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Do Family Firms Pay Less for External Funding?

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Abstract

We examine the impact of family control on the cost of raising external funds by family enterprises. Using a sample of Australian publicly listed firms, we find a significantly negative relation between cost of newly raised capital and family control. Moreover, we show that this relationship varies with the quality of corporate governance and the quality of firm's information environment. Further, we conduct several robustness checks and consistently find that our main results remain unchanged. Overall, our evidence suggests that family firms have easier access to external financing fostered by family involvement in the ownership and control.

JEL classifications: G31; G32; M41; M42

Keywords: Australian family firms; Cost of capital; Corporate governance; Financial analysts; Institutional ownership

1. Introduction

It has been well documented that family and non-family firms differ significantly in several important dimensions. For instance, family-controlled firms tend to perform better (Anderson and Reeb, 2003), are more valuable (Villalonga and Amit, 2006), have lower dividend-payout ratios (Attig et al., 2016), and exhibit higher level of employee satisfaction (Huang et al., 2015). Furthermore, they react differently to rare events such as economic downturns (Lins et al., 2013) and political uncertainty (Amore and Minichili, 2018). Despite fairly extensive literature in this area, there is a scarcity of evidence on the availability and the cost of external financing for family versus non-family firms, especially in the context of the country-specific quality of investor protection and alternative ownership structures.

This paper investigates whether family and non-family firms differ in the cost of access to equity and debt financing. We choose to study Australian firms as they represent a particularly useful setting for our research questions. First, family firms are well represented in the Australian capital market and its economy at large (Mroczkowski and Tanewski, 2007; Moores and Mula, 2000; Graves and Shan, 2013). Second, the agency conflict in Australian firms tends to be less severe than in vast majority of other countries around the globe, as investor protection for shareholders and creditors in Australia is generally strong (Setia-Atmaja et al., 2009). Consistently, Gray et al. (2009) state that Australia has a unique and relatively strict institutional and regulatory framework. La Porta et al. (2002) argue that the Australian capital market is considered as high ownership concentration where 50% firms are family firms at 20% cut-off value. Family firms in Australia, the private benefits of control are higher in the line with the argument of Lamba and Stapledon (2001). The authors argue that if private benefits of control are high if a firm will have higher controlling shareholders. Nenova (2003) documents a high mean value (23%) of control-block votes in Australia in comparison with other developed

countries. Further, the ownership structure of Australian family firms is distinct from those in other common law countries. The equity ownership stake held by a typical family firm is significantly higher as compared to family ownership in e.g., U.S. or U.K. (Setia-Atmaja et al., 2009). Third, with regard to corporate governance, prior research such as Stapledon (1995) shows that about 45% of the firms are owned by non-institutional shareholders. Even institutional investments in family firms are lower than other two developed nations (Velury and Jenkins, 2006). Later, Dignam and Galanis (2004) find that in Australian family firms are mostly owned by non-institutional corporate shareholder. There is a dominance of blockholders in Australia and they likely involve in private rent extraction. This indicates that Australian listed family firms do not follow the outsider corporate governance mechanism like other developed nations, U.K and U.S. Finally, in respect of market for corporate control, Brakman et al. (2006) argue that there is a weaker takeover market in Australia compared to that of the U.K and the U.S.

Finally, family firms are more concerned about potential penalties and reputation harm and, therefore, are willing to sacrifice tax benefits to avoid the non-tax cost of potential price reductions. This is because family firms are sensitive to tax incentives (Chen et al., 2010). Australia provides an interesting framework for our analysis. Although Australia, U.K and U.S are considered as Anglo-Saxon countries, the Australian capital market is smaller compared to other continental countries (La Porta et al., 1998; 1999). The market capitalisation of Australian Stock Exchange, London Stock Exchange and NYSE are around A$2 trillion, US$4.6 trillion and US$30 trillion in 2018.

The Australian debt market is substantially different from other developed countries. Approximately, 90% of corporate debt in Australia is provided by commercial banks, versus 54% in Europe, and only 16% in the U.S (Ernst & Young, 2018)[1], meaning that firms in Australia

[1] https://www.ey.com/au/en/services/strategic-growth-markets/ey-accelerating-growth-ey-7-drivers-of-growth-funding-and-finance-corporate-debt-financing-time-to-sniff-out-options-other-than-the-banks

essentially do not issue debt in the corporate debt market to raise new capital. Australia has introduced imputation tax system in 1987 which leads to significant change to the tax framework.[2] This change has influenced the use of debt financing and eventually results in changes in corporate capital structures (Twite, 2001; Pattenden, 2006).[3]

Using a large dataset spanning the period from 2000 to 2016 and covering 3,901 firm-year observations, we find a negative and statistically significant relation between family control and the cost of equity as well as the cost of debt. This result implies that firms in which founding families play a relatively greater role through equity ownership, have easier access to external financing and therefore pay less for raising debt or equity. The results remain qualitatively the same when we use alternative measures of our key variables. Next, we conduct additional tests to investigate the impact of corporate governance and the information environment on the cost of financing. We find that greater family control acts as an effective monitoring device and appears to substitute other standard monitoring mechanisms such as independent board of directors and concentrated institutional ownership. More specifically, the banks tend to charge lower interest rates and equity investors demand lower returns, if the family control is more intense, even in the absence of board or other shareholders' oversight. Indirectly, this result is in line with e.g., Villalonga and Amit (2006) who document higher valuations of family firms, as well as Anderson et al., (2003) who find lower cost of debt financing for the U.S. sample. This result is also

[2] A dividend imputation tax system gives shareholders a credit which can be used to offset individual income taxes on dividend. Under the Australian imputation tax system, firms pay dividends on profits that taxed in Australia (named as franked dividends), and corporate income tax could be imputed in contradiction of individual tax compulsions on dividend income, and, hence, this efficiently removes the double taxation of dividends that exist under a traditional tax system. When dividends paid from corporate income have been taxed at the corporate tax rate, shareholders will receive a cash dividend plus the tax credit, and this tax credit can be used to offset their own personal tax liabilities. Dividends gained outside Australia (unfranked dividends) will be treated following a traditional tax schedule (Cannavan et al., 2004; Balachandran et al., 2019).

[3] Twite (2001) investigates the changes in the Australian firms' capital structure under the dividend imputation tax system, and finds that firms tend to reduce debt financing and increase external equity financing. Pattenden (2006) examines Australian firms' capital structure decisions under traditional and imputation tax regimes, and finds that tax incentives can help explain capital structure choice.

consistent with theoretical arguments put forward in seminal papers by Jensen and Meckling (1976).

Our paper contributes to the literature in several ways. First, we extend research on the importance of the cost of external financing in the context of family ownership. D'Aurizio et al., (2015) study Italian family firms during the 2007-2009 financial crisis and find that credit to family firms is limited than that to non-family firms. Boubakri et al., (2010) investigate the association between family control and cost of equity financing. They report that before the Asian crisis family control is not associated with firms' equity financing costs, however, following the crisis, family control is observed related to a higher cost of equity. Contemporaneously Boubakri and Ghouma (2010) examine the impact of corporate governance on bond yield-spreads and ratings. Using multinational sample firms, they observe that family control is positively related to effect bond yield-spreads, and negatively associated with bond ratings. Anderson et al. (2003) examine the link between founding-family ownership and firm performance and provide evidence that family firms perform better than nonfamily firms. Ellul et al. (2007) examine whether family blockholders have any impact on the firm's debt agency costs. They use international bond issues from 1995 to 2000 for 1,072 international firms originating from 24 different countries and document that family firms originating from high investor protection environments benefit from lower debt costs compared to non-family firms. Recently Ma et al. (2017) explore the relationship between family control and firms' cost of debt. Using Chinese data, they report that family control is associated with a lower cost of debt. However, as far as our knowledge goes no studies have examined the link between cost of debt and cost of equity capital in the context of unique setting Australia as discussed earlier. We aim to fill this gap in the literature.

