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Earnings Management and Performance in Family-Controlled Firms: Evidence from an Emerging Economy

Abstract

This study introduces an earnings management dimension to compute premanipulated accounting performance to determine whether family-controlled firms have higher performance relative to non-family-controlled firms. Using a premanipulated return on assets measure for Chilean firms dataset, we find that the premanipulated performance of family-controlled firms is superior to that of non-family-controlled firms. We also show that the presence of institutional investors in the firm's ownership structure has a positive influence on performance of family companies. The results suggest that earnings management behavior is not sufficient to explain the higher performance of family-controlled firms that has been reported in the literature.

Keywords: Family-controlled firms, earnings management, accounting performance.

JEL codes: G32, G34

1. Introduction

Recent evidence on corporate finance and governance literature suggests that several capital markets contain an important portion of firms that do not present the classical widely dispersed ownership described by Berle and Means (1932) and Jensen and Meckling (1976). La Porta et al. (1999) shows that concentrated ownership structures are common around the world and that, among this kind of corporate ownership configuration, family-controlled firms are the predominate form of ownership.[1]

Family firm literature suggests that family-controlled corporations enjoy some advantages related to the reduction of agency problems between manager and shareholders (Isakov and Weisskopf 2014). Conversely, more concentrated ownership can results in problems between controllers and minority shareholders, which arise because controllers take advantage of private benefits of control (Dyck and Zingales 2004).

However, family-controlled firms are generally associated with higher accounting and stock market performance. Following the pioneering work of Anderson and Reeb (2003) for U.S. firms, several authors have investigated whether financial performance differences exist between family-owned firms and their non-family counterparts (e.g., Maury 2006; Villalonga and Amit 2006). For instance, Barontini and Caprio (2006) and Maury (2006) find that family firms outperform their non-family counterparts when the family-controlled firm's CEO is the firm's founder and when second-generation family members do not hold managerial positions.

Our paper focuses on Chile. Evidence for Latin American markets suggests that family-controlled firms outperform non-family-controlled firms. González et al. (2012) analyze a sample of listed and non-listed Colombian firms and find that family firms exhibit better performance than their non-family counterparts. Martinez et al. (2007) and Bonilla et

[1] La Porta et al. (1999) find that one-third of firms are family controlled around the world, while (Faccio and Lang 2002) and Claessens et al. (2000) shows that around 44% of continental European firms and two-thirds of firms in Asian countries are family controlled.

al. (2010) find similar results for the Chilean context. However, no studies have extended the comparison beyond profitability to include an earnings management dimension. Indeed, Bonilla et al. (2010) do not take into account that earnings management behavior, which can serve as a proxy of real accounting performance, may explain the performance differential between family and non-family firms.

We extend the previous literature by incorporating an earnings management dimension for Chilean firms. Our analyses are based on three fundamental motivations. First, earnings management can seriously influence accounting performance and directly affect stock performance (Sloan 1996; Richardson et al. 2005; Healy and Wahlen 1999). Second, evidence on earnings management suggests that firms with high levels of ownership concentration (with insider CEO positions) in countries with weak investor protection are associated with higher levels of earnings management in order to hide private benefits of control extraction. This effect is especially strong when a divergence exists between cash flow rights and control rights due to pyramidal control (Leuz et al. 2003; Gopalan and Jayaraman 2012). In this sense, earnings management can be important because Chilean environment provides weak investor protection, given its French civil law legal origin,[2] and firms have a high level of ownership concentration, primarily in the hands of individual shareholders, families, or holdings, which gives rise to pyramidal structures and the generation of internal capital markets (Lefort and González 2008; Lefort and Walker 2000). However, despite high levels of ownership concentration, Chilean family-controlled firms tend to show lower levels of divergence between cash flow rights and voting rights (Lefort and González 2008). Consequently, family-controllers shareholders should be more alignment with minority shareholders.

[2] Some of the main differences concerning the country's legal origin are, for instance, creditors' rights (Levine 1998), quality of accounting standards and the accounting process in general, ownership structure (Himmelberg et al. 1999a), market development, and per capita income (La Porta et al. 2000). In general, common law systems provide greater investor protection than French civil law systems.

