# Family Firms, Antitakeover Provisions, and the Cost of Bank Financing

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## Abstract

We investigate how the role of antitakeover provisions (ATPs) in alleviating the conflict of interests between shareholders and creditors differs between family and nonfamily firms. We find that while nonfamily firms with more ATPs (measured by the G-index) enjoy a lower cost of bank loans, the corresponding family firms do not. These results are robust to using change regressions and exploiting the variation in state-level antitakeover laws as a natural experiment to alleviate endogeneity concerns. The adverse effect of ATPs on the cost of debt for family firms is particularly severe when they adopt control-enhancing mechanisms, when their bank loans are unsecured or have no covenants, when they are insulated from disciplinary forces, or when they have more powerful CEOs. The results suggest that the differences in agency conflicts inherent in different organizational structures are important considerations in examining the effects of ATPs on the cost of debt and that banks effectively factor in such conflicts when determining loan rates.



***Keywords***: Agency conflict, Antitakeover provision, Control mechanism, Cost of bank loan, Creditor, Family firm

***JEL*** **Classification**: G21, G32, G34

## Introduction

Prior literature shows that antitakeover provisions (ATPs) have different impacts on the wealth of shareholders and debtholders. One stream of literature finds that ATPs entrench managers, thereby decreasing shareholder value (e.g., Gompers, Ishii, and Metrick (2003), Masulis, Wang, and Xie (2007), Bebchuk, Cohen, and Ferrell (2009), Cohen and Wang (2013)). Another strand of literature focuses on the positive role of ATPs in reducing creditors' concerns about borrowers' takeover vulnerability, thereby mitigating potential conflicts between shareholders and creditors and in turn lowering the cost of debt (Klock, Mansi, and Maxwell (2005), Chava, Livdan, and Purnanandam (2009), Francis et al. (2010)).

In this paper we extend the latter stream of literature by showing that the net impact of ATPs on a firm's cost of capital cannot be fully assessed without considering a firm's ownership and governance mechanisms. More specifically, we investigate how agency conflicts arising from family firms' unique ownership structure and control incentives affect the positive role of ATPs documented in prior literature. While prior studies focus mainly on the positive impact of ATPs on creditors, few studies examine the possibility that ATPs intensify agency conflicts among various claimholders including managers, shareholders, and creditors, which adversely affects creditors' claims on firm value. In particular, we have limited understanding of the net effect of ATPs on creditors in the presence of controlling shareholders who have a strong desire to maintain control of the firm.[1] Although controlling ownership can reduce takeover vulnerability and thus benefit creditors, it can also hurt them by insulating managers and controlling owners

[1] Cremers, Nair, and Wei (2007) argue that the net impact of shareholder governance on bondholders depends on the nature of the governance mechanisms in place. Using the presence of an institutional blockholder as a proxy for shareholder governance, they find that institutional blockholders combined with low antitakeover provisions lead to higher bond yields. They argue that the presence of institutional blockholders increases the likelihood of a firm being a takeover target, especially when it has weak antitakeover provisions. While their analysis largely focuses on the role of institutional blockholders in disciplinary takeovers, we focus on the potential costs and benefits of family control from an agency conflict perspective and the impact of the interaction of family control with ATPs on the creditor's loan pricing.

from disciplinary forces, especially when it is combined with strong takeover defenses. Therefore, whether ATPs alleviate or intensify the shareholder-creditor conflict is likely to depend on a firm's ownership structure and controlling shareholders' incentives to maintain their power.

Family ownership represents an ideal setting to address this issue because, as we discuss below, it is associated with agency conflicts between controlling shareholders and various other stakeholders including managers, creditors, and small shareholder. Moreover, family ownership is the most prevalent form of concentrated ownership around the world (La Porta, Lopez-De-Silanes, and Shleifer (1999), Claessens, Djankov, and Lang (2000)). In the U.S., founders and their heirs are the most common types of large, undiversified shareholders, controlling about one-third of Fortune 500 and S&P 500 industrial firms (Anderson and Reeb (2003)) and more than one-half of all public firms (Villalonga and Amit (2010)). In Asia and Europe, family firms account for almost half of listed firms and more than 60% of all firms, respectively (Claessens et al. (2000), Faccio and Lang (2002)). In addition, family shareholders tend to have a strong desire to maintain control due to incentives for intergenerational transfers of control (Bertrand and Schoar (2006)). Thus, family ownership represents a close approximation to the controlling ownership discussed in the literature.

