a total of 584 events where the family firm status changes across the panel makes the application of firm-fixed effects feasible. Standard errors are robust to clustering at the highest accuracy level possible (the company codes within the panel). Each earnings management parameter and all control variables are standardized (rescaled to a mean of zero and standard deviation of one) to ease interpretation of regression results and ensure an evenly fair contribution of earnings-management components in the aggregate measure REM_AGG.

3.5. Descriptive Statistics

Although the scope and depth of our panel data is beyond the research available, our descriptive statistics still precisely mirror previous observations on smaller datasets. In Table 1, we observe that the family firms in our dataset are, on average, 25 years younger than non-family firms and reveal higher mean growth rates (0.759 versus 0.137 for non-family counterparts). Further supporting earlier findings (Anderson & Reeb, 2003a), we show that family firms are also better in terms of performance (0.036 versus 0.031) while they are also (1) significantly smaller in size (3028.225 versus 5163.211) and (2) less levered (0.161 versus 0.208). In terms of family firm characteristics within the panel, Table 2 presents mean evolutions of FAM_FIRM, FF_MGMT and FF_OWNERSHIP characteristics from 1996 to 2010. In line with the earlier publications (Jiraporn & DaDalt, 2009; Wang, 2006), family influence decreases over time and in almost every year-by-year comparison.[14] It also confirms the theory that firm maturation induces increased ownership diversification, as, for example, founders die or family members sell shares to third parties. Prior research not only provides confirmation for this finding (Franks et al., 2012) but also traces it back to the high level of investor protection in the US. The observed share of about one-third family firms in the S&P 1500 index also precisely confirms previous observations by Anderson and Reeb (2003a). Interestingly, family influence is dominantly secured by management involvement (i.e., founder and/or family descendants in CEO and/or board positions) rather than family ownership (on average, 26.91 percent per panel year) as the higher share of FF_MGMT suggest (34.41 percent).

[14] The only increase observable occurs in the periods 1996 to 1998 (cf. Table 2).

VARIABLE	(1) MEAN FAM_FIRM	(2) MEAN NON_FAM_FIRM
FIRM_AGE	35.419	60.545
GROWTH	0.759	0.137
LEV	0.161	0.208
LOSS	0.186	0.218
PERF	0.036	0.031
SIZE	3028.225	5163.211

Table 1: Unstandardized and unwinsorized mean values, for years 1996 to 2010. FIRM_AGE defined as panel year, less founding year of the corporation; GROWTH defined as change in revenue from t-1 to t, rebased to total revenues in t-1; LEV as leverage indicator, calculated as total (long-term) debt, scaled by the amount of total assets of the respective firm in the corresponding period; LOSS as dummy variable equaling 1 if net income in period t is smaller than zero, zero if otherwise; PERF calculated as percentage of net income of total assets in period t; SIZE as total assets in million ($) in period t.

YEAR	(1) FAM_FIRM	(2) FF_MGMT	(3) FF_OWNERSHIP
1996	42.39%	39.03%	30.58%
1997	43.17%	39.75%	31.18%
1998	43.65%	39.69%	31.35%
1999	43.11%	39.15%	30.70%
2000	42.33%	38.07%	30.10%
2001	41.61%	37.29%	29.20%
2002	40.35%	35.97%	28.48%
2003	39.39%	34.83%	27.28%
2004	38.49%	34.05%	26.62%
2005	36.81%	32.43%	25.66%
2006	35.43%	31.24%	24.22%
2007	34.59%	30.46%	23.44%
2008	33.63%	29.44%	22.78%
2009	32.73%	28.30%	21.70%
2010	30.88%	26.50%	20.38%
MEAN	**38.57%**	**34.41%**	**26.91%**

Table 2: Full sample period (1996-2010) overview of mean evolution of various family firm status characteristics. (1) FAM_FIRM equals 1 if a firm is either (3) family-owned (FF_OWNERSHIP) and/or (2) family-managed (FF_MGMT), and zero otherwise. FF_MGMT equals 1 if a firm is either managed by the founder(s) or founder descendants/family members, and zero otherwise. FF_OWNERSHIP equals 1 for firms with more than five percent of total voting rights controlled by either the founder(s) and/or founder descendants/family members, and zero otherwise.

3.6. Empirical Results and Implications

In order to test our proposed research hypothesis (*Hypothesis 1, 2,* and *3*) this section discusses the empirical results of our various regression analyses. Starting with the first hypothesis (*Hypothesis 1*), according to which the amount of earnings management is lower for family firms vis-à-vis non-family counterparts, we find mixed confirmation in Table 3. Running full sample regressions according to equation (6), we find evidence for significantly lower REM activities in family firms. Interestingly, this finding does not only hold on the aggregate level (REM_AGG, -0.166**) but also for the individual components discretionary cash flows (DISC_CFO, 0.0889***) and discretionary production costs (DISC_PROD, -0.0752**). The parameters for discretionary expenses (DISC_EXP, -0.0116) as well as accruals-based earnings management (ACC_ABEM, 0.0231) are interestingly not significant.

Investigating the persistence of these findings for level two family firm characteristics (FF_MGMT, FF_OWNERSHIP) reveals additional insights: Table 4 exhibits that (1) both family-managed and family-owned firms use REM practices less than counterparts, whereas (2) family ownership is surprisingly associated with higher levels of ABEM. Regarding the former observation, we see that family managed firms report significantly lower discretionary expenses (DISC_EXP, -0.0588**) although the total REM parameter is insignificant (-0.0653). Regarding the latter finding we observe that for family ownership the aggregate real-earnings management is also significantly negative (REM_AGG, -0.150**) but – surprisingly – accruals-based earnings management levels are significantly higher (0.123**). Although we expect the first finding to be fully in line with prior research and our hypothesis, we remain puzzled for the latter observation and are not able to provide an ad hoc explanation.[15]

Based on our findings, we conclude that family firms per se manage real earnings less

[15] We run the same regression for level three family firm characteristics in the Appendix (Table 10), confirming that specifically founder ownership is significantly increasing the level of abnormal accruals (0.141**).

than counterparts. For ABEM, we do not observe equally strong support in our data – but also no contradictive evidence. We therefore confirm *Hypothesis 1* as our results are also in line with current literature (Achleitner et al., 2014; Jiraporn & DaDalt, 2009) and strengthen previous findings by the larger time scale, panel size, and significance levels, especially for the disaggregated REM parameter levels. Finally, we see no reason to believe in increased opacity in family firm reporting (Anderson et al., 2009; Bianco, Bontempi, Golinelli, & Parigi, 2013; Schmid et al., 2014) – at least to the extent earnings management is concerned.

VARIABLES	(1) DISC_CFO	(2) DISC_EXP	(3) DISC_PROD	(4) REM_AGG	(5) ACC_ABEM
FAM_FIRM	0.0889***	-0.0116	-0.0752**	-0.166**	0.0231
	(0.0318)	(0.0229)	(0.0302)	(0.0737)	(0.0523)
LEV	-0.0224***	0.0196***	-0.0146*	-0.0177	-0.0178
	(0.00836)	(0.00610)	(0.00853)	(0.0182)	(0.0115)
PERF	0.0163*	-0.00935	-0.00644	-0.0107	-0.0904***
	(0.00832)	(0.00676)	(0.00495)	(0.0121)	(0.0268)
SIZE	0.120***	-0.0445**	-0.00580	-0.107*	0.263***
	(0.0292)	(0.0193)	(0.0244)	(0.0652)	(0.0246)
LOSS	-0.0772***	-0.0177	0.0528***	0.128***	0.0603**
	(0.0256)	(0.0119)	(0.0109)	(0.0301)	(0.0279)
GROWTH	-0.00630	0.0370***	0.0238***	-0.0235**	0.00507
	(0.00613)	(0.00571)	(0.00705)	(0.0112)	(0.00898)
Constant	-0.0278*	0.00998	0.0217*	0.0401	-0.0361*
	(0.0145)	(0.00981)	(0.0126)	(0.0312)	(0.0202)
Observations	16,674	15,563	14,502	13,673	15,882
Firm-fixed effects	yes	yes	yes	yes	yes
Industry-fixed effects	no	no	no	no	no
Year-fixed effects†	no	no	no	no	no
R-squared	0.013	0.009	0.006	0.007	0.024
Number of Code	1,609	1,541	1,487	1,426	1,534

Table 3: Firm-fixed effects regressions on (1) discretionary cash flows (DISC_CFO), (2) discretionary expenses (DISC_EXP), (3) discretionary production costs (DISC_PROD), (4) the aggregate real-earnings management measure (REM_AGG), and (5) the accruals-based earnings management variable (ACC_ABEM), for years 1996 to 2010. All parameters are standardized and winsorized at one percent significance level, excluding the family-firm specific control (FAM_FIRM). † Year-fixed effects as well as other controls have been applied in the estimation of accruals-based (ACC_ABEM) and real-earnings management parameters (REM_AGG) and are omitted here to avoid regression attenuation bias (Aigner, 1973; Frost & Thompson, 2000; Phillips & Smith, 1991). Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

For the core hypothesis of our paper (*Hypothesis 2*), after which the implementation of SOX leads to lower levels of ABEM in family firms, we introduce corresponding interaction terms to test for differences. Table 5 reports our results. In contrast to the literature (Bartov & Cohen, 2009; D. A. Cohen et al., 2008; Lobo & Zhou, 2006; Wilson, 2013), we observe first that the level ABEM slightly increases in the post-SOX era (ACC_ABEM, 0.0530**).[16] Second, we also observe that there is no stand-alone effect of SOX introduction (POST_SOX) on REM (0.0301). Moreover, the level of REM is again significantly lower for family firms (-0.169*), confirming our previous results. Finally and third, the most important finding stems from the interaction of the family firm with the post-SOX dummy variable: We find that – for family firms – the overall increase in post-SOX ABEM levels (0.0530**) is entirely offset by the interaction term (FAM_FIRM#POST_SOX, -0.0712**). In other words, although abnormal accruals after the SOX implementation may increase, family firms decrease their use of abnormal accruals. Moreover, the mathematical net effect of family firms is even higher than the post-SOX ABEM increase itself (0.0530**-0.0712** = -0.0182). Performing extensive robustness tests for this central finding in Tables 7 to 9, we find that both the magnitude and the significance of the coefficient do not vary substantially. In two out of three of our robustness tests the coefficients even strengthen (please see tables in Section 3.8 in detail).

Our results are interesting in various dimensions. First of all, it appears to be the case that the introduction of SOX has been effective (i.e., reached its intention to increase earnings quality) only for family firms. As our coefficient of ABEM has been positive and significant we propose that the post-SOX reduction in ABEM found by previous researchers (Bartov & Cohen, 2009; D. A. Cohen et al., 2008; Lobo & Zhou, 2006; Wilson, 2013) may have been

[16] As this finding is puzzling once again we perform robustness tests in Tables 7 and 8. Here the significance of the ACC_ABEM coefficient cannot be confirmed empirically. Therefore we remain cautious on the reliability of this observation.

biased by unobserved family firm characteristics in the respective data sets. Although this finding might be both revolutionary and entirely new, we see no reason why not to follow this argumentation – at least for the constituents of our panel, i.e., the large 1,500 publicly listed firms in the S&P index. Second, we take SEW theory into account and conclude that the family firm specific reduction of ABEM is in line with reputational and transgenerational handover incentives of these firms. As SOX has put accruals-based earnings management under regulatory and reputational scrutiny, we see the only motive of family firms to reduce ABEM in a form of particular risk aversion. Both when reporting to the outside world and under aspects of wealth preservation: Family firms appear to react highly conservatively towards regulatory change. At the same time, the interaction term itself indicates that SOX was needed to promote this risk aversion to occur. Thus, we imply that reporting conservatism and the implied risk aversion is not a matter of family firm identity per se, but rather a sign of an identity-linked *event reaction*. Consequently, for non-family firms, the exact opposite conclusion has to be drawn. They exhibit substantially higher risk appetite, resulting in lower financial reporting quality.

Finally, we test for the last hypothesis (*Hypothesis 3*) about the relationship between REM, ABEM, and potential complementary (substitutive) effects post SOX introduction. We introduce the interaction term INTACT_TERM (ACC_ABEM multiplied by FAM_FIRM) to the equation. As Achleitner et al. (2014), we interpret positive signs of INTACT_TERM as sign for complementary effects and negative signs as indicators of substitution. Table 6 shows the results. First and foremost, we find that the lower levels of REM for family firms (Column (1), or Table 5) are arising from a reduction in the post-SOX period (-0.177*) rather than the pre-SOX era (-0.0144). Second, we observe that the interaction has positive coefficients (0.0641) in the time prior to SOX and negative thereafter (-0.00257). We can conclude that, prior to the

legislation, complimentary use has been made, while in a post-SOX environment substitution occurred. In other words, firms which did manage earnings prior to SOX did it extensively (i.e., applied both methods of earnings management) while after the introduction managers were more selective and had to substitute one for the other. However, as the coefficients are both insignificant we remain cautious and accept *Hypothesis 3* only as no *significant* complimentary (substitutive) use can be observed.

VARIABLES	(1) DISC_CFO	(2) DISC_EXP	(3) DISC_PROD	(4) REM_AGG	(5) ACC_ABEM
FF_MGMT	0.0548	-0.0588**	-0.0332	-0.0653	-0.0411
	(0.0351)	(0.0291)	(0.0276)	(0.0709)	(0.0514)
FF_	0.0467	0.0318	-0.0577*	-0.150**	0.123**
OWNERSHIP	(0.0317)	(0.0246)	(0.0299)	(0.0742)	(0.0500)
LEV	-0.0230***	0.0197***	-0.0141*	-0.0170	-0.0181
	(0.00838)	(0.00611)	(0.00853)	(0.0182)	(0.0116)
PERF	0.0164**	-0.00890	-0.00645	-0.0109	-0.0903***
	(0.00832)	(0.00681)	(0.00498)	(0.0122)	(0.0267)
SIZE	0.122***	-0.0441**	-0.00877	-0.116*	0.272***
	(0.0297)	(0.0197)	(0.0252)	(0.0679)	(0.0239)
LOSS	-0.0766***	-0.0176	0.0522***	0.127***	0.0607**
	(0.0256)	(0.0119)	(0.0109)	(0.0301)	(0.0277)
GROWTH	-0.00646	0.0373***	0.0240***	-0.0228**	0.00455
	(0.00615)	(0.00571)	(0.00708)	(0.0113)	(0.00914)
Constant	-0.0251	0.0170*	0.0200	0.0407	-0.0487**
	(0.0162)	(0.00968)	(0.0125)	(0.0313)	(0.0225)
Observations	16,674	15,563	14,502	13,673	15,882
Firm-fixed effects	yes	yes	yes	yes	yes
Industry-fixed effects	no	no	no	no	no
Year-fixed effects†	no	no	no	no	no
R-squared	0.012	0.010	0.006	0.008	0.025
Number of Code	1,609	1,541	1,487	1,426	1,534

Table 4: Firm-fixed effects regressions on (1) discretionary cash flows (DISC_CFO), (2) discretionary expenses (DISC_EXP), (3) discretionary production costs (DISC_PROD), (4) the aggregate real-earnings management measure (REM_AGG), and (5) the accruals-based earnings management variable (ACC_ABEM), for years 1996 to 2010. All parameters are standardized and winsorized at one percent significance level, excluding family-firm specific controls (FF_MGMT, FF_OWNERSHIP).† Year-fixed effects as well as other controls have been applied in the estimation of accruals-based (ACC_ABEM) and real-earnings management parameters (REM_AGG) and are omitted here to avoid regression attenuation bias (Aigner, 1973; Frost & Thompson, 2000; Phillips & Smith, 1991). Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1) ACC_ABEM	(2) REM_AGG
FAM_FIRM	0.0663	-0.169*
	(0.0502)	(0.0927)
POST_SOX	0.0530**	0.0301
	(0.0261)	(0.0614)
FAM_FIRM#POST_SOX	-0.0712**	0.0359
	(0.0359)	(0.0797)
LEV	-0.0173	-0.0139
	(0.0114)	(0.0187)
PERF	-0.0900***	-0.00995
	(0.0268)	(0.0121)
SIZE	0.251***	-0.142**
	(0.0340)	(0.0615)
LOSS	0.0605**	0.128***
	(0.0279)	(0.0301)
GROWTH	0.00473	-0.0217**
	(0.00850)	(0.0110)
Constant	-0.0672***	0.0188
	(0.0233)	(0.0514)
Observations	15,882	13,673
Firm-fixed effects	yes	yes
Industry-fixed effects	no	no
Year-fixed effects†	no	no
R-squared	0.025	0.008
Number of Code	1,534	1,426