Third, the desire to uphold the prestige and reputation of the family name may induce controlling shareholders of family firms—even second-generation family CEOs—to manage earnings to show better performance. As previously stated, performance is higher in family firms when the founder is CEO but declines when a second-generation family member holds the CEO position (Villalonga and Amit 2006). This performance decline can be explained by issues related to tensions between the family and the firm's business objectives (Bennedsen et al. 2007) or by less CEO managerial specialization and skills (Burkart et al. 2003). However, we hypothesize that this relation may not necessary hold for the Chilean context for two reasons. On the one hand, family CEO successors can engage in earnings management to meet performance targets to maintain the family reputation in a small capital market. On the other hand, 15 conglomerates—most of them belonging to families—as a group control 91% of the assets of listed nonfinancial companies in Chile (Lefort and Walker 2007). According to the Boardex database, Thomson One database, and the Superintendencia de Valores y Seguros (SVS; Chilean Superintendent of Securities and Insurance), these conglomerates tend to select the best-qualified CEO, including second-generation family members.

Using an unbalanced panel data analysis, we verify our research hypothesis. We estimate premanipulated earnings performance, which we compute using a discretionary accruals Jones model with returns on assets (ROA) as a regressor, as proposed by Kothari et al. (2005). Our results show that, although family firms tend to have higher levels of discretionary accruals, their premanipulated performance is superior to that of nonfamily firms. We also find that participation in ownership by Chilean Pension Funds Administrators (AFPs) has a positive influence on firms' premanipulated performance. These results suggest that these kinds of investors alleviate potential agency problems in a setting characterized by higher levels of ownership concentration.

The remainder of the article is structured as follows. Section 2 reviews the literature regarding family firm's performance and quality of accounting information. Section 3 formulates our research hypotheses, method, and sample selection. Section 4 provides the empirical results. Finally, Section 5 presents a summary of our major conclusions.

2. Related Empirical Literature

Family shareholders and especially family control has attracted the attention of the academic world in the last decade since La Porta et al. (1999) showed that families are important in economies around the world. In broad terms, family firms account for 53% of European firms (Barontini and Caprio 2006), 44% of Western Europe firms (Faccio and Lang 2002), 37% of U.S. firms (Villalonga and Amit 2006), more than 65% of East Asia firms (Claessens et al. 2000), and 50% of the Spanish quoted firms (Santana and Aguiar 2006).

Studies that analyze family-controlled firms support the intuition that family-controlled firms alleviate agency problems because they have higher levels of ownership concentration. However, when concentrated ownership creates a conflict between large shareholders and minority shareholders, families can become entrenched. Guthrie and Sokolowsky (2010) demonstrate that excessive power concentration in the hands of a small number of shareholders attenuates managers–shareholders agency problems but may intensify the divergence of interests between controlling and minority shareholders. As the probability of entrenchment increases, the nature and the position of the largest shareholder are extremely important, particularly in family-controlled firms. On the one hand, entrenchment can be attenuated because families tend to maintain their utility function in terms of family name, prestigious, and reputation, especially when the firm is controlled by the founder. On the other hand, the possibility of agreements among different family members in these firms may provide controlling shareholders with the incentive to behave opportunistically. This dynamic has led to increased research of family firms in several fields

(Ali et al. 2007; Barontini and Caprio 2006; Ben-Amar and André 2006; Faccio and Lang 2002; Villalonga and Amit 2009).

Several studies analyze the relation between family-controlled firms and performance computed by stock performance and accounting performance (Anderson and Reeb 2003; Villalonga and Amit 2006; Faccio et al. 2001; Maury 2006; Lee 2006; Jara-Bertin et al. 2008). For instance, (Maury 2006) studies European markets and finds that higher performance in family-owned firms is more pronounced when the family does not have total control of the firm. In a similar vein, Jara-Bertin et al. (2008) find that European family-owned firms perform better financially, measured by the market-to-book ratio, than non-family enterprises. Furthermore, they show that the performance of family-owned firms improves as contestability to the control of the largest shareholder increases.

Allouche et al. (2008) examine accounting performance for Japanese firms and find that family-controlled firms outperform non-family-controlled firms. Martinez et al. (2007) show that family-owned firms listed in the Chilean public stock market perform better than non-family firms. Bonilla et al. (2010) extends the work by Martinez et al. by including a risk dimension, controlling for more variables, and using a different estimation technique. They also find that family-controlled firms outperform non-family firms.

The studies previously mentioned use accounting measures (i.e., ROA, return on earnings) to proxy for financial performance; however, the use of accounting earnings performance measures may bias the results if firms (both family and non-family) engage in earnings management practices. Earnings management may seriously affect the quality of accounting information and stock performance (Dechow 1994; Dechow et al. 2010; Roychowdhury and Watts 2007).