Our paper provides a new perspective by analysing the impact of family control on the cost of equity and debt for Australian listed companies using a long time series of data. We exploit

this research setting due to the fairly significant control of family firms in the Australian capital market that allows us to draw meaningful conclusions concerning the cost of raising outside funds for family versus non-family firms. Second, our study adds to the corporate finance literature on the cost of capital in general (e.g., Easley and O'Hara, 2004; Chen et al., 2009; Hou et al., 2012; Byun et al., 2013; Barth et al., 2013). Third, our work complements the body of research on the importance and attributes of family-controlled firms. Extant literature reports ambiguous evidence on superior performance of family-run companies, their higher managerial efficiency, higher valuations, as well as different financing and investment policies as compared to widely-held non-family firms. This paper sheds further light on the unique characteristics of family firms by providing additional empirical evidence on the economic importance of the family involvement on the cost of raising external capital.

The remainder of our paper is structured as follows. Section 2 reviews the literature and develops testable hypotheses. Section 3 describes the data and explains research methods. Section 4 discusses the results, whereas Section 5 concludes the paper.

2. Hypothesis development

A substantial literature examines the impact of information asymmetry between management and outside investors on firm financing decisions. The Pecking order theory of Myers (1984) and Myers and Majluf (1984) predicts that firms with higher information asymmetry have higher external financing costs and choose debt financing over equity to reduce costs, signal managerial expectations, and mitigate the level of information asymmetry. Similarly, existing research has highlighted an important role of firm information asymmetry in determining share financing choices (Eckbo and Masulis, 1992; Bortolotti et al., 2008; Chang et al., 2009; Autore et al., 2011).

In this paper, we posit the existence of the difference in the cost of equity and debt between family and non-family firms due to different types of agency problems associated with these firms. Extant literature suggests that family firms are not subject to traditional agency problems. Villalonga and Amit (2006) identify the classic agency problem between owners and managers as "Agency Problem I" while the other type of agency conflict between majority shareholders and minority shareholders as "Agency Problem II". Traditional agency problem (Agency Problem I) arises when there is a conflict between managers and shareholders (Fama and Jensen, 1983). They further argue that agency cost (Agency Problem I) in family firms may be lower compared to non-family firms because of the close relationship between owners and managers. In family firms, members of the family generally hold executive positions and are therefore involved in the decision-making process. Since ownership concentration in family firms is high, principals play more direct monitoring roles over firms' activities which should lead to a greater alignment of interests (Demsetz and Lehn, 1985). Also, family firms seem to have better managerial skills, enjoy lower risk, superior knowledge in business activities and effective relationships with customers and suppliers. This is consistent with Anderson and Reeb (2003) who provide evidence that the performance of family firms is better than non-family firms. Hence, family firms are expected to be efficient in their business activities and this will result in reducing agency problems between managers and principals.

In contrast, Shleifer and Vishny (1997) and Villalonga and Amit (2006) posit that concentrated ownership in family firms causes agency problems between the majority shareholder (the family) and the minority. The conflict of interest between controlling owners and the minority is likely to be higher due to majority of the ownership of a firm being held by a few family members (Fama and Jensen, 1983). Family firms may expropriate minority shareholders by extracting private benefits because they enjoy effective control in family firms (Anderson and

Reeb, 2003). The agency problems in the family firms are also examined with regard to accounting quality but the outcomes are inconclusive. For example, Wang (2006), Ali et al. (2007) and Tong (2008) find that family firms report better quality earnings than non-family firms. Their results are consistent with the arguments made by Stein (1989) who posits that financial reporting quality of family firms is superior to that of non-family firms due to the family members' long-term investment horizon. This in effect prevents them from becoming involved in value-destroying rent seeking behaviour. Furthermore, Hutton (2007) conjectures that family firms may not be involved in manipulative activities because family members are considered to be long-term investors. Consistently, Chrisman et al. (2004) and Ghosh and Tang (2015) argue that accounting quality for family firms is higher than non-family firms because these firms are directly monitored by family members. Similarly, Chen et al. (2008) assert that family firms deliver more earnings warnings due to their awareness about the litigation risks and reputation costs. In regard to tax avoidance, Chen et al. (2010) report that family firms avoid less tax than non-family firms. Their findings indicate that in comparison with non-family firms, family firms are more aware about the probable reputational damage and penalties associated with an internal revenue service audit. This may result in reducing managers' opportunistic behaviour (Tong, 2008).

In contrast, Jabeen and Shah (2011) argue that corporate disclosures in family firms are likely to be of lower quality than in non-family firms. This is because family members hold substantial amounts of shares in family firms and have direct access to special information. Consistent with this notion, Chen et al. (2008) and Anderson et al. (2009) reveal that family firms report less voluntary disclosure compared to non-family firms. This is because family owners actively participate in managerial activities which lead to lower information asymmetry between owners and managers. More recently, Razzaque et al. (2016) show that family firms in emerging

economies engage in more real earnings management compared to non-family firms because the minority expropriations by the controlling shareholders in weaker investor protection environments is high compared to developed countries.

With reference to firms' performance, Anderson and Reeb (2003) and Sraer and Thesmar (2007) observe that family firms perform better than non-family firms. Similarly, Villalonga and Amit (2006) report that family ownership creates value if the founder is a CEO in family firms. In contrast, Li and Ryan (2015) find that family control destroys firm value.

Not many studies have explored the impact of family ownership on cost of equity capital and cost of debt. Boubakri et al., (2010) document that compared to non-family firms in East Asian countries, family firms have higher cost of equity capital after the late 1990s Asian financial crisis. As argued earlier, Australia is distinctive because of its strict institutional and regulatory framework and the ownership structure of family firms where the equity ownership stake held by a typical family firm is significantly higher than other developed countries. Therefore, we expect that family firms have lower cost of equity capital.

Limited studies have examined the link the between family ownership and cost of debt. For example, Anderson et al. (2003) find a negative relationship between founding family ownership and cost of debt. They argue that in family firms' divergence of interests between shareholders and bondholders is less compared to their counterpart non-family firms, and that family firms maintain long-lasting personal relationship with external parties including bondholders, banks and other parties, which results from family reputation that may reduce cost of debt. Anderson et al. (2003), Ellul et al. (2007); Fahlenbrach (2009); Lin et al. (2011), Aslan and Kumar (2012), and Achleitner et al. (2014) conjecture that cost of debt in family firms is likely to be lower because their main motive is survival and hence, they invest relatively more in low-risk projects.

Gonzalez et al. (2013) investigate whether family ownership has impact on capital structure. Using Colombian firms, the authors document that debt levels tend to be lower for younger firms. Similarly, Keasey et al. (2015) report the association between leverage and willingness to dilute control. They report that young family businesses are less willing to dilute control. Recently, Ma et al. (2017) argue that whether the cost of debt in family firms is higher depends on country-level regulatory environment such as weak or strong investor protection. Consistently, we posit that, since Australia is classified as a strong investor protection country, there is less expropriation of minority shareholder by family firms. Moreover, family firms provide transparent information to the shareholders, creditors and bondholders that may result in lower cost of equity capital and cost debt.

Therefore, we formulate our main hypothesis as follows:

Main hypothesis*: There is a negative relationship between family control and the cost of equity and cost of debt.*

3. Research design

3.1 Data, sample, and descriptive statistics

We collect data from the Bloomberg, DataStream, DatAnalysis and I/B/E/S databases. Our initial sample consists of the population of companies listed on the Australian Stock Exchange (ASX) and covered by the I/B/E/S database for the period 2000-2016. The sample begins with 7,662 firm years' observations. We eliminate 2,147 firm-year observations due to unavailability of family ownership data. Financial firm sector is dropped due to different specifications and operating nature of financial firms compared to non-financial firms. We also drop observations with missing values in the computation of cost of equity. In addition, we exclude observations with incomplete information for control variables and due to this, we lose 789, 586, and 689 firm

years for price/earnings to growth ratio (PEG), modified PEG ratio (MPEG), and Ohlson and Juettner-Nauroth (2005) models, respectively. This exercise leads us to a final sample size of 3,412, 3,215, and 3,110 firm-year observations for the PEG (Easton, 2004), MPEG (Easton, 2004) and OJN model (Ohlson and Juettner-Nauroth, 2005), respectively. For cost of debt, after eliminating firms from financials sector and firms with incomplete information for family ownership and control variables, we arrive at the final sample of 3,412 firm-year observations. Panel A of Table 1 presents the sample distribution for cost of equity models and cost of debt.