Table 5: Firm-fixed effects regressions on (1) the accruals-based earnings management variable (ACC_ABEM), and (2) the aggregate real-earnings management measure (REM_AGG), for years 1996 to 2010. All parameters are standardized and winsorized at one percent significance level, excluding a family-firm specific control (FAM_FIRM) and a dummy for the post-SOX period (POST_SOX).† Year-fixed effects as well as other controls have been applied in the estimation of accruals-based (ACC_ABEM) and real-earnings management parameters (REM_AGG) and are omitted here to avoid regression attenuation bias (Aigner, 1973; Frost & Thompson, 2000; Phillips & Smith, 1991). Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1) FULL REM_AGG	(2) PRE_SOX REM_AGG	(3) POST_SOX REM_AGG
ACC_ABEM	0.0563	-0.0282	0.0265
	(0.0801)	(0.169)	(0.0516)
FAM_FIRM	-0.164**	-0.0144	-0.177*
	(0.0785)	(0.0622)	(0.106)
INTACT_TERM	0.00475	0.0641	-0.00257
	(0.125)	(0.265)	(0.159)
LEV	-0.0170	0.0261**	-0.00399
	(0.0172)	(0.0130)	(0.0185)
PERF	-0.00467	-0.00946	-0.0179
	(0.0154)	(0.0143)	(0.0183)
SIZE	-0.129**	-0.123*	-0.159*
	(0.0630)	(0.0669)	(0.0890)
LOSS	0.124***	0.0307	0.107**
	(0.0327)	(0.0238)	(0.0515)
GROWTH	-0.0257**	-0.0308***	-0.0173
	(0.0115)	(0.00998)	(0.0219)
Constant	0.0412	-0.0430	0.0810*
	(0.0315)	(0.0315)	(0.0474)
Observations	13,029	4,838	7,167
Firm-fixed effects	yes	yes	yes
Industry-fixed effects	no	no	no
Year-fixed effects†	no	no	no
R-squared	0.009	0.010	0.009
Number of Code	1,347	1,238	1,102

Table 6: Firm-fixed effects regressions on the aggregate real-earnings management measure (REM_AGG) (1) over the full period (1996-2010), (2) the pre-SOX period (1996-2001), and (3) the post-SOX period (2003-2010). All parameters are standardized and winsorized at one percent significance level, excluding a family-firm specific control (FAM_FIRM) and the interaction term (ACC_ABEM*FAM_FIRM).† Year-fixed effects as well as other controls have been applied in the estimation of accruals-based (ACC_ABEM) and real-earnings management parameters (REM_AGG) and are omitted here to avoid regression attenuation bias (Aigner, 1973; Frost & Thompson, 2000; Phillips & Smith, 1991). Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

3.7. Conclusion

This paper analyses earnings management in family firms after the introduction of fundamental financial and regulatory legislation, here the Sarbanes-Oxley Act of 2002. We provide evidence that SOX has led only family firms to significantly decrease ABEM activities in the post-SOX world. We interpret this result as a particular risk aversion of family firms, arising from their SEW endowment in the desire to protect their reputation and non-financial wealth. We also postulate that the results of fellow researchers (Bartov & Cohen, 2009; D. A. Cohen et al., 2008; Lobo & Zhou, 2006; Wilson, 2013), favoring SOX effectiveness, may arise from an unobserved family firm bias on either management or ownership levels. However, we also show that the introduction event itself has served as a distinct catalyst to promote the ABEM reduction to occur. Finally, and in line with previous research, we provide additional proof of lower levels of real-earnings management in family firms overall.

Our findings have substantial implications, both for family firm research and the inherited SEW theory. First, family firms appear to have a generally superior approach to corporate governance, potentially connected to their lower risk preferences, a direct result of their socioemotional wealth. Although they require an exogenous shock such as SOX to reduce ABEM practices, they (i.) adjust their managerial behavior accordingly, and (ii.) show lower levels of high-risk REM in any case. On the reverse we can conclude that the exact opposite behavior occurs in non-family firms – with multiple negative consequences for financial reporting integrity and long-term firm value (as REM conceptually decreases long-term competitiveness).

Second, and tightly connected to the first implication, if regulatory events occur, family firms tend to react highly risk averse. Family firms reduce ABEM activities significantly. This finding provides further confirmation of the SEW theory, according to which family firms strive

for a range of financial as well as non-financial goals, e.g., reputation, or a transgenerational handover of ownership. Especially once potential public scrutiny after an accounting scandals is considered, a form of SEW preservation appears as likely and in line with the literature (Berrone et al., 2010; Gómez-Mejía et al., 2007; Martin et al., 2014).

Third and finally, we suggest that corporate governance research should become more sensitive to a distinct family firm differentiation in management and ownership characteristics. As numerous researchers have shown, SOX was praised for its effectiveness (Bartov & Cohen, 2009; D. A. Cohen et al., 2008; Lobo & Zhou, 2006; Wilson, 2013). We disagree with this assessment to the extent that a family firm bias may have been unobserved and remains undetected.

Our findings face the following limitations. First, although unprecedented in its scale, our sample only represents the largest publicly listed US firms and hence does not include firms in private ownership. Consequently, drawing universal transcultural and international conclusions for further jurisdictions (e.g., European economies where family businesses dominate) is difficult and creates room for further research (e.g., the implementation of the German corporate governance code in 2002). Second and last, our conclusions are drawn from a single – though crucial – piece of financial and regulatory legislation, SOX. It may be feasible to expand the study to further exogenous shocks, e.g., the financial crisis, which would require an extended database.

3.8. Robustness Tests

In order to provide robustness for our results, we perform additional regression analyses for the impact of SOX on ABEM and REM in family firms. In congruence with the model layout in Table 5 we test for the impact of SOX implementation but use a generalized least squares (GLS) regression (Table 7). In Table 8 we also provide results for an ordinary least squares (OLS) regression on the exact same model outline. Finally, in Table 9 we show another firm-fixed effects regression. However, here we used an OLS estimation (in contrast to a firm-fixed effects outline for the main paper results) to estimate the various ABEM and REM parameters. Overall, our tests confirm the hypothesis after which family firms react to the SOX implementation with a significant reduction in ABEM activities.

VARIABLES	(1) ACC_ABEM	(2) REM_AGG
FAM_FIRM	0.0686**	-0.151*
	(0.0283)	(0.0826)
POST_SOX	0.0149	0.0145
	(0.0203)	(0.0563)
FAM_FIRM#POST_SOX	-0.0896***	0.0360
	(0.0342)	(0.0804)
LEV	-0.0399***	-0.00937
	(0.00845)	(0.0176)
PERF	-0.0897***	-0.0157
	(0.0233)	(0.0118)
SIZE	0.387***	-0.0898
	(0.0278)	(0.0624)
LOSS	0.0791***	0.122***
	(0.0266)	(0.0303)
GROWTH	0.0124*	-0.0214**
	(0.00661)	(0.0106)
Constant	-0.0583***	0.0312
	(0.0162)	(0.0519)
Observations	15,882	13,673
Firm-fixed effects	no	no
Industry-fixed effects	no	no
Year-fixed effects†	no	no
Number of Code	1,534	1,426

Table 7: Generalized least squares (GLS) regressions on (1) the accruals-based earnings management variable (ACC_ABEM), and (2) the aggregate real-earnings management measure (REM_AGG), for years 1996 to 2010. All parameters are standardized and winsorized at one percent significance level, excluding a family-firm specific control (FAM_FIRM) and a dummy for the post-SOX period (POST_SOX). † Year-fixed effects as well as other controls have been applied in the estimation of accruals-based (ACC_ABEM) and real-earnings management parameters (REM_AGG) and are omitted here to avoid regression attenuation bias (Aigner, 1973; Frost & Thompson, 2000; Phillips & Smith, 1991). Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1) ACC_ABEM	(2) REM_AGG
FAM_FIRM	0.0778**	0.0550
	(0.0338)	(0.0891)
POST_SOX	0.000215	-0.0438
	(0.0192)	(0.0536)
FAM_FIRM#POST_SOX	-0.0947***	0.120
	(0.0332)	(0.126)
LEV	-0.0664***	0.0617
	(0.0132)	(0.0651)
PERF	-0.0833***	-0.209***
	(0.0207)	(0.0380)
SIZE	0.445***	0.0862
	(0.0358)	(0.170)
LOSS	0.127***	-0.124
	(0.0308)	(0.0789)
GROWTH	0.0238***	-0.0256*
	(0.00714)	(0.0152)
Constant	-0.0647***	-0.000108
	(0.0182)	(0.0685)
Observations	15,882	13,673
Firm-fixed effects	no	no
Industry-fixed effects	no	no
Year-fixed effects†	no	no
R-squared	0.175	0.008

Table 8: Ordinary least squares (OLS) regressions on (1) the accruals-based earnings management variable (ACC_ABEM), and (2) the aggregate real-earnings management measure (REM_AGG), for years 1996 to 2010. All parameters are standardized and winsorized at one percent significance level, excluding a family-firm specific control (FAM_FIRM) and a dummy for the post-SOX period (POST_SOX). † Year-fixed effects as well as other controls have been applied in the estimation of accruals-based (ACC_ABEM) and real-earnings management parameters (REM_AGG) and are omitted here to avoid regression attenuation bias (Aigner, 1973; Frost & Thompson, 2000; Phillips & Smith, 1991). Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1) ACC_ABEM	(2) REM_AGG
FAM_FIRM	0.0577	-0.0669
	(0.0412)	(0.102)
POST_SOX	0.0586**	0.0841
	(0.0286)	(0.0705)
FAM_FIRM#POST_SOX	-0.0597*	-0.0531
	(0.0337)	(0.0850)
LEV	-0.00980	-0.00853
	(0.00880)	(0.0246)
PERF	-0.0708***	-0.0527***
	(0.0228)	(0.0179)
SIZE	0.182***	-0.0781
	(0.0277)	(0.0672)
LOSS	0.0535*	0.0885***
	(0.0300)	(0.0336)
GROWTH	0.00322	-0.0241*
	(0.00718)	(0.0135)
Constant	-0.0635***	-0.0266
	(0.0227)	(0.0556)
Observations	15,882	13,673
Firm-fixed effects	yes	yes
Industry-fixed effects†	no	no
Year-fixed effects†	no	no
R-squared	0.021	0.005
Number of Code	1,534	1,426

Table 9: Firm-fixed effects regressions on (1) the accruals-based earnings management variable (ACC_ABEM), and (2) the aggregate real-earnings management measure (REM_AGG), for years 1996 to 2010. † ACC_ABEM and REM_AGG parameters have been – in contrast to the previous tables provided in the paper – estimated with an OLS regression, controlling for industry- and year-fixed effects. Consequently, these controls have been left out in the above table in order to avoid regression attenuation bias (Aigner, 1973; Frost & Thompson, 2000; Phillips & Smith, 1991). All parameters are standardized and winsorized at one percent significance level, excluding a family-firm specific control (FAM_FIRM) and a dummy for the post-SOX period (POST_SOX). Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

3.9. Appendix

VARIABLES	(1) DISC_CFO	(2) DISC_EXP	(3) DISC_PROD	(4) REM_AGG	(5) ACC_ABEM
FOUNDER_CEO	-0.00957	-0.0179	-0.0130	-0.0184	-0.0315
	(0.0390)	(0.0313)	(0.0403)	(0.104)	(0.0626)
FOUNDER_MGMT	0.0269	-0.0604*	-0.0150	-0.0239	-0.0569
	(0.0336)	(0.0310)	(0.0240)	(0.0567)	(0.0647)
FAMILY_CEO	0.0535	0.00777	-0.0520	-0.129	0.0365
	(0.0641)	(0.0360)	(0.0401)	(0.117)	(0.0429)
FAMILY_MGMT	0.0916	-0.0533	-0.0444	-0.0834	0.00507
	(0.0560)	(0.0359)	(0.0335)	(0.0934)	(0.0392)
FOUNDER_MORE_	0.00745	0.0335	-0.0176	-0.0302	0.141**
5PC_OWNER	(0.0305)	(0.0288)	(0.0329)	(0.0756)	(0.0719)
FAMILY_MORE_	0.0884*	0.0257	-0.0817*	-0.228**	-0.00855
5PC_OWNER	(0.0510)	(0.0449)	(0.0482)	(0.108)	(0.0491)
LEV	-0.0279***	0.0207***	-0.0111	-0.00715	-0.0248**
	(0.00823)	(0.00612)	(0.00797)	(0.0152)	(0.0125)
PERF	0.0198**	-0.00977	-0.00848*	-0.0157	-0.0930***
	(0.00879)	(0.00730)	(0.00508)	(0.0123)	(0.0292)
SIZE	0.113***	-0.0472**	-0.00131	-0.0968	0.269***
	(0.0289)	(0.0199)	(0.0246)	(0.0660)	(0.0252)
LOSS	-0.0711***	-0.0160	0.0509***	0.116***	0.0637**
	(0.0270)	(0.0126)	(0.0113)	(0.0312)	(0.0296)
GROWTH	-0.00777	0.0395***	0.0256***	-0.0222*	0.00569
	(0.00645)	(0.00614)	(0.00753)	(0.0120)	(0.00974)
Constant	-0.0252	0.0204*	0.0236*	0.0442	-0.0362*
	(0.0195)	(0.0124)	(0.0131)	(0.0308)	(0.0218)
Observations	16,086	15,015	14,028	13,228	15,339
Firm-fixed effects	yes	yes	yes	yes	yes
Industry-fixed effects	no	no	no	no	no
Year-fixed effects†	no	no	no	no	no
R-squared	0.012	0.010	0.007	0.007	0.025
Number of Code	1,603	1,535	1,480	1,420	1,526

Table 10: Firm-fixed effects regressions on (1) discretionary cash flows (DISC_CFO), (2) discretionary expenses (DISC_EXP), (3) discretionary production costs (DISC_PROD), (4) the aggregate real-earnings management measure (REM_AGG), and (5) the accruals-based earnings management variable (ACC_ABEM), for years 1996 to 2010. All parameters are standardized and winsorized at one percent significance level, excluding family-firm specific controls. † Year-fixed effects and other controls have been applied in the estimation of ACC_ABEM and REM_AGG parameters and are omitted here to avoid regression attenuation bias (Aigner, 1973; Frost & Thompson, 2000; Phillips & Smith, 1991). Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

4. Examining EPS Forecast Errors in Family Firms: Counter-intuitive Evidence from a Price-distributed Analysis[†]

ABSTRACT

Recent publications find that earnings per share (EPS) forecast errors —i.e., the algebraic difference between actuals and analyst consensus estimates— lack variability with share price, implying managerial earnings smoothing for large share price firms. This finding stems from using undeflated forecast errors as a new methodology to detect managerial myopia; i.e., unlike common research practice, forecast errors have not been deflated by price to adjust for differences in scale. We follow this strand of research and apply it to family firms. We distribute forecast errors along share price deciles and observe counter-intuitive results in the sense that price-distributed EPS forecast errors are very similar for family firms and non-family firms. Specifically, first, family firms and their counterparts appear to equally compress EPS volatility with increasing share price. Second, with rising share prices, family firms profit from excessive analyst forecast pessimism in the same magnitude as non-family firms. But third, we also show that family firms do not smooth earnings as much as non-family corporations. They (1) employ lower levels of discretionary accruals, and (2) refrain from using earnings adjustments — leaving forecast guidance as one possible explanation for the ability of high price firms to beat targets. Based on a hand-sourced S&P 1500 family firm dataset, we posit that findings of lower earnings management activities in family firms should be reevaluated and may depend on the research methodology applied. Concludingly we also see strong evidence to believe that large publicly traded, analyst-followed family firms exhibit more similarities with same-size non-family counterparts than with small non-followed family firms.

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Keywords: Analyst forecasts, earnings compression, earnings game, EPS, family firms, forecast error, forecast pessimism, United States.

4.1. Introduction

When equity market analysts forecast company earnings, the means and medians of the resulting algebraic difference (forecast error) between actual (reported) earnings per share (EPS) and analyst consensus estimates should be equal to zero across the forecast population. Numerous publications have proven that this theoretical model does not hold in practice as a majority of companies is positively hitting earnings targets (Bartov et al., 2002; Kasznik & McNichols, 2002). In fact, the very persistent just-hitting tendency (i.e., meeting analyst EPS targets by just a few cents) is a prerequisite of the so-called earnings game, benefiting managers, analysts, and sophisticated investors alike (Athanasakou et al., 2008; Bartov et al., 2002; Doyle et al., 2013; Graham et al., 2005). For example, through positive stock price reactions upon results announcement, transient investors make short-term returns (Matsumoto, 2002). Furthermore, suspicion is raised once the magnitude of forecast errors does not increase with share price; i.e., larger (smaller) stocks having tighter (wider) standard deviations of forecast errors (Degeorge et al., 1999) and forecast errors turn positive per se (Cheong & Thomas, 2011).