In this sense, recent evidence on earnings quality shows that family-owned firms in the United States have greater information quality about earnings compared with non-family

firms (Ali et al. 2007; Wang 2006). Evidence also points to the better financial information quality of family firms outside the United States. For instance, Prencipe et al. (2008) find that Italian family firms are less sensitive to income-smoothing motivations than their non-family counterparts. Cascino et al. (2010) report consistent results, showing that Italian family firms exhibit, on average, higher accounting quality compared to non-family firms. Similarly, Mei-Ling's (2010) study of a sample of Taiwanese firms suggests that family firms promote information transparency and quality of accounting reporting to avoid negative implications associated with the possible expropriation of minority shareholders.

There is no research about the link between family firm performance and earning management practices in Latin America. This study points in that direction and thus fills an important gap in the literature.

2.1. *Earnings Management Definition*

Discretionary accruals is one of several proxies of earnings management suggested in the literature (Dechow et al. 2010). In general terms, the use of accrual accounting is allowed by worldwide accounting standards, including International Financial Reporting Standards conceptual framework (García Lara et al. 2008; Leuz 2010). The main function, according to the Financial Accounting Standards Board in Statement of Financial Accounting Concepts No.6 (1985) is to "attempt to record the financial effects on an entity of transactions and other events and circumstances that have cash consequences for the entity in periods in which those transactions, events, and consequences occur rather than only in the period in which cash is received or paid by the entity" (para. 139).

First, Healy and Wahlen (1999) argue that earnings management arises "when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholder about the underlying economic performance of the

company, or to influence contractual outcomes that depend on reported accounting numbers" (p. 6). One common way to meet these consequences is the use of discretionary accruals. In fact, discretionary accruals are a key topic in research about earnings management (Dechow et al. 2010; Dechow et al. 2012).

Others definitions, as proposed by Ronen (2010), includes real activities manipulation and occurs when "*managerial decisions results in not reporting the true short-term, value-maximizing earnings. Earnings management could be beneficial, pernicious or neutral and take place from taking production/investment actions before earnings are realized or making accounting choices that affect the earnings numbers and their interpretation after the true earnings are realized"*

However, most of the accrual-based models to detect earnings management attempt to separate the normal component of accruals from the discretionary components. While the normal component represents those accruals that are oriented to the normal business conditions represented in earnings reports, the discretionary components are those that signal to managers information about business conditions or that managers use in a self-seeking opportunistic manner.

Prior literature proses several accrual-based models with an important volume of empirical research based on the Jones (1991) model or some of its improvements (Dechow et al. 1995; Dechow et al. 2003; Kothari et al. 2005). We select the model that incorporates ROA as a regression, in which ROA is considered a factor that potentially affects total accruals (Kothari et al. 2005).

3. Method and Data

3.1 Hypotheses

Prior studies provide evidence indicating that, in Chile, family-owned firms perform better financially than non-family firms (Martinez et al. 2007; Bonilla et al. 2010). However, following Dechow (1994), Jara-Bertin and López-Iturriaga (2011) show that earnings-based measures explain stock performance better than cash flow-based measures. This finding suggests that the Chilean stock market, on average, seriously considers earnings-based measures like ROA to evaluate firms' performance and serves for valuation purposes. For example, comparable with the Enron and WorldCom cases in the United States and with the concern about size difference, the Chilean La Polar case of 2011 is the clearest example of how a non-family firm with relatively widespread ownership that pursues earnings management (and the reversal process) can mislead to the market in terms of valuation, financing access, and risk exposure. This case resulted in a confidence crisis in Chile and opened up a discussion about the credibility of accounting numbers.

We posit that family firms in the Chilean context serve to attenuate several agency problems derived of both managers–shareholders and controllers–minority agency problems. Even if family controllers manage earnings upward, we posit that this activity is for the purpose of signaling and is not based on opportunistic motives. Once earnings management noise is eliminated, family controlled-firms still outperform their non-family counterparts. Thus, our first hypothesis is as follows:

Hypothesis 1. *The premanipulated profitability of family-controlled firms is greater than that of than non-family-controlled firms.*

Institutional investors are very important in emerging small capital markets, where the ownership structure is concentrated and firms' internal corporate governance mechanisms arise as natural response of weaker enforcement of law. Pension funds (AFP) play an important monitoring role in the corporate governance process in Chilean stock market

(Lefort and González 2008). In fact, as institutional investors, AFPs are very active[3] in the market; they maintain ownership stakes in 45% of total Chilean traded firms and have an independent director on the board of roughly 44% of firms in which they participate (Superintendencia de Pensiones 2012). In addition, the votes of independent directors elected by AFPs represent the most important portion of independent directors elected by minority shareholders (Lefort and Urzúa 2008). Even though AFP regulators limit ownership stakes when firms present some specific considerations in terms of ownership structures and markets liquidity, we hypothesize that controlling for AFPs influences the performance between family and non-family firms. Additionally, previous literatures argue that institutional investors are more sophisticate in terms of recourses and abilities that would be able to detect any accual-based earnings management behavior (Chung et al. 2002). Thus, we state our second hypothesis, with premanipulated returns included, as follows:

> **Hypothesis 2**. *After controlling for the effect of AFPs, the difference in premanipulated profitability between family-controlled firms and non-family-controlled firms declines significantly or disappears.*

We also test robustness of our results including a risk dimension. Most of the previous work on family firms do not control for risk differences between family and non-family firms. Bonilla et al. (2010) demonstrate that differences exist, and therefore by examining the dichotomy between family and non-family firms using premanipulated earnings, we provide reliable results. Therefore, following our arguments in support of H1 and H2, we state our third and four hypotheses as follows:

[3] Information obtained from webpage of SVS, on 2012 pension Funds holds over the 6% of total market firm's shareholders equity and over the 41% of Chilean corporate bonds issued. Additionally, pension funds participate in an important portion of transactions in the Chilean stock market.

Hypothesis 3. *The variance of premanipulated returns of family-controlled firms differs from the variance of premanipulated returns of non-family firms.*

Hypothesis 4. *After adjusting for risk, the difference in premanipulated profitability between family-controlled firms and non-family firms does not disappear.*

3.2 Definition of family firms

Following prior studies on Chilean family firms (Martinez et al. 2007; Bonilla et al. 2010) and international literature (Barontini and Caprio 2006; Villalonga and Amit 2009; Ruiz-Mallorquí and Santana-Martín 2009), we classify a company as a family firm according to three criteria. First, we inspect the list of business groups produced by SVS. At the end of 2007 there were 117 such groups. In each case, if the group was undoubtedly associated with a business family, we classified firms within the group as family-controlled firms, including the family controlling the firm through pyramidal ownership. Second, if a company did not belong to any of these corporate groups, we categorized it as a family-controlled firm if one or more members of a family-controlled firm on the SVS list controlled the firm at the senior management level. Third, we classified a company not in any business group as a family-controlled firm if one or more members of a family on the SVS list controlled its board of directors. For the last two criteria, we used information from credit rating agencies, company financial reports, market data, and other company sources. We define non-family firms as all companies not fitting these three family-controlled firm criteria.

3.3 Data set

Using a subset of the data set from Bonilla et al. (2010), our sample is composed of an unbalanced panel of 1,646 observations from 179 quoted Chilean companies for the period between January 1998 and December 2007. We obtain the data from Economática (a Latin American database vendor), the SVS, and the Santiago Stock Market. Table 1 shows the number of firms in the sample for each year. The number of observations for each year differs from those used by Bonilla et al. (2010) for two reasons (i) To obtain premanipulated profit rates, as explained in the following discussion, we incorporate new variables into the sample, and in some cases observations are not available for all the companies in the baseline data set; and (ii) the methodology for the adjustment of profits needs at least 10 firm-years observations, which further reduces the sample. As in Bonilla et al., we exclude nonprofits entities and holding companies, whose financial statements are a composite of their public subsidiaries.

[TABLE 1 ABOUT HERE]

Based on these criteria, an average of 68% of sample firms are classified as family-controlled firms, and 32% of sample firms are classified as non-family firms for the period covered. Table 2 shows that the percentage of family-controlled firms is much higher than that of non-family firms throughout the 10-year period.

[TABLE 2 ABOUT HERE]

3.4 Model variables

We estimate abnormal accruals through the Jones (1991) model with ROA as a regressor (Kothari et al. 2005). The dependent variable is total accruals (A), defined as the

difference between the earnings before the extraordinary items and cash flows from the operations. As explanatory variables, we define ΔREV as the variation in total revenues between periods *t*–1 and *t*; gross property, plant, and equipment (GPPE) as total fixed asset; and ROA. DAJROA is the estimated discretionary accruals from the year-industry estimation of equation (1). To avoid heteroskedasticity problems, we scale all the variables by average total assets.

Our regression model proposed in equation (2) contains two dependent variables: ROA and premanipulated ROA (ROAPRE), defined as the difference between ROA and DAJROA. ROA is a measure of financial performance that indicates how the firm's assets were managed during the period under study; ROAPRE is similar to ROA but free of earnings manipulations. The data for these ROA and DAJROA are drawn from the Economática database and from equation (1), respectively. We include these variables for two reasons. First, ROA is commonly used in this type of analysis. Second, ROA summarizes firm performance (Dechow 1994). The appendix provides a description of all the variables used in this study.

