Family Ownership and the Accrual Anomaly: International Evidence

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Abstract

Motivated by the unique nature of family firms and the puzzling persistence of the accrual anomaly worldwide, we study the presence and the economic significance of the accrual anomaly separately for family and non-family firms using an international sample of 27,117 observations from 34 capital markets. At an individual stock level of analysis, we show the negative relation of accruals with future earnings performance and stock returns is more pronounced within family firms, while it is highly attenuated within non-family firms. Evidence from portfolio-level analysis summarizes the economic significance of this finding. Overall, we conclude that agency problems and barriers to arbitrage could be key explanatory factors regarding the occurrence and the persistence of the anomaly within family firms.

1. Introduction

Family ownership is an important feature that could drive stock prices and contracts with implications for firm misvaluation. While early literature links family ownership to security mispricing through a failure by market participants to understand that the concentration of ownership in family hands may both have positive and negative effects on economic efficiency, research investigating the consequences of family ownership on the predictive ability on standard determinants in the cross-section of stock returns, has received very limited attention. Riding this challenge for research, we study the impact of family ownership on stock return predictability attributable to accounting accruals. We focus on accruals due to its paramount importance in financial reporting and market efficiency.

Sloan (1996) in his seminal paper shows that accruals are negatively related with future profitability and stock returns, a regularity labelled in the literature as the accrual anomaly. A vast majority of papers has examined the accrual anomaly and found that it is the most robust anomaly ever discovered in various aspects such as the measurement of accruals (e.g., Richardson et al. 2005), the composition and characteristics of the sample under investigation (e.g., Pincus et al. 2007), methodological issues (e.g., Kraft et al. 2007), choice of abnormal returns (e.g., Hirshleifer et al. 2009), time (e.g., Greene et al. 2009), and other anomalies (e.g., Desai et al. 2004) among others.

The underlying origins of the accrual anomaly are far to be resolved. The first path of prior research follows Sloan's (1996) conjecture that the anomaly arises from investors' earnings fixation and their failure to appreciate the lower persistence of accruals. In this line, the inability to adjust for the implications of potential earnings management (e.g., Xie, 2001) and/or extrapolative bias concerning future growth (e.g., Bradshaw et al., 2001) can be considered as possible underlying causes. The second stream of the research argues that the anomaly is driven by a misunderstanding of diminishing marginal returns to new investment and related overinvestment (e.g., Fairfield et al. 2003). One could argue that the latter explanation could co-exist with measurement error inherent in accruals, since generally accepted accounting principles (GAAP) require the immediate impairment of unprofitable investments (see Dechow et al. 2008). The third stream of the research claims that it arises from limits to arbitrage (e.g., Mashruwala et al. 2006), which could be consistent with any mispricing explanation of the anomaly.

Although the literature has examined the impact of ownership concentration and control on corporate performance (Anderson and Reeb, 2003; Bennedsen et al., 2007; Maury, 2006; Villalonga and Amit, 2006), there is scant evidence of whether and how it can affect an

asset pricing regularity with respect to accounting information. In this paper, we attempt to fill this gap in the literature, by examining the impact of family ownership and control on the occurrence and the magnitude of the accrual anomaly. Based on theoretical and empirical research on various characteristics of family firms, we propose a competing hypothesis for the impact of family ownership on the anomaly.

In particular, family ownership could affect the accrual anomaly through the following channels: agency costs, information uncertainty and limits to arbitrage. Regarding agency costs within family firms, the existing literature suggests an incentive effect (an entrenchment effect), which in turn implies a weaker (stronger) accrual anomaly. Further, there are studies suggesting richer information quality and less severe arbitrage restrictions within family firms, while other studies the opposite. Based on the former (latter) studies, the accrual effect on future profitability and stock returns is expected to be less (more) pronounced within family firms. According to the above discussion, it is clear that family ownership could have a significant impact on the magnitude of the accrual anomaly, but the sign of this impact remains under debate. The above discussion leads us to formulate a non-directional hypothesis that there is significant variation on the accrual anomaly between family and non-family firms. Indeed, the anomaly might be weaker or stronger within family firms.

We test our competing hypothesis using an international sample of 27,117 observations from 34 capital markets. The sample consists of 8,118 family firms and 18,999 non-family firms. Our baseline findings can be summarized as follows. Cross-sectional regressions of one-year ahead future profitability on accruals, conditional on current profitability, reveal that the differential persistence coefficient on accruals relative to that of cash flows is six times more negative within family firms compared to the respective coefficient within non-family firms. In particular, the differential persistence coefficient on accruals for non-family firms is equal to -0.044, while for family firms is incrementally more negative by -0.206. Thus, the negative effect of accruals on future earnings performance is more pronounced within family firms.

Further, based on cross-sectional regressions of one-year ahead future returns on accruals, after controlling for current profitability, size and book to market ratio, we show that the pricing coefficient on accruals is highly more negative within family firms compared to the respective coefficient within non-family firms. In particular, the pricing coefficient on accruals for non-family firms is equal to -0.189, while for family firms is incrementally more negative by -0.444. Thus, the negative effect of accruals on future stock price performance is more pronounced within family firms.

The evidence from portfolio-level analysis summarizes the economic significance of the findings from cross-sectional regressions. When we consider all firms included in the sample, we find that the hedge return on a trading strategy taking a long (short) position in firms that report low (high) accruals is equal to 0.081, suggesting a profitable exploitation of the accrual anomaly. However, there is tremendous variation in the magnitude and significance of the hedge return of the strategy between family firms and non-family firms. In particular, the hedge return ranges from 0.187 for family firms to 0.034 for non-family firms. Thus, the profitable exploitation of the accrual anomaly is magnified within family firms, while it is highly attenuated and becomes insignificant at conventional levels within non-family firms.

After establishing that the magnitude of the accrual anomaly is magnified within family firms, we explore potential reasons for it. We focus on earnings management and limits to arbitrage as possible driving forces. When we consider trading strategies on discretionary accruals, we show that the hedge return for the entire sample of stocks is equal to 0.077. Variation in the return earned by the hedge trading strategy on discretionary accruals between family firms and non-family firms is larger than the respective variation on total accruals. The strategy for family firms and non-family firms generates a return of about 0.201 and 0.024, respectively. Thus, the accrual anomaly occurs within family firms, possibly due to market misunderstanding of the executives' discretion over earnings.

When we investigate the performance of interacted trading strategies on both accruals and idiosyncratic volatility, we find stronger return predictability for the subsample that consists of firms with low accruals and low idiosyncratic volatility and firms with high accruals and high idiosyncratic volatility relative to the subsample that consists of firms with low accruals and high idiosyncratic volatility and firms with high accruals and low idiosyncratic volatility. Within the entire population of firms, the hedge return on the former subsample is equal to 0.1, while on the latter subsample is equal to 0.056. Within family firms, the hedge strategy on accruals and idiosyncratic volatility earns a return of about 0.273 and 0.169, for the former subsample and the latter subsample, respectively. Within non-family firms, the stock price performance of the strategy is indistinguishable different from zero, for both subsamples. Thus, the accrual anomaly persists within family firms, possibly due to stronger limits to arbitrage.

Our study makes at least three important contributions to the literature. First, it adds to the ongoing research on the link between ownership structure and stock return predictability, by showing a significant impact of family ownership on the magnitude of the accrual anomaly, an aspect that received limited attention in the existing literature. To the best of our knowledge,

this is the first study to investigate the accrual anomaly across family and non-family firms. Second, besides simply documenting the difference in the magnitude of the accrual anomaly between family and non-family firms, it adds to the literature on the underlying origins of the accrual anomaly, by suggesting that agency problems and barriers to arbitrage could be key explanatory factors regarding the occurrence and the persistence of the anomaly within family firms. Third, it has important practical implications for the investment community, by showing that failure of the market to properly assess firm features such as family ownership, may help on the formation of more profitable trading strategies based on accounting accruals.