Family firms have attracted significant attention in the literature on corporate governance because of their unique ownership structure and the various control mechanisms that family shareholders implement to maintain control of the firm. Prior studies show that while concentrated family ownership mitigates agency problems between managers and shareholders (Fama and Jensen (1983), Villalonga and Amit (2006)), it can intensify agency conflicts between controlling shareholders and minority shareholders (Villalonga and Amit (2006, 2009), Ali, Chen,

and Radhakrishnan (2007)).[2] Moreover, these agency problems vary across family firms depending on the extent of the founding family's involvement in management and the presence of control-enhancing mechanisms. This heterogeneity provides a rich setting to examine the complex interplay among ownership, control, and takeover defenses from creditors' perspective.

We propose two competing hypotheses regarding the differential impact of ATPs on the cost of bank debt between family and nonfamily firms. The first of these hypotheses, the conflicts of interest hypothesis, posits that the entrenchment effects of ATPs (i.e., reducing the governance role of takeovers in disciplining poorly performing managers (Karpoff and Malatesta (1989)) intensify agency problems in family firms, and that the costs of intensified agency problems offset the benefits that creditors can gain from reduced takeover vulnerability. Prior studies show that founding families expropriate other investors through various channels such as special dividends, unwarranted perquisites, excessive compensation, and related-party transactions (DeAngelo and DeAngelo (2000), Gilson and Gordon (2003), Faccio, Lang, and Young (2001), Baek, Kang, and Lee (2006)). Strong takeover defenses that insulate family shareholders from governance pressures increase this expropriation risk by allowing them to extract more private benefits at the expense of other investors, aggravating agency conflicts between family shareholders and other stakeholders, including minority shareholders and creditors. To the extent that increased expropriation risks and decreased firm value due to an increase in agency conflicts adversely affect creditors' claims on firm assets, creditors will require higher compensation (i.e., higher loan rates) for loans issued to family firms with strong takeover defenses. Because family shareholders often use mechanisms that enhance their control rights above their cash flow rights, such as dual-class shares, pyramids, cross-holdings, or voting agreements, which further

[2] Villalonga and Amit (2009) find that for large U.S. firms, founding families are the only blockholders with voting rights exceeding their cash flow rights on average. They also show that agency conflicts between controlling and minority shareholders are as relevant in the U.S. as in other countries.

exacerbate conflicts between controlling shareholders and other claimholders (Villalonga and Amit (2006, 2009)), the conflicts of interest hypothesis predicts that loan spreads for family firms with strong takeover defenses will be particularly high for those family firms that adopt control-enhancing mechanisms.

In contrast, the interest alignment hypothesis posits that family control mitigates potential agency conflicts that ATPs create, making the effects of ATPs in reducing takeover risk stronger in family firms than in nonfamily firms. The entrenchment effect of ATPs may be less severe in family firms since founding families with large, undiversified ownership tend to be committed monitors of management. Furthermore, the links that bind current to future generations strongly motivate family owners to cultivate durable relationships with various stakeholders and make long-term value-enhancing investments (Anderson, Mansi, and Reeb (2003), Bertrand and Schoar (2006), Mueller and Philippon (2011)). Thus, to the extent that ATPs insulate family owners from the market for corporate control and allow them to pay less attention to short-term performance pressures,[3] the interests of shareholders and creditors are likely to be better aligned in family firms than in nonfamily firms. These arguments suggest that ATPs combined with family control mitigate conflicts of interest between controlling shareholders and creditors, leading to a lower cost of bank loans. Moreover, to the extent that family shareholders use control-enhancing mechanisms to further reduce takeover vulnerability and commit to long-term value creation, the effects of ATPs in reducing loan rates may be more pronounced for family firms that have control-enhancing mechanisms.

[3] Jarrell and Poulsen (1988) show that the use of ATPs incentivizes firms to invest in firm-specific human capital and that firms benefit from such long-term investments. Chemmanur and Tian (2012) further find that ATPs insulate managers from short-term performance pressures and allow them to invest in long-term innovative projects. Johnson, Karpoff, and Yi (2012) also show that takeover defenses help IPO firms bond their commitment to stakeholders such as customers, suppliers, and strategic partners and thus induce relationship-specific investment.