In this paper, we are the first to investigate patterns in EPS forecast errors in family firms by using a recently established methodology (Cheong & Thomas, 2011). Earnings management researchers generally *deflate* forecast errors by price in order to adjust for scale (Ali et al., 2007; Anderson, Reeb, et al., 2012; Lang & Lundholm, 1996). In our analysis, we use *undeflated* parameters and distribute forecast errors by share price deciles in order to detect managerial myopia (i.e., earnings management, or forecast guidance). We find that publicly traded, analyst-followed family firms *appear* to manage analysts and earnings as they (1) exhibit compressed EPS volatility with increasing share price, and (2) profit from excessive analyst forecast pessimism as forecast error medians grow with increasing share price scale. But besides this pressing descriptive observation we find other evidence that they do not

necessarily participate in the earnings game by means of earnings management. Family firms (1) employ lower levels of discretionary accruals than counterpart firms, and (2) use comparably less managerial discretion in earnings adjustments.[17] Correspondingly and following recent research evidence (Cheong & Thomas, 2014), the increasing analyst pessimism with share price is likely to be caused by differential analyst forecast downward guidance.

Assessing our findings in greater detail, we find first that, although family firms are expected to exercise particular conservatism in the way they manage earnings – arising from their socioemotional wealth endowment (Berrone et al., 2012, 2010) – family firm forecast errors do not increase with share price.[18] For instance, we observe that median share prices grow 14 times from the smallest to the largest price decile while family firm forecast error medians triple (from \$0.01 to \$0.03) and, most importantly, forecast error bandwidth (i.e., the absolute difference between the five and 95 percentile of forecast errors) only doubles (from \$0.27 to \$0.48).

Moreover, family firm forecast error bandwidths are considerably tighter than for non-family counterparts.[19] In other words, large stock family firms have a distinct (and, vis-à-vis

[17] Managers and analysts frequently make use of adjusted GAAP earnings results in order to account for non-recurring items, e.g. restructuring charges, one-offs, etc. We refer to these discretionary changes as *street-adjustments* in reference to a similar expression used by Bradshaw & Sloan (2002). In form and content, it refers to the fact that these numbers are used in discussions between Wall Street analysts, specialized press, professional (institutional) investors, and managers. Those numbers are subject to substantial magnitudes of both managerial (sender) and analyst/press (recipient) discretion.

[18] The term socioemotional wealth refers to a distinct set of incentives of objectives family firms are endowed with. For instance, the ability to hand-over the company to descending generations, maintain and foster a family firm reputation, or profit from superior (long-term) ties to external stakeholders vis-á-vis non-family firms (see, for example, Berrone et al., 2012, 2010; Gómez-Mejía, Takács Haynes, Núñez-Nickel, Jacobson, & Moyano-Fuentes, 2007).

[19] Prior researchers find smaller *absolute* forecast errors in family firms but seem to avoid both a more detailed investigation and potential explanation (Ali et al., 2007). It was simply argued to be "consistent with family firms making better disclosures about their financial performance" (Ali et al., 2007, p.31). Although Degeorge et al. (1999) observed the lacking EPS variation with scale, they did not investigate it further. Cheong & Thomas (2011) report a desire of large price firms to appear as small price firms, assumed to arise from the focus of market participants on cents per share forecast errors, rather than forecast error as a percentage of share price.

non-family firms, more pronounced) desire to appear as small price firms when reporting (positive) earnings surprises. While previous research has documented but not explained smaller forecast errors for family firms, it has not detected the lacking variability with price. Conceptually, both smaller forecast errors and the non-variation with share prices speak in favor of considerable earnings smoothing (Cheong & Thomas, 2011). Also, at first glance, both findings obviously contradict the opacity argument in family firm reporting (Anderson et al., 2009) and – to some degree – the entrenchment effect of family ownership (Wang, 2006).

Second, we find excessive analyst forecast pessimism for both family and non-family firms. Regardless of the firm type, analysts give forecasts which are met by the companies. This effect gradually increases in magnitude with share price growth, i.e., is highest for firms with largest within-panel stock prices. As analyst pessimism is essential to allow for target achievability which – as part of the earnings game – induces rewards for investors, analysts, and managers (Athanasakou et al., 2008, 2011; Healy, 1985; Ke & Yu, 2006; Matsumoto, 2002), it is interesting and suspicious that no material difference between the two firm types can be observed. In any case, both findings confirm a behavioral similarity of family firms and non-family firms, or the way analysts assess the two firm types. Most likely, as recent research suggests (Cheong & Thomas, 2014), it is differential forecast downward guidance being the explanation why only high price firms – both family and non-family entities – beat estimates.

Third and finally, we provide evidence that the visible trajectory in forecast error evolution does not stem from intentional earnings smoothing. We are able to show that family firms (1) employ substantially lower levels of accruals-based earnings management across share price deciles, and (2) refrain from using discretionary street-adjustments to reported earnings in the extent non-family counterparts do. Although a small number of researchers claim to have found the opposite (Abdolmohammadi et al., 2010; T.-Y. Chen, Gu, et al., 2014),

prior literature is dominated by the assumption that family firms make substantially less use of earnings management overall (Achleitner et al., 2014; Jiraporn & DaDalt, 2009; Wang, 2006). This argument stems from their assumed long-term incentives (transgenerational hand-over, reputation preservation, etc.), embedded in SEW theory (Berrone et al., 2012, 2010; Martin et al., 2014). As the forecast error evolution provides a counter-intuitive evidence, we provide alternative confirmation of this finding in three out of four earnings management metrics (i.e., the use of discretionary abnormal accruals, earnings volatility, and street-adjustments to US GAAP earnings) employed in the descriptive analysis.

Our sample is based on the arguably largest family firm dataset available. We have hand-collected family firm data for all constituents of the S&P 1500 index between 1996 and 2010. By the scope and depth of the family firm panel data we surpass existing data sets of prominent family firm publications (Anderson & Reeb, 2003a, 2004; Villalonga & Amit, 2006). With a total of 25,020 observations from 1,668 firms – thereof 40 percent family firms – we feel equipped to draw multiple conclusions on a homogenous group of large publicly traded, analyst-followed family firms and their counterparts.

In light of our results, we argue first that prior findings in the literature, arguably confirming lower levels of earnings management in family firms, should be reassessed by using different and additional methodologies to detect managerial earnings smoothing. Many (family firm related) findings are solely based on accounting evidence from balance sheet metrics or deflated forecast errors (e.g., Achleitner, Guenther, Kaserer, & Siciliano, 2014; Bartov et al., 2002; Martin, Campbell, & Gómez-Mejía, 2014). Potentially, even a false picture of true economic reality may have been created when employing just one of the established methodologies (Hines, 1988). Using a less common but nonetheless interesting and valid methodology might be beneficial for a purely holistic assessment and deliver new insights on

assumptions currently taken for granted. Further disentangling forecast errors – also apart from the family firm context – is therefore highly recommended and regarded as a very fruitful area for research to come.

Second, we think that – overall – the differentiation between family firms and their counterparts becomes increasingly difficult. In particular, we admit that large publicly traded, analyst-followed family firms have substantial similarities with non-family counterparts. In fact, many of our results (e.g., same lacking EPS forecast error variability with scale, same level of analyst forecast pessimism indicating potential forecast guidance) make it difficult to argue for any positive family firm influence at large price firms. This finding becomes particularly amplified once we observe that small and non-followed family firms exhibit more volatile (i.e., likely to be unmanaged) earnings trajectories across price deciles. Hence, a distinct line between (1) large publicly traded, analyst-followed family firms, (2) non-followed but publicly traded family firms, and (3) the large majority of private family firms has to be drawn.

The remainder of this paper is organized in the following order. Section 4.2 describes the sample selection and data set in detail. Section 4.3 outlines and summarizes the key results. After we elaborately discuss the evidence in Section 4.4, we perform robustness tests for non-followed firms in Section 4.5. We conclude in Section 4.6.

4.2. Sample Selection and Data

The panel data set of this paper comprises hand-sampled family firms within the S&P 1500 index from 1996 to 2010. Containing 25,020 firm-year observations, we have defined family firms (FAM_FIRM) as those firms which are either family-managed (FF_MGMT) and/or family-owned (FF_OWNERSHIP). A firm is family-managed when (1) either the founder is involved in management as chief executive officer (FOUNDER_CEO) and/or serves

on the board (FOUNDER_MGMT), and/or (2) the family (or founder descendants) manage the company in the leading position (FAMILY_CEO) and/or as board members (FAMILY_MGMT). We refer to a family-owned company if either the founder (FOUNDER_MORE_5PC_OWNER) and/or the family (FAMILY_MORE_5PC_OWNER) control more than five percent of the voting rights of a company. Our approach to family firm definition follows in principle the dominant process documented in the literature (Anderson et al., 2003; see, e.g., Villalonga & Amit, 2006). As we use binary variables for all family firm characteristics, we apply a value of one if a condition is fulfilled, and zero otherwise. All ownership and management information has been gathered from the Securities and Exchange Commission (SEC) database EDGAR. Here, we have manually screened both 10-K reports (for management information) and DEF 14A statements (for ownership data). Results have been enriched by a manual cross-check on the Hoover firm profile database, the website fundinguniverse.com, and an open-search on the respective company websites.

Finally, to account for particularities in the business and balance sheet profiles, we have excluded pure utilities and financial institutions (984 firms) from the total of 3,081 constituents. Also, we have taken out those companies lacking full ticker information (33), and accounted for spin-offs, carve-outs, and companies affected from merger and acquisition activities (396). Consequentially the final sample of the paper consists of 1,668 firms.

The family firm panel has been enriched with annual balance sheet data from COMPUSTAT and stock price quotes from the University of Chicago's Center for Research in Security Prices (CRSP). Most importantly, we have added actual (ACT) and forecast (EST) EPS data from the Institutional Broker Estimate System (I/B/E/S). Specifically, we have used I/B/E/S unadjusted data to account for potential forecast rounding errors in adjusted data, arising from stock splits (see, for example, Cheong & Thomas, 2011; Diether, Malloy, &

Scherbina, 2002). We have gathered first and fourth quarter EPS (both US GAAP and street-adjusted) numbers in order to investigate potential differences between the two points in times. Also, as a matter of robustness, we assume first (fourth) quarter numbers to be most (least) different as their distance to annual results publications is highest (lowest).[20] We refrain from displaying annual earnings, dividend and cash flow per share data to account for lacking forecast observations as the analyst coverage intensity varies considerably both frequency- and firm-wise. None of the observations has been truncated or winsorized.[21]

Technically, we define analyst forecast errors (FE) as the differences between the actual values reported and the latest forecasts available, regardless of the periods researched:

$$FE_{FIRM\_TYPE,\ TIME} = ACT\ (EPS_{FIRM\_TYPE,\ TIME}) - EST\ (EPS_{FIRM\_TYPE,\ TIME}) \qquad (1)$$

Following Cheong & Thomas (2011), we do not deflate forecast error by share price as deflating by the latter leads to an understatement (and potential misdetection) of the former. This distinct negative relation stems from their finding that forecast errors do not vary with share price scale which in turn indicates considerable earnings compression (Cheong & Thomas, 2011).[22] Although the overwhelming majority of researchers appear to deflate, we recommend to carefully reevaluate deflation techniques in order to better explain forecast error magnitudes and thereby earnings surprises (Ali et al., 2007; Anderson, Reeb, et al., 2012; Lang & Lundholm, 1996). Correspondingly, we do not deflate by share price but distribute forecast

[20] In contrast to street-adjusted numbers, which are subject to management adjustments and potentially managerial myopia, I/B/E/S started to supply Generally Accepted Accounting Principles (GAAP) earnings per share reported results, calculated according to the GAAP guidelines, from 2006 onwards. Please refer to http://extranet.datastream.com/ContentUpdate/detail.asp?MainID=1494 for more details.

[21] Except for the left-hand side variables in columns (1) and (2) in Table 5. These variables are winsorized at the one percent significance level to address potential outlier concerns in the regression design.

[22] In their paper, Cheong & Thomas (2011) argue that (i.) forecast staleness and (ii.) measurement issues can be excluded as root causes for the lacking variability with share price – leaving (iii.) suppressed variation as only feasible explanation.

errors by price range (PRANGE) to gain more granularity on earnings surprises. For that purpose, we form ten price deciles across the data set (see Table 1 for median prices in each decile).

$$|BDWH|_{FIRM\_TYPE,\ PRANGE} = 95\%\ Decile\ (FE_{FIRM\_TYPE,\ PRANGE}) - 5\%\ Decile\ (FE_{FIRM\_TYPE,\ PRANGE}) \quad (2)$$

$$TFE_{FIRM\_TYPE} = \sum |BDWH|_{FIRM\_TYPE,\ PRANGE} \quad (3)$$

$$ANALYST\_P_{FIRM\_TYPE,\ PRANGE} = Median\ (FE_{FIRM\_TYPE,\ PRANGE}) \quad (4)$$

Within the analysis of forecast errors, we concentrate on three groups of measures: First, to measure price-distributed forecast errors, we analyze the intradecile ranges of forecast errors by comparing the absolute bandwidths (|BDWH|) between the five and 95 percent percentiles by share price decile (2). Second, to measure total forecast errors (TFE) for family (non-family) firms, we construct an overall measure of bandwidth dispersion (3), representing the sum of the decile forecast error bandwidths. Finally, to measure analyst forecast pessimism (ANALYST_P), we assess the median forecast error by price decile (4).

4.3. Results

4.3.1. Price-distributed (FE) and Total Forecast Error (TFE)

In Table 1 and corresponding Figures 1 and 2, we report first quarter EPS forecast errors distributed by price deciles for both family firms and non-family counterparts. As per the theoretical intuition, we observe actual and forecasted numbers to gradually increase with share price. For example, as represented in Panel 1B, family firm median actual (estimated) EPS increase from \$0.03 (\$0.03) in the 1st decile to \$0.55 (\$0.53) in the 10th decile – an increase by factor 18 for actual results. For non-family firms, actual (estimated) EPS increase from \$0.01

($0.01) to $0.76 ($0.72), respectively. From this finding we can infer that share prices are – ceteris paribus – a function of increasing earnings. Also, we observe that the resulting forecast error is generally slightly positive (median average of $0.01 for both family and non-family firms), indicating a suspicious tendency of target achievability (cf. Athanasakou et al., 2009; Bartov et al., 2002).

Looking at the data in detail, we find first and foremost that forecast error (FE) does not increase with share price – for both family and non-family firms (Panel 1B and 1C, Figures 1 and 2). Regardless if we observe median FE across price ranges, or the more important forecast error bandwidths – a substantial and meaningful variation with increasing share price does not appear. Beginning with family firms, we observe that the total forecast error bandwidth actually decreases from the 1st ($0.27) up to the 8th decile ($0.24), with more extreme compression in between (i.e., $0.19 for the 6th decile), and the largest value in the 10th decile ($0.48). The median forecast error remains in a range of $0.01 to $0.02 throughout the 1st to 9th decile and increases to $0.03 only for the largest shares in the panel. In other words, while median share prices in the last decile are 14 times higher than in the first one ($4.91, compared to $69.28), family firm forecast error medians triple and the important bandwidth of forecast errors not even doubles.

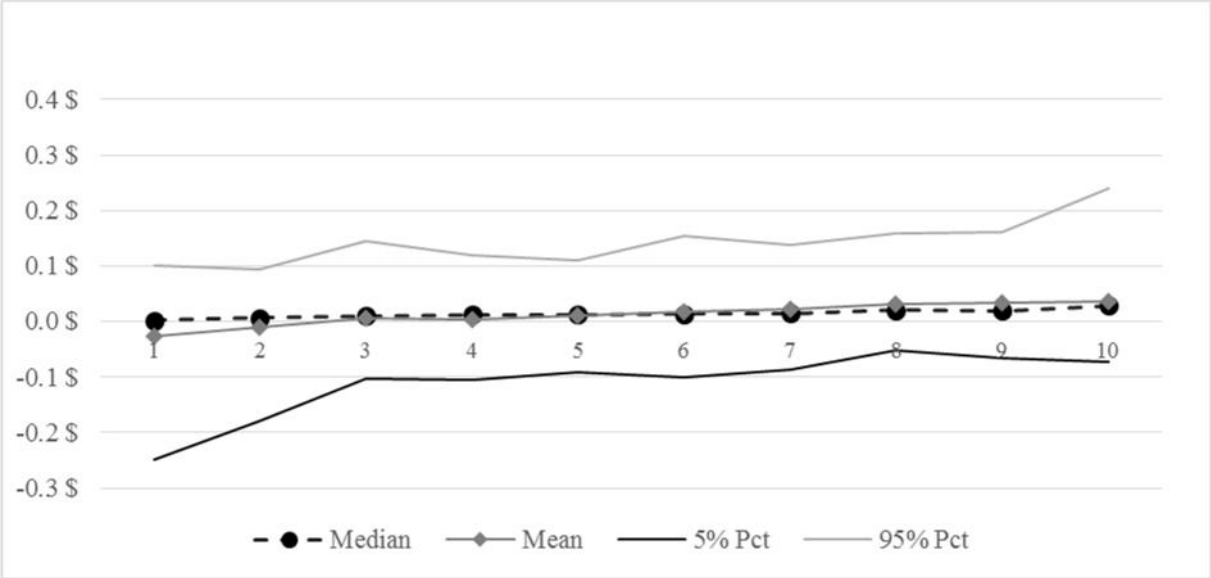

Figure 1: Q1 EPS forecast errors for non-family firms (y), scaled by ten share price deciles (x), in US$, for years 1996 to 2010.