The remainder of this paper is organized as follows: Section 2 presents the literature review while Section 3 sets forth the research hypothesis. In Section 4, we provide details about data, sample formation, variable measurement and the research methodology. In Section 5, we critically discuss the results obtained from the empirical analysis while in Section 6 we provide some robustness tests. Section 5 summarizes and concludes our paper.

2. Accounting Information, Family Firms and Future Performance

In this paper, we focus on the informational content of financial statements of family firms in assessing their future performance. The literature on family firms is extensive. Although managerial, entrepreneurial, strategic and international business aspects of family firms have been largely examined, accounting and reporting issues in family companies are relatively unexplored (Prencipe et al., 2014). Prencipe et al. (2014) identify and nicely discuss four theoretical frameworks employed by prior family literature, namely the agency theory, the stewardship theory, the resource-based theory, and the most recent socioemotional wealth theory. In the accounting and finance context though, the discussion about family ownership is mainly centered around the agency conflicts.[1] Studies examining the relationship between family ownership and financial reporting are predominantly focused on the issues of earnings quality, accounting conservatism, voluntary disclosures, corporate governance and firm performance.

[1] Recent studies that apply the socioemotional wealth paradigm in accounting include Achleitner et al., 2014; Gomez- Mejia et al., 2014; Pazzaglia et al., 2013, and Tsao et al., 2019.

Founding family ownership could affect the demand and supply of financial reporting quality in one of the two competing ways: the alignment (incentive) effect and the entrenchment effect (Wang, 2006). According to the alignment hypothesis, family ownership is positively related to financial reporting quality as the reduction of Type I agency conflicts between owners and managers tends to reduce managerial incentives to misreport. Family firms characterized by long-term orientation, higher reputational concerns, lengthy tenures, closer monitor of the management and lower market pressure are expected to face lower risk of manipulation.

According to the opposing entrenchment hypothesis, concentrated ownership beyond a given threshold, increases the risk of wealth expropriation at the expense of minority shareholders (Schulze, Lubatkin, & Dino, 2003). Family firms tend to withhold private information internally and to appoint family members on the board weakening its monitoring role and lowering reliability perceived by the financial markets (Anderson & Reeb, 2003; Ajinkya, Bhojraj, & Sengupta, 2005). [2]

Wang (2006), using a sample of S&P 500 firms, finds that founding family ownership is associated with higher earnings quality (lower abnormal accruals, more informative earnings, and lower persistence of transitory loss components) and that the relationship between family ownership and earnings quality is nonlinear. Quite similarly, Tong (2008) reports that family firms are characterized by lower absolute discretionary accruals, fewer small positive earnings surprises, more informative earnings, and fewer earnings restatements. Similar evidence are provided by Cascino et al. (2010) and Prencipe, Bar-Yosef, Mazzola and Pozza (2011) in the Italian setting. In particular, Cascino et al. (2010) find that family firms convey financial information of higher quality compared to their non-family peers, while Prencipe et al. (2011) provide evidence consistent with lower income smoothing for family firms and particularly so when CEO and Board Chairman are members of the controlling family.

Ali, Chen, and Radhakrishnan (2007) add that family firms set executives' compensation programs that are hardly related to accounting data, report better quality earnings and are more likely to warn for a given magnitude of bad news. However, family firms make

[2] It is worth mentioning that the majority of prior literature distinguishes between family and nonfamily firms by looking at the degree of ownership concentration. Given that family control represents the most common form of concentrated ownership, the assumption is that high ownership concentration should be able to capture family ownership. However, this identification strategy might erroneously classify as family firms, other firms with major block holders such as governmental bodies, hedge funds, pension funds etc. (Cascino, Pugliese, Mussolino, and Sansone, 2010). Our literature review mainly focuses on more recent studies that employ a refined measure of family ownership.

fewer voluntary disclosures about their corporate governance practices, possibly to avoid interference from non-family shareholders. Consistent though with a better information environment for family firms, Ali et al. (2007) find that family firms have larger analyst following, more informative analysts' forecasts, and smaller bid-ask spreads. Chen, Chen and Cheng (2008) provide evidence consistent with S&P 1500 family firms providing fewer earnings forecasts and conference calls, but more earnings warnings.

Drawing on the "family identity" dimension of socioemotional wealth theory, Tsao et al. (2019) find that founding family ownership mitigates myopic R&D investment behavior. The authors argue that families' desire to preserve the family's reputation and ensure transgenerational sustainability leads to their unwillingness to engage in myopic R&D investment behavior that might reduce long-term firm value. [3] This evidence is consistent with Achleitner, Fichtl, Kaserer and Siciliano (2014) who argue for a substitutive association between real earnings management and accrual earnings management in family firms. They find that family firms engage less in real earnings management but more in earnings-decreasing accrual earnings management. More recently, examining a sample of Italian private family firms, Minichilli et al. (2021) find that eponomy is positively associated with financial reporting quality and that this effect is present no matter whether top executive/board members belong to the founding family's first or later generations.

Prior literature also provides evidence consistent with the entrenchment hypothesis. Stockmans, Lybaert, and Voordeckers (2010) find that family firms that attach more importance to nonpecuniary goals and to the preservation of socioemotional wealth engage more in upward earnings management when firm performance is poor. Similar evidence is provided by Ding, Qu, and Zhuang (2011) for Chinese-listed family firms. They find that family firms have less informative earnings, employ less conservative accounting practices[4], and have higher discretionary accruals. These findings are consistent with lower earnings quality for family firms. Using a Taiwanese sample, Yang (2010) finds that earnings management increases with the level of insider ownership in family controlled firms, and decreases with presence of family CEO. Focusing on the effectiveness of independent directors

[3] Consistent with the importance of reputational concerns, Chen et al. (2010) find that publicly listed family firms exhibit less tax aggression.

[4] Chen, Chen, and Cheng (2014) find that conservatism increases with non-CEO family ownership, but not in family firms with founders serving as CEOs.

in monitoring earnings management, Jaggi, Leung, and Gul (2009) and Prencipe & Bar-Yosef (2011) find it to be weaker in family-controlled firms.

Another important line of the family literature focuses on the impact of family ownership on corporate performance (Anderson and Reeb, 2003; Bennedsen et al., 2007; Maury, 2006; Villalonga and Amit, 2006). Anderson and Reeb (2003) document a nonlinear relationship between firm performance and the family stake. In particular, there is an incentive effect at lower levels of control where performance increases with family holdings. However, they find an opposite effect at higher levels of control. Villalonga and Amit (2006) find that superior performance within family firms is less prevalent in firms with disproportionate voting rights. Examining the stock market performance of family firms from eight European countries, Cella (2009) documents significantly positive abnormal returns for family firms. Similar evidence are provided by Fahlenbrach (2009) for U.S. family firms run by a founder-CEO. More recently, Eugster and Isakov (2019) document that Swiss family firms, potentially having more agency problems, earn higher abnormal returns compared to non-family firms.

While the stock returns of family firms might have received a lot of attention, the possible impact of family ownership on the predictive ability of standard determinants of the cross-section of stock returns (e.g., book-to-market ratios, firm capitalization, short- and long-horizon lagged returns, accruals and other growth measures) has been largely ignored. In this paper, we fill this gap in the literature by focusing on the impact of accounting accruals which is associated with the so-called the so-called "accrual anomaly"

The accrual anomaly, first documented by Sloan (1996), refers to the negative relation of accounting accruals with future profitability and stock returns. The anomaly has been identified as one of the most pervasive asset pricing regularities in the U.S. (e.g., Chan et al. 2006; Richardson et al. 2005 ; Dechow et al. 2008) and internationally (e.g., Pincus et al. 2007; Papanastasopoulos, 2014). Notably, the accrual anomaly represents a major challenge to capital market efficiency with respect to accounting information.