We test these two competing hypotheses using a large sample of 8,006 bank loans issued to 1,601 U.S. firms on the S&P 1500 Index over the period 1996 to 2006. Following previous studies such as Anderson and Reeb (2003), Villalonga and Amit (2006), and Li and Srinivasan (2011), we define family firms as firms in which founding family members, either individually or as a group, have block equity ownership, or at least one founding family member sits on the board or works in top management. In our sample, 585 firms (36.5%) are classified as family firms. To capture ATPs, we use the G-index of Gompers, Ishii, and Metrick (2003).

Consistent with prior studies, we find that a higher G-index is associated with lower loan spreads (Klock, Mansi, and Maxwell (2005), Chava, Livdan, and Purnanandam (2009), Francis et al. (2010)). However, unlike Anderson, Mansi, and Reeb (2003), who use a sample of S&P 500 industrial firms and find that family firms benefit from a lower cost of public debt, we find that loan spreads for family firms are insignificantly lower than those for nonfamily firms.[4] As we discuss in more detail below, this difference is largely due to the larger fraction of small firms in our sample that are not on the S&P 500 Index, as small firms depend more on bank financing than on public debt financing.

More importantly, we find that while ATPs reduce the cost of bank loans for nonfamily firms, they do not do so for family firms. In other words, loan-spread-reducing effects of ATPs (by lowering takeover vulnerability) dominate in nonfamily firms but not in family firms. These results suggest that when high ATPs are combined with significant family control, banks are concerned about the expropriation and entrenchment risks arising from strong takeover defenses

[4] While Anderson, Mansi, and Reeb (2003) focus on the positive role of family ownership in aligning the interests of equityholders with those of bondholders, we extend their study by examining whether the effects of family control on the cost of bank debt vary depending on agency conflicts, takeover defences, and control mechanisms in family firms. We also use bank loans instead of public bonds in our analysis, which allows us to examine how banks that are known to have information advantages relative to small public debtholders (Fama (1985)) assess the agency conflicts of a broad set of large as well as small publicly listed firms. We show that family control combined with both strong takeover defences and control-enhancing mechanisms intensifies creditors' concerns of expropriation risk and thus increases the cost of bank debt.

and thus charge higher loan prices to family firms, in line with the conflicts of interest hypothesis. When we separately analyze family firms based on the presence of control-enhancing mechanisms, we further find that the adverse effect of ATPs mainly concentrates in family firms with control-enhancing mechanisms, further supporting the conflicts of interest hypothesis.

To shed further light on the importance of agency conflicts in loan pricing of family firms with strong takeover defenses, we conduct a series of subsample tests on family firms based on different indicators of agency problems. We first find that the adverse interaction effects of family control and strong ATPs on loan spreads are more pronounced when bank loans are unsecured or unprotected by restrictive covenants, suggesting that the absence of security/covenants increases banks' concerns that ATPs induce controlling shareholders in family firms to engage in self-serving transactions rather than reduce borrowers' takeover risk. These results are particularly evident when family firms have control-enhancing mechanisms. Because prior literature finds that covenants play a crucial role in mitigating potential conflicts of interest between shareholders and debtholders (Kalay (1982), Billett, King, and Mauer (2007), Graham, Li, Qiu (2008), Chava, Kumar, and Warga (2010)), these results suggest that agency conflicts between shareholders and debtholders are an important consideration in examining the effects of ATPs on the cost of debt and that banks effectively factor in such conflicts when pricing loans.

We next find that loan spreads for family firms with strong takeover defenses are higher when these firms operate in a less competitive industry or when they have lower financial leverage. These results are more pronounced when family firms increase the voting rights of family shareholders above their cash flow rights using control-enhancing mechanisms.

When we classify family firms according to CEO power to examine whether the classic agency conflicts between managers and shareholders are factored into creditors' loan pricing of firms with strong ATPs, we find that the adverse effect of ATPs on the cost of bank loans is more evident when CEOs in family firms, especially those in family firms with control-enhancing mechanisms, are the chairman of the board, are old, or receive excess compensation.