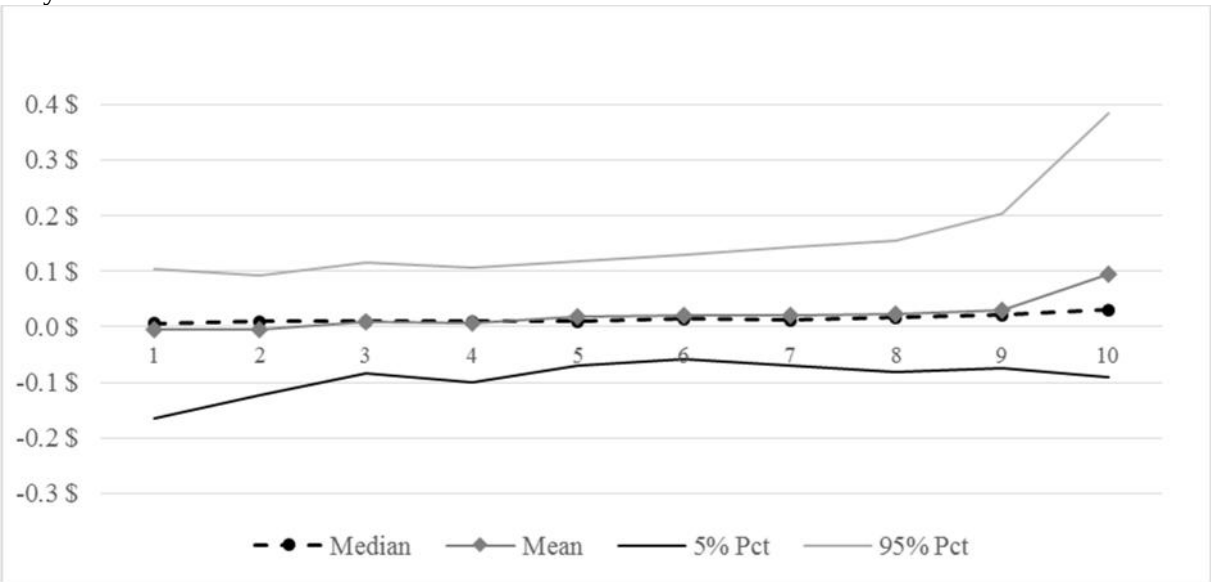

Figure 2: Q1 EPS forecast errors for family firms (y), scaled by ten share price deciles (x), for years 1996 to 2010.

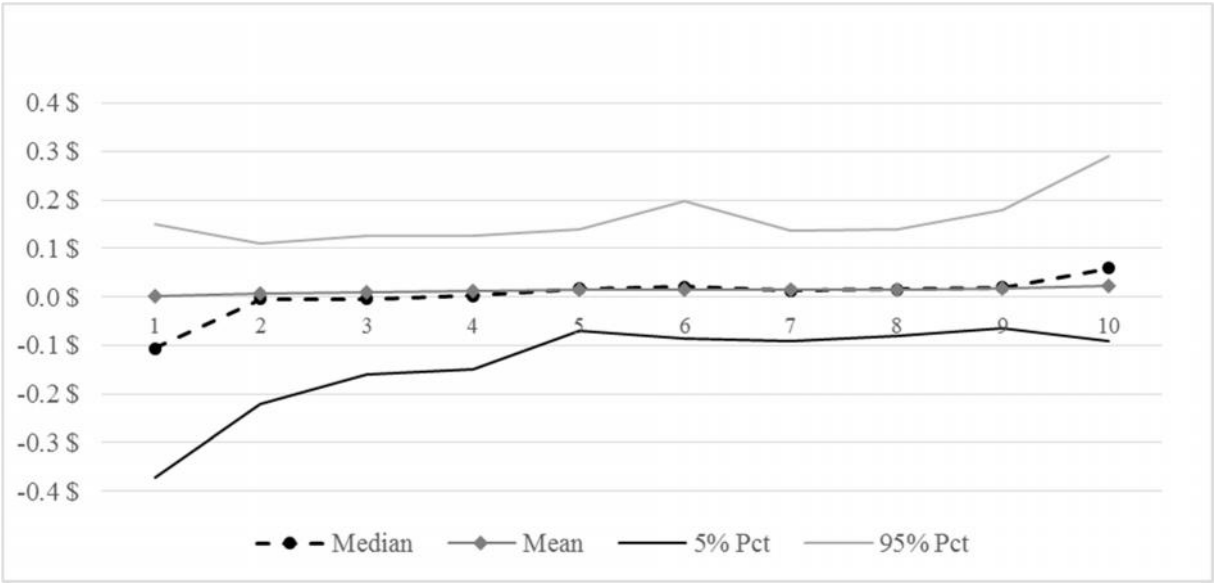

Figure 3: Q4 EPS forecast error for non-family firms (y), scaled by ten share price deciles (x), for years 1996 to 2010.

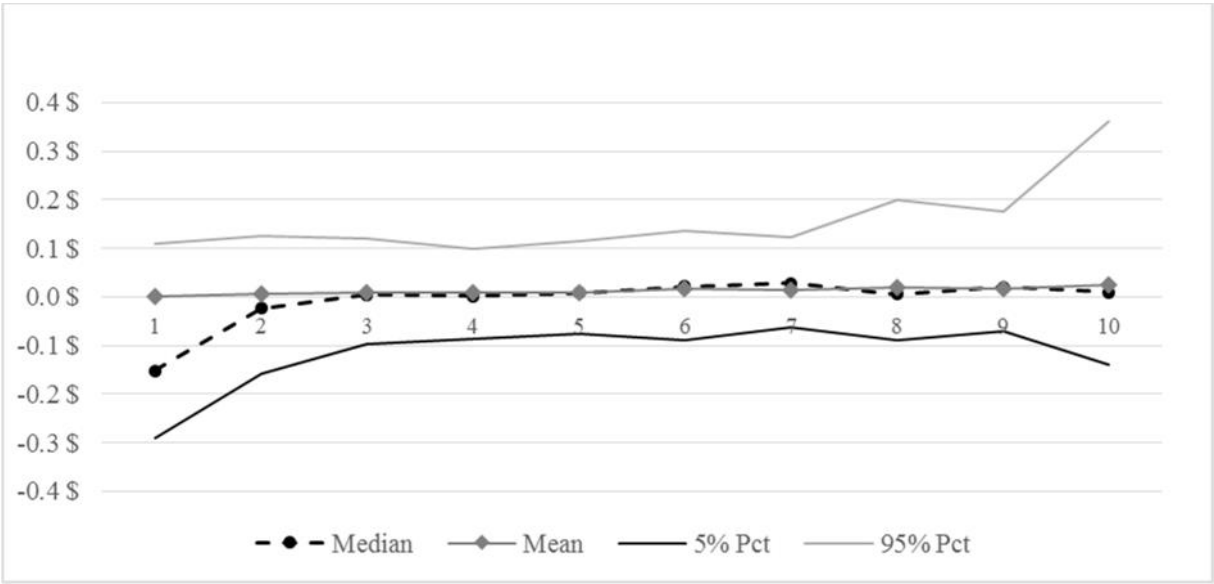

Figure 4: Q4 EPS forecast error for family firms (y), scaled by ten share price deciles (x), for years 1996 to 2010.

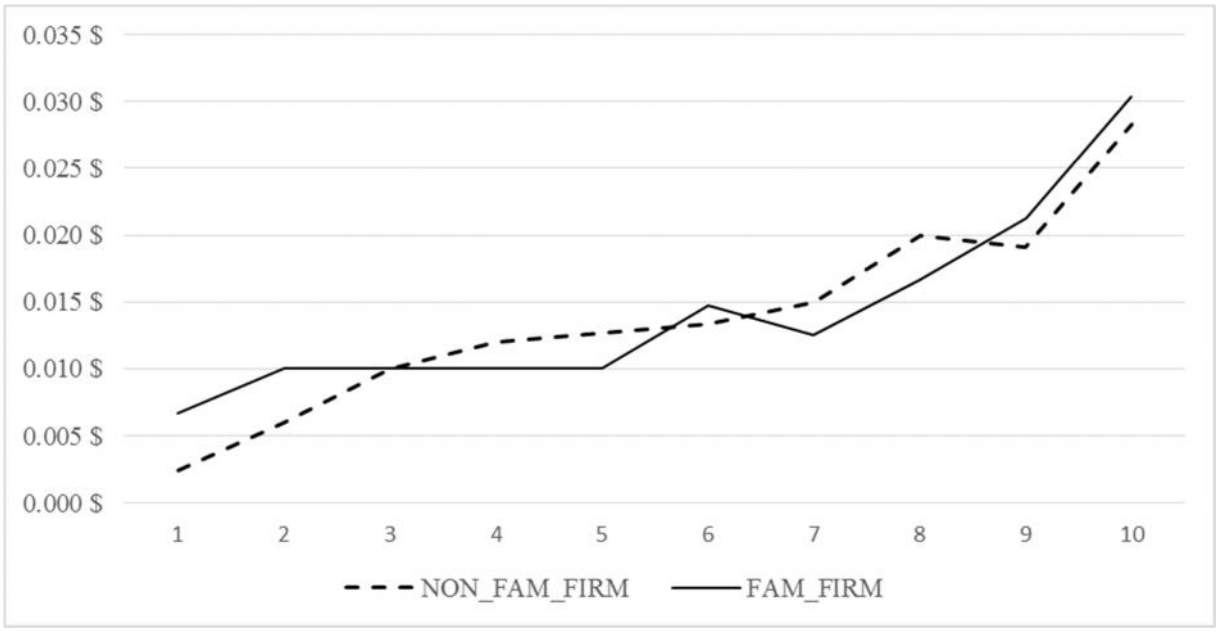

Figure 5: Q1 EPS median forecast error for family firms and non-family firms (y), scaled by ten share price deciles (x), in US$, for years 1996 to 2010.

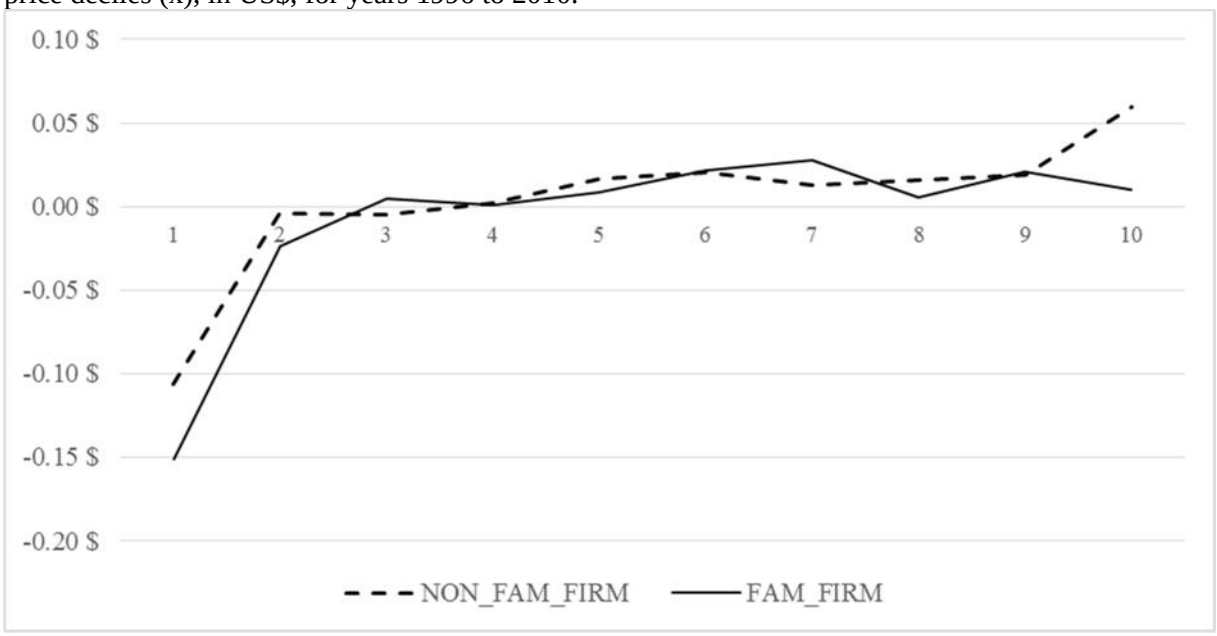

Figure 6: Q4 EPS median forecast error for family firms and non-family firms (y), scaled by ten share price deciles (x), for years 1996 to 2010.

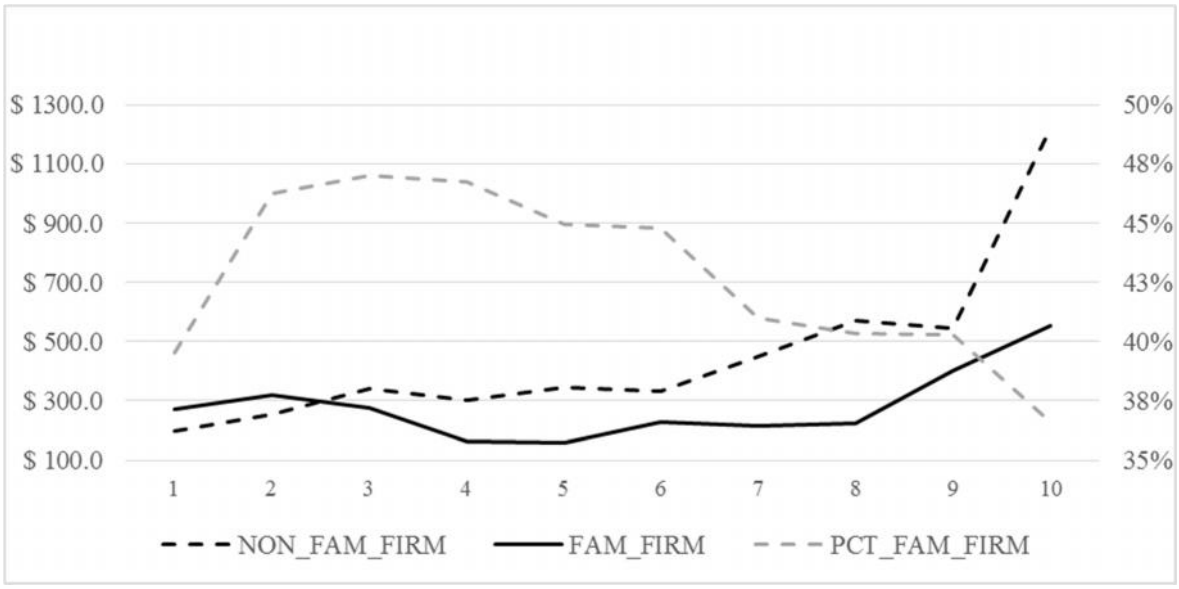

Figure 7: Absolute abnormal accruals (|ABEM|) for family firms (FAM_FIRM) and non-family firms (NON_FAM_FIRM), and – for illustrative purposes only – percentage of family firms (PCT_FAM_FIRM), by ten share price deciles (x), for years 1996 to 2010. ABEM (in US$ millions) plotted on LHS y-axis, PCT_FAM_FIRM on right-hand side y-axis.