3. Hypothesis Development

We study the accrual anomaly separately for family and non-family firms. We are motivated by a desire to seek whether family ownership can affect the occurrence and the magnitude of a prominent stock market anomaly attributable to accounting figures. Recent studies show that features associated with ownership structure, and particularly the identity of the controlling

shareholder (e.g., Lilienfeld – Toal and Ruenzi, 2014; Eugster and Isakov, 2019), might not be fully integrated into stock prices and thus, there are reasons to believe that such features can possibly affect asset pricing regularities attributable to accounting figures. This possibility becomes economically more important, since family firms constitute a large fraction of listed firms worldwide (La Porta et al., 1998; Faccio and Lang, 2002; Carney and Child, 2013).

The existing literature suggests that the concentration of ownership and control could have a significant impact on corporate performance. One stream of the literature (e.g., Anderson and Reeb, 2003; Villalonga and Amit, 2006) focuses on performance metrics related to profitability (e.g., return on assets) and valuation ratios (e.g., Tobin's Q). Another stream of the literature focuses on stock returns. For instance, Lilienfeld – Toal and Ruenzi (2014) show that firms with high CEO ownership outperform firms with low CEO ownership. Both studies claim that their findings cast doubt on market efficiency, suggesting that investors face difficulties in assessing quantitatively features associated with ownership structure and control. Recently, Eugster and Isakov (2019) show that risk-adjusted returns of family firms are significantly higher than those of non-family firms. They claim that the stock price performance of family firms is superior due to a higher risk exposure related to specific agency problems inherent in these firms.[5]

It is reasonable to expect that family ownership could also significantly affect earnings and stock price performance, attributable to financial figures, and particularly accounting accruals. The logic behind this expectation relies on the link of various characteristics of family firms with possible underlying origins of the accrual anomaly.

Regarding the underlying origins of the accrual anomaly, from a mispricing point of view, the most common line of thought goes back to Sloan (1996), who claims that the anomaly arises from investors' fixation on net income number as a whole, and inability to correctly distinguish between the lower persistence of accruals and the higher persistence of cash flows. In this line, expectational errors about future performance (Bradshaw et al., 2001) and/or inability to account the consequences of managerial discretion over earnings (Chan et al., 2006; Dechow and Dichev, 2002; Richardson et al., 2005; Xie, 2001), can be considered as underlying causes.

Other studies follow the hypothesis that the anomaly arises from investors' misunderstanding of diminishing marginal returns to new investment (Fairfield et al., 2003).

[5] Corstjens et al. (2006), Cella (2009), and Fahlenbrach (2009) among others, report also superior stock returns for family firms, but do not provide explanations about their market performance.

In this line, failure to adjust for agency costs due to managerial discretion or managerial over-confidence about the profitability of investments, can be considered as a driving force (Dechow et al., 2008). A third stream of the literature follows the hypothesis that the accrual anomaly arises from barriers to arbitrage (Mashruwala et al. 2006). In this line, limits to arbitrage, such as high idiosyncratic volatility, high transaction costs, and low stock liquidity, can be considered as underlying sources.[6]

The magnitude of the accrual anomaly could differ between family and non-family firms due to the following characteristics associated with family ownership and control: agency problems, information asymmetry and arbitrage restrictions. On the one hand, family firms may suffer from more severe agency problems arising from the conflicts of interests between majority and minority shareholders (i.e., agency problem II), due to the presence of a family as a large shareholder. In this case, large shareholders have strong incentives to manipulate earnings for their own benefits (Wang, 2006), which leads to low earnings quality (Hope et al., 2013). Large shareholders may also have empire building incentives to engage in wasteful capital expenditures to serve their own interests (similar to the arguments in Jensen, 1986). Earnings management and overinvestment practices could co-exist. As argued by Polk and Sapienza (2008), empire building tendency may give rise to additional motives for earnings manipulation to avoid market scrutiny. We need to stress here, that family firms could be considered as a weak form of organization (Morck & Yeung (2003), since often family members control senior management positions and dominate the board of directors (Anderson and Reeb, 2003; Anderson and Reeb, 2004). Given the high level of power that family members have on their firms, if they decide to engage in earnings management and/or overinvestment activities, they can more easily do so (Ali et al. 2007). [7]

Additionally, the information environment in family firms may be poor, since they are more likely to rely on private communication channels rather than public channels. (Boubaker and Labegorre, 2008). Ultimately, private information tends to be held within the family,

[6] From a rational point of view, the accrual anomaly arises as firm executives adjust their investment expenditures upwards (i.e., resulting to a higher level of accruals) in a rational response to the reduction in the discount rate. The latter explanation is consistent with q-theory of investment with real investment frictions (Lyandres et al. 2008; Li et al. 2009, Li and Zhang, 2010), which cannot be directly linked to features associated with ownership structure.

[7] As suggested by La Porta et al. (1997) ownership concentration could be a reflection of poor investor protection. Suboptimal managerial practices such as earnings manipulation and/or investment in value-destroying projects may be more prevalent in settings with poor shareholder protection, where share ownership is less likely to be dispersed (see Burkart, Panunzi, & Shleifer, 2003; Leuz, Nanda, & Wysocki, 2003).

reducing the flow of information to outsiders (Ajinkya et al. 2005). Collins et al. (2003) and Drake et al. (2007), claim that better accounting disclosure could reduce accruals mispricing. At the same time, family members tend to hold undiversified and concentrated equity position in their firms and to have much longer investment horizons, which suggests lower trading volume (i.e., low liquidity) for their stocks. Prado et al. (2016) show that firms with more concentrated ownership exhibit higher costs of shorting. Lower trading volume and higher trading costs in turn implies stronger arbitrage risk.

On the other hand, family firms may suffer from less severe agency problems compared to non-family firms. Higher family involvement may be associated with enhanced monitoring of the management and challenging of decision making in the interest of all shareholders (i.e., agency problem I). In this case, family firms tie less of management compensation to accounting based performance measures (Chen, 2005; Chen et al., 2008) and thus, their reported income numbers are less likely to be manipulated by firm executives (Ali et al. 2007). Families have a long-term orientation on generating value, since their goal is to pass the firm to succeeding generations. In this line, family members enable managers to mitigate myopic investment decisions (Stein, 1988; Stein, 1989; Tsao et al., 2019), and consequently their firms invest more efficiently relative to other firms (James, 1999). We need to stress here, that family firms could be considered as a form of organization with long-term perspectives and reputational concerns (Davis at al. 1997). Given, the presence of owners who exercise long-term control and the lengthy tenure, family firms are more likely associated with the general benefits of stable and long-term management, that have been shown to be stronger motivators to improve firm performance than financial rewards alone (Bennedsen et al. 2007).

Further, according to Ali et al. (2007) family firms provide better accounting disclosure, which is consistent with these firms being subject to less managerial discretion over earnings. Cascino et al. (2010) show that family firms convey financial information of higher quality compared to their non-family peers. Ali et al. (2007) show larger analyst following, more informative analysts' forecasts, and smaller bid-ask spreads for family firms. The latter characteristics are associated with lower information uncertainty and weaker arbitrage restrictions.

To sum up, family firms may face more or less severe agency problems, provide poorer or richer information environment, and have more or less pronounced barriers to arbitrage. Agency costs, limits to arbitrage and information uncertainty have a positive link to the magnitude of the accrual anomaly. Thus, the accrual anomaly might expected to be stronger or

weaker, within family firms relative to non-family firms. This leads to the following non-directional hypothesis:

H1: Family ownership has a significant impact on the magnitude of the accrual anomaly.

4. Sample and Variable Measurement

To construct our sample, we start with all firms available in the NRG Metrics family ownership dataset over the period 2007-2017. NRG Metrics is a newly established, comprehensive database, created by a team of market professionals and academic researchers, that provides corporate governance, ownership, compensation and audit data for a large number of internationally listed firms.[8] We extract financial statement and market data from Worldscope and Datastream.[9] We exclude any closed-end funds, trusts, ADRs, REITs, units of beneficial interest, other financial institutions, and foreign firms from our analyses. Following Ince and Porter (2006), we perform all initial data screenings for basic coding errors. Further, we drop firm-year observations with negative book value of equity, with insufficient data to compute accrual measures, market capitalization, and book-to-market ratio.