Control variables, measured for each firm, are as follows:

- Family dummy (DFAM): A dummy variable that equals 1 for family-controlled firms, and zero otherwise.
- AFP ownership dummy (DAFP): A dummy variable that equals 1 for firms whose ownership structure includes institutional investors (AFP), and zero otherwise. The values for this variable are obtained from SVS reports on the investment portfolios of Chilean pension funds during the period under study.
- Debt/Assets: Leverage, defined here as the debt/assets ratio, extracted from the Economática database.

- Size: Size of the firm, measured as the natural logarithm of total assets. The raw values are extracted from the Economática database.
- Age: Age of the firm, that is, number of years since it was founded. This information is obtained from companies' websites or through direct consultation by telephone.
- Industry: The firm's industrial classification. The Economática database uses a classification system of 19 sectors.

3.5 Method

From a methodological point of view, we divide our research into two stages. First, to obtain our premanipulated ROA and ROAPRE measures, we estimate total accruals and compute the discretionary component as a proxy of earnings management through the cross-sectional industry-years specific Jones (1991) model with ROA as a regressor as proposed by Kothari et al. (2005).[4] Second, we analyze the relation between ROA and premanipulated ROA and family firm's dichotomy.

In line with Dechow et al. (2010), the Jones (1991) model with ROA as a regressor performs better than the ROA-matched model in terms of specification and power. Thus, total accruals depend on ΔREV, GPPE, and ROA, expressed as

$$A_{it} = \alpha + \beta_1\left(\frac{1}{Assets_{it}}\right) + \beta_2 \Delta REV_{it} + \beta_3 GPPE_{it} + \beta_4 ROA_{it} + \varepsilon_{it}, \quad (1)$$

where the residual ε_{it} corresponds to the discretionary or abnormal accruals of the model (DAJROA).

[4] We also estimate several discretionary accruals measures such as the modified Jones model (Dechow et al. 1995), the Dechow and Dichev model modified by McNichols (2002), and the margin model proposed by Peasnell et al. (2000).

Once we estimate ROAPRE, we test for differences between the means of ROA, ROAPRE, and DAJROA for family-controlled firms and non-family firms.[5] To control for the unobservable constant heterogeneity (i.e., fixed effects) in Model (2), we use the panel data approach (Arellano 2003; Baltagi 1995). This method also allows us to deal with potential endogeneity issues through the generalized method of moments. Prior research on ownership nature and firm characteristics show that endogeneity may arise (Demsetz and Villalonga 2001; Himmelberg et al. 1999b). We therefore address this problem by estimating equation (2) using the Blundell and Bond (1998) and Bond (2002) system estimator version of the generalized method of moments.[6]

The consistency of the estimates depends on the absence of second-order serial autocorrelation in the residuals and on the validity of the instruments (Arellano and Bond 1991). Accordingly, we report the auto(2) test. To test the validity of the instruments, we use the Hansen test of overidentifying restrictions, which allows us to test the absence of correlation between the instruments and the error term and, therefore, to check the validity of the selected instruments. We also present two Wald tests, $z1$ and z2, which report the joint significance of the reported coefficients and the industry dummies, respectively. The basic model is written as

$$\mathrm{ROA_{it}\ or\ ROAPRE_{it}} = \alpha_0 + \beta_1 \cdot \mathrm{SIZE_{it}} + \beta_2 \cdot \mathrm{AGE_{it}} + \beta_3 \cdot \mathrm{DEBT_{it}} + \beta_4 \cdot DFAM_{\mathrm{it}} + \square_{\mathrm{i}} + \square_{\mathrm{t}} + \varepsilon_{\mathrm{it}}. \quad (2)$$

Our first step is to determine whether the incorporation of the premanipulated ROA into a dynamic data panel model changes the results found byBonilla et al. (2010). As in

[5] Additionally, we estimate a model where the dependent variable is DAJROA in order to test differences in earnings management motivations between family firms and non-family ones.

[6] Here we advance the methodology of Bonilla et al. because they do not address the potential endogeneity issue.

Bonilla et al., we also incorporate the dummy variable *DAFP* to establish whether the presence of AFPs in the ownership structure helps to explain the profitability differences between firms.

Finally, to ascertain the effect of risk, we carry out two procedures. First, we perform a difference of variance test on the two firm types. Second, we estimate equation (1) in which the dependent variable ROA is adjusted for risk. We obtain the standard deviation of ROAs by firm type for each year in the sample. We use it as a proxy for risk and divide each firm's ROA by this measure as explained in Section 4.2.