For non-family firms, we even see a gradual forecast error bandwidth decrease from the 1st to the 5th price bucket ($0.35 to $0.20), while it also remains at $0.21 in the 8th decile. Medians increase slightly from ($0.01 to $0.03 across the 1st to 10th decile), but do not mirror the price scale-variation in actual earnings capacity. We also observe that there are distinct differences between the 2nd and 9th deciles and the two extreme price buckets, i.e., the 1st and 10th decile. While there is no forecast error variation for the largest chunk of the price distribution, we observe highest bandwidth values for outlier categories (e.g., $0.27 ($0.35) for family firms (non-family firms) in the 1st decile and $0.48 ($0.31) in the 10th decile, respectively). These findings also hold true for fourth quarter EPS forecast errors (Table 2, Figures 3 and 4) and are to some extent even more amplified – namely the tightest forecast error compression at low to medium ranges, and extreme values at the lowest and highest deciles.

Second, with regard to total forecast error (TFE) magnitudes, we observe that family firms have smaller forecast errors overall. Comparing the total forecast error bandwidth for first quarter results, family firms report a total variation of $2.47 and non-family counterparts $2.52. This result is underpinned by an even wider gap at fourth-quarter earnings: Although forecast errors are widened – potentially due to managerial year-end adjustments – family firms have considerably tighter variations ($2.72) than non-family firms ($2.98). This result is also robust and even more pronounced when excluding the 1st and 10th decile in which forecast errors widen for both firm types (cf. Tables 1 and 2). Finally, we can also confirm this descriptive evidence empirically (Table 5): For both first and fourth quarter EPS forecast errors, we can support prior findings of smaller absolute forecast errors in family firms (cf. Ali et al., 2007).

4.3.2. Analyst Forecast Pessimism (ANALYST_P)

To observe the level of analyst forecast pessimism for both family and non-family firms we narrow the focus on the median forecast error evolution by price range (Figure 5 and Figure 6). The intuition is that positive median forecast errors imply analyst forecast pessimism whereas negative forecast error medians express (too) optimistic analyst views – with the corresponding consequences for the ability to meet or beat targets (Athanasakou et al., 2011; Cheong & Thomas, 2011).

First, we find that analyst forecast pessimism is again persistent and increases continuously with share price decile as the median forecast error grows consistently throughout. Second, we confirm that there is – again – no substantial difference between family firms and their counterparts, regardless of the quarter analyzed. However, for both firm types, we observe substantial differences between median forecast errors across quarters: First, first quarter medians are substantially stickier around zero compared to fourth quarter medians (cf. y-axis ranges, Figures 5 and 6). Second, the upward trajectories across price deciles are different. First quarter medians do not substantially increase between the 1st and the 7th decile but increase sharply between the 8th and 10th decile, indicating substantially higher analyst pessimism for large stocks. Fourth quarter medians are negative for 1st decile shares – indicating excessive forecast optimism for the smallest in-panel shares – and remain largely flat for all remaining deciles (though at higher magnitudes). Third and finally, there are differences when comparing both quarters and firm types simultaneously. On an absolute level, the first-to-last decile growth in median forecast error in the first (last) quarter is \$0.02 (\$0.16) for family firms and \$0.03 (\$0.17) for non-family firms. Not only is the within-quarter growth remarkable, also the apparently slightly lower increase for family firms should be noted.

4.3.3. Earnings Management (ABEM)

Previous research on price-distributed but undeflated earnings forecast errors has introduced managerial earnings smoothing as the potential and most likely explanation for the flat trajectory of EPS forecast errors with increasing price scale (Cheong & Thomas, 2011). Consequently, in the light of our surprising results for family firm forecast errors, we investigate the impact of managerial action on both family and non-family firms. We measure the former as the extent to which accruals deviate from a 'normal' level and define an accruals-based earnings management estimator (ABEM). Conceptually, accruals are linking the income and cash flow statement of a company. Although they result from the desire to equalize accounting identity with business process reality (they are a key tool to equip managers with accounting flexibility), they can also be used opportunistically (Dechow & Skinner, 2000; Healy & Wahlen, 1999). For instance, managers can create 'cookie jar reserves' of restructuring charges and release them to flatten earnings trajectories across reporting periods (Levitt, 1998). Consequently, as accruals can be used two-directionally (either to build up or reverse accruals reserves between different reporting periods), we interpret the activity level on the lines of absolute abnormal accruals. Abnormal accruals are the remainder of the accruals level observed, minus an implied estimated level (equation 6). Our model of normal accruals estimation (equation 5) represents an adaptation of the one used by Wang (2006) which in itself is well-established and a modification of previous literature models (Achleitner et al., 2014; Ball & Shivakumar, 2006; Dechow & Dichev, 2002; Jones, 1991).

$$ACC_t = \alpha_0 + \alpha_1 * CFO_{t-1} + \alpha_2 * CFO_t + \alpha_3 * CFO_{t+1} + \alpha_4 * DCFO_t + \alpha_5 * DCFO_t * CFO_t + \alpha_6 * d.YEAR * d.INDUSTRY + \varepsilon_t \quad (5)$$

$$|ABEM| = | ACC_{t\ (obs.)} - ACC_{t\ (est.)} | \quad (6)$$

In which:

ACC_t = Net income before extraordinary items less net operating cash flows at time t, scaled by average total assets at the corresponding period[23]

$ACC_{t\ (obs.)}$ = Accruals observed in period t

$CFO_{t-1,\ t,\ t+1}$= Net operating cash flows at the time periods t, t-1, and t+1, scaled by average total assets in the respective period

$DCFO_t$ = Dummy variable for negative net operating cash flows in period t (1, if $CFO_t - CFO_{t-1} < 0$)

$DCFO_t * CFO_t$ = Proxy for economic losses

YEAR = Dummy variable for each year (1996-2010)

INDUSTRY = Fama-French industry classification, based on standard industrial classification (SIC) codes (cf. Fama & French, 1997)

We plot abnormal accruals by price range in Figure 7 and report them in Table 3. We observe that, on average, family firms have substantially lower abnormal accruals ($281 million) than non-family firms ($456 million). Distributed by price, we see first that the level is higher for price deciles one and two but remains below this boundary until and including decile 8. Second, we see that a gradual but small increase is observable for firms in price deciles 9 and 10. The largest family firms are located in these deciles which may indeed be confronted with market pressure levels highly comparable to those of the largest non-family corporations. For non-family firms overall, the picture reverses entirely: The level of abnormal accruals increases gradually from the 1st to the 10th decile (except for the second-to-last decile, where it remains flat). Compared to family firms, the absolute level is substantially higher – not only in the last decile, where abnormal accruals peak at $1,222 million (in contrast to $553 million for family firms). Furthermore, in Figure 7, we add the percentage distribution of family firms in

[23] The variable is winsorized at the one percent significance level.

the data set across price deciles. We observe that the percentage of family firms decreases continuously from the 2nd to 10th decile (Figure 7), but remains well above one-third even in the last share price decile.

4.3.4. US GAAP vs. Street-adjusted EPS

As a matter of robustness and to test for potential managerial intervention not directly affected by the same tool (i.e., ABEM), we compare the trajectory of same-period US GAAP and street-adjusted EPS results (Figures 8 to 11). Hereby, we can contrast managerial discretion (in street-adjusted numbers) and accounting conservatism (reported numbers in line with strict accounting regulations) for both family firms and their counterparts. The increasing use of street adjustments and the resulting differential expansion between street-adjusted earnings and US GAAP numbers has been prominently documented in the literature (Bradshaw & Sloan, 2002; Levitt, 1998), including a description of the resulting negative consequences for accounting accuracy and financial market integrity. For the available data between 2006 and 2010, we see first that for both family firms and non-family firms the bandwidth of GAAP earnings is substantially widened in comparison to street numbers. Second, the mean and five percentile forecast errors of non-family firms GAAP earnings are substantially more negative than for family firms (Figures 8 and 9). But third and most relevant for our purposes, we observe that street numbers for non-family firms (Figure 10) are equally tight; i.e., have very comparable forecast error bandwidths than for family firms (Figure 11). In other words, comparing GAAP numbers (not subject to managerial discretion) and street numbers (subject to managerial discretion) we observe that the level of compression is substantially higher for non-family firms, speaking in favor of intentional earnings smoothing. Consequently and as a side effect, fourth, the high negative amplitude of non-family GAAP earnings (Figure 8) is remarkably equalized

when street-adjusted numbers are used (Figure 10). A similar effect is not noticeable for family firms (Figure 11).

4.3.5. Revenue (REVCH) and Net Income (NICH) Volatility

Earnings and forecast error trajectories can be influenced not only by managers but also vary according to the intrinsic volatility of the underlying (e.g., total sales volume). The latter can arise from, e.g., the level of correlation with the market portfolio, or from industry-specific cyclicality (for example, timely seasonality in sales). Furthermore, revenues are supposed to represent the clearest measure of systematic volatility whereas net income is already subject to managerial influence (e.g., at the level of production costs, COGS, or SG&A). As far as family firm revenues are concerned, it has to be noted that there are industries in which family ownership is more prevalent than in others (Villalonga & Amit, 2010). We report the mean distribution of family firms and counterparts by the 17 Fama-French industry factors in Table 4.[24] We also add the absolute forecast errors (|FE|) for both firm types to this table.

We find that family firm concentration is highest in the textiles, oil and petroleum products, and transportation industries. Interestingly, when comparing absolute quarterly forecast errors across industries, there is no distinct pattern with increasing (decreasing) family firm shares observable. Apart from construction and construction materials ($0.20) and mining and minerals ($0.13), absolute forecast errors for both family and non-family firms vary largely around the mean ($0.07). Hence, assuming that there is no cross-industry family-firm-specific forecast error, we turn our attention to the price-scaled distribution of the aforementioned

[24] Please note again that, in order to account for the specific balance sheet characteristics, we have excluded the largest banks and utility companies (based on both SIC and ICB codes) from our dataset (See Section 4.2). The remaining fraction of financial firms in the table is most likely due to classification mismatches between Fama-French and SIC industry definitions.

parameters, i.e., revenue and net income volatility (Figures 12 to 15).[25] First, comparing revenue volatility distributions, we find that family firms within our data set show a considerably higher revenue volatility versus non-family firms. For both firm types, however, the negative amplitudes decrease with increasing share prices. Second, for family firms, revenue volatility remains at a constant level throughout price deciles five to nine.[26] Adding net income volatility to this picture (Figures 14 and 15), the findings speak in favor of considerable earnings smoothing in non-family firms at higher price deciles: Across deciles two to nine, non-family firm net income volatility decreases consistently. For family firms, however, we observe a decrease only in the smallest price buckets (2nd to 4th decile) but a somewhat constant volatility for all remaining buckets. In other words, only for family firms does net income volatility (subject to managerial discretion) mirror revenue volatility (not subject to managerial discretion). This observation does not hold for non-family firms, implying higher levels of managerial intervention (earnings management).

[25] We define revenue (REVCH) and net income volatility (NICH) as absolute percentage changes in total revenues and net income, from period t-1 to t, respectively. As for the aforementioned price-distributed forecast error parameters, we report median, mean, and five and 95 percentile values (Figures 12 to 14).

[26] We refrain from displaying the 10th decile in Figures 12 and 13, and the 1st and 10th decile in Figures 14 and 15, in order to account for distorting outliers in the data.

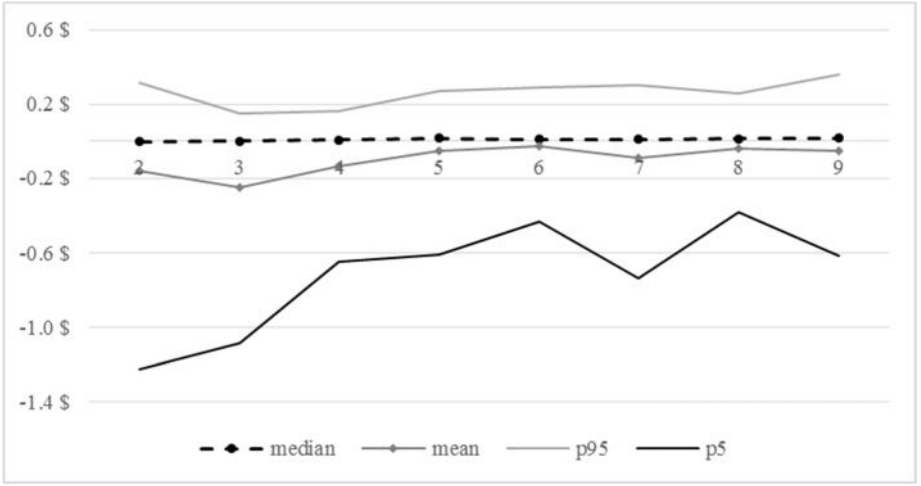

Figure 8: Q4 EPS GAAP forecast error for non-family firms (y), by ten share price deciles (x), for years 2006 to 2010.

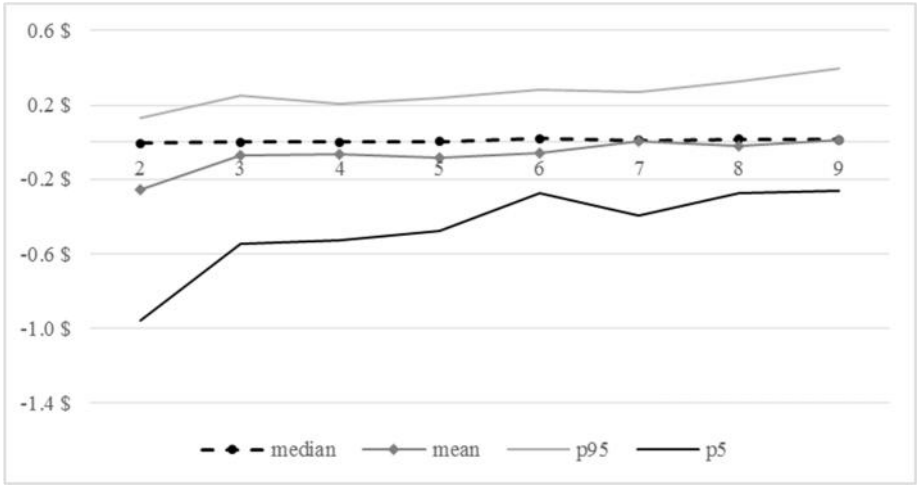

Figure 9: Q4 EPS GAAP forecast error for family firms (y), by ten share price deciles (x), for years 2006 to 2010.

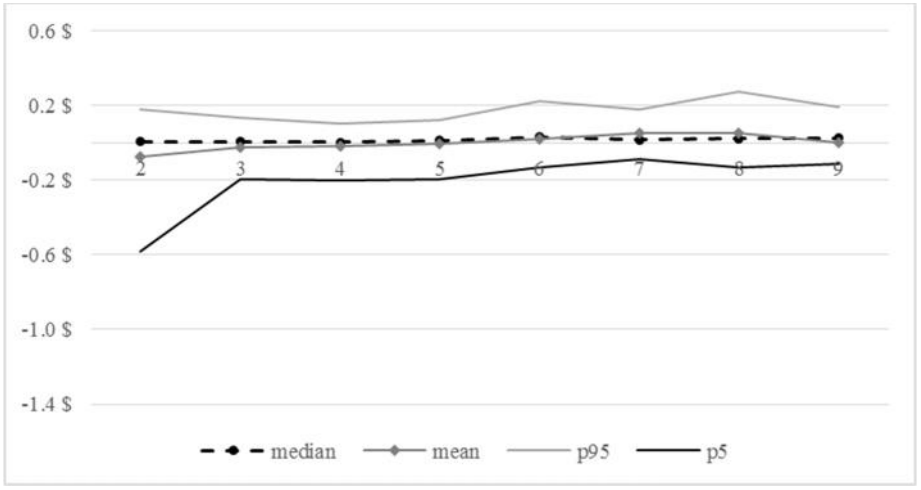

Figure 10: Q4 EPS forecast error for non-family firms (y), by ten share price deciles (x), for years 2006 to 2010.

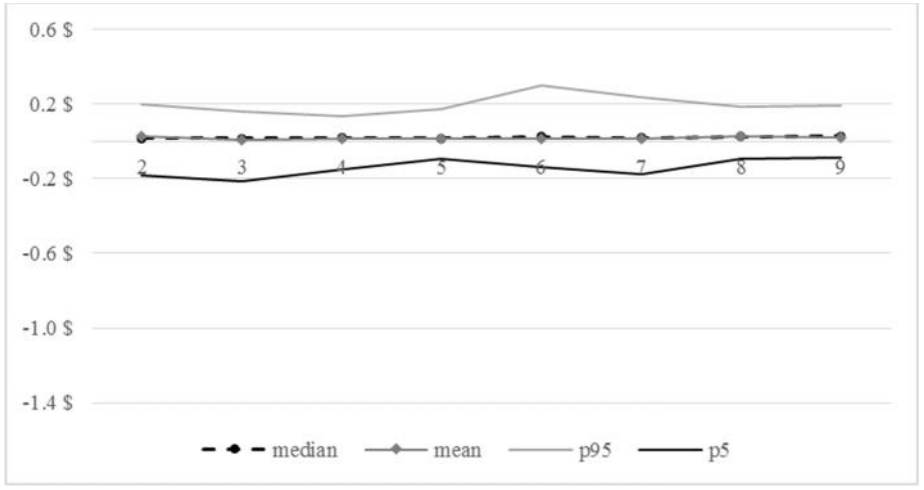

Figure 11: Q4 EPS forecast error for family firms (y), by ten share price deciles (x), for years 2006 to 2010.