Panel B and Panel C of Table 1 provide details of the distribution of firm-years across years and industries, respectively. The lowest number of family firms is (n = 142) in 2000, with 4.16 percent of sample firms, and the largest number of firms is (n = 286) in 2013, representing 8.38 percent of sample firms. The distribution is fairly even with no apparent evidence of clustering in any year. We classify firms according to the Global Industries Classification Standard (GICS) codes. A large proportion (24.50%) of firms is concentrated in the Industrial sector followed by Consumer Discretionary (21.71%), Materials (19.78%), Consumer staples (9.23%) and Energy (7.21%). These are the most widely represented industry sectors in the sample and, thus, the distribution indicates that the chosen firms operate in a broad array of industries.

[Insert Table 1 here]

Table 2 presents the descriptive statistics of the sample firms and the univariate test of differences between family and non-family firms. Results of the univariate analysis indicate that family firms are smaller in size (13.74 vs. 18.33). Family firms utilize less leverage (17.58 vs. 27.32) and are less risky (0.78 vs. 1.19) than non-family firms. These firms are more likely to be audited by a Big 4 auditing firm (95% vs. 90%). Family firms also have a higher return on equity (5.56% vs. 4.75%) and lower capital to total assets ratio (5% vs. 7%) than non-family firms in our sample. Family firms are more financially sound (*ZSCORE*) than non-family firms (3.23 vs.

2.81). Founding families on average hold 31.93% of the firm's outstanding equity.

The univariate results of Panel B in Table 2 imply that family firms have lower average cost of equity (0.17 vs. 0.18)[4] and cost of debt (0.06 vs. 0.08) than non-family firms. Finally, results in Panel C show that the family firms represent the 27% of our sample firms.

[Insert Table 2 here]

In Table 3, we report the Pearson correlations between the explanatory and control variables in the model. Consistent with the above univariate analysis, family control (*FAM*) variable is significantly negatively correlated with *SIZE*, *BETA*, *LEV* and *CAPTA* variables. In contrast to this, there is a significant positive correlation of 0.14 between the Big 4 auditors (*BIG4*) and *FAM*. Overall, the underlying nature and magnitude of the reported correlations suggests that the independent variables can be jointly included to form a parsimonious regression model.

[Insert Table 3 here]

3.2 Main variables

3.2.1 Identification of family-controlled firms

We classify a firm as a family firm if the following criteria are satisfied: (i) the existence of a dominant shareholder who is identified as founding member or family members involved in the management of the company and has a direct interest of greater than 20 per cent of voting shares; (ii) the dominant shareholder is the CEO or a key member of the board; and (iii) the dominant shareholder continues to be the dominant shareholder and board member during the sample period. We also removed firms that are controlled by business groups including family and non-family members. Based on this classification, we construct the dummy variable (*FAM*) which equals 1 if the firm is classified as a family firm and 0 otherwise. This ownership-based dummy

[4] The average cost of equity of our study is consistent with prior Australian study of Hasan et al. (2015). Furthermore, Truong and Partington (2007) show that cost of equity estimates for the Australian firms are in the range of 10-17%.

variable is the primary indicator of family participation in our testing[5]. For robustness checks, we also use the family equity holdings as a fraction of outstanding shares.

3.2.2 Measuring cost of equity (COE)

Prior studies employ both the implied approach and the realized approach for measuring the cost of equity (Monkhouse, 1993; Khurana and Raman, 2004; Dhaliwal et al., 2006; Hail and Leuz, 2006; Gray et al., 2009; Chen et al., 2011; Hasan et al., 2015). However, some authors, for instance, Pastor et al. (2008), suggest that the implied approach is superior compared to the realized approach. Also, estimates based on ex-post realized stock returns suffer from measurement errors (Fama and French, 1997). As a result, we employ the implied approach to estimate the cost of equity. Following Hasan et al. (2015), we use price/earnings to growth ratio (*PEG*), modified PEG ratio (*MPEG*), and Ohlson and Juettner-Nauroth (2005) models, labelled as *COE_PEG*, *COE_MPEG* and *COE_OJN*, respectively. Extant literature provides conflicting evidence regarding the superiority of any particular model in estimating the cost of equity capital (Dhaliwal et al., 2006). Therefore, we use the average of all three of these measures (*COE_Avg*) due to the lack of consensus on precisely estimating the cost of equity capital. The use of an average measure reduces the overall error in the cost of equity estimate (Dhaliwal et al., 2006; Hail and Leuz, 2006). We also present results for individual cost of equity estimates to show how the association between family firm control and cost of equity estimates varies across the models.

3.2.3 Measuring cost of debt (COD)

Following Kim et al. (2011), we employ interest rate spread as a proxy for cost of debt (*COD*), which is the difference between interest rate on debt and average annual prime rate. This approach

[5] Anderson et al. (2003) argue that some families are able to exert control with minimal fractional ownership, while others require a larger stake for the same level of control. Therefore, ownership-based dummy variable approach, as the primary indicator of family participation is an ideal approach.

is appropriate for our study as Australia businesses are greatly reliant on private debt over public debt (Gray et al., 2009).

3.2.4 Control variables

We use a number of variables into the analysis to control for other potential determinants of a firm's cost of equity capital and debt financing, as suggested by the literature. Size of the firm can have a significant influence on cost of equity capital and debt financing as larger firms enjoy economies of scale and greater stability. Furthermore, larger firms have a lower probability of default (Berger and Udell, 1995), are followed more by analysts, and are more liquid (Witmer and Zorn, 2007). Therefore, to control for firm size, the *SIZE* variable is defined as the natural logarithm of total assets at the balance sheet date. *SIZE* is expected to be negatively associated with cost of equity capital and debt financing. To control for riskiness of the firm, we measure leverage (*LEV*) as the ratio of total debt to total assets. The sign for the *LEV* variable is expected to be positively associated with the cost of capital. *BETA* measures the firm's stock price volatility with respect to the overall market and is calculated for 36 months ending in the month of issue forecast (Fernando et al., 2010). The sign for the *BETA* variable is expected to be positively related to the cost of equity capital and debt financing, as larger risk is associated with higher cost of equity and debt. We also employ the *BIG4* variable which is represented as a dummy variable taking value of 1 if the auditing process has been performed by one of the Big 4 auditing firms and 0 otherwise (Carey and Simnett, 2006; Azizkhani et al., 2013), to control for the effect of a firm's information disclosure quality on cost of capital financing. Prior studies provide evidence that Big 4 auditors conduct higher quality audits (Eshleman and Guo, 2014), encourage higher quality disclosures in firms' financial reports (Chang et al., 2009). Mansi et al. (2004) argue that the potential conflicts of interest among owners, managers, and other shareholders create an environment in which an outside auditor may contribute significant benefits to investors, and

suggest that firms employing Big N or industry-specialist auditors have lower costs of debt. Other studies find that auditor quality might contribute as a governance and certification mechanism which can aid in reducing information asymmetry and enhancing the information environment and transparency of issuing firms and, hence, is associated with lower cost of capital (Khurana and Raman, 2004) and debt financing (Karjalainen, 2011). *ROE* is the ratio of net income before extraordinary items to total equity. This variable reveals how much profit a company generates with the money shareholders have invested. Therefore, the sign for the *ROE* is expected to be negatively associated with cost of equity and debt. We also include book-to-market ratio (*BM*) as a growth proxy. To control for financial distress, we include Altman's Z score.[6] *CAPTA* is the ratio of capital to total assets. Finally, we include year and industry dummies to control for possible time and industry effects. For ease of reading, we also present these variable definitions in the Appendix.

3.3 Empirical specification

In the primary specification, we estimate the ordinary least squares regression (OLS) model to test the relationship between family control and cost of equity capital, and various control measures.

$$COE_{i,t} = \alpha + \beta FAM_{i,t} + CONTROL_{i,t-1} + \varepsilon_{i,t} \qquad (1)$$

where, $COE_{i,t}$ is cost of equity capital of firm i in year t. $FAM_{i,t}$ is a dummy variable equal to 1 for family-controlled firms in year t, and 0 otherwise. $CONTROLS_{i,t-1}$ is the set of control variables defined in Section 3.2.4. All control variables are included in the regressions with a one-year lag. We include industry-fixed, and year-fixed effects to control for cross-sectional and time-series dependence. All models are estimated with robust standard errors to correct for heteroscedasticity and are clustered at the firm level (Petersen, 2009).