Our variables are defined as follows. Following Villalonga and Amit (2006), we define family firms as follows: *FF* takes the value of one if the founder or a member of the family is officer, director or owns >5% of the firm's equity, individually or as a group, zero otherwise. For the accounting variables, we start with the measurement of the traditional total accruals (*TOTACC*). We measure total accruals with the balance sheet approach as the annual change in net operating assets (*NOA*) scaled by the average total assets (*AVGA*):

$$NOA_t = (TA_t - C_t) - (TA_t - MINT_t - OPS_t - TD_t)$$

$$TOTACC_t = \frac{\Delta NOAt}{AVGAt}$$

where TA_t is the total assets, C_t is the cash and cash equivalents, $MINT_t$ is the minority interest, OPS_t is ordinary and preferred shares, and TD_t is the total debt.

Following Artikis and Papanastasopoulos (2016), we compute the current and one year ahead earnings performance as net income (*NI*) deflated by *AVGA*. Moreover, we follow

[8] Recent studies that have used NRG Metrics data include, among others, Delis et al. (2020), Attig et al. (2021), and Cho et al. (2019).
[9] All firm-level accounting and market variables are expressed in US dollars.

authors by computing the free cash flows (*FCF*) as a sum of the following three cash components: (1) the change in *NOA*, which represents the accrual component of earnings; (2) the change in cash and short-term investments; and (3) the difference between debt repayments and debt issuances. We use the discretionary accruals (*DISACC*) as the residuals from the modified Jones model. Market capitalization (*MV*) is measured six months after the fiscal year end, while the book-to-market ratio (*BM*) is equal to the book value of equity divided by the market capitalization at the year-end. To alleviate any possible concerns with respect to extreme values, we winsorize all variables at the top and bottom 1% of their distribution.

Stock returns are inclusive of dividends using the return index (RI) provided by Datastream. *RI* is defined as the theoretical growth in the shareholding unit of equity at the closing price applicable on the ex-dividend rate. The raw equity return for a firm at month j is calculated as $r_j = RI_{j+1} / RI_{j-1}$. To avoid generation of extreme outliers, we follow Ince and Porter (2006) and McLean et al. (2009) and impose three filters. First, we delete all the zero returns from the last observation to the first observation with non-zero returns. Second, we set the returns of two consecutive months as missing if a monthly increase over 300% and a monthly decrease more than 50%, respectively, are observed. Third, we trim monthly returns at the top and bottom 1% of their distributions within each country.

After obtaining the firm-monthly returns, we compute the one-year ahead annual raw stock return (RET_{t+1}) using the compounded 12 monthly buy-and-hold returns. The 12-month return cumulation period begins 6 months after the fiscal year-end. To measure abnormal returns, we follow the matching return approach to a benchmark portfolio, based on market capitalization and book-to-market ratio. In this way, returns are adjusted for size and book-to-market effects. Precisely, the one-year ahead annual abnormal return ($ARET_{t+1}$) is calculated as follows. Each year, firms are first sorted into four quartile portfolios by market capitalization (*MV*). Each of the resulting quartile portfolios are then sorted into four additional quartile portfolios by the book-to-market ratio (*BM*). This procedure results in 16 benchmark portfolios. The matching return is the annual one-year-ahead weighted average return of all firms in each benchmark portfolio. The abnormal return ($ARET_{t+1}$) for a firm is the difference between the raw return (RET_{t+1}) and the matching return of the benchmark portfolio to which the firm belongs. If a firm delists during the period, then the last available return index (RI) before delisting is used to calculate the delisting return and the proceeds are reinvested into the benchmark portfolio.

Regarding the market frictions, we follow Lim and Wei (2011) and compute the idiosyncratic stock volatility (*IVOL*), measured as the standard deviation of the residual values from the following time-series model:

$$R_{i,t} = b_{i0} + b_{i1}R_{M,t} + e_{i,t}$$

where $R_{i,t}$ is the monthly individual stock return and $R_{M,t}$ is the monthly market index return. The model is estimated with 36 months of returns ending in June of year t. All the variables used in our analyses are defined in the Appendix A.

The previously mentioned criteria yield a final sample of 27'117 firm-year observations, from 34 capital markets, with non-missing financial statement and stock-market firm-level data. Table 1 describes the sample composition by country and year. As expected, the U.S. equity market accounts for the largest part of the sample, representing around 27% of the total firm-year observations, followed by the United Kingdom and Japan that represent 8% and 7% of the sample, respectively. Taiwan, Malaysia, and South Korea represent the smallest proportion of our sample. With respect to family ownership, around 30% of our firm-year observations represent family firms.

[Insert Table 1 here]

5. Empirical Findings

In this section, we present the empirical results of the analysis. Table 2 reports the descriptive statistics and mean comparison tests between family and non-family firms for all the variables used in the empirical analysis. Family firms appear to be smaller in size, earn lower stock returns and have more volatile stock performance compared to non-family firms. Although current year earnings performance is not significantly different, family firms report lower profitability in the next year compared to the non-family firms. Family firms report significantly higher (lower) total accruals (free cash flows) compared to non-family firms. Finally, the paired mean comparisons (t-test) show that family firms report significantly higher discretionary accruals and seem to grow slower compared to the non-family firms.

[Insert Table 2 here]

Table 3 presents pair-wise correlations among the variables used in the analysis, across the whole sample (Panel A) and separately for family and non-family firms (Panels B and C,

accordingly). Consistent with prior literature, we find that profitability is highly persistent (0.595, p-value = 0.000). We also find that total accruals are not significantly related to future profitability for the total sample (0.004, p-value = 0.558) implying that the accrual anomaly is not present in our setting. However, the separate analysis across family and non-family firms suggests that the accrual anomaly is present only across family firms (-0.231, p-value = 0.000). Regarding future returns, we find that both total accruals and discretionary accruals are negatively related to future stock returns across family and non-family firms. However, the correlation coefficient appears to be much larger across family firms.

[Insert Table 3 here]

Following prior literature (Richardson et al., 2005, 2006; Fairfield et al., 2003a,b) we regress future profitability on current profitability and total accruals (Table 4, column 1). We estimate annual cross-sectional regressions and report the time-series averages of the parameter coefficients. The coefficient on total accruals represents the difference between the accrual and the cash component of current profitability. Consistent with prior literature, the coefficient on *TOTACC* is significantly negative (-0.107, p-value = 0.005), confirming the lower persistence of accruals relative to that of cash flows across the total sample.

We then examine whether the lower persistence of accruals is differentially present across family and non-family firms (Table 4, column 2). We introduce the indicator variable *FF* taking the value of one for family firms, zero otherwise. We interact this variable with *TOTACC* in order to capture the differential persistence of the accrual component of earnings across family and non-family firms. The significantly negative interaction coefficient *FF* * *TOTACC* (-0.206, p-value = 0.011) shows that accruals are significantly less persistent for family firms versus non-family firms. In particular, the lower persistence of accruals for family firms appears to be almost six times larger than that of non-family firms (-0.250 / -0.044 = -5.68).

[Insert Table 4 here]

Going a step further, we examine the association between future (one-year ahead) returns and accruals, after controlling for current profitability, size and book-to-market ratio (Table 5, column 1). Consistent with prior literature, the coefficient on *TOTACC* is

significantly negative (-0.327, p-value = 0.017), confirming the existence of the accrual anomaly across the total sample.

We then examine whether the accrual anomaly is equally present across family and non-family firms (Table 5, column 2). We introduce the indicator variable *FF* taking the value of one for family firms, zero otherwise. We interact this variable with *TOTACC* in order to capture the differential pricing of the accrual component of earnings across family and non-family firms. The significantly negative interaction coefficient *FF* * *TOTACC* (-0.444, p-value = 0.033) shows that the negative effect of accruals on future stock returns is significantly larger for family firms versus non-family firms. In particular, the negative effect of accruals on future stock returns for family firms appears to be more than three times larger than that of non-family firms (-0.633 / -0.189 = -3.35).