4 Results and Discussion

4.1 Comparison of ROA, ROAPRE, and DAJROA measures

Table 3 summarizes the sample data relating to the ROA, ROAPRE, and DAJROA variables, and Table 4 provides the results of the difference of means test for family-controlled firms and non-family enterprises. The results show that family-controlled firms have a mean ROA of 4.79% over the 10 years under study and thus perform better than non-family firms, whose mean ROA is 3.46%. A *t*-test value of 2.1745 (*p*-value = 0.0149) shows that this difference is statistically significant and thus corroborates the first result from Bonilla et al. (2010) despite the use of a somehow different sample.

[TABLE 3 ABOUT HERE]

[TABLE 4 ABOUT HERE]

Romero-Meza et al. (2007) describe the major influence that AFP may have in the small Chilean capital market. Therefore, as in Bonilla et al. (2010), we also test for the presence of AFP in the property of the companies in the sample. Column 3 of Table 5 shows

that despite the inclusion of a dummy variable to distinguish between firms that do and do not have AFP investors, the previous results remain valid. Namely, family-controlled firms continue to show statistically significant higher average returns that those of non-family firms.

[TABLE 5 ABOUT HERE]

4.2 Comparison of risk-adjusted ROA values

To investigate the possibility that the family-controlled firms' superior performance is accompanied by higher levels of risk, we replace the dependent variable ROA and ROAPRE in equation (2) with ROARISK and ROAPRERISK, which are, respectively, ROA and premanipulated ROA adjusted for risk:

$$ROARISK_{i,t} = ROA_{i,t}/\sigma_{j,t},$$

$$\text{for } \; i = firm, \;\; t = year, \;\; j = family\ firms, nonfamily\ firms$$

where $\sigma_{j,t}$ is the standard deviation of the returns on family-controlled businesses and non-family firms for the year t. Thus, we reestimate equation (1) using a measure of the dispersion of the premanipulated returns as a proxy for risk.[7]

Table 6 shows the estimates with risk-adjusted ROA. Finally, we test whether the standard deviation of premanipulated returns (i.e., the risk proxy) for family-controlled firms is lower than that for non-family firms using a difference of standards deviations test. Table 7 provides the results.

[7] This equivalent suggests a possible source of heteroskedasticity. As in Bonilla et al. (2010), we checked it by a Goldfeld and Quandt test. The results show that the variance is not the same for the two types of firms. That is, by deflating by the standard deviation, we are implicitly correcting for heteroskedasticity.

[TABLE 6 ABOUT HERE]

[TABLE 7 ABOUT HERE]

The results in Table 7 show that the standard deviation of the ROAPRE values for non-family firms is greater than that of the family-controlled firms. The null hypothesis that the deviations for the two categories of firms are the same is therefore rejected with a high level of statistical confidence in favor of the alternative hypothesis according to which the variability of family-controlled firm returns is less than that of non-family firms. This finding implies that the results of superior accounting performance of family controlled firm's remains valid even when we use risk adjusted premanipulated returns.

5. Conclusions

This research takes into account earning management to test for differences in profitability between family and non-family firms in Chile. We use the Jones (1991) model to obtain a measure of premanipulated returns and use it for testing. We find that family-owned firms perform better financially than non-family firms even when we use premanipulated returns and control for risk differences. In addition, we find that the presence of AFPs in the ownership structure of firm (both family and non-family) helps to explain the financial performance difference between family and non-family enterprises. Our study has implications for academia, practitioners, and policymakers. For academia, our evidence confirms a growing body of research that show that family firms have better financial performance than their non-family counterparts. However, Chilean firms are characterized by high ownership concentration and pyramidal ownership structures and are primarily controlled by families or individual investors and holdings. Therefore, new research on these ownership structures and the position of family shareholders should be welcome, especially

in a Latin American cross-country analysis. For practitioners, our results point to some characteristics of the ownership structure that makes the financial information issued by firms more reliable. These characteristics are especially important in family firms, where ownership concentration gives owners clear control of the firm. For policymakers, our results are relevant in many other Latin Americans countries where family-owned firms are also an engine of economic growth and where financial regulation may be supoptimal such that earning management practices are usual.