[6] Altman's Z score = 1.2 (working capital/total assets) +1.4 (retained earnings/total assets) + 3.3 (earnings before interest & tax/total assets) + 0.6 (market value of equity/total liabilities) + 0.999 (sales/total assets).

Similarly, we employ the following model to test the association between family ownership and cost of debt financing:

$$COD_{i,t} = \alpha + \beta FAM_{i,t} + CONTROL_{i,t-1} + \varepsilon_{i,t} \qquad (2)$$

where, $COD_{i,j,t}$ is cost of debt capital of firm i in year t. A description of the remaining variables is provided as above.

4. Empirical results

4.1 Relationship between family control and the costs of external funding

Table 4 summarises the pooled OLS estimates of the effect of family-controlled firms on the cost of equity capital and debt financing. In Model 1, the regression results suggest that the family control is significantly negatively associated with the average cost of equity capital (Coeff = -0.380 and p <0.01) and this result is consistent with our main hypothesis. Using *COE_PEG* as a measure of the cost of equity capital (Model 2), we also find that the *FAM* variable is negative and statistically significant at the 1% level. The regression results of remaining two-model specifications (Models 3 and 4) show that the family firms experience a lower cost of equity capital. In terms of economic influence on the cost of equity and debt, a one standard deviation increase in the level of family control reduces the cost of equity of 7.68% and debt 6.88%, respectively.

In terms of the control variables, the coefficient for *BIG4* is negative and significant, while the *LEV* coefficient estimate is significantly positively associated with cost of equity capital in all the estimations. The coefficient on *SIZE* estimate is negative and significant as expected. The *CAPTA* variable is positive and statistically significant across all specifications of the cost of equity estimates, which suggests that higher capital adequacy ratio is associated with higher cost of equity capital. The coefficient on *BM* variable is negative and statistically significant in all

three specifications of cost of equity, which confirms that low growth firms enjoy lower cost of capital. However, *ROE*, *BETA* and *ZSCORE* variables are insignificant, suggesting that these variables have no impact on the cost of equity capital in our sampled firms.

Model 5 presents the result of relationship between family ownership and the cost of debt financing. The coefficient on family ownership (*FAM*) is negative (-0.318) and statistically significant at the 1% level, suggesting that family firms experience a lower cost of debt financing. This result is in line with the main hypothesis.

With respect to the control variables, *BIG4* and *SIZE* variables are significantly negatively associated with cost of debt financing, as expected. The coefficient on *LEV* variable is positive and statistically significant (Coeff = 0.648 and $p < 0.01$), which confirms that higher debt usage is associated with a higher cost of debt. Similarly, the *CAPTA* variable is positively associated with higher cost of debt financing.

[Insert Table 4 here]

4.2 Robustness checks

In this section, we conduct robustness checks to assess whether our results in the previous section are reliable.

4.2.1 Firm-fixed effects

Although we control in the regressions for many firm-level characteristics that are potentially correlated with family control and costs of external financing, we are aware that the results can be driven by unobservable and time-invariant heterogeneity across firms. We address this concern by performing a panel regression that includes firm-fixed effects. Panel A of Table 5 presents the results of this analysis for the whole sample. As shown, family control is significantly and negatively associated with different proxies for cost of equity capital as well as the average cost of equity capital (Models 1 through 4), and also negatively correlated with cost of debt financing

even after controlling for firm-fixed effects. Specifically, the coefficient estimates of the *COE_Avg* and COD variables are -0.598 (*t*-stat=-5.91) and -0.341 (*t*-stat=-3.33) for the specifications for cost of equity and cost of debt financing, respectively. These results suggest that our results are not driven by time-invariant unobservable firm characteristics.

[Insert Table 5 here]

4.2.2 Lagged family control

It is likely that the relation between family control and costs of external financing is driven by reverse causality or simultaneity problems, for example, potential reverse causality between costs of external financing and family firm characteristics. To mitigate this endogeneity bias, we use the lagged value of the family control variable in the regression. While the lagged variable cannot entirely solve the endogeneity problem, they are suitable to alleviate the concern of reverse causality. Panel B of Table 5 reports results for the models with the lagged value of the family control variable. The results confirm a negative relation between family control and costs of external financing. The *FAM* coefficient estimates are -0.342 (*t*-stat=-5.09) and -0.298 (*t*-stat=-2.89) for the specifications relating to cost of equity and cost of debt financing, respectively.

4.2.3 Two-step system GMM estimate

Endogeneity is a serious concern in the ownership literature. We have attempted to address potential endogeneity problems by accounting for firm fixed effects and using lagged family control in the robustness tests. However, we are aware that the results can be driven by unobservable heterogeneity across firms that can drive both family control and the cost of capital. In addition, as ownership structure is relatively sticky, using lagged family control does not adequately address concern about reverse causality. Therefore, we employ an alternative method, the two-step system GMM estimate, to further check the robustness of our baseline results.[7] Panel

[7] We thank the anonymous reviewer for this suggestion.

C of Table 5 presents the results of the two-step system GMM estimate of regressing cost of capital measures on family control.

As shown, the family control is significantly, negatively associated with the cost of capital measures even after the two-step system GMM estimate, supporting the prediction that family firms are associated with lower cost of capital.

4.2.4 Governance mechanisms

Mande et al. (2012) and Dutordoir et al. (2014) find that corporate governance quality is related to whether firms issue various forms of debt or equity. Extant research provides evidence that the corporate governance mechanisms impact cost of capital (Anderson et al., 2004; Chen et al., 2009). For example, Anderson et al. (2004) document that cost of debt is inversely related to board independence. Later, using 559 firm-year observations across the 17 emerging countries, Chen et al. (2009) report that cost of equity is significantly associated with the ownership concentration.[8] As a result, we investigate whether the effects of family control on cost of equity capital and debt financing differ between stronger and weaker governed firms using (i) board independence; and (ii) institutional ownership as proxies for the strength of the governance mechanisms. If family-controlled firms mitigate the agency conflicts, we would expect the effects of family control on cost of capital to be more pronounced in firms with weaker governance.

Board independence represents the percentage proportion of the total number of board members that are identified as independent directors. The institutional ownership is measured as the sum of the percentage shareholding of all institutional shareholders within the company's top 20 shareholders. Then, we rank firm-year observations into terciles based on the institutional ownership at the beginning of the fiscal year for each sample year with high (low) ownership referring to a stronger (weaker) monitoring environment. Similarly, we rank firm-year

[8] Chen et al. (2009) use two proxies for ownership concentration: The ownership of the five largest shareholders and the Herfindal index of the five largest shareholders (the sum of the squares of five shareholders' ownership).

observations into terciles based on the board independence with the top terciles comprising firms having stronger governance and those firms in the bottom terciles having weaker governance. We subsequently examine the baseline model in the subsamples with stronger and weaker governance firms[9] and report the results in Panel A of Table 6 for board independence and in Panel B for institutional ownership.

We find that the impacts of family control on cost of capital and debt are strongly negatively significant for the subsample of firms with less independent boards and lower institutional ownership while this relation is statistically insignificant for the subsample of firms with more independent boards and higher institutional ownership. Overall, the results indicate that family-controlled firms provide strong incentives for founding families to monitor the firm and reduce the agency conflicts in the absence of effective governance mechanism.

[Insert Table 6 here]

4.2.5 High-versus low-quality information environment

A number of previous studies suggest that information quality reduces cost of equity capital by curtailing information asymmetry. For example, Easley and O'Hara (2004), Francis et al., (2005) and Hail and Leuz (2006) find strong negative associations between proxies for information quality and cost of capital. Furthermore, using S&P 500 firms, Ali et al. (2007) report that family firms reduce information asymmetry by providing more quarterly forecasts than non-family firms. To investigate this issue, we use the number of analysts following the stock (*ANALYST*) as proxy for the information asymmetry level. We measure analysts following as the average number of analysts making annual earnings forecasts over a 12-month period for a particular firm. Following Guay et al. (2011) and Kim et al. (2016), for each fiscal year, we sort firm-year observations into terciles based on the values of analysts' following with more (less)

[9] In the analysis, we exclude the observations derived from the middle tercile.

following refers to low (high) information asymmetry. Since our results provide evidence that family control reduces the agency problems and thereby the cost of capital, then in this section we posit that this effect would be more pronounced for firms where such information asymmetry is higher. We then examine the baseline model in the subsamples with high and low information environments. In the analysis, we exclude observations from the middle tercile. As anticipated, our results in Table 7 show that the negative effects of family control on cost of equity capital and debt financing are more pronounced for the subsample of firms where such information asymmetry is higher. Specifically, we find that the *FAM* coefficient estimates are -0.326 (*t*-stat=-4.32) and -0.356 (*t*-stat=-4.14) for the specifications for cost of equity under low information environment (Model 2) and for cost of debt financing controlling for low information environment (Model 4), respectively; whereas, this relation is statistically insignificant for the subsample of firms with higher information environment (Models 1 and 3).