[Insert Table 5 here]

In order to provide empirical evidence on the economic significance of the accrual anomaly, we perform portfolio-based analysis on future profitability and future stock returns (Table 6, columns 1-2, 7-8, and 13-14). Each year, we create quintile portfolios based on total accruals and calculate the one-year ahead stock returns. We then calculate hedge returns on a trading strategy that takes a long (short) position in firms that report low (high) accruals (i.e., the difference between the lowest and highest portfolio). Across the total sample, we find a statistically significant hedge return of 8.1% (t-stat = 6.956) suggesting a profitable exploitation of the accrual anomaly.

We then provide evidence on the economic significance of the accrual anomaly, separately for family and non-family firms (Table 6, columns 3-6, 9-12, and 15-18). Each year, separately across family and non-family firms, we create quintile portfolios based on total accruals and calculate the one-year ahead stock returns. We then calculate hedge returns on a trading strategy that takes a long (short) position in firms that report low (high) accruals, separately for family and non-family firms. We find a statistically significant hedge return of 18.7% (t-stat = 10.120) for family firms compared to a much lower return of 3.4% (t-stat = 2.694) for non-family firms. This evidence suggests that the profitable exploitation of the accrual anomaly is magnified within family firms and tends to attenuate for non-family firms.

[Insert Table 6 here]

Having now established the differential existence and profitable exploitation of the accrual anomaly across family and non-family firms, we try to explore potential reasons for it. We first examine earnings management practices as a possible explanation for the results (Table 7). We calculate discretionary accruals using the modified-Jones (1991) model. Each year, we create quintile portfolios based on discretionary accruals and calculate the one-year ahead stock returns. We then calculate hedge returns on a trading strategy that takes a long (short) position in firms that report low (high) discretionary accruals. Across the total sample, we find a statistically significant hedge return of 7.7% (t-stat = 6.727). However, the difference in the hedge return between family and non-family firms is much larger for the trading strategy based on discretionary accruals than that based on total accruals. In particular, family firms seem to enjoy a hedge return of 20.1% (t-stat = 11.560) compared to a trivial hedge return of 2.4% (t-stat = 2.083) for non-family firms. Our evidence supports the notion that the accrual anomaly is mainly concentrated in family firms, possibly due to the market misunderstanding of the managerial discretion over reported earnings.

[Insert Table 7 here]

In addition, we examine the role that limits to arbitrage play in explaining the accrual anomaly. To this end, we apply a two-way trading strategy based on both accruals and idiosyncratic volatility. We create two subsamples that include four different groups as follows: sub sample one (low accruals and low idiosyncratic volatility, high accruals and high idiosyncratic volatility) and subsample two (low accruals and high idiosyncratic volatility, high accruals and low idiosyncratic volatility). For the first subsample, the hedge return of the total sample equals to 0,99% (t-stat = 3.872), while for the second subsample it is equal to 5.6% (t-stat = 1.865). We then consider separately the family and the non-family firms. For family firms, our trading strategy on accruals and idiosyncratic volatility generates a hedge return of 27.3% (t-stat = 6.552) and 16.9% (t-stat = 3.459) for the first subsample and the second subsample, respectively. For non-family firms, our trading strategy earns an indistinguishably different from zero hedge return for both subsamples. Overall, our findings suggest that the accrual anomaly is mainly concentrated in family firms, possibly due to stronger limits to arbitrage of family firms.

[Insert Table 8 here]

6. Robustness Tests

We check the robustness of our results as follows. Given that family ownership can take different forms in practice, we employ a battery of different definitions of family ownership. Following Villalonga and Amit (2006), we consider three different definitions of family ownership. First, we define as family firms only those firms where the family ownership stake is the largest shareholder (*FF_LargestShareholder*). Second, we define as family firms only those firms where one or more family members from the second or later generation are officers, directors, or blockholders (*FF_OfficersDirectorsBlockholders*). Third, we define as family firms only those firms where the family is the largest shareholder and has at least 20% of the votes (*FF_Largest20*). The empirical results for the profitability model are reported in Table 9 while the results for the returns model are reported in Table 10. Our results are robust to alternative definitions of family ownership.

[Insert Table 9 & 10 here]

7. Conclusion

Using an international sample of firms over the period 2007 to 2017, we find that the accrual anomaly, i.e. the negative association between accounting accruals and future profitability and stock returns, is more pronounced within family firms relative to non-family firms. Notably, the effect is robust across four different definitions of family ownership. Further, we show that the profitable exploitation of the accrual effect on stock returns is magnified within family firms that face greater earnings management practices by executives and more severe arbitrage restrictions. Overall, our novel evidence demonstrates that agency costs and limits to arbitrage can be detrimental to the magnitude and persistence of the accrual anomaly within family firms. Our study has certain limitations that might be considered as possible avenues for future research. First, we acknowledge that there are other definition of family firms suggested by the literature that provide alternative ways of capturing important dimensions of family ownership and control and its impact on corporate performance. Second, we cannot rule out the possibility that other underlying characteristics of family firms (e.g., risk) ignored in our study, may be responsible in driving our results. Lastly, since in our analysis we consider a pooled sample of firms from 34 international stock markets including the U.S., future cross-

country studies could examine the impact of family ownership and control in broader context that accounts for country formal and informal institutional factors regarding family firms.

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Table 1 Sample composition by country and family ownership structure