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Appendix
Definition of Variables

Abbreviation	Variable	Definition
Dependent Variables:		
ROA	Return on assets	Net income/total assets
ROAPRE	Pre-manipulated ROA	ROA – DAJROA
DAJROA	Estimated discretionary accruals	Estimated from the year-industry estimation of equation (1).
A	Total accruals	Earnings before extraordinary items – cash flows from Operations.
Independent Variables:		
DFAM	Family-firm dummy	Dummy that takes the value of 1 if the firm is a family-owned firm, and zero otherwise.
DAFP	AFP ownership dummy	Dummy that takes the value of 1 if AFPs are part of the ownership structure of the firm, and zero otherwise.
Debt/Assets	Leverage	Debt to total assets ratio.
Size	Firm´s size	Natural log of total assets.
Age	Firm´s age	Number of years since the firm was founded.
Industry	Firm industrial classification	Industry were the firm operated based on a 19 sector system.

Table 1
Number of companies in sample, by year.

Year	Total
1998	169
1999	170
2000	174
2001	173
2002	175
2003	179
2004	150
2005	150
2006	150
2007	156
Total	1,646

Table 2
Percentages of family-controlled firms and non-family firms.

Year	Non-Family Firms (%)	Family Firms (%)	Total (%)
1998	23.1	76.9	100.0
1999	28.2	71.8	100.0
2000	28.7	71.3	100.0
2001	27.2	72.8	100.0
2002	28.0	72.0	100.0
2003	28.5	71.5	100.0
2004	26.7	73.3	100.0
2005	26.7	73.3	100.0
2006	30.0	70.0	100.0
2007	30.1	69.9	100.0
Total	27.7	72.3	100.0

Table 3
ROA, ROAPRE and DAJROA sample characteristics.

Variable	Obs. (*n*)	Mean	Std. Dev.
ROA	1,646	0.0425	0.1045
ROAPRE	1,646	0.0432	0.1228
DAJROA	1,646	–0.0007	0.0660

Notes: ROA = return on assets. ROAPRE = premanipulated ROA. DAJROA = estimated discretionary accruals from the year-industry estimation of equation (1).

Table 4
Difference of Means and Generalized Method of Moments

Panel A: Difference of means test for ROA, ROAPRE and DAJROA of family-controlled and non-family-controlled firms

	Means			
	Family (%)	Non-Family (%)	t	Sig. level
ROA	4.36	3.13	1.7442	0.0406
ROAPRE	4.44	3.24	1.6832	0.0462
DAJROA	0.19	–0.78	2.2905	0.0111

Panel B: Difference of means test for ROA, ROAPRE, and DAJROA of pension funds ownership participation firms and non-pension funds ownership participation

	Means			
	Pension Funds (%)	Non-Pension Funds (%)	t	Sig. level
ROA	6.39	2.61	6.2715	0.0000
ROAPRE	6.26	2.85	4.7791	0.0000
DAJROA	0.13	–0.23	0.9618	0.1682

Panel C: GMM system estimator results of family's influence on discretionary accruals

Variable	DAJROA	DAJROA	DAJROA	DAJROA
Size			–0.0018	–0.0019
			(–0.77)***	(–0.70)
Age			–0.0065	–0.0057
			(–2.73)***	(–2.78)***
Debt/Assets			–0.0004	–0.0030
			(–1.05)	(–1.44)
Dfamily	0.0544	0.0627	0.0227	0.0262
	(4.73)***	(3.47)***	(3.52)***	(3.49)***
Temporal Effect	No	Yes	No	Yes
Sectorial Effect	Yes	Yes	Yes	Yes
Auto(2)	1.46	1.37	1.12	1.30
*z*1	3.50	26.17	26.47	35.06
	(16)***	(25)***	(19)***	(28)***
*z*2	3.65	2.12	8.66	11.33
	(15)***	(24)***	(15)***	(24)***
Hansen test	14.42	18.53	50.34	50.21
	(17)	(17)	(49)	(48)
Obs.	1,646	1,646	1,646	1,646

Notes: ROA = return on assets. ROAPRE = premanipulated ROA. DAJROA = estimated discretionary accruals from the year-industry estimation of equation (1). Dfamily = dummy variable that equals 1 for family-controlled firms, and zero otherwise. *** indicates significance < 1%. ** indicates significance between 5% and 1%, and * indicates significance between 10% and 5%.