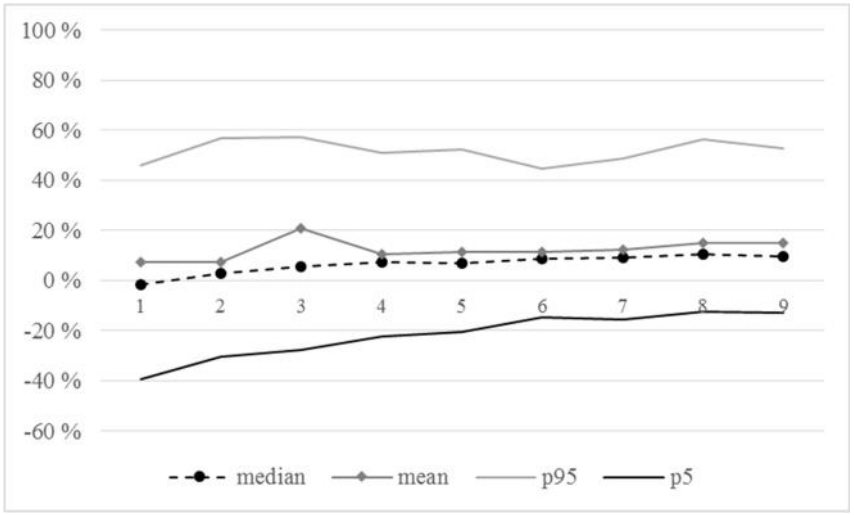

Figure 12: Revenue volatility of non-family firms (y), by ten share price deciles (x), for years 1996 to 2010.

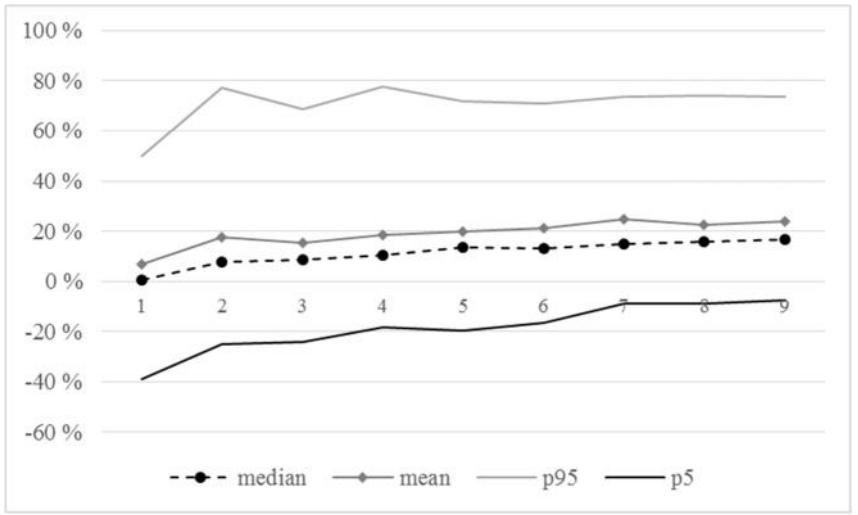

Figure 13: Revenue volatility of family firms (y), by ten share price deciles (x), for years 1996 to 2010.

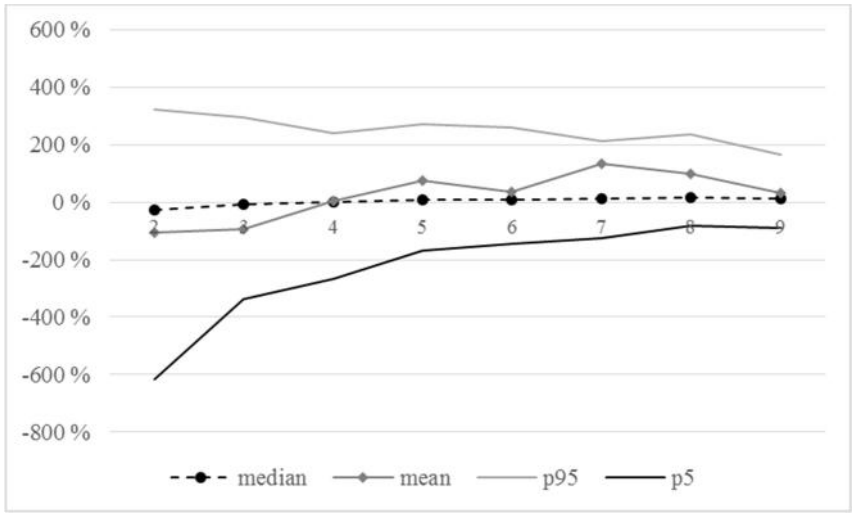

Figure 14: Net income volatility of non-family firms (y), by ten share price deciles (x), for years 1996 to 2010.

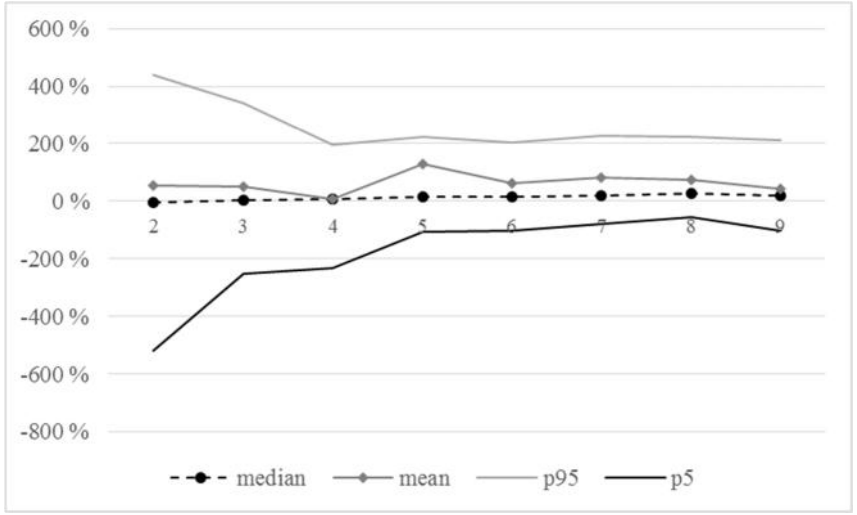

Figure 15: Net income volatility of family firms (y), by ten share price deciles (x), for years 1996 to 2010.

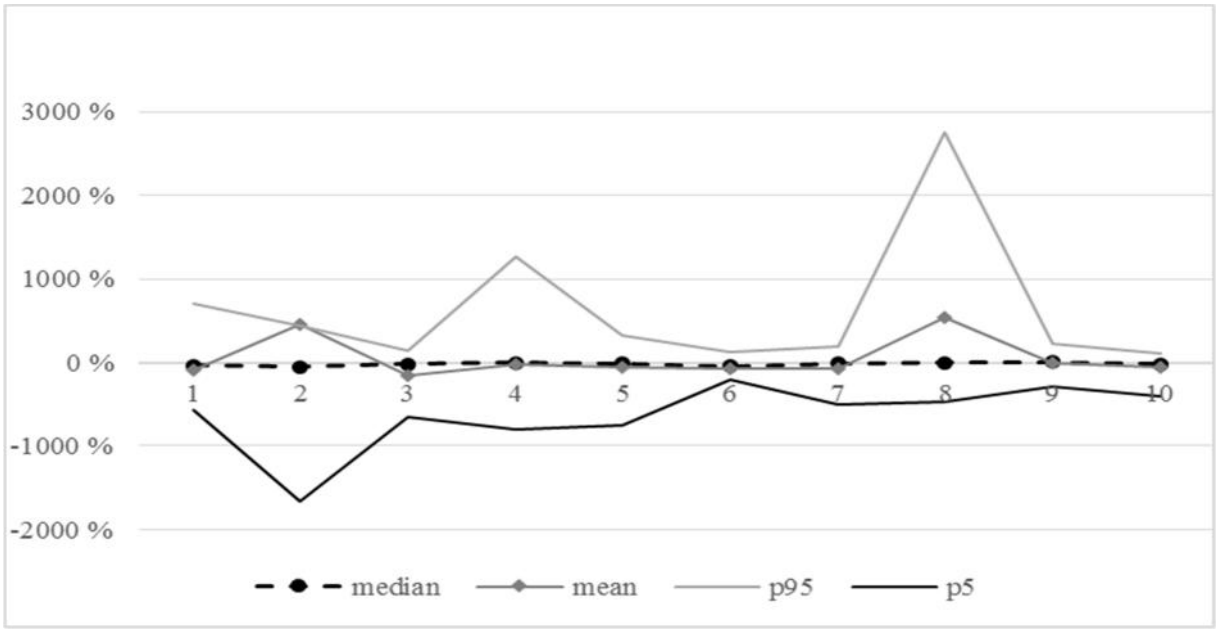

Figure 16: Net income volatility of non-followed non-family firms (y), scaled by ten share price deciles (x), for years 1996 to 2010.

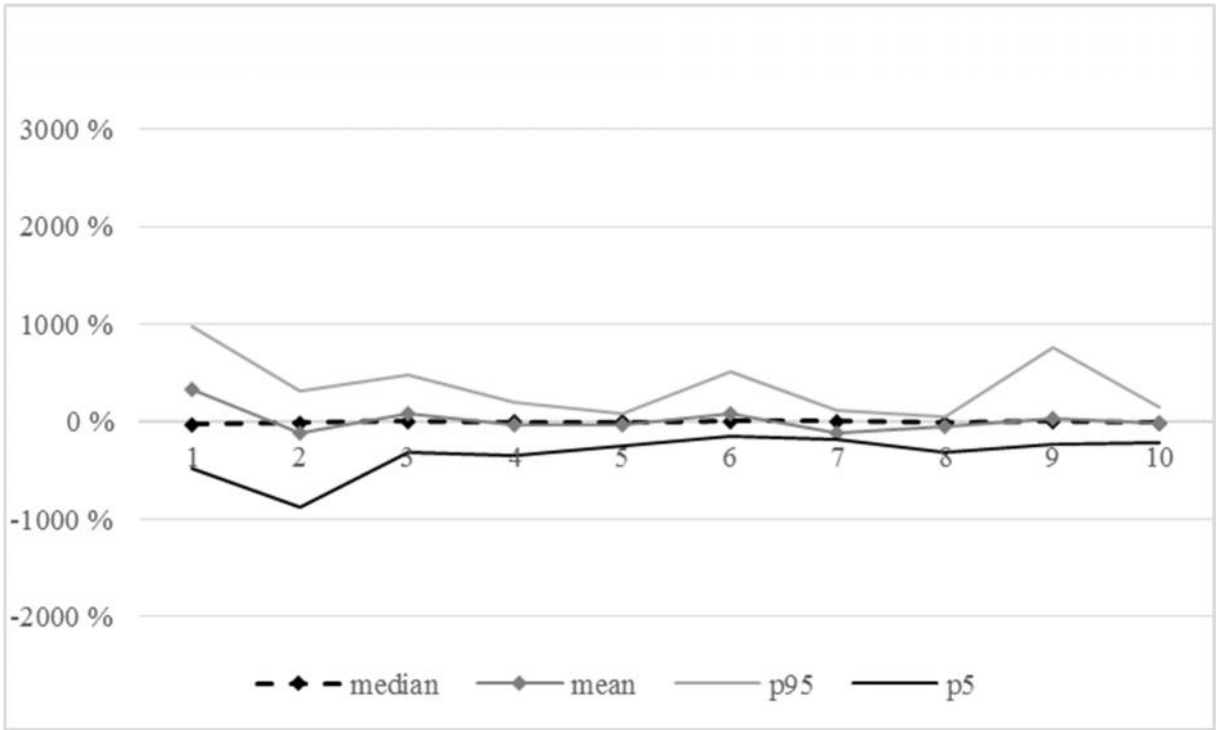

Figure 17: Net income volatility of non-followed family firms (y), scaled by ten share price deciles (x), for years 1996 to 2010.

Table 1: Descriptive statistics for Q1 EPS forecast error (FE), in US$, distributed over ten share price deciles, for years 1996 to 2010

Variable \\ Decile (PRANGE)	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Mean (exc. ∑ for TFE)
Panel 1A:											
PRICE											
Median	$4.91	$10.20	$14.88	$18.94	$23.12	$27.50	$32.72	$39.26	$49.04	$69.28	$28.98
Mean	$4.79	$10.20	$14.87	$18.93	$23.14	$27.47	$32.73	$39.43	$49.33	$87.46	$30.84
N (all firms)	1.531	1.528	1.529	1.536	1.520	1.529	1.531	1.527	1.529	1.528	1.529
N (FAM_FIRM)	605	707	719	718	683	685	628	616	616	559	654
N (NON_FAM_FIRM)	926	821	810	818	837	844	903	911	913	969	875
Panel 1B:											
ACT (FAM_FIRM)											
Median	0.03	0.10	0.16	0.21	0.25	0.28	0.33	0.37	0.46	0.55	0.27
Mean	0.01	0.08	0.15	0.21	0.25	0.30	0.36	0.42	0.52	0.88	0.32
EST (FAM_FIRM)											
Median	0.03	0.09	0.15	0.20	0.22	0.26	0.32	0.35	0.44	0.53	0.26
Mean	0.01	0.08	0.14	0.20	0.23	0.28	0.34	0.40	0.48	0.78	0.30
FE (FAM_FIRM)											
Median	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.01
Mean	0.00	0.00	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.10	0.02
FE (95 % Decile, FAM_FIRM)	0.11	0.09	0.12	0.11	0.12	0.13	0.14	0.16	0.20	0.39	0.16
FE (5 % Decile, FAM_FIRM)	-0.16	-0.12	-0.08	-0.10	-0.07	-0.06	-0.07	-0.08	-0.07	-0.09	-0.09
|BDWH| FAM_FIRM	0.27	0.22	0.20	0.21	0.19	0.19	0.21	0.24	0.28	0.48	0.25
TFE FAM_FIRM	-	-	-	-	-	-	-	-	-	-	2.47
Panel 1C:											
ACT (NON_FAM_FIRM)											
Median	0.01	0.10	0.15	0.23	0.27	0.32	0.39	0.47	0.56	0.76	0.33
Mean	-0.05	0.07	0.14	0.21	0.28	0.32	0.39	0.50	0.58	0.90	0.33
EST (NON_FAM_FIRM)											
Median	0.01	0.09	0.15	0.21	0.27	0.30	0.36	0.44	0.53	0.72	0.31
Mean	-0.02	0.08	0.14	0.21	0.27	0.30	0.37	0.46	0.55	0.87	0.32
FE (NON_FAM_FIRM)											
Median	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.01
Mean	-0.03	-0.01	0.01	0.00	0.01	0.02	0.02	0.03	0.03	0.04	0.01
FE (95 % Decile, NON_FAM_FIRM)	0.10	0.10	0.15	0.12	0.11	0.15	0.14	0.16	0.16	0.24	0.14
FE (5 % Decile, NON_FAM_FIRM)	-0.25	-0.18	-0.10	-0.11	-0.09	-0.10	-0.09	-0.05	-0.07	-0.07	-0.11
|BDWH| NON_FAM_FIRM	0.35	0.28	0.25	0.23	0.20	0.25	0.23	0.21	0.23	0.31	0.25
TFE NON_FAM_FIRM	-	-	-	-	-	-	-	-	-	-	2.52

Table 2: Descriptive statistics for Q4 EPS forecast error (FE), in US$, distributed over ten share price deciles, for years 1996 to 2010