	FULL SAMPLE												FAMILY											NON-FAMILY										
Country	*07*	*08*	*09*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*TOTAL*	*07*	*08*	*09*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*07*	*08*	*09*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*
Australia	48	42	50	54	97	91	103	107	113	157	148	*1010*	6	4	7	12	24	20	24	28	29	36	34	42	38	43	42	73	71	79	79	84	121	114
Austria	18	16	21	21	24	21	20	22	20	27	22	*232*	7	6	9	9	11	9	8	10	8	10	8	11	10	12	12	13	12	12	12	12	17	14
Belgium	25	21	26	21	41	38	40	40	39	50	45	*386*	11	8	12	9	20	17	17	16	16	18	17	14	13	14	12	21	21	23	24	23	32	28
Brazil	6	6	37	31	40	38	36	36	38	38	34	*340*	1	0	7	6	9	9	5	6	5	5	4	5	6	30	25	31	29	31	30	33	33	30
Canada	39	38	42	41	142	128	141	142	146	214	197	*1270*	14	11	14	14	55	43	47	46	55	79	75	25	27	28	27	87	85	94	96	91	135	122
Denmark	12	12	13	15	43	39	38	37	36	52	44	*341*	2	2	2	2	6	4	5	5	5	7	5	10	10	11	13	37	35	33	32	31	45	39
Finland	20	23	23	23	67	66	62	67	64	72	72	*559*	0	0	1	0	10	9	6	9	10	10	13	20	23	22	23	57	57	56	58	54	62	59
France	95	89	107	108	110	109	108	111	98	225	218	*1378*	45	36	48	50	47	51	51	55	46	123	109	50	53	59	58	63	58	57	56	52	102	109
Germany	145	131	161	159	158	143	139	142	141	168	166	*1653*	53	40	63	65	61	51	52	51	49	65	61	92	91	98	94	97	92	87	91	92	103	105
Greece	148	128	119	109	91	82	83	78	75	73	65	*1051*	98	79	72	71	58	51	56	52	54	58	48	50	49	47	38	33	31	27	26	21	15	17
Hong Kong	24	25	26	28	56	61	59	62	57	60	57	*515*	7	6	7	8	23	26	25	28	25	26	25	17	19	19	20	33	35	34	34	32	34	32
India	0	0	39	41	66	57	63	62	68	60	59	*515*	0	0	28	30	39	29	39	35	42	35	35	0	0	11	11	27	28	24	27	26	25	24
Indonesia	0	0	0	0	24	33	32	32	31	32	32	*216*	0	0	0	0	7	9	9	9	9	9	7	0	0	0	0	17	24	23	23	22	23	25
Ireland	11	11	13	13	16	16	19	12	13	16	14	*154*	4	3	3	3	3	5	5	3	3	4	5	7	8	10	10	13	11	14	9	10	12	9
Italy	82	76	83	80	81	69	79	79	76	112	110	*927*	44	41	46	44	42	36	43	43	41	62	56	38	35	37	36	39	33	36	36	35	50	54
Japan	166	166	167	168	156	175	167	169	167	166	166	*1833*	19	16	15	16	9	16	15	17	17	13	15	147	150	152	152	147	159	152	152	150	153	151
Malaysia	0	0	0	0	19	19	19	18	23	23	22	*143*	0	0	0	0	5	5	5	4	5	5	5	0	0	0	0	14	14	14	14	18	18	17
Netherlands	21	21	22	21	43	41	38	36	37	50	45	*375*	3	1	3	3	10	8	9	10	8	10	12	18	20	19	18	33	33	29	26	29	40	33
Norway	15	16	18	18	78	76	67	54	56	70	63	*531*	2	2	2	3	20	21	18	20	20	20	18	13	14	16	15	58	55	49	34	36	50	45
Philippines	0	0	0	0	20	25	23	26	26	28	26	*174*	0	0	0	0	10	13	11	14	13	15	14	0	0	0	0	10	12	12	12	13	13	12
Poland	8	10	14	14	14	14	16	15	17	17	17	*156*	1	1	3	3	2	2	3	2	2	2	2	7	9	11	11	12	12	13	13	15	15	15
Portugal	14	15	14	16	14	18	17	16	19	24	22	*189*	0	1	1	1	0	4	3	3	4	9	7	14	14	13	15	14	14	14	13	15	15	15
Russia	29	31	40	38	36	37	37	35	32	31	28	*374*	3	1	3	3	2	2	5	4	3	3	1	26	30	37	35	34	35	32	31	29	28	27
Singapore	16	16	17	18	44	51	52	48	46	38	36	*382*	2	1	1	5	13	19	20	15	17	13	13	14	15	16	13	31	32	32	33	29	25	23
South Africa	24	23	25	24	23	25	26	25	25	24	25	*269*	5	3	4	3	3	5	4	4	3	4	5	19	20	21	21	20	20	22	21	22	20	20
South Korea	0	0	18	20	20	19	18	20	19	18	17	*169*	0	0	3	2	6	4	5	6	6	6	4	0	0	15	18	14	15	13	14	13	12	13
Spain	44	41	43	38	39	39	36	37	41	54	59	*471*	15	14	16	12	11	13	12	12	13	20	23	29	27	27	26	28	26	24	25	28	34	36
Sweden	45	44	47	42	77	73	73	75	82	111	98	*767*	10	8	10	8	12	12	14	17	15	35	28	35	36	37	34	65	61	59	58	67	76	70
Switzerland	46	48	52	51	68	66	68	66	64	92	91	*712*	9	8	10	11	20	16	20	16	18	23	22	37	40	42	40	48	50	48	50	46	69	69
Taiwan	0	0	0	0	18	17	17	17	17	17	14	*117*	0	0	0	0	9	8	8	9	9	10	8	0	0	0	0	9	9	9	8	8	7	6
Thailand	0	0	0	0	23	22	27	29	29	30	29	*189*	0	0	0	0	9	6	10	10	9	11	11	0	0	0	0	14	16	17	19	20	19	18
Turkey	33	25	33	35	35	37	37	39	32	42	37	*385*	16	8	13	17	16	17	17	19	15	18	17	17	17	20	18	19	20	20	20	17	24	20
United Kingdom	153	160	163	175	209	219	218	228	212	233	229	*2199*	35	32	41	47	42	53	44	47	40	37	41	118	128	122	128	167	166	174	181	172	196	188
USA	294	316	325	353	850	861	878	842	808	811	797	*7135*	66	66	67	85	237	229	241	230	211	217	214	228	250	258	268	613	632	637	612	597	594	583
												27117											**8118**										**18999**

Table 2

Descriptive statistics

						FAMILY					NON-FAMILY					
N=27,117	mean	sd	p25	p50	p75	mean	sd	p25	p50	p75	mean	sd	p25	p50	p75	Two-sample t-test
FF	0.299	0.458	0.000	0.000	1.000											
ARETt+1	0.090	0.338	-0.127	0.058	0.272	0.057	0.319	-0.155	0.034	0.243	0.104	0.345	-0.115	0.068	0.284	***
ROAt	0.047	0.082	0.016	0.045	0.084	0.047	0.091	0.014	0.048	0.087	0.047	0.078	0.016	0.044	0.082	-
ROAt+1	0.039	0.083	0.009	0.041	0.079	0.028	0.097	-0.011	0.036	0.076	0.044	0.076	0.015	0.042	0.080	***
TOTACC	0.027	0.134	-0.040	0.018	0.082	0.034	0.132	-0.035	0.022	0.088	0.024	0.135	-0.042	0.016	0.079	***
FCF	0.020	0.138	-0.037	0.031	0.092	0.013	0.147	-0.046	0.030	0.092	0.023	0.133	-0.034	0.032	0.092	***
MV	14.536	1.972	13.364	14.664	15.907	13.992	2.113	12.752	14.203	15.475	14.768	1.861	13.602	14.845	16.053	***
BM	0.717	0.732	0.308	0.523	0.872	0.775	0.910	0.297	0.517	0.897	0.692	0.640	0.312	0.527	0.863	***
DISACC	-0.005	0.134	-0.072	-0.014	0.049	0.002	0.132	-0.068	-0.010	0.056	-0.008	0.134	-0.074	-0.016	0.046	***
IVOL	0.109	0.063	0.066	0.088	0.123	1.499	3.750	0.070	0.094	0.135	1.035	3.144	0.064	0.086	0.118	***

Table 3

Correlations

Panel A

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) ARETt+1	1.000												
(2) ROAt	0.003	1.000											
	(0.587)												
(3) ROAt+1	0.141***	0.595***	1.000										
	(0.000)	(0.000)											
(4) TOTACC	-0.121***	0.274***	0.004	1.000									
	(0.000)	(0.000)	(0.558)										
(5) FCF	0.120***	0.330***	0.357***	-0.805***	1.000								
	(0.000)	(0.000)	(0.000)	(0.000)									
(6) MV	-0.004	0.301***	0.286***	0.116***	0.066***	1.000							
	(0.468)	(0.000)	(0.000)	(0.000)	(0.000)								
(7) BM	0.041***	-0.328***	-0.319***	-0.138***	-0.062***	-0.422***	1.000						
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)							
(8) DISACC	-0.121***	0.273***	0.003	0.998***	-0.803***	0.114***	-0.139***	1.000					
	(0.000)	(0.000)	(0.583)	(0.000)	(0.000)	(0.000)	(0.000)						
(9) IVOL	0.007	-0.205***	-0.181***	-0.075***	-0.047***	-0.384***	0.263***	-0.074***	1.000				
	(0.225)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)					
(10) FF	-0.064***	0.001	-0.084***	0.033***	-0.033***	-0.180***	0.052***	0.034***	0.064***	1.000			
	(0.000)	(0.820)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)				
(11) FF_LargestShareholder	-0.031***	0.042***	-0.010*	0.019***	0.007	-0.146***	0.056***	0.019***	0.050***	0.652***	1.000		
	(0.000)	(0.000)	(0.108)	(0.002)	(0.247)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)			
(12) FF_OfficersDirectorsBlockholders	-0.029***	0.021***	-0.012*	-0.010	0.020***	-0.095***	0.078***	-0.009	0.006	0.643***	0.511***	1.000	
	(0.000)	(0.001)	(0.052)	(0.113)	(0.001)	(0.000)	(0.000)	(0.130)	(0.312)	(0.000)	(0.000)		
(13) FF_Largest20	-0.023***	0.035***	-0.009	0.011*	0.010*	-0.166***	0.075***	0.012*	0.064***	0.563***	0.876***	0.475***	1.000
	(0.000)	(0.000)	(0.160)	(0.064)	(0.106)	(0.000)	(0.000)	(0.051)	(0.000)	(0.000)	(0.000)	(0.000)	