[Insert Table 7 here]

4.2.6 Use of alternative proxy for family participation

As additional robustness test, we replace the *FAM* dummy variable with *FAMOWN*, which represents the percentage of total company equity shareholding held by all family members. The empirical equations are given as:

$$COE_{i,t} = \alpha + \beta FAMOWN_{i,t} + CONTROL_{i,t-1} + \varepsilon_{i,t} \qquad (3)$$

$$COD_{i,t} = \alpha + \beta FAMOWN_{i,t} + CONTROL_{i,t-1} + \varepsilon_{i,t} \qquad (4)$$

where, $COE_{i,t}$ ($COD_{i,t}$) is cost of equity (debt) capital of firm i in year t. $FAMOWN_{i,t}$ the percentage of total company equity shareholding held by all family members. $CONTROLS_{i,t-1}$ a proxy for the set of firm-level control variables reported with a one-year lag, including firm size (*SIZE*), stock market valuation (*BM*), operating performance (*ROE*), leverage (*LEV*), systematic risk (*BETA*), disclosure quality (*BIG4*), financial distress (*ZSCORE*), and level of capital (*CAPTA*).

Table 8 presents the empirical analysis results of the relation between family ownership and costs of external funding, employing different measures of cost of equity capital financing (Models 1 through 4) and cost of debt capital financing (Model 5). Similar to the main results in the baseline model (also see Table 4), the *FAMOWN* variable is significantly negatively associated with all the proxies for cost of equity capital and debt financing. This result is in line with the main hypothesis and consistent with the argument made by Anderson et al. (2003) that family ownership provides strong incentives for families to monitor and reduce agency conflicts.

[Insert Table 8 here]

4.2.7 Family CEO

Extant literature provides conflicting evidence regarding the role played by a family member on the CEO's position in a firm. For example, Morck et al. (1988) contend that family CEOs can enhance firms' wealth because they bring unique, value-adding skills to the business that result in superior accounting performance and market valuations. Similarly, Anderson and Reeb (2003) observe that family involvement in management positions is significantly positively associated with firm performance. However, Smith and Amoako-Adu (1999) and Barth et al. (2005) report the opposite. Anderson et al. (2003) find that having a family member as CEO is associated with a significantly higher cost of debt financing in a firm. Accordingly, we investigate the impact of two potential CEO choices: Family member as CEO or Outsider CEO. For this, we create a dummy variable coded as '1' for a family member as CEO and '0' for an outsider hired as CEO. The empirical equations are given as:

$$COE_{i,t} = \alpha + \beta FAMCEO_{i,t} + CONTROL_{i,t-1} + \varepsilon_{i,t} \qquad (5)$$

$$COD_{i,t} = \alpha + \beta FAMCEO_{i,t} + CONTROL_{i,t-1} + \varepsilon_{i,t} \qquad (6)$$

Table 9 presents the empirical analysis results of the relation between family member as CEO and costs of external funding. Results in Table 9 show that having a family member as CEO is associated with lower costs of external financing. Thus, the results are consistent with the

argument by Villalonga and Amit (2004) who suggest that the conventional owner-manager agency problem in non-family firms is more acute than the family-minority conflict in family firms with a member as CEO.

[Insert Table 9 here]

4.2.8 Family firms' age

Gonzalez et al. (2013) document that debt levels are lower for younger firms and tend to have higher debt levels as the firms age. In a similar vein, Keasey et al. (2015) find that the owner's stake is positively related to leverage and the life cycle of the firm matters in the financing decision. Accordingly, in Table 10, we report the effect of firm age in family-controlled firms on costs of external funding for the subsample of young firms and mature firms.[10] We rank firm-year observations into terciles based on the firm age with the top terciles comprising firms having mature firms and those firms in the bottom terciles having young firms. We find that the effect of firm age on costs of external funding is stronger for mature family-controlled firms, suggesting that the relation of family control and costs of external funding is stronger for mature firms.

5. Conclusion

Companies raise external funding to finance new investments, pay for mergers and acquisitions or support their working capital needs. The cost of capital matters because it determines the profitability of the capital spending decisions, which in turn may reflect positively on the enterprise value. Companies concerned about creating wealth for shareholders, should aim at reducing their cost of capital (ceteris paribus), since it leads to value maximization and makes shareholders better off.

In this paper, we find that Australian family firms enjoy lower cost equity and debt financing vis-à-vis firms without any family involvement. The effect is persistent and survives a number of

[10] We thank the anonymous reviewer for this suggestion.

robustness checks, in which we employ different measures of our main variables. Moreover, we find that family control may play an important monitoring role. Firms that exhibit poorer corporate governance and information environments benefit significantly from family participation in firms' ownership structure and control. The Australian economy provides an attractive laboratory for the testing of our hypotheses given the incidence of family firms in the stock market, their reliance on bank funding, and the level of investor protection.

Our study suggests that investors should view founding family ownership as an organizational device that better protects shareholders' interests. The findings obtained in the paper may guide policymakers, market participants and regulators with regard to different policy directions on family-run enterprises.

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Appendix: Definitions of variables

Variable Name	Definition
Cost of Capital and Debt measures	
COE_PEG	Cost of capital based on the model developed by Gebhardt et al. (2001)
COE_MPEG	Based on the model developed by Claus and Thomas (2001)
COE_OJN	Based on the model developed by Ohlson and Juettner-Nauroth (2005)
COE_Avg	Mean estimate of the COE_PEG, COE_MPEG, and COE_OJN estimates
COD	Interest rate spread which is the difference between interest rate on debt and average annual prime rate
Control variables	
FAM	A dummy variable equal to 1 for family-controlled firms, and 0 otherwise
SIZE	Natural logarithm of total assets
LEV	Ratio of total debt to total assets
BETA	Systematic risk which is stock beta determined over 36 months ending in the month of issue forecast
BIG4	An indicator variable taking a value of 1 if the principal auditor of the firm is a Big 4, and 0 otherwise
ROE	Ratio of net income before extraordinary items to total equity
BM	Book-to-market ratio
ZSCORE	Altman's Z score
CAPTA	Ratio of capital to total assets
Robustness tests-related variables	
ANALYST	Average number of analysts making annual earnings forecasts over a 12-month period
FAMCEO	A dummy variable taking a value of 1 for a family member as a CEO and 0 otherwise
FAMOWN	Percentage of total company equity shareholding held by all family members
BIND	Percentage proportion of the total number of board members who are identified as independent directors
IO	Sum of the percentage shareholding of all institutional shareholders within the company's top 20 shareholders

Table 1
Sample selection and distribution across years and industries

Table reports sample selection and sample distribution across years and industries for various cost of capital models. We classify firms according to the Global Industries Classification Standard (GICS) codes.