Previous studies find that compared to family firms with founder CEOs, those with nonfounder CEOs tend to face higher agency conflicts (Perez-Gonzalez (2006), Fahlenbrach (2009), Li and Srinivasan (2011)). Consistent with these studies, we also find that the adverse effects of ATPs on loan spreads are more pronounced when family firms are managed by nonfounder CEOs than by founder CEOs, when family firms are managed by a second- or later-generation founding family member (Villalonga and Amit (2006)), when family firms are managed by a nonfamily CEO than by a family CEO, and when family firms have control-enhancing mechanisms irrespective of whether their CEOs are family members or not. Overall, the results of the subsample tests confirm that the conflicts between controlling shareholders and other investors are a key determinant of creditors' loan pricing in family firms with strong antitakeover defenses.

In additional analyses, we address concerns that omitted unobservable firm characteristics simultaneously affect a firm's choice of ATPs and its cost of bank debt by estimating regressions of changes in loan spreads on changes in the G-index. We find that the results do not change, suggesting that our findings are robust to controlling for time-invariant omitted variable concerns. We also exploit the variation in the state-level antitakeover laws as a natural experiment to help us address endogeneity concerns.[5] We find that unanticipated changes in state-level antitakeover

[5] Similarly, Francis et al. (2010) examine whether a firm's cost of debt is affected by its ATPs using the variation in state-level antitakeover laws as a natural experiment and show that bonds issued by firms incorporated in states with

laws increase bank loan spreads for family firms after controlling for firm-level ATPs but not for nonfamily firms.

Our study contributes to the literature that examines the impact of ATPs on firm value. While prior studies such as Gompers, Ishii, and Metrick (2003), Masulis, Wang, and Xie (2007), Bebchuk, Cohen, and Ferrell (2009), and Cohen and Wang (2013) document an adverse effect of ATPs on equity value, other studies find the opposite effect of ATPs on the cost of debt. For example, Klock, Mansi, and Maxwell (2005) and Chava, Livdan, and Purnanandam (2009) show that firms with more ATPs enjoy lower bond spreads and bank loan spreads, respectively. Francis et al. (2010) also show that state antitakeover laws tend to decrease bond yields. These studies attribute their findings to the role of ATPs in reducing takeover vulnerability. We extend this stream of literature by showing that for family firms, agency costs intensified by strong ATPs offset the loan-spread-reducing effects of ATPs, particularly for those family firms with control-enhancing mechanisms. Consistent with our findings, Cremers, Nair, and Wei (2007) find that shareholder control measured by institutional blockholdings increases (decreases) corporate bond yields if the firm has weaker (stronger) takeover defences. While their study emphasizes the role of the increase in takeover vulnerability induced by institutional blockholdings, we focus on family control and various agency conflicts arising from such control in examining the effect of takeover defences on the cost of debt.

The paper is organized as follows. In Section I, we discuss our data and compare the characteristics of family and nonfamily firms. In Section II, we examine how family control and the interaction between family control and ATPs affect the cost of bank loans. Section III reports subsample results based on various measures of agency conflicts. Section IV reports results for

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weak antitakeover laws have higher yield spreads than bonds issued by firms incorporated in states with restrictive antitakeover laws.

alternative classifications of family firms, and Section V presents results of additional analyses as well as robustness tests. Section VI summarizes and concludes.

## I. Sample and Summary Statistics

### *A. Sample*

Our initial sample consists of all firms included in *RiskMetrics*, which covers firms on the S&P 1500 Index, from 1996 to 2006. We then restrict our sample to those firms whose loans are covered in Loan Pricing Corporation's (LPC) *Dealscan*[6] and whose stock returns and financial data are available in *CRSP* and *Compustat*, respectively. Following Chava, Livdan, and Purnanandam (2009) and Bharath et al. (2011), we also exclude firms in the financial (SIC codes between 6000 and 6999) and utility (SIC codes between 4000 and 4999) industries. Our final sample comprises 8,006 bank loans issued to 1,549 distinct firms over the sample period (5,068 firm-years). Since *RiskMetrics* covers most of the firms on the S&P 1500 Index, our sample includes not only large firms but also small and mid-sized firms. We measure ATPs using the G-index of Gompers, Ishii, and Metrick (2003) and obtain this information from *RiskMetrics*.[7] The loan spread is measured using the *Dealscan* variable All-In-Spread-Drawn (AISD), the rate a borrower pays in basis points over LIBOR or the LIBOR equivalent on the drawn loan amounts.