Table 5
Generalized Method of Moments System Estimator Results of Model 2

Variable	ROA	ROA	ROA	ROAPRE	ROAPRE	ROAPRE
Size	0.0340	0.0364	0.0342	0.0406	0.0467	0.0408
	(7.47)***	(5.68)***	(6.96)***	(6.43)***	(6.33)***	(6.18)***
Age	0.0060	0.0001	0.0006	0.0043	0.0012	0.0021
	(1.25)	(0.02)	(0.13)	(0.73)	(0.22)	(0.49)
Debt/Assets	–0.0009	–0.0009	–0.0007	–0.0011	–0.0011	–0.0010
	(–2.41)**	(–2.13)**	(–2.02)**	(–2.45)**	(–2.04)**	(–2.34)**
Dfamily	0.0625	0.0478	0.0296	0.0151	0.0149	0.0180
	(4.73)***	(2.83)***	(1.82)*	(1.77)*	(1.79)*	(2.21)**
DAFP			0.0492			0.0125
			(5.53)***			(1.81)*
Temporal Effect	No	Yes	Yes	No	Yes	Yes
Sectorial Effect	Yes	Yes	Yes	Yes	Yes	Yes
Auto(2)	1.32	1.48	1.52	0.40	0.41	0.41
*z*1	17.45	36.15	29.36	16.15	20.45	49.68
	(19)***	(28)***	(29)***	(19)***	(28)***	(29)***
*z*2	10.95	15.22	10.19	9.09	8.22	12.35
	(15)***	(24)***	(24)***	(15)***	(24)***	(24)***
Hansen test	46.83	45.19	51.61	52.72	51.40	55.70
	(49)	(48)	(57)	(49)	(48)	(57)
Obs	1646	1646	1646	1646	1646	1646

Notes: ROA = return on assets. ROAPRE = premanipulated ROA. DAFP = Chilean Pension Funds Administrators ownership dummy. Dfamily = dummy variable that equals 1 for family-controlled firms, and zero otherwise. Numbers in parentheses are *t-statistic*. *** indicates significance < 1%. ** indicates significance between 5% and 1%, and * indicates significance between 10% and 5%.

Table 6
Generalized Method of Moments System Estimator of Model 2

Variable	ROARISK	ROARISK	ROARISK	ROAPRERISK	ROAPRERISK	ROAPRERISK
Size	0.471	0.3586	0.2505	0.3469	0.429	0.3771
	(8.17)***	(5.04)***	(5.02)***	(5.93)***	(6.82)***	(6.56)***
Age	0.0073	0.0016	0.0084	0.0119	0.0276	0.0156
	(1.25)	(0.29)	(0.18)	(0.22)	(0.59)	(0.42)
Debt/Assets	–0.0092	–0.0075	–0.0095	–0.0113	–0.0103	–0.0129
	(–2.05)**	(–1.88)*	(–2.49)**	(–2.55)**	(–2.00)**	(–3.60)***
Dfamily	0.647	0.6720	0.3308	0.3438	0.2699	0.3791
	(3.95)***	(4.23)***	(2.65)***	(2.07)**	(1.78)*	(3.56)***
DAFP			0.5714			0.3665
			(7.07)***			(5.78)***
Temporal Effect	No	Yes	Yes	No	Yes	Yes
Sectorial Effect	Yes	Yes	Yes	Yes	Yes	Yes
Auto(2)	1.40	1.23	1.24	0.44	0.22	0.24
*z*1	21.11	36.93	39.71	10.57	14.42	37.14
	(19)***	(28)***	(29)***	(19)***	(28)***	(29)***
*z*2	10.13	17.86	23.57	7.35	6.70	10.45
	(15)***	(24)***	(24)***	(15)***	(24)***	(24)***
Hansen test	44.22	43.33	46.31	50.53	46.34	54.14
	(49)	(48)	(57)	(49)	(48)	(57)
Obs	1646	1646	1646	1646	1646	1646

Notes: ROARISK = return on assets adjusted to risk dimension. ROAPRERISK = premanipulated ROA adjusted to risk dimension. DAFP = Chilean Pension Funds Administrators ownership dummy. Dfamily = dummy variable that equals 1 for family-controlled firms, and zero otherwise. Numbers in parentheses are *t-statistic*. *** indicates significance < 1%. ** indicates significance between 5% and 1%, and * indicates significance between 10% and 5%.

Table 7
Variance Ratio Test

Panel A. Ratio = sd(ROAnofamiliy)/sd(ROAfamily)	
Ho: Ratio = 1	f-statistic = 1.2047
Ha: Ratio ≠ 1	prob (F > f) = 0.048
Ha: Ratio > 1	prob (F > f) = 0.024
Ha: Ratio < 1	prob (F < f) = 0.975
Panel B. Ratio = sd(ROAPREnofamiliy)/sd(ROAPREfamily)	
Ho: Ratio = 1	f-statistic = 1.3338
Ha: Ratio ≠ 1	prob (F > f) = 0.000
Ha: Ratio > 1	prob (F > f) = 0.001
Ha: Ratio < 1	prob (F < f) = 0.999