Panel A: Sample selection by cost of capital model

Reason for sample exclusion	Total	Easton PEG (2004)	Easton MPEG (2004)	Ohlson and Juettner-Nauroth (2005)	COD
I/B/E/S Forecasted EPS diminished by:	7,662	7,662	7,662	7,662	7,662
- Lack of family ownership data	2,147	2,147	2,147	2,147	2,147
- Lack of COC measure data	N/A	N/A	552	521	N/A
- Belongs to financial industry	1,314	1,314	1,162	1,195	1,314
- Lack of control variables	789	789	586	689	789
Final usable sample	3,412	3,412	3,215	3,110	3,412

Panel B: Breakdown by year

Year	Total
2000	142
2001	200
2002	194
2003	163
2004	186
2005	221
2006	239
2007	259
2008	274
2009	208
2010	248
2011	271
2012	250
2013	286
2014	271

Panel C: Breakdown by industry

	Total	%
Consumer Discretionary	741	21.71
Consumer Staples	315	9.23
Energy	246	7.21
Healthcare	232	6.80
Industries	836	24.50
Information Technology	237	6.95
Materials	675	19.78
Telecommunication	69	2.03
Utilities	61	1.79

Table 2
Descriptive statistics

This table provides the results of descriptive statistics and univariate analysis for family and non-family firms. The sample comprises 3,901 firm-year observations from 2000 to 2016. The descriptive statistics variables include: *SIZE* (natural logarithm of total assets), *LEV* (total debt/total assets), *BETA* (stock beta calculated over 36 months ending in the month of issue of forecast), *BIG4* (An indicator variable taking a value of 1 if the principal auditor of the firm is a Big 4, and 0 otherwise), *ROE* (net income before extraordinary items to total equity), *BM* (book-to-market ratio), *ZSCORE* (Altman's *Z* score), *CAPTA* (capital to total assets), *FAMOWN* (Percentage of total company equity shareholding held by all family members), COE_PEG is cost of equity, estimated by the PEG model of Easton (2004), COE_MPEG is cost of equity, estimated by the MPEG model of Easton (2004), COE_OJN is cost of equity based on the model developed by Ohlson and Juettner-Nauroth (2005), COE_AVG (mean of the COE_PEG, COE_MPEG, and COE_OJN estimates), COD (Interest rate spread which is the difference between interest rate on debt and average annual prime rate), and a binary variable for family firms (*FAM*). The *t*-value represents the significance of differences between the mean family and mean non-family. Symbols *** and ** are significant at the 1% and 5% levels, respectively.

Variables	**Panel A: Firm-level variables**			
		Family firms	**Non-family firm**	***t*-value**
SIZE	Mean ($M)	13.74	18.33	-5.89***
	Median ($M)	13.26	16.79	
LEV	Mean (%)	17.58	27.32	-2.89***
	Median (%)	19.80	26.54	
BETA	Mean	0.78	1.19	-3.02***
	Median	0.73	0.87	
BIG4	Mean	0.95	0.90	2.25**
	Median	1.00	1.00	
ROE	Mean (%)	5.56	4.75	2.64***
	Median (%)	5.22	3.68	
BM	Mean	0.86	0.94	-4.83***
	Median	0.89	0.99	
ZSCORE	Mean	3.23	2.81	3.65***
	Median	2.46	1.96	
CAPXTA	Mean	0.05	0.07	-3.99***
	Median	0.04	0.06	
FAMOWN	Mean	31.93	0.000	14.35***
	Median	24.36	0.000	
Panel B: Cost of equity and debt				
COC_PEG	Mean	0.16	0.18	-2.55**
	Median	0.12	0.14	
COC_MPEG	Mean	0.17	0.20	-3.01***
	Median	0.15	0.17	
COC_OJN	Mean	0.18	0.21	-2.78***
	Median	0.16	0.19	
COC_AVG	Mean	0.17	0.18	-2.87***
	Median	0.14	0.16	
COD	Mean	0.06	0.08	-3.68***
	Median	0.04	0.07	
Panel C: Dependent variable				
	Family firms	%	Non-family firms	%
FAM	850	27	2,562	73

Table 3
Correlation Matrix

Table presents the Pearson correlation matrix of the key variables. Symbols ***, **, and * denote significance at the 1%, 5% and 10% levels, respectively. Variable definitions are provided in the Appendix.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
COE_PEG	1													
COE_MPEG	0.29***	1												
COE_OJN	0.27***	0.16***	1											
COE_AVG	0.46***	0.39***	0.40***	1										
COD	0.26***	0.24**	0.20**	0.35*	1									
FAM	-0.11**	-0.21**	-0.10**	-0.14**	-0.15**	1								
BIG4	-0.19***	-0.12***	-0.18**	-0.17**	-0.19***	0.14***	1							
SIZE	-0.12***	-0.14**	-0.15**	-0.16*	-0.10***	-0.18***	0.47***	1						
BM	-0.18***	-0.13***	-0.15**	-0.18**	-0.10**	-0.42***	0.28***	0.38***	1					
BETA	0.28***	0.23***	0.23**	0.16**	-0.14**	-0.17***	-0.16**	-0.23***	-0.16***	1				
LEV	0.04***	0.04***	0.06**	0.03*	-0.04*	-0.15*	0.11	-0.14**	-0.15	0.12**	1			
CAPTA	0.30***	0.27***	0.22*	0.22**	0.15**	-0.16***	-0.14***	0.17***	0.16***	-0.24***	-0.10**	1		
ROE	0.31***	0.26***	0.26*	0.24**	0.23**	0.22***	0.16	0.18***	0.13***	-0.43*	-0.16**	0.14***	1	
ZSCORE	-0.09***	-0.08***	-0.09***	-0.08***	-0.06**	0.19***	0.18**	0.28***	0.17***	-0.17	0.12	-0.09*	0.08**	1

Table 4
Family-controlled firms and costs of external funding

This table presents the empirical analysis results of the relation between family-controlled firms and costs of external funding, employing different measures of cost of equity capital financing (Models 1 through 4) and cost of debt capital financing (Model 5). The empirical equations are given as:

$$COE_{i,t} = \alpha + \beta FAM_{i,t} + CONTROL_{i,t-1} + \varepsilon_{i,t} \quad (1)$$

$$COD_{i,t} = \alpha + \beta FAM_{i,t} + CONTROL_{i,t-1} + \varepsilon_{i,t} \quad (2)$$

where, $COE_{i,t}$ ($COD_{i,t}$) is cost of equity (debt) capital of firm *i* in year *t*. $FAM_{i,t}$ is a dummy variable equal to 1 for family-controlled firms in year *t*, and 0 otherwise. $CONTROLS_{i,t-1}$ a proxy for the set of firm-level control variables reported with a one-year lag, including firm size (*SIZE*), stock market valuation (*BM*), operating performance (*ROE*), leverage (*LEV*), systematic risk (*BETA*), disclosure quality (*BIG4*), financial distress (*ZSCORE*), and level of capital (*CAPTA*). Detailed definitions of the variables are provided in the Appendix. Year and industry dummies are also included to control for year-industry fixed effects. The *t-statistics* shown in parentheses are based on robust standard errors, which account for heteroscedasticity and firm-level clustering. The symbols *** and ** indicate significance at the 1% and 5% levels, respectively.

Variables	**COE_AVG**	**COE_PEG**	**COE_MPEG**	**COE_OJN**	**COD**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
FAM	**-0.380**	**-0.358**	**-0.329**	**-0.368**	**-0.318**
	(-6.66)* **	**(-5.43)*** **	**(-4.19)*** **	**(-4.65)*** **	**(-3.04)*** **
SIZE	-0.182	-0.194	-0.227	-0.220	-0.1842
	(-3.69)***	(-4.25)***	(-5.58)***	(-5.13)***	(-4.27)***
LEV	0.524	0.476	0.746	0.742	0.6482
	(3.09)***	(3.09)***	(3.52)***	(3.289)***	(3.20)***
BIG4	-0.558	-0.482	-0.354	-0.309	-0.620
	(-3.03)***	(-2.90)***	(-2.37)**	(-2.18)**	(-3.42)***
ROE	-0.233	-0.326	-0.287	-0.350	-0.475
	(-1.35)	(-0.51)	(-0.95)	(-1.03)	(-2.21)**
BM	-0.005	-0.005	-0.008	-0.008	-0.011
	(-2.97)***	(-3.00)***	(-3.53)***	(-3.35)***	(-2.18)**
BETA	0.074	0.062	0.059	0.051	0.049
	(1.23)	(1.07)	(0.70)	(0.49)	(0.86)
ZSCORE	0.294	0.270	0.357	0.350	0.269
	(0.68)	(0.51)	(1.22)	(1.02)	(1.12)
CAPTA	0.050	0.058	0.074	0.076	0.072
	(3.64)***	(3.77)***	(5.09)***	(5.23)***	(4.74)***
Constant	2.064	1.842	1.896	1.896	1.086
	(8.07)***	(9.29)***	(7.09)***	(8.61)***	(5.92)***
Fixed effects	YI	YI	YI	YI	YI
R-squared	0.352	0.341	0.310	0.318	0.220
Obs.	3,412	3,412	3,215	3,110	3,412