Following previous studies on family firms (e.g., Anderson and Reeb (2003), Villalonga and Amit (2006), Li and Srinivasan (2011)), we identify family firms using two criteria: equity ownership by a founding family and/or the presence of family members on the board of directors

[6] To ensure that we use accounting information available at the time of loan initiation, we follow Bharath et al. (2011) and use accounting data in the same fiscal year if loans are made in the second half of the fiscal year. If loans are issued in the first half of the fiscal year, accounting information from the prior fiscal year is used.

[7] Following Gompers, Ishii, and Metrick (2003), we assume that firms' governance provisions do not change between publication years and we fill missing G-index observations with previously available data. The publication years are 1990, 1993, 1995, 1998, 2000, 2002, 2004, and 2006.

or on management teams.[8] We identify family firms by searching the following sources: the section in proxy statements that describes director biographies, the list of family firms in the November 10, 2003 issue of *Business Week* magazine, and *Board Analyst*, *BoardEx*, *ExecuComp*, and other internet sources including companies' websites. Family ownership is measured as the ratio of the number of shares of all classes held by family members to the total number of shares outstanding.

### *B. Summary Statistics*

Panel A of Table I presents the distribution of family and nonfamily firms over our sample period. Out of 5,068 firm-year observations in our sample, 1,856 (36.6%) are classified as family firms.[9] This number is comparable to that (37%) in Villalonga and Amit (2006), who use Fortune 500 firms, and slightly higher than that (34%) in Anderson, Mansi, and Reeb (2003), who use firms on the S&P 500 Index. The fraction of family firms ranges from 31.7% in 2006 to 41.5% in 1998. Panel B presents the industry distribution of sample firms using two-digit SIC codes. The fraction of family firms is largest in the wholesale and retail trade industry (45.2%), followed by the agriculture, forestry, and fishing (42.9%) and services (41.6%) industries.

Table II provides descriptive statistics on loan, firm, and CEO characteristics for our sample. All continuous variables are winsorized at the 1% level in both tails to mitigate the effects of potential outliers. The appendix provides detailed descriptions of the variables. Several observations are worth noting. First, for loan characteristics, we find that the median loan spread

[8] Family firms can be defined in various ways. See Villalonga and Amit (2006, 2010) for a detailed discussion on different definitions of family firms.

[9] Our definition of family firms classifies Microsoft Corp. as a family firm because its founder, Bill Gates, serves as a board member during our sample period. Bennedsen, Perez-Gonzalez, and Wolfenzo (2010) point out, however, that entrepreneurial firms such as Microsoft should not be considered as family firms because some of the main traits of family firms such as preference for intergenerational control transfers are not applicable to these firms. To address this concern, we follow Villalonga and Amit (2006) and exclude technology firms (SIC codes 35, 36, 38, and 73) from the sample and repeat all the analyses reported in the paper. Our main results do not change.

of family firms (100 basis points) is significantly higher than that of nonfamily firms (93.75 basis points), while the mean loan spreads are not significantly different between the two groups.[10] Compared with loans to nonfamily firms, those to family firms have smaller commitment size and a smaller number of lenders,[11] with the differences significant at the 1% level. Second, for firm characteristics, we find that compared with nonfamily firms, family firms are less likely to deploy ATPs (i.e., lower G-index scores) and are smaller, younger, and less profitable (i.e., lower EBITDA/Sales). Family firms also have lower default probability (i.e., higher Altman Z-score) and their boards tend be less independent. Third, compared with CEOs in nonfamily firms, CEOs in family firms are less likely to be the chairman of the board, have longer tenure, and receive lower compensation. Finally, we find that 73% of family firms have control-enhancing mechanisms, and that a founder (family member) serves as CEO in 36% (59%) of family firms.