Variable \\ Decile (PRANGE)	**1st**	**2nd**	**3rd**	**4th**	**5th**	**6th**	**7th**	**8th**	**9th**	**10th**	**Mean (exc. ∑ for TFE)**
Panel 2A:											
ACT (FAM_FIRM)											
Median	0.02	0.11	0.18	0.23	0.28	0.32	0.38	0.45	0.55	0.66	0.32
Mean	-0.17	0.08	0.16	0.22	0.29	0.34	0.42	0.51	0.60	1.09	0.35
EST (FAM_FIRM)											
Median	0.02	0.11	0.17	0.23	0.27	0.30	0.36	0.42	0.53	0.66	0.31
Mean	-0.01	0.10	0.16	0.22	0.28	0.31	0.39	0.50	0.58	1.08	0.36
FE (FAM_FIRM)											
Median	-0.15	-0.02	0.00	0.00	0.01	0.02	0.03	0.01	0.02	0.01	-0.01
Mean	0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.02	0.03	0.01
FE (95 % Decile, FAM_FIRM)	0.11	0.13	0.12	0.10	0.12	0.14	0.12	0.20	0.18	0.36	0.16
FE (5 % Decile, FAM_FIRM)	-0.29	-0.16	-0.10	-0.09	-0.07	-0.09	-0.06	-0.09	-0.07	-0.14	-0.12
|BDWH| FAM_FIRM	0.40	0.28	0.22	0.18	0.19	0.23	0.19	0.29	0.25	0.50	0.27
TFE FAM_FIRM	-	-	-	-	-	-	-	-	-	-	2.72
Panel 2B:											
ACT (NON_FAM_FIRM)											
Median	0.00	0.11	0.20	0.26	0.33	0.38	0.45	0.54	0.65	0.91	0.38
Mean	-0.15	0.07	0.17	0.24	0.34	0.39	0.44	0.53	0.69	1.14	0.38
EST (NON_FAM_FIRM)											
Median	0.01	0.10	0.19	0.25	0.31	0.36	0.43	0.51	0.63	0.88	0.37
Mean	-0.05	0.08	0.17	0.24	0.32	0.37	0.42	0.52	0.67	1.08	0.38
FE (NON_FAM_FIRM)											
Median	-0.11	0.00	0.00	0.00	0.02	0.02	0.01	0.02	0.02	0.06	0.00
Mean	0.00	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.02	0.02	0.01
FE (95 % Decile, NON_FAM_FIRM)	0.15	0.11	0.13	0.13	0.14	0.20	0.14	0.14	0.18	0.29	0.16
FE (5 % Decile, NON_FAM_FIRM)	-0.37	-0.22	-0.16	-0.15	-0.07	-0.09	-0.09	-0.08	-0.07	-0.09	-0.14
|BDWH| NON_FAM_FIRM	0.52	0.33	0.28	0.27	0.21	0.28	0.23	0.22	0.25	0.38	0.30
TFE NON_FAM_FIRM	-	-	-	-	-	-	-	-	-	-	2.98

Table 3: Abnormal accruals (ABEM) for family and non-family firms, in US$ millions, distributed over ten share price deciles, for years 1996 to 2010

Variable \\ Decile (PRANGE)	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Mean
PRICE	4.9	10.2	14.9	18.9	23.1	27.5	32.7	39.3	49.0	69.3	29
N (all firms)	1.531	1.528	1.529	1.536	1.520	1.529	1.531	1.527	1.529	1.528	1.529
Percentage (FAM_FIRM)	40%	46%	47%	47%	45%	45%	41%	40%	40%	37%	43%
N (FAM_FIRM)	605	707	719	718	683	685	628	616	616	559	654
| FAM_FIRM_MEAN ABEM |	270.5	321.3	276.2	163.1	160.0	227.3	215.5	224.3	401.3	552.7	281
Percentage (NON_FAM_FIRM)	60%	54%	53%	53%	55%	55%	59%	60%	60%	63%	57%
N (NON_FAM_FIRM)	926	821	810	818	837	844	903	911	913	969	875
| NON_FAM_FIRM_MEAN ABEM |	199.3	255.1	339.1	303.5	346.0	330.9	447.5	572.7	545.8	1222.4	456

Table 4: Industry distribution of family firms, and non-family counterparts, by mean and corresponding first-quarter absolute forecast errors (FE), for years 1996 to 2010

Industry sector	Mean (FAM_FIRM)	Std. Error (FAM_FIRM)	|FE| (FAM_FIRM)	Std. Error (FAM_FIRM)	|FE| (NON_FAM_FIRM)	Std. Error (NON_FAM_FIRM)
Textiles, Apparel & Footwear	49.59%	2.03%	0.07	0.01	0.07	0.01
Oil and Petroleum Products	46.61%	1.94%	0.08	0.01	0.09	0.01
Transportation	45.93%	1.78%	0.00	0.04	0.12	0.03
Automobiles	44.86%	2.49%	0.08	0.01	0.05	0.01
Other	44.08%	0.60%	0.04	0.00	0.05	0.00
Construction and Construction Materials	43.43%	1.81%	0.20	0.04	0.15	0.03
Machinery and Business Equipment	41.37%	0.88%	0.05	0.00	0.05	0.00
Retail Stores	40.33%	1.11%	0.03	0.00	0.04	0.01
Drugs, Soap, Perfum, Tobacco	38.79%	1.72%	0.07	0.01	0.04	0.00
Food	36.12%	1.75%	0.07	0.01	0.06	0.01
Consumer Durables	34.68%	2.09%	0.06	0.01	0.07	0.01
Banks, Insurances, etc.	30.17%	4.28%	0.05	0.03	0.05	0.01
Fabricated Products	27.82%	3.90%	0.04	0.01	0.06	0.01
Chemicals	26.96%	2.20%	0.06	0.02	0.07	0.01
Steel Works Etc.	26.15%	2.44%	0.05	0.01	0.08	0.01
Utilities	21.93%	3.89%	0.06	0.01	0.07	0.01
Mining and Minerals	16.11%	2.54%	0.13	0.04	0.12	0.02
Mean	**36.17%**	**2.20%**	**0.07**	**0.01**	**0.07**	**0.01**
Median	**38.79%**	**2.03%**	**0.06**	**0.01**	**0.07**	**0.01**

VARIABLES	(1) FE_Q1EPS_ABS	(2) FE_Q4EPS_ABS
FAM_FIRM	-0.0164**	-0.0207***
	(0.00661)	(0.00687)
PRICE	0.00156**	0.000248**
	(0.000616)	(0.000112)
DOWN	-0.00200	-0.00419
	(0.00202)	(0.00255)
MBE_PAST_2	-0.00664***	-0.00683***
	(0.00160)	(0.00200)
ABN_ACCRUALS	-0.000915	-0.00811**
	(0.00278)	(0.00324)
PERF	-0.00291	-0.0129***
	(0.00206)	(0.00330)
SIZE	0.0181***	0.0304***
	(0.00422)	(0.00537)
LOSS	0.0138***	0.0304***
	(0.00453)	(0.00544)
Constant	0.0449***	0.0630***
	(0.00444)	(0.00525)
Observations	5,728	9,212
Firm-fixed effects	yes	yes
Industry-fixed effects†	no	no
Year-fixed effects/Other Controls†	yes	yes
R-squared	0.023	0.047
Number of Code	950	979

Table 5: Firm-fixed regressions on (1) Q1 and (2) Q4 EPS absolute forecast errors, for years 1996 to 2010. Share prices (PRICE) and downward revisions (DOWN) as beginning of year for Q1, and at year-end announcement for Q4 results. LHS variables winsorized at one percent significance level. †Industry- and year-fixed effects as well as other controls (e.g., for revenue growth) have been applied in the estimation of downward analyst revisions regressions and are omitted to avoid regression attenuation bias (Aigner, 1973; Frost & Thompson, 2000; Phillips & Smith, 1991). Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

4.4. Discussion

We can discuss our findings along a categorization of two main groups: (1) The three suspicious findings (same level earnings compression with scale, comparable amplitudes of analyst forecast pessimism, same (or even tighter) total forecast errors) are in contrast to the assumed intrinsic attributes of family firms. (2) The three more expected results (lower levels of discretionary accruals in family firms, higher levels of earnings adjustments for non-family firms, comparably higher net income volatility for family firms) do mirror previous literature more precisely as they culminate into the 'good company' image family firms are largely attached with (Anderson & Reeb, 2003a; Berrone et al., 2012, 2010).

4.4.1. EPS Compression, Total Forecast Error (TFE), and Analyst Forecast Pessimism (ANALYST_P)

Regarding earnings compression with scale, we argue that there is a distinct desire – for both family firms and non-family counterparts – to compress earnings variation in cents per share (except for the cheapest and most expensive stocks). Although this finding is well documented for firms overall (cf. Cheong & Thomas, 2011; Degeorge et al., 1999), we are very surprised that the variability is equally low for family firms vis-à-vis firms without any involvement of founders or their families, especially when looking per quarter earnings. Conceptually, family firms are assumed to be those firms disregarding the importance of quarterly results. This expectation stems from their assumed long-term perspective and the broader incentives, e.g., the successful hand-over to a next generation, or the preservation of reputational capital. These aspects are generally conceptualized in the SEW theory (Berrone et al., 2012, 2010). Linking the theory to our findings, we have to assume that for large, publicly listed and analyst-followed family firms the long-term aspects are of minor importance. In those firms, SEW considerations may rank after stock market expectations.

Second, with regard to the similarity in terms of analyst forecast pessimism, we can imagine two competing arguments. First, assuming that non-family firms successfully manage earnings and participate in the earnings game, family firms could *accidentally* profit from excessive forecast pessimism to account for their distinct ownership or management profile. Most likely, the family firm characteristics of each firm are well known among analysts (e.g., board compositions, or the respective shareholder profiles and stock distributions). Possibly, analysts anticipate family firm reactions and provide them with less accurate and less ambitious forecasts. Alternatively, although analysts may lack the incentive to adhere to managerial earnings guidance in family firms, they might still associate family firms with an abnormally high level of corporate opacity (Anderson et al., 2009; Bianco et al., 2013) and give forecasts which are less accurate and less ambitious *by nature*. Second, family firm analysts may be equally guided towards lower earnings benchmarks when compared to non-family firm analysts. As described, within the earnings game, delivering earnings surprises provides short-term advantages for managers, investors, and analysts alike (Bartov et al., 2002; Kasznik & McNichols, 2002; Matsumoto, 2002). But, family firms – in particular firms with founding family ownership – can be assumed to lack sufficient levels of transient short-term investors to drive the earnings game. However, recent publications clearly associated increasing median EPS forecast error with differential analyst downward guidance in high price firms (Cheong & Thomas, 2014). Following this argument, family firms are just as likely to participate in the earnings game as any other firm.

Still, both theories would not necessarily explain why the level of forecast guidance is a function of share price; i.e., strongly increases with share price growth (as also low price firms – assuming they participate in the earnings game – would profit from pessimistic forecasts). In any case, we note that the similarities are suspiciously high between family firms and non-

family corporations – and certainly higher than expected ex ante.

Third and finally, with regard to the smaller total forecast error, the observations allow in principle for two different arguments: First, family firms are using managerial techniques to manage earnings equally (or even more) often versus firms without family involvement. This however would contradict previous publications and established theory on family firm behavior (Achleitner et al., 2014; Berrone et al., 2012, 2010; Martin et al., 2014). Alternatively, family firms are influenced by other factors (except for industry characteristics) leading to smoother earnings trajectories. We can also imagine informational quality to drive smaller forecast errors but remain puzzled about the interplay of this argument with the earnings game (Ali et al., 2007); as that finding would support more earnings games being played in family firms.

4.4.2. Accruals-based Earnings Management (ABEM), US GAAP vs. Street-adjusted EPS, Revenue (REVCH) and Net Income (NICH) Volatility

Shifting our focus to the level of managerial earnings adjustments, we find that our results are not likely to be driven by intentional earnings smoothing. With our observations at hand, managerial myopia (in the form of EPS smoothing) can be rejected as the source of the price-distributed forecast error trajectories we observe. First, for family firms, the amount of abnormal accruals is in accentuated contrast to the compression of forecast errors. For non-family firms however, the exact opposite is true: The abnormally high and increasing level of abnormal accruals mirrors the compression of forecast errors over time. Consequently, and in line with the broader literature on earnings management in family firms, we can exclude that ABEM is the root cause of forecast error compression. Second, we examine the level of discretionary earnings adjustments, i.e., the difference between US GAAP and street-adjusted earnings. We show that the level of intentional smoothing between the two earnings figures is substantially higher in non-family firms compared to family counterparts. Third, we analyze

volatility differentials between revenue and net income results of the two firm types. We show that – only for family firms – the level of net income volatility mirrors the volatility of corresponding revenues, indicating less managerial intervention than in non-family firms. For that reason and following from the descriptive analysis, we argue that, overall, managerial myopia does not influence the price-distributed forecast error trajectory in family firms.

4.5. Robustness Tests (Non-followed Firms)

The patterns of some of our results are both challenging and counter-intuitive, which is why we perform robustness tests to underpin the relevance of our findings. As we argue in favor of both analyst forecast pessimism (ANALYST_P) and earnings smoothing to achieve earnings targets in non-family firms, we cross-check our results against firms not followed by analysts. Similar to the tests performed under Section 4.3 we have applied measures based on COMPUSTAT numbers. We check for the variation of earnings with scale for non-followed (non-) family firms (Figures 16 and 17). We find that – for both family firms and counterparts – distinct patterns of earnings smoothing are not observable; i.e., variation with scale is very bumpy. Non-followed firm EPS levels are unevenly distributed across price deciles with high and sometimes extreme amplitudes of mainly positive variation. We note that the variation is higher for non-family, non-followed firms but find family firm variation still to be substantial. Our result is also robust to the inclusion of controls such as firm size both on an absolute (comparable mean revenue values for non-followed and followed firms) and relative basis (as indicated by the price-scaled distribution).[27] As a result, we reiterate to make a distinction between both family firms and non-family firms as well as followed and non-followed corporations.

[27] The mean total revenue value for followed firms is $4,406.6 million, and $4,249.8 million for non-followed corporations.

4.6. Conclusion

In the recent past, academics have found EPS forecast errors – i.e., the difference between actual earnings and analyst consensus estimates prior to results release – to lack variability with share price scale (Cheong & Thomas, 2011; Degeorge et al., 1999) and presented earnings smoothing as the most likely explanation. Importantly, these researchers did not deflate forecast errors by price to control for size effects.

In this paper we have applied this new methodology to family firms and gained new insights and very surprising counter-intuitive results. By using undeflated forecast errors – distributed across ten equally large share price deciles – we detected smallest levels of managerial myopia in order to meet analyst earnings benchmarks; a requirement to meet investor, analyst, and manager incentives within the earnings game (Athanasakou et al., 2011; Bartov et al., 2002; Matsumoto, 2002).

Surprisingly, we find that family firms are not that much different to non-family firms in the analyst-manager interaction. We find that (1) family firms equally compress EPS volatility with rising share prices when compared to non-family firms. In other words, they exhibit a distinct preference to report small earnings surprises over percentage-of-share-price surprises. For instance, we see median share prices increasing by factor 14 from the first to the last decile. However, family firm forecast error bandwidths (i.e., the absolute difference between the five and 95 percentile of forecast errors) only double from $0.27 to $0.48 – making a substantial EPS forecast error compression very likely (Cheong & Thomas, 2011).

We also find that – suspiciously – (2) analysts are equally pessimistic for family firms and counterparts with rising share prices. For large price firms, analysts systematically undershoot earnings estimates, allowing managers to beat targets – and investors realize short-term returns (Athanasakou et al., 2011; Barth et al., 1999; Kasznik & McNichols, 2002;

Matsumoto, 2002). As recent publications show (Cheong & Thomas, 2014), this may be a result of equally high levels of analyst forecast guidance in family and non-family corporations. Consequently, family firms would participate in the earnings game as much as non-family corporations.

However, in line with the assumptions on family firms in academia (Berrone et al., 2012, 2010), this observation is not supported by intentional earnings smoothing (i.e., earnings management). We provide further evidence that family firms (3) use less discretionary accruals, (4) largely refrain from making street-adjustments to US GAAP earnings, and (5) exhibit less managerial intervention when reducing volatility in the transition process from revenue numbers to net income results.

As we created the largest family firm data set available (all S&P 1500 firms between 1996 and 2010 have been analyzed, resulting in 25,020 observations), our findings are relevant in several important dimensions. First, we posit that previous research results on earnings management in family firms may be biased by the respective methodology applied. Most existing publications use accounting information from balance sheet metrics (Achleitner et al., 2014; T.-Y. Chen, Gu, et al., 2014) and create a largely positive picture on family firm behavior in the context of earnings smoothing and/or manipulation. By using a different strand of research methodology we challenge these results as family firms profit from opportunistic analyst behavior in the same magnitude as non-family firms.

Second, in differentiation to non-analyst-followed firms, we also propose to introduce a distinct line when conducting research and discussing family firms. Comparing followed and non-followed firms, and taking our overall findings into consideration, we observe clear patterns after which large analyst-followed family firms mirror the attributes of large analyst-followed non-family firms substantially more closely than those of small non-followed family

firms. As mentioned, we see high similarities between large non-family and family firms when comparing the level of EPS compression with scale, or the magnitudes of analyst forecast pessimism. Accordingly, widely accepted views on family firm behavior have to be carefully recalibrated when applied to the largest US corporations.