Panel B: Family firms

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) ARETt+1	1.000								
(2) ROAt	0.053***	1.000							
	(0.000)								
(3) ROAt+1	0.204***	0.617***	1.000						
	(0.000)	(0.000)							
(4) TOTACC	-0.260***	0.182***	-0.231***	1.000					
	(0.000)	(0.000)	(0.000)						
(5) FCF	0.268***	0.460***	0.604***	-0.778***	1.000				
	(0.000)	(0.000)	(0.000)	(0.000)					
(6) MV	0.022*	0.364***	0.292***	0.130***	0.111***	1.000			
	(0.051)	(0.000)	(0.000)	(0.000)	(0.000)				
(7) BM	0.033***	-0.300***	-0.232***	-0.161***	-0.040***	-0.535***	1.000		
	(0.003)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)			
(8) DISACC	-0.261***	0.181***	-0.233***	0.999***	-0.778***	0.128***	-0.162***	1.000	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
(9) IVOL	0.002	-0.226***	-0.177***	-0.092***	-0.058***	-0.434***	0.334***	-0.091***	1.000
	(0.860)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

Panel C: Non-family firms

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

(1) ARETt+1	1.000								
(2) ROAt	-0.019***	1.000							
	(0.008)								
(3) ROAt+1	0.105***	0.586***	1.000						
	(0.000)	(0.000)							
(4) TOTACC	-0.064***	0.320***	0.133***	1.000					
	(0.000)	(0.000)	(0.000)						
(5) FCF	0.053***	0.259***	0.209***	-0.820***	1.000				
	(0.000)	(0.000)	(0.000)	(0.000)					
(6) MV	-0.033***	0.273***	0.267***	0.122***	0.034***	1.000			
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)				
(7) BM	0.052***	-0.352***	-0.382***	-0.131***	-0.075***	-0.345***	1.000		
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)			
(8) DISACC	-0.063***	0.320***	0.134***	0.998***	-0.817***	0.120***	-0.131***	1.000	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
(9) IVOL	0.016**	-0.192***	-0.177***	-0.071***	-0.038***	-0.348***	0.209***	-0.070***	1.000
	(0.026)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

**** p<0.01, ** p<0.05, * p<0.1*

Table 4

VARIABLES	(1) ROAt+1	(2) ROAt+1
ROAt	0.652***	0.644***
	(0.013)	(0.013)
TOTACC	-0.107***	-0.044***
	(0.005)	(0.005)
FF		-0.008***
		(0.001)
TOTACC * FF		-0.206***
		(0.011)
Constant	0.011***	0.015***
	(0.001)	(0.001)
Observations	27,117	27,117
R-squared	0.381	0.410

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 5

VARIABLES	(1) ARETt+1	(2) ARETt+1
ROAt	0.203***	0.192***
	(0.031)	(0.030)
TOTACC	-0.327***	-0.189***
	(0.017)	(0.020)
FF		-0.032***
		(0.005)
TOTACC * FF		-0.444***
		(0.033)
MV	0.003**	0.001
	(0.001)	(0.001)
BM	0.021***	0.019***
	(0.004)	(0.004)
Constant	0.037*	0.079***
	(0.019)	(0.020)
Observations	27,117	27,117
R-squared	0.018	0.028

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6

	LOW PORTFOLIO						HIGH PORTFOLIO						SPREAD					
	TOTAL SAMPLE		FAMILY		NON-FAMILY		TOTAL SAMPLE		FAMILY		NON-FAMILY		TOTAL SAMPLE		FAMILY		NON-FAMILY	
Column	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Year	ARETt+1	TOTACC	ARETt+1	TOTACC	ARETt+1	TOTACC	ARETt+1	TOTACC	ARETt+1	TOTACC	ARETt+1	TOTACC	ARETt+1	TOTACC	ARETt+1	TOTACC	ARETt+1	TOTACC
2007	-0.125	-0.040	-0.117	-0.035	-0.127	-0.041	-0.204	0.329	-0.243	0.322	-0.178	0.334	-0.079	0.369	-0.126	0.357	-0.051	0.375
2008	0.242	-0.107	0.271	-0.118	0.233	-0.103	0.155	0.299	0.003	0.288	0.211	0.304	-0.087	0.406	-0.268	0.406	-0.022	0.407
2009	0.296	-0.222	0.299	-0.217	0.295	-0.224	0.157	0.137	0.007	0.128	0.216	0.141	-0.140	0.360	-0.292	0.346	-0.079	0.365
2010	-0.013	-0.059	0.043	-0.064	-0.035	-0.058	-0.098	0.237	-0.133	0.238	-0.080	0.237	-0.085	0.296	-0.176	0.301	-0.045	0.294
2011	0.239	-0.106	0.278	-0.100	0.220	-0.108	0.091	0.237	0.017	0.238	0.127	0.236	-0.148	0.343	-0.260	0.339	-0.093	0.345
2012	0.226	-0.111	0.269	-0.104	0.210	-0.114	0.169	0.194	0.059	0.191	0.220	0.195	-0.058	0.306	-0.210	0.295	0.010	0.310
2013	0.076	-0.108	0.111	-0.100	0.065	-0.110	0.008	0.201	-0.054	0.204	0.037	0.200	-0.069	0.309	-0.165	0.304	-0.028	0.310
2014	0.032	-0.127	0.040	-0.130	0.030	-0.126	-0.038	0.175	-0.074	0.177	-0.018	0.174	-0.071	0.302	-0.114	0.307	-0.048	0.300
2015	0.239	-0.182	0.261	-0.168	0.231	-0.187	0.145	0.160	0.103	0.153	0.167	0.165	-0.094	0.343	-0.158	0.321	-0.064	0.352
2016	0.096	-0.174	0.109	-0.168	0.091	-0.177	0.056	0.155	-0.029	0.141	0.092	0.161	-0.040	0.329	-0.139	0.309	0.002	0.338
2017	0.001	-0.112	0.052	-0.100	-0.020	-0.116	-0.016	0.203	-0.100	0.203	0.028	0.203	-0.017	0.315	-0.152	0.303	0.048	0.319
Average	**0.119**	**-0.123**	**0.147**	**-0.119**	**0.108**	**-0.124**	**0.038**	**0.212**	**-0.040**	**0.208**	**0.075**	**0.214**	**-0.081**	**0.334**	**-0.187**	**0.326**	**-0.034**	**0.338**
STD	**0.137**	**0.053**	**0.137**	**0.051**	**0.138**	**0.054**	**0.121**	**0.060**	**0.096**	**0.060**	**0.131**	**0.060**	**0.038**	**0.034**	**0.061**	**0.033**	**0.041**	**0.035**
N	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**
Test	**2.887**	**-7.669**	**3.559**	**-7.733**	**2.612**	**-7.618**	**1.057**	**11.714**	**-1.392**	**11.439**	**1.896**	**11.760**	**-6.956**	**32.707**	**-10.120**	**32.498**	**-2.694**	**31.863**