## II. Family Firm Control, ATPs, and the Cost of Bank Loans

In this section we examine the effects of family control and the interaction between family control and ATPs on the cost of bank loans. Specifically, we estimate the following ordinary least squares (OLS) regression to investigate whether the effect of ATPs on the cost of bank loans is different between family and nonfamily firms:

$$\text{Log}\,(\textit{loan spread}_{jit}) = \alpha \textit{High G-index}_{it}\,(\text{indicator}) + \beta \textit{Family firm}_{it}\,(\text{indicator}) + \gamma \textit{High G-index}_{it}\,(\text{indicator}) \times \textit{Family firm}_{it}\,(\text{indicator}) + \mu X_{jit} + \psi Y_{it} + \eta Z_t + \iota_i + \rho_t + \varepsilon_{jit}, \quad (1)$$

[10] Ali, Chen, and Radhakrishnan (2007) and Chen, Dasgupta, and Yu (2012) report that family firms in different S&P indexes have different transparency and disclosure policies that may affect the cost of capital. When dividing our family firms into those belonging to SmallCap 600, MidCap 400, and S&P 500 indexes, we find that the mean loan spread is highest for SmallCap 600 family firms (169.51 basis points), followed by MidCap 400 family firms (111.95 basis points) and S&P 500 family firms (79.16 basis points).

[11] Loan commitment size is highly correlated with firm size as measured by the logarithm of market capitalization (correlation coefficient = 0.57). Although we exclude loan size from our regression analyses, our results are robust to including both loan size and firm size in the same regressions.

where loans are denoted by *j*, firms by *i*, and time by *t*. The dependent variable is the logarithm of AISD.[12] *High G-index* is an indicator that takes the value of one if the number of ATPs adopted by a firm is greater than the sample median (nine) and zero otherwise (Gompers, Ishii, and Metrick (2003))[13]; *Family firm* is an indicator that takes the value of one for a family firm and zero otherwise; $X_{jit}$ is a vector of characteristics of loan *j* issued to firm *i* at time *t*; $Y_{it}$ is a vector of characteristics of firm *i* at time *t*; $Z_t$ is a vector of variables capturing macroeconomic conditions at time *t*;[14] $\iota_i$ and $\rho_t$ are industry and year fixed effects, respectively; and $\varepsilon_{jit}$ is an error term. Standard errors are adjusted for heteroskedasticity and clustered at the firm level.[15] The control variables closely follow those used in prior studies (Graham, Li, and Qiu (2008), Chava, Livdan, and Purnanadam (2009)).

In equation (1), $\alpha$ measures the effect of *High G-index* on loan spreads of nonfamily firms, $\beta$ measures the effect of family control with a low G-index on loan spreads, and $\gamma$ measures the difference in the effects of *High G-index* on loan spreads between family and nonfamily firms, which is our primary explanatory variable of interest. The sum of $\alpha$ and $\gamma$ captures the net effect of *High G-index* on loan spreads of family firms. The conflicts of interest hypothesis, which argues that ATPs in family firms intensify the agency conflicts between controlling shareholders

[12] Following prior studies (e.g., Chava, Livdan, Purnanadam (2009), Graham, Li and Qiu (2008)), we take the natural logarithm of loan spreads to address the skewness in loan spreads.

[13] In untabulated results, we also repeat our analyses by replacing the High G-index indicator with raw G-index. Although using raw G-index allows us to better employ sufficient variation in the firm level of ATPs, we use the high G-index indicator in our analysis for the easier interpretation of the results.

[14] We use two variables to control for macroeconomic conditions: credit spread (difference between the yields of BAA and AAA corporate bonds) and term spread (difference between the yields of 10-year Treasury notes and 1-year Treasury notes).

[15] Our unit of analysis is a loan, although some deals comprise multiple loan facilities. While we use clustered standard errors at the firm level throughout our analysis, for robustness we also follow Bharath et al. (2011) and use clustering at the deal level to address the concern that loans in the same deal might be correlated with each other. Our results continue to hold.

and other types of investors, predicts γ to be positive. In contrast, the interest alignment hypothesis predicts γ to be negative.

The results are reported in Table III. Column (1) shows that the coefficient estimate on *High G-index* is negative and significant at the 1% level after controlling for firm characteristics, loan characteristics, and macroeconomic conditions. The coefficient estimate of 0.09 indicates that the loan spread for firms with stronger takeover defenses is 8.6% lower (= $e^{-0.090}$-1) than that for firms with weaker takeover defenses. Because the average loan spread of firms with low ATPs is 140.43 basis points, this coefficient estimate suggests that loan spreads for high G-index firms are 12.64 (=140.43×0.09) basis points lower than for low G-index firms. This finding is consistent with prior studies showing that strong takeover defenses lead to low costs of debt (Klock, Mansi, and Maxwell (2005), Chava, Livdan, and Purnanandam (2009), Francis et al. (2010)).