Table 5
Endogeneity

This table reports the panel regression of costs of external funding on family control using a number of robustness tests, including firm-fixed effects (Panel A), lagged family control (Panel B), and two-step system GMM estimate (Panel C). The results for cost of equity capital financing are reported in Models 1 through 4, and in Model 5 for cost of debt capital financing. The regression equations are as follows:

$$COE_{i,t} = \alpha + \beta FAM_{i,t} + CONTROLS_{i,t-1} + \varepsilon_{i,t} \quad (1)$$

$$COD_{i,t} = \alpha + \beta FAM_{i,t} + CONTROLS_{i,t-1} + \varepsilon_{i,t} \quad (2)$$

where, $COE_{i,t}$ ($COD_{i,}t$) is cost of equity (debt) capital of firm *i* in year *t*. $FAM_{i,t}$ is a dummy variable equal to 1 for family-controlled firms in year *t*, and 0 otherwise. $CONTROLS_{i,t-1}$ a proxy for the set of firm-level control variables reported with a one-year lag, including firm size (*SIZE*), stock market valuation (*BM*), operating performance (*ROE*), leverage (*LEV*), systematic risk (*BETA*), disclosure quality (*BIG4*), financial distress (*ZSCORE*), and level of capital (*CAPTA*). Detailed definitions of the variables are provided in the Appendix. Firms and year dummies are also included to control for firm-year fixed effects. The *t-statistics* shown in parentheses are based on robust standard errors, which account for heteroscedasticity and firm-level clustering. The symbol *** indicates significance at the 1% level.

Panel A: Firm-fixed effects					
Variables	**COE_AVG**	**COE_PEG**	**COE_MPEG**	**COE_OJN**	**COD**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
FAM	**-0.598**	**-0.505**	**-0.416**	**-0.493**	**-0.341**
	(-5.91)* **	**(-5.07)*** **	**(-3.85)*** **	**(-4.55)*** **	**(-3.33)*** **
Constant	2.325	2.442	2.437	2.480	2.442
	(5.49)***	(7.19)***	(6.58)***	(6.15)***	(5.91)***
Control variables	Yes	Yes	Yes	Yes	Yes
Fixed effects	FY	FY	FY	FY	FY
R-squared	0.291	0.292	0.294	0.295	0.281
Obs.	3,412	3,412	3,215	3,110	3,412
Panel B: Lagged family control					
Variables	**COE_AVG**	**COE_PEG**	**COE_MPEG**	**COE_OJN**	**COD**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
FAM_{t-1}	**-0.342**	**-0.334**	**-0.315**	**-0.329**	**-0.298**
	(-5.09)* **	**(-4.88)*** **	**(-3.89)*** **	**(-4.31)*** **	**(-2.89)*** **
Constant	2.009	2.011	2.009	2.012	-1.056
	(5.23)***	(5.15)***	(5.19)***	(5.37)***	(-6.85)***
Control variables	Yes	Yes	Yes	Yes	Yes
Fixed effects	YI	YI	YI	YI	YI
R-squared	0.342	0.339	0.340	0.338	0.216
Obs.	3,412	3,412	3,215	3,110	3,412
Panel C: Two-step system GMM estimate					
Variables	**COE_AVG**	**COE_PEG**	**COE_MPEG**	**COE_OJN**	**COD**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
FAM	**-0.224**	**-0.211**	**-0.194**	**-0.217**	**-0.318**
	(-3.92)* **	**(-3.20)*** **	**(-2.47)** **	**(-2.74)*** **	**(-3.04)*** **
Constant	1.218	1.087	1.119	1.119	1.086
	(4.76)***	(5.48)***	(4.18)***	(5.08)***	(5.92)***
Control variables	Yes	Yes	Yes	Yes	Yes
Fixed effects	YI	YI	YI	YI	YI
R-squared	-0.224	-0.211	-0.194	-0.217	-0.318
Obs.	3,412	3,412	3,215	3,110	3,412

Table 6

The effects of governance on the relation of family control and costs of external funding

This table presents the empirical analysis results regarding the effects of governance in family-controlled firms on costs of external funding for the subsample of firms with poor and better governance measures. We use the percentage proportion of the total number of board members who are identified as independent directors (*BIND*) and institutional ownership (*IO*) as proxies for governance mechanisms to control for agency costs. For each fiscal year in the sample period, we sort firms into terciles based on the value of each governance measure. We rank firm-year observations into terciles based on the institutional ownership at the beginning of the fiscal year for each sample year with high (low) ownership referring to a stronger (weaker) monitoring environment. Similarly, we rank firm-year observations into terciles based on the board independence with the top terciles comprising firms having stronger governance and those firms in the bottom terciles having weaker governance. The empirical equations (1) and (2) are given in the previous tables. The results for board independence are reported in Panel A, and for institutional ownership in Panel B. Detailed definitions of the variables are provided in the Appendix. Year and industry dummies are also included to control for year-industry fixed effects. The *t-statistics* shown in parentheses are based on robust standard errors, which account for heteroscedasticity and firm-level clustering. The symbol *** indicates significance at the 1%.

Variables	**Panel A: Board Independence**			
	COE_AVG		**COD**	
	LowBIND	***HighBIND***	***LowBIND***	***HighBIND***
	(1)	***(2)***	***(3)***	***(4)***
FAM	**-0.384**	**-0.250**	**-0.268**	**-0.200**
	(-4.44)* **	**(-1.49)**	**(-4.73)*** **	**(-1.51)**
Constant	2.685	2.276	3.033	2.055
	(7.60)***	(5.40)***	(6.10)***	(4.31)***
Control Variables	Yes	Yes	Yes	Yes
Fixed effects	YI	YI	YI	YI
R-squared	0.392	0.358	0.183	0.166
Obs.	1,136	1,136	1,136	1,136
Variables	**Panel B: Institutional Ownership**			
	COE_AVG		**COD**	
	LowIO	***HighIO***	***LowIO***	***HighIO***
	(4)	***(5)***	***(6)***	***(7)***
FAM	**-0.356**	**-0.216**	**-0.267**	**-0.108**
	(-4.20)* **	**(-1.39)**	**(-5.01)*** **	**(-0.65)**
Constant	2.386	2.657	2.439	2.439
	(9.26)***	(5.37)***	(6.39)***	(5.07)***
Control Variables	Yes	Yes	Yes	Yes
Fixed effects	YI	YI	YI	YI
R-squared	0.375	0.348	0.188	0.167
Obs.	1,124	1,120	1,124	1,120

Table 7
The effects of information environment on the relation of family control and costs of external funding

This table presents the empirical analysis results regarding the effects of information environment in family-controlled firms on costs of external funding for the subsample of firms with high and low information asymmetry measures. We use financial analysts' following as a proxy for information asymmetry (*ANALYST*). For each fiscal year in the sample period, we sort firms into terciles based on the value of information asymmetry measure. We measure analysts following as the average number of analysts making annual earnings forecasts over a 12-month period for a particular firm. Following Kim, Li, Lu and Yangxin (2016), for each fiscal year, we sort firm-year observations into terciles based on the values of analysts' following with more (less) following refers to low (high) information asymmetry. The empirical equations (1) and (2) are given in the previous tables. The results for cost of equity capital financing are reported in Models 1 and 2, and for cost of debt capital financing in Models 3 and 4. Detailed definitions of the variables are provided in the Appendix. Year and industry dummies are also included to control for year-industry fixed effects. The *t-statistics* shown in parentheses are based on robust standard errors, which account for heteroscedasticity and firm-level clustering. The symbols ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	COE_AVG		**COD**	
Variables	***HighANALYST***	***LowANALYST***	***HighANALYST***	***LowANALYST***
	(1)	***(2)***	***(3)***	***(4)***
FAM	**-0.115**	**-0.326**	**-0.123**	**-0.356**
	(-1.61)	**(-4.32)*** **	**(-1.28)**	**(-4.14)*** **
SIZE	-0.020	-0.032	-0.028	-0.033
	(-3.73)***	(-5.93)***	(-4.45)***	(-6.33)***
LEV	0.204	0.417	0.227	0.415
	(1.96)**	(4.44)***	(2.19)**	(4.34)***
BIG4	-0.293	-0.599	-0.295	-0.525
	(-3.07)***	(-6.78)***	(-3.19)***	(-5.97)***
ROE	-0.189	-0.293	-0.116	-0.264
	(-1.81)*	(-2.86)***	(-1.67)*	(-2.53)**
BM	-0.004	-0.009	-0.004	-0.007
	(-2.21)**	(-4.04)***	(-2.88)***	(-3.76)***
BETA	0.037	0.065	0.034	0.075
	(1.33)	(1.78)*	(1.25)	(2.04)**
ZSCORE	0.124	0.274	0.123	0.288
	(1.67)*	(3.65)***	(1.64)	(3.85)***
CAPTA	0.041	0.054	0.042	0.067
	(2.87)***	(4.98)***	(2.31)**	(5.88)***
Constant	2.393	2.237	3.246	2.993
	(7.43)***	(6.89)***	(7.57)***	(7.02)***
Fixed effects	YI	YI	YI	YI
R-squared	0.333	0.376	0.193	0.236
Obs.	1,519	1,521	1,519	1,521