Third and finally, we see substantial room for further empirical research. First, our findings are largely descriptive. Conducting empirical research on our results is certainly of highest value for the newly emerging literature stream on price-distributed forecast errors. Second, we encourage researchers to shift their focus to the disentanglement of price-scaled forecast errors in general. In contrast to practitioners, most researchers divide forecast error by share prices before analyzing forecast error evolution (Ali et al., 2007; Anderson, Reeb, et al., 2012; Lang & Lundholm, 1996). Similar to Cheong & Thomas (2011) we motivate to undeflate forecast errors and distribute them by important firm characteristics apart from share price (e.g., firm age, or leverage). Hereby, new potential insights – not only on family firms – can rightfully be expected.

5. Conclusion

Financial reporting integrity is a core prerequisite of functioning capital markets, necessary to overcome the informational barrier between company insiders (managers) and the outside world (all conceivable stakeholders). Market participants are expected to act upon the financial information received and the picture constructed by reported numbers (Hines, 1988). Consequently, the efficiency of capital markets is diminished at the point where informational asymmetries arise among market participants (Fama, 1970). What is known as the earnings or numbers game (Levitt, 1998) describes the extraction of private (exclusive) rents of those informational asymmetries in the earnings announcements process. Managers, investors, and analysts participate and fuel the game in order to achieve private gains – using earnings management and forecast guidance; all at the abstract cost of the aforementioned market integrity, and at the direct expense of unsophisticated retail investors. As a consequence the latter group, not being aware of that game taking place, is trading on information which they believe to be accurate but which is actually distorted. The earnings game puts market integrity at severe risk, potentially hindering capital markets to efficiently allocate capital in the long run.

This dissertation is the first to address the earnings game in a very special type of companies, namely family firms. We show that family firms – in particular those firms where family influence stems from ownership (and not necessarily management) – are significantly less likely to participate in the earnings game. Analyzing various stages of the earnings game, earnings management, and the analyst-management interaction, we not only provide evidence that family firms abstain from the creation of informational asymmetries but also show that they are more honest when reporting and disclosing financial information. We argue to have found a central difference between family firms and their counterparts in the family firm-specific

socioemotional wealth (SEW) endowment. According to SEW theory (Berrone et al., 2012, 2010; Gómez-Mejía et al., 2007), family firms preserve and enhance their superior reputation and image, positive long-term relationships with stakeholders, and unique capability to hand over the organization to a descending generations. It is this particular set of incentives which makes family firms act both more long-term (avoiding managerial myopia) and risk averse – and therefore abstaining from the earnings game.

However, we also make an important contrary contribution to the literature. We are able to show that previous findings of lower earnings management in family firms (Achleitner et al., 2014; Jiraporn & DaDalt, 2009; Martin et al., 2014) are highly contingent upon the methodologies applied. As some of our results are speaking in favor of no (or, at maximum tiniest) differences between non-family and family firms, we question the generality of the positive image which family firms are largely associated with. It appears that – in our data set of large publicly traded, analyst-followed firms – the differences between family firms and counterparts are substantially smaller than between large and small (private, or non-followed) family firms.

Constituting about a third of publicly listed US firms (Anderson & Reeb, 2003a), family firms account for an even larger share of private firms, and eventually, represent the majority of all firms globally (Burkart et al., 2003). Research on family firms has proliferated in recent decades and expanded the prior focus on agency contracts between managers and owners (Fama & Jensen, 1983; Jensen & Meckling, 1976) to also account for the particularities within the different shareholder groups. On the one hand, family firms are seen as a source of opacity and entrenchment in information flows (Anderson et al., 2009; Bennedsen et al., 2007; Schmid, 2013; Wang, 2006). On the other hand, numerous research publications have also proven family firms to be more informative, successful and long-term oriented than corporations without any

family influence (Anderson & Reeb, 2003a; Kappes & Schmid, 2013; Kim et al., 2014; Schmid et al., 2014; Wang, 2006). In particular, their behavior with regard to earnings management and numbers manipulation is found to be more conservative and trustworthy overall (Achleitner et al., 2014; Jiraporn & DaDalt, 2009; Martin et al., 2014).

We investigated family firm behavior with the presumably largest dataset available in current academia. Having analyzed family involvement on ownership and management levels on all constituents of the S&P 1500 index over 1996 to 2010, we expand the scope and depth of well-established publications considerably (Ali et al., 2007; Anderson & Reeb, 2003a, 2004). Not only have we applied a five percent threshold level to either founder and/or founder descendant total voting rights to assign family ownership status (Anderson & Reeb, 2003a), but we have also documented family involvement for a total of four management roles: The founder as (1) CEO or (2) board member, (3) a family member as CEO or, finally, (4) a constituent of the management board. Accordingly, we gained six family firm variables (and thereof also a large number of derived and joint-variable family definitions) on a total of 25,020 firm-year observations, from 1,668 companies. The panel data set is enriched by required financial reporting data, stock prices, and analyst estimates.

We have assessed family firm behavior, the family firm impact on various forms of earnings management, and the analyst-management interaction in the earnings process throughout the three papers of this dissertation. In the first paper 'The Earnings Game in Family Firms' we investigate how family firms and counterparts perform against analyst benchmarks. We focus on the particular area of zero earnings surprises, i.e., where companies just-hit (surpass), or marginally fail short of earnings targets (Athanasakou et al., 2011; Dechow et al., 2000; Doyle et al., 2013). We show that family firms are less likely to meet these decisive benchmarks although the importance to deliver positive cent surprises is frequently documented

(Athanasakou et al., 2011; Bartov et al., 2002; Cheong & Thomas, 2011). This is particularly interesting as the costs of meeting benchmarks by manipulating earnings is relatively small when one's earnings are already slightly below the benchmark (as we refer to adjustments at the second decimal place). Our observation holds especially true for family-owned companies, i.e., those firms where family firm status is not necessarily achieved by management involvement. We therefore attribute an *integrity effect* to family ownership as those firms owned by founders or their descending families can be assumed to (1) either disregard analyst forecast benchmarks (avoiding managerial myopia, focusing on long-term value creation), and/or (2) willingly report *true* numbers unable to beat benchmarks. Interestingly, our findings do not hold for firms where family involvement is attributed to management responsibilities. We interpret this result as an indicator for high market pressure to deliver positive earnings results – potentially as high as in any non-family firm.

Based on the first paper, we draw two important conclusions. First, in contrast to established literature on market development and minority shareholder protection (La Porta et al., 1999, 2000) we see advantages for all shareholders once family influence is secured through ownership involvement. Frequently, family ownership is associated with, e.g., the potential squeeze-out of minority shareholders, or enhanced informational entrenchment (Wang, 2006). We argue against this assessment of family ownership as we assume minority shareholders, and in particular retail investors, to profit from better earnings quality (i.e., informational quality) under family influence.

Second, as we see differential evidence for family-owned and family-managed firms, we recommend to conduct a more detailed examination of family firm characteristics in earnings management research to come. In particular, the role of family managers appears interesting. Do the incentives and objectives of family firms change once family managers play

an active role in large publicly traded, analyst-followed firms? Do family managers face more or less ambitious analyst estimates vis-à-vis non-family managers? Or is family management an irrelevant distinction as the relevant decisions are taken on the ownership level? These and other questions remain an interesting and relevant array for future research.

In the second paper 'The Impact of Governance Legislation on Earnings Management in Family Firms' we examine the impact of the introduction of the Sarbanes-Oxley Act (2002) on earnings management in family firms and their counterparts. SOX increased regulatory standards, aiming at increased accounting accuracy after a wave of prominent accounting and fraud scandals in the United States (Adelphia, Enron, WorldCom). We find that only family firms react to the SOX implementation with a significant reduction in accruals-based earnings management. We conclude that this observation stems from a particular risk aversion in family firms and see their behavior explained by their desire to preserve and enhance their SEW. Family firms are uniquely endowed with a set of specific assets, namely a superior reputation, positive relations to external and internal stakeholders, and an ability to hand-over a company to a descending generation (Berrone et al., 2012, 2010; Fernando, Schneible, & Suh, 2014; Gómez-Mejía et al., 2007). In order to preserve this endowment we assume family firms to seek to avoid the risks associated with potential earnings manipulation in the post-SOX world (e.g., public scrutiny, regulatory fines for managerial misconduct, or an overall loss in reputation). As the effectiveness of SOX in the reduction of accruals-based earnings management has been widely documented (Bartov & Cohen, 2009; D. A. Cohen et al., 2008; Lobo & Zhou, 2006; Wilson, 2013) but family characteristics remained unconsidered, we posit that previous research results exhibit an unobserved family firm bias.

Finally, we also argue that family firm behavior is not *per se* risk averse – at least as accruals-based earnings management is concerned: Although we find family firms to report

lower levels of real-earnings management throughout the panel period, the impact of SOX on accruals-based earnings management is perfectly visible. Hence, we argue that – to reduce the application of earnings management techniques – an exogenous shock was required for family firms to react. For that reason we encourage to assess the role of family firm characteristics in greatest detail, this includes avoiding the application of a family firm *bonus* (e.g., in reputation, or when assessing company earnings) ex ante. In summary, also the accuracy of family firm accounting information should not be taken for granted.

In the third paper 'Examining EPS Forecast Error in Family Firms: Counter-intuitive Evidence from a Price-distributed Analysis' we examine the relationship between analyst estimates and actual earnings (i.e., analyst forecast errors) in family firms. Most importantly, we apply a more granular and new methodology to forecast error research – with counter-intuitive results. Unlike researchers, practitioners do not deflate forecast errors by price in order to adjust for differences in scale (Ali et al., 2007; Anderson, Reeb, et al., 2012; Lang & Lundholm, 1996). We follow this approach as it substantially increases the likelihood of forecast error detection. Consequently and similar to researchers who already discovered a lacking forecast error variability with scale (Cheong & Thomas, 2011; Degeorge et al., 1999), we instead distribute forecast errors along ten share price deciles.

We find first that family firms and non-family counterparts suppress EPS volatility with increasing price scale in comparable magnitudes. Forecast error variability of both firm types remains equally flat and increases only under-proportionally with stock size. We observe, for example, that median share prices from the smallest to the largest decile grow by factor 14 (i.e., from \$4.91 to \$69.28). However, family firm forecast error forecast bandwidth (i.e., the absolute difference between the five and 95 percentile of forecast errors) only doubles (from \$0.27 to \$0.48) while it remained largely flat from the 1st to 9th decile – and only increases in

the 10th decile. The trajectory for non-family firms is very similar. From these results it can be inferred that family firms have a distinct desire to smooth EPS results with increasing share price; in the same magnitude as non-family firms.

Second, we observe that family firms profit from analyst forecast pessimism in the same way as non-family firms. Median forecast errors for both family firms and non-family companies are positive for the large majority of share price deciles, implying a systematic under-estimation of analysts (Cheong & Thomas, 2011). Moreover, this effect intensifies for both firm types in the highest share price categories; i.e., forecast pessimism (allowing for target achievability, and subsequent positive earnings surprises) is highest for large price stocks. Both findings strongly indicate forecast guidance taking place in family firms in the same way as in non-family counterparts. Conceptually, this evidence is underpinned by recent publications, putting increasing EPS forecast error medians in the context of differential walk-downs of analyst targets (i.e., forecast guidance; Cheong & Thomas, 2014). In other words, according to this evidence, family firms play the earnings game as much as anyone else.

But, we show that – at least in terms of earnings management – this is not likely to be the correct interpretation. First, we show that family firms use substantially lower amounts of abnormal accruals to manage earnings. Whereas for family firms abnormal accruals increase only moderately with increasing share price, the increase for non-family firms is almost exponential with price growth – speaking in favor of considerable accruals-based earnings management.

Second, we document that family firms and non-family corporations face comparable levels of revenue volatility – but only for family firms the revenue trajectory is mirrored in net income volatility. Accordingly, we can assume higher levels of (opportunistic) managerial intervention to smooth earnings in non-family firms. Interestingly, this finding does not hold

for non-followed (i.e., smaller) family firms in our public firm data set. More precisely, public corporations without analyst coverage have a higher revenue and net income volatility per se – regardless of a potential family firm identity.

Third and finally, we compare levels of US GAAP earnings and street-adjusted numbers (which are subject to managerial discretion). We observe – again – that non-family firms adjust street numbers opportunistically; i.e., flatten out volatility observable in US GAAP accounting earnings.

We draw three central conclusions from our results. First, we note that within family firms large discrepancies exist. Large family firms in our dataset exhibit higher similarities with large non-family firms than they do with small family firms (e.g., when analyst forecast pessimism, or EPS compression with scale are concerned). Hence, we urge researchers not to take the well-established differentiation between public and private family firms only for granted (Murphy, 2005; Ramírez, Waldman, & Lasser, 1991). A more granular examination – at least within publicly traded firms – appears to be useful and is strongly recommended.

Second, we argue that the detection of managerial earnings smoothing (by earnings management, or forecast guidance) is – to a very large degree – contingent upon the methodology applied. In the past, several (family firm) researchers have focused on the analysis of balance sheet parameters to detect real and accruals-based earnings management (e.g., Achleitner et al., 2014; Martin et al., 2014). By our results, we are convinced that previous findings could be enriched by the application of forecast error analysis. Evidence may even differ and turn out to be in conflict with prior results – in that case, assessments on the basis of accounting metrics only may even create a false (and misleading) picture of reality (Hines, 1988).

Third and finally, we argue to have found sufficient evidence of the earnings game being

played in publicly traded non-family firms. As non-family enterprises represent the majority of firms in the S&P 1500 index, we see that the earnings game is not only a theoretical concept – its key elements (earnings management, and forecast guidance) are observable in practice. The earnings game itself comes at the cost of an erosion of financial market integrity (Levitt, 1998) and believing in the trustworthiness of reported numbers becomes irrational. In the short-run, only unsophisticated retail investors bear the cost of not being invited to play the game. They remain uninformed and face an asymmetric information environment (Fama, 1970). In the long-run however, earnings management and forecast guidance bear the potential to endanger financial markets as a whole as even financial professionals may no longer believe in – and trade on – repeatedly adjusted numbers (Levitt, 1998). Ending the earnings game by stopping analyst forecast provision, limiting accounting flexibility, and a change in managerial incentives is therefore a prerequisite of functioning capital markets of the future.

Our research as a whole faces several limitations. First, throughout all papers, we focus on the United States as the largest, most liquid, and most developed capital market.[28] At the same time, it has been reported that family firms constitute about one-third of the country's largest firms (Anderson & Reeb, 2003a). Moreover, the level of investor protection is arguably one of the highest globally (Reese & Weisbach, 2002). Hence, our research would profit from a comparison with countries exhibiting (i.) lower levels of investor protection, (ii.) better or worse states of market development (La Porta et al., 1999), and (iii.) a comparable or even higher relevance of family firms.

Second, we defined family firm characteristics by the use of binary variables. Precisely, family firm status was granted to those firms matching our criteria (e.g., for family ownership, founders or descending families owning five percent of total voting rights). For a more detailed

[28] For further information, please refer to the World Bank's Global Financial Development Report 2014, available under https://openknowledge.worldbank.org/bitstream/handle/10986/16238/9780821399859.pdf?sequence=4.

analysis the use of a continuous variable is recommended in research to come. Hereby, one could investigate the impact of block holders, or research more granularly the evolution of family firm status over time.

Third, we do not address market reactions in our analysis. What are the implication on stock returns on less (more) earnings games being played in family (non-family) firms? Do investors profit to the expected extent? Will the market sufficiently differentiate between genuine beaters and one-time hitters? Those and related questions leave room for substantial research to come. Although some works have been published on investor returns in the earnings game, a differentiation for family firms has not been performed (Athanasakou et al., 2011; Kasznik & McNichols, 2002). Having shed light on earnings management in family firms, this field of research will remain extremely interesting for some time to come and we are excited about future research in this area.

Fourth and finally, we analyze the earnings game (only) from an empirical perspective. To consider strategies, objectives, and incentives family firm managers face in more detail, we suggest to conduct an interview-based study and combine those findings with empirical evidence from market and balance sheet data. A highly relevant and well-cited survey exists for earnings management and analyst benchmark beating in all firms (Graham et al., 2005). For family firms specifically, this dissertation lacks this level of clarity on behavioral observations and individual incentives but may attract research to come. In this context, we can also imagine to include data on payment schemes, potential options grants, or comparable executive incentives in the analysis. As the impact on earnings surprises of bonus schemes and in-the-money options has already been documented (Efendi et al., 2007; Healy, 1985), we expect interesting insights when differentiating, for example, between family-managed and family-owned firms.

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