In column (2), we replace *High G-index* with *Family firm* and find that the coefficient estimate on *Family firm* is negative but insignificant. In comparison, Anderson, Mansi, and Reeb (2003) find that family control is related to lower bond spreads using a sample of firms on the S&P 500 Index. Since IRRC covers small and mid-sized firms as well as those on the S&P 500 Index, and firms that borrow from banks tend to be smaller than firms that can issue bonds, our results suggests that lower costs of debt for family firms documented in prior literature are limited to large family firms that are able to access bond markets. To further address this issue, in untabulated tests we split *Family firm* according to whether family firms are on the S&P 500 Index and reestimate the column (2) regression. We find that only the coefficient on the indicator for family firms on the S&P 500 Index is significant and negative (*p*-value = 0.09), while that on the indicator for other family firms is insignificant. These results confirm Anderson, Mansi, and

Reeb (2003). They are also consistent with Anderson, Duru, and Reeb (2009), who find significant positive effects of family control on Tobin's *q* for family firms on the S&P 500 Index but not for other firms in their sample of the 2,000 largest U.S. firms.

Column (3) includes *High G-index*, *Family firm*, and their interaction. The results show that the effects of ATPs are sharply different between family and nonfamily firms. The coefficient estimate on *High G-index* is negative and significant at the 1% level, suggesting that higher ATPs lead to significantly lower bank loan spreads for nonfamily firms. The coefficient estimate on *Family firm* is negative and significant at the 1% level, indicating that family control is associated with significantly lower loan spreads when family firms have lower ATPs. However, the coefficient estimate ($\gamma$) on the interaction term between *High G-index* and *Family firm* is positive and significant, suggesting that increased ATPs significantly increase loan spreads for family firms. The sum of the coefficient estimates on the interaction term and on *High G-index* is not significantly different from zero (*p*-value of *F*-test = 0.98). Therefore, although nonfamily firms with high ATPs enjoy reduced loan spreads, such loan-spread-reducing benefits do not obtain for family firms with high ATPs, consistent with the conflicts of interest hypothesis.

In column (4), we examine whether the results in column (3) are related to the extent of agency conflicts that family firms face by splitting family firms into those with and without control-enhancing mechanisms. The results show that the coefficient estimate on the interaction between the indicator for family firms without control-enhancing mechanisms and *High G-index* is statistically insignificant. In contrast, the corresponding coefficient estimate using an indicator for family firms with control-enhancing mechanisms is significantly positive at the 1% level. Tests on the sum of the coefficient estimates on *High G-index* and its interaction with the indicator for family firms without (with) control-enhancing mechanisms show that it is negative

and significant for family firms without control-enhancing mechanisms (*p*-value = 0.07), while it is positive and insignificant for family firms with control-enhancing mechanisms (*p*-value = 0.29). Therefore, stronger takeover defenses significantly decrease loan spreads for family firms that do not have control-enhancing mechanisms but have no significant impact for family firms with control-enhancing mechanisms. To the extent that the presence of control-enhancing mechanisms reflects high agency conflicts between family shareholders and other investors, these results suggest that the difference in ATP effects between family and nonfamily firms shown in column (3) is mainly driven by family firms with high agency conflicts, in line with the conflicts of interest hypothesis.[16]

Overall, the findings in Table III suggest that high ATPs in family firms increase lenders' concerns that the costs of ATPs offset the benefits of reduced takeover risk, particularly when family firms have high agency conflicts.[17]

## III. Agency Conflicts and the Cost of Bank Loans

[16] Alternatively, these results may suggest that since family control and strong takeover defenses are substitutes, adding ATPs in family firms where concentrated control ownership is already in place cannot have any incremental effects in reducing loan spreads. However, while this substitution argument is also consistent with the finding of no incremental ATP effects for family firms in column (3), it cannot explain the results in the following sections showing that loan spreads of family firms increase with potential agency conflicts between family shareholders and other stakeholders.