Table 7

	LOW PORTFOLIO (BASED ON DISCRETIONARY ACCRUALS			HIGH PORTFOLIO (BASED ON DISCRETIONARY ACCRUALS			SPREAD		
	TOTAL SAMPLE	FAMILY	NON-FAMILY	TOTAL SAMPLE	FAMILY	NON-FAMILY	TOTAL SAMPLE	FAMILY	NON-FAMILY
Column	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Year	ARETt+1	ARETt+1	ARETt+1	ARETt+1	ARETt+1	ARETt+1	ARETt+1	ARETt+1	ARETt+1
2007	-0.085	0.005	-0.115	-0.195	-0.217	-0.183	-0.110	-0.222	-0.069
2008	0.246	0.269	0.238	0.151	-0.004	0.208	-0.095	-0.272	-0.031
2009	0.251	0.258	0.247	0.132	-0.044	0.200	-0.118	-0.302	-0.047
2010	-0.017	0.044	-0.049	-0.096	-0.131	-0.080	-0.079	-0.175	-0.031
2011	0.220	0.280	0.191	0.100	0.035	0.134	-0.120	-0.245	-0.057
2012	0.231	0.266	0.218	0.169	0.054	0.224	-0.063	-0.212	0.006
2013	0.076	0.120	0.063	0.008	-0.053	0.036	-0.068	-0.173	-0.027
2014	0.032	0.040	0.030	-0.040	-0.084	-0.013	-0.072	-0.124	-0.043
2015	0.248	0.276	0.237	0.147	0.061	0.190	-0.101	-0.215	-0.047
2016	0.092	0.098	0.090	0.069	-0.047	0.113	-0.023	-0.145	0.023
2017	-0.015	0.028	-0.030	-0.016	-0.103	0.029	-0.001	-0.131	0.059
Average	**0.116**	**0.153**	**0.102**	**0.039**	**-0.049**	**0.078**	**-0.077**	**-0.201**	**-0.024**
STD	**0.127**	**0.116**	**0.132**	**0.117**	**0.084**	**0.133**	**0.038**	**0.058**	**0.038**
N	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**
Test	**3.040**	**4.367**	**2.567**	**1.101**	**-1.913**	**1.952**	**-6.727**	**-11.560**	**-2.083**

Table 8

Year	HIGH ACCRUALS AND HIGH VOLATILITY			LOW ACCRUALS AND LOW VOLATILITY			SPREAD		
	TOTAL SAMPLE	FAMILY	NON-FAMILY	TOTAL SAMPLE	FAMILY	NON-FAMILY	TOTAL SAMPLE	FAMILY	NON-FAMILY
	ARETt+1	ARETt+1	ARETt+1	ARETt+1	ARETt+1	ARETt+1	ARETt+1	ARETt+1	ARETt+1
2007	-0.177	-0.183	-0.169	-0.169	0.097	-0.204	0.009	0.280	-0.034
2008	0.069	-0.112	0.173	0.250	0.346	0.235	0.181	0.457	0.062
2009	0.150	-0.102	0.301	0.188	0.454	0.146	0.038	0.556	-0.155
2010	-0.179	-0.180	-0.179	0.072	0.000	0.072	0.251	0.180	0.251
2011	0.042	-0.039	0.090	0.083	0.128	0.076	0.041	0.167	-0.015
2012	0.094	-0.008	0.161	0.219	0.175	0.223	0.124	0.184	0.062
2013	-0.021	-0.149	0.049	0.177	0.186	0.176	0.198	0.336	0.127
2014	-0.070	-0.210	0.031	0.064	0.128	0.050	0.135	0.338	0.019
2015	0.086	0.020	0.123	0.182	0.210	0.175	0.096	0.189	0.053
2016	0.014	-0.170	0.081	0.041	0.041	0.041	0.028	0.211	-0.039
2017	-0.027	-0.131	0.024	-0.031	-0.029	-0.032	-0.005	0.102	-0.056
Average	**-0.002**	**-0.115**	**0.062**	**0.098**	**0.158**	**0.087**	**0.100**	**0.273**	**0.025**
STD	**0.107**	**0.076**	**0.141**	**0.123**	**0.143**	**0.127**	**0.085**	**0.138**	**0.106**
N	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**
Test	**-0.056**	**-5.011**	**1.463**	**2.627**	**3.651**	**2.266**	**3.872**	**6.552**	**0.777**

Year	HIGH ACCRUALS AND LOW VOLATILITY			LOW ACCRUALS AND HIGH VOLATILITY			SPREAD		
	FULL SAMPLE	FAMILY	NON-FAMILY	FULL SAMPLE	FAMILY	NON-FAMILY	FULL SAMPLE	FAMILY	NON-FAMILY
	ARETt+1	ARETt+1	ARETt+1	ARETt+1	ARETt+1	ARETt+1	ARETt+1	ARETt+1	ARETt+1
2007	-0.152	-0.153	-0.151	0.126	0.309	0.085	0.278	0.462	0.236
2008	0.139	0.215	0.119	0.236	0.432	0.159	0.098	0.218	0.040
2009	0.114	-0.177	0.159	0.294	0.263	0.309	0.179	0.440	0.150
2010	0.002	-0.172	0.048	-0.019	0.039	-0.055	-0.020	0.211	-0.104
2011	0.135	0.125	0.139	0.200	0.241	0.175	0.065	0.116	0.036
2012	0.184	0.183	0.184	0.232	0.317	0.199	0.048	0.134	0.015
2013	0.060	0.065	0.058	0.026	0.112	-0.018	-0.034	0.046	-0.076
2014	0.005	-0.049	0.037	-0.024	-0.069	-0.008	-0.029	-0.020	-0.044
2015	0.141	0.045	0.190	0.190	0.190	0.190	0.050	0.146	0.001
2016	0.070	-0.051	0.115	0.096	0.101	0.094	0.026	0.152	-0.021
2017	0.028	0.008	0.035	-0.018	-0.034	-0.011	-0.046	-0.042	-0.046
Average	**0.066**	**0.004**	**0.085**	**0.122**	**0.173**	**0.102**	**0.056**	**0.169**	**0.017**
STD	**0.094**	**0.138**	**0.097**	**0.117**	**0.157**	**0.115**	**0.099**	**0.162**	**0.100**
N	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**
Test	**2.322**	**0.086**	**2.900**	**3.462**	**3.642**	**2.928**	**1.865**	**3.459**	**0.569**

Table 9

VARIABLES	(1) ROAt+1	(2) ROAt+1	(3) ROAt+1
ROAt	0.651***	0.652***	0.651***
	(0.013)	(0.013)	(0.013)
TOTACC	-0.080***	-0.091***	-0.087***
	(0.005)	(0.005)	(0.005)
FF_LargestShareholder	-0.002*		
	(0.001)		
TOTACC * FF_LargestShareholder	-0.169***		
	(0.014)		
FF_OfficersDirectorsBlockholders		-0.003**	
		(0.001)	
TOTACC * FF_OfficersDirectorsBlockholders		-0.144***	
		(0.014)	
FF_Largest20			-0.002
			(0.001)
TOTACC * FF_Largest20			-0.159***
			(0.015)
Constant	0.012***	0.012***	0.012***
	(0.001)	(0.001)	(0.001)
Observations	27,117	27,117	27,117
R-squared	0.392	0.387	0.389

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 10

VARIABLES	(1) ARETt+1	(2) ARETt+1	(3) ARETt+1
ROAt	0.207***	0.207***	0.203***
	(0.031)	(0.031)	(0.031)
TOTACC	-0.270***	-0.287***	-0.280***
	(0.019)	(0.019)	(0.019)
FF_LargestShareholder	-0.017***		
	(0.006)		
TOTACC * FF_LargestShareholder	-0.359***		
	(0.042)		
FF_OfficersDirectorsBlockholders		-0.023***	
		(0.006)	
TOTACC * FF_OfficersDirectorsBlockholders		-0.353***	
		(0.046)	
FF_Largest20			-0.013**
			(0.006)
TOTACC * FF_Largest20			-0.378***
			(0.048)
MV	0.002	0.002*	0.002
	(0.001)	(0.001)	(0.001)
BM	0.020***	0.021***	0.020***
	(0.004)	(0.004)	(0.004)
Constant	0.053***	0.046**	0.050**
	(0.019)	(0.019)	(0.019)
Observations	27,117	27,117	27,117
R-squared	0.021	0.021	0.021

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1