Table 8

Family ownership and costs of external funding

This table presents the empirical analysis results of the relation between family ownership and costs of external funding, employing different measures of cost of equity capital financing (Models 1 through 4) and cost of debt capital financing (Model 5). The empirical equations are given as:

$$COE_{i,t} = \alpha + \beta FAMOWN_{i,t} + CONTROL_{i,t-1} + \varepsilon_{i,t} \quad (3)$$

$$COD_{i,t} = \alpha + \beta FAMOWN_{i,t} + CONTROL_{i,t-1} + \varepsilon_{i,t} \quad (4)$$

where $COE_{i,t}$ ($COD_{i,t}$) is cost of equity (debt) capital of firm *i* in year *t*. $FAMOWN_{i,t}$ the percentage of total company equity shareholding held by all family members. $CONTROLS_{i,t-1}$ a proxy for the set of firm-level control variables reported with a one-year lag, including firm size (*SIZE*), stock market valuation (*BM*), operating performance (*ROE*), leverage (*LEV*), systematic risk (*BETA*), disclosure quality (*BIG4*), financial distress (*ZSCORE*), and level of capital (*CAPTA*). The results for cost of equity capital financing are reported in Models 1 through 4, and for cost of debt capital financing in Model 5. Detailed definitions of the variables are provided in the Appendix. Year and industry dummies are also included to control for year-industry fixed effects. The *t-statistics* shown in parentheses are based on robust standard errors, which account for heteroscedasticity and firm-level clustering. The symbols ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

Variables	**COE_PEG (1)**	**COE_MPEG (2)**	**COE_OJN (3)**	**COE_AVG (4)**	**COD (5)**
FAMOWN	**-0.242**	**-0.220**	**-0.275**	**-0.296**	**-0.128**
	(-4.69)* **	**(-2.96)*** **	**(-6.00)*** **	**(-7.46)*** **	**(-2.64)*** **
SIZE	-0.168	-0.191	0.151	-0.163	-0.147
	(-4.52)***	(-5.75)***	(4.72)***	(-5.97)***	(-2.95)***
LEV	0.512	0.515	0.504	0.509	0.499
	(6.18)***	(6.57)***	(5.32)***	(5.81)***	(4.03)***
BIG4	-0.589	-0.585	-0.476	-0.591	-0.288
	(-5.66)***	(-5.40)***	(-3.24)***	(-5.78)***	(-2.59)***
ROE	-0.375	-0.374	-0.361	-0.274	-0.479
	(-2.23)**	(-2.78)***	(-2.49)**	(-2.68)***	(-3.34)***
BM	-0.006	-0.006	-0.008	-0.006	-0.011
	(-3.78)***	(-3.75)***	(-4.45)***	(-3.30)***	(-2.50)**
BETA	0.012	0.012	0.012	0.013	0.062
	(1.39)	(1.33)	(1.50)	(1.42)	(1.33)
ZSCORE	0.282	0.283	0.289	0.302	0.295
	(1.85)*	(1.92)*	(1.96)**	(2.03)**	(2.14)**
CAPTA	0.056	0.053	0.051	0.051	0.049
	(3.39)***	(4.92)***	(3.21)***	(2.89)***	(3.73)***
Constant	6.967	7.083	6.536	5.827	6.053
	(4.92)***	(5.21)***	(4.09)***	(5.12)***	(3.13)***
Fixed effects	YI	YI	YI	YI	YI
R-squared	0.195	0.187	0.186	0.177	0.167
Obs.	3,412	3,412	3,215	3,110	3,412

Table 9
Family member as CEO and costs of external funding

This table presents the empirical analysis results of the relation between family member as CEO and costs of external funding. The empirical equations are given as:

$$COE_{i,t} = \alpha + \beta FAMCEO_{i,t} + CONTROL_{i,t-1} + \varepsilon_{i,t} \quad (5)$$

$$COD_{i,t} = \alpha + \beta FAMCEO_{i,t} + CONTROL_{i,t-1} + \varepsilon_{i,t} \quad (6)$$

where, $COE_{i,t}$ ($COD_{i,t}$) is cost of equity (debt) capital of firm *i* in year *t*. $FAMCEO_{i,t}$ is a dummy variable taking a value of 1 for a family member as a CEO and 0 otherwise. $CONTROLS_{i,t-1}$ a proxy for the set of firm-level control variables reported with a one-year lag, including firm size (*SIZE*), stock market valuation (*BM*), operating performance (*ROE*), leverage (*LEV*), systematic risk (*BETA*), disclosure quality (*BIG4*), financial distress (*ZSCORE*), and level of capital (*CAPTA*). The results for cost of equity capital financing are reported in Model 1, and for cost of debt capital financing in Model 2. Detailed definitions of the variables are provided in the Appendix. Year and industry dummies are also included to control for year-industry fixed effects. The *t-statistics* shown in parentheses are based on robust standard errors, which account for heteroscedasticity and firm-level clustering. The symbols *** and ** indicate significance at the 1% and 5% levels, respectively.

Variables	**COE_AVG (1)**	**COD (2)**
FAMCEO	**-0.134**	**-0.195**
	(-5.01)* **	**(-3.58)*** **
SIZE	-0.176	-0.115
	(-3.10)***	(-2.35)**
LEV	0.499	0.702
	(3.99)***	(5.72)***
BIG4	-0.587	-0.682
	(-5.55)***	(-5.21)***
ROE	-0.279	0.474
	(-2.34)**	(3.15)***
BM	-0.060	-0.011
	(-2.48)**	(-2.53)**
BETA	0.072	0.054
	(1.41)	(1.23)
ZSCORE	0.245	0.245
	(1.04)	(1.04)
CAPTA	0.049	0.080
	(2.73)***	(4.90)***
Constant	7.213	7.786
	(21.67)***	(29.01)***
Fixed effects	YI	YI
R-squared	0.196	0.187
Obs.	3,412	3,412

Table 10
Firm age, family control and costs of external funding

This table presents the empirical analysis results regarding the effect of firm age in family-controlled firms on costs of external funding for the subsample of young firms (YAGE) and mature firms (MAGE). We rank firm-year observations into terciles based on the firm age with the top terciles comprising firms having mature firms and those firms in the bottom terciles having young firms. *COE* (*COD*) is cost of equity (debt) capital of firm *i* in year *t*. *FAM* is a dummy variable equal to 1 for family-controlled firms in year *t*, and 0 otherwise. Detailed definitions of the variables are provided in the Appendix. Year and industry dummies are also included to control for year-industry fixed effects. The *t-statistics* shown in parentheses are based on robust standard errors, which account for heteroscedasticity and firm-level clustering. The symbols ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	COE_AVG		**COD**	
Variables	***YAGE***	***MAGE***	***YAGE***	***MAGE***
	(1)	***(2)***	***(3)***	***(4)***
FAM	**-0.019**	**-0.024**	**-0.009**	**-0.012**
	(-2.90)* **	**(-4.15)*** **	**(-1.82)***	**(-2.82)*** **
Constant	3.783	3.755	3.987	3.986
	(9.38)***	(9.23)***	(56.68)***	(56.59)***
All controls	Yes	Yes	Yes	Yes
Fixed effects	YI	YI	YI	YI
R-squared	0.269	0.270	0.159	0.160
Obs.	1,026	1,026	1,026	1,026