[17] Previous studies on ATPs exclude firms with dual-class shares from their analyses (Gompers, Ishii, and Metrick (2003), Masulis, Wang, and Xie (2007), Bebchuk, Cohen, and Ferrell (2009)). Bebchuk, Cohen, and Ferrell (2009) argue that dual-class shares serve as a powerful mechanism for takeover defences, so the effect of other antitakeover provisions on takeover vulnerability is trivial. Similarly, Gompers, Ishii, and Metrick (2009) argue that a dual-class structure is "the most extreme example of antitakeover protection." Villalonga and Amit (2009) show that U.S. family firms use dual-class stocks as a control-enhancing mechanism along with disproportionate board representation and voting agreements. In untabulated results, we estimate the Table III regression including a dual-class stock indictor, the high G-index indicator, and the family firm indicator to examine whether our results are driven largely by the effects of dual-class stocks. We find that the coefficient estimate on the dual-class stock indicator is insignificant while the coefficient estimate on the high G-index indicator stays negative and significant. When we interact the dual-class stock indicator with the family firm indicator, we find that the coefficient estimate on this interaction term is negative and insignificant. These results suggest that dual-class stocks and ATPs capture different dimensions of corporate governance mechanisms in family firms, resulting in differences in their effects on the cost of bank loans. To further check if dual-class effects drive our results, we drop family firms with dual-class shares from those with control-enhancing mechanisms and reestimate the regression in column (4). Our results remain unchanged.

In this section we conduct subsample analyses to examine how various agency conflicts in family firms affect the results in the previous section on the impact of ATPs on the cost of bank loans.

### *A. Loan Security, Covenants, and Dividend Flexibility*

Prior literature shows that loan securities and covenants serve as contractual devices that ease conflicts of interest between shareholders and creditors (e.g., Rajan (1995), Billett, King, and Mauer (2007)). The conflicts of interest hypothesis predicts that the adverse effect of ATPs on the cost of debt for family firms is particularly pronounced when the conflicts between debtholders and shareholders are more severe, such as when bank loans are unsecured or lack restrictive covenants. To test this conjecture, we divide our sample according to the presence of loan contract devices that ease shareholder-creditor conflicts (i.e., whether loans are secured and whether loans have restrictive covenants) and examine whether our key results are affected.

The results are reported in Table IV. In Panel A, we classify our sample according to whether the loans are secured.[18] We find that the coefficient estimate on the interaction term between *Family firm* and *High G-index* is positive and significant only for unsecured loans (columns (1) and (2)). The difference in the coefficient estimates on this interaction term between secured and unsecured loans is significant at the 1% level. Thus, the adverse interaction effects of family control and high ATPs on loan spreads is significantly larger for unsecured loans than for secured loans.

In columns (3) and (4), we decompose *Family firm* according to the presence of control-enhancing mechanisms and find that the adverse effect of *High G-index* on loan spreads for

[18] For brevity, the coefficient estimates on the control variables are not reported. The regression models in Table IV include the same control variables as in Table III.

family firms with control-enhancing mechanisms reported in Table III holds only for unsecured loans. The sum of the coefficient estimates on *High G-index* and its interaction term with *Family firm with control-enhancing mechanisms* is significantly different from zero (*p*-value of *F*-test = 0.00) for unsecured loans. On the other hand, the coefficient estimates on the interaction term between *Family firm without control-enhancing mechanisms* and *High G-index* are insignificant in both unsecured and secured loan subgroups. These results suggest that the adverse effect of ATPs in family firms is more pronounced in those family firms that are susceptible to high agency conflicts between family shareholders and other investors, particularly creditors.

In Panel B of Table IV, we classify our sample according to whether loan contracts include restrictive covenants. Following Chava, Livdan, and Purnanandam (2009), we consider three types of loan covenants for which information is available in *Dealscan*, namely, debt sweep, equity sweep, and assets sweep covenants, and assign a loan to the covenant group if it includes at least one of these three covenants in its contract terms.[19] We find that the coefficient estimates on the interaction term between *Family firm* and *High G-index* and that between *Family firms with control-enhancing mechanisms* and *High G-index* are positive and significant only when loans have none of the three covenants. Tests on the sum of the coefficient estimates for a subsample of no covenants show that the net effects of ATPs on loan spreads are significantly positive for family firms with control-enhancing mechanisms (*p*-value of *F*-test = 0.09). These results suggest that creditors that face increased agency conflicts due to a lack of protection via covenants penalize family firms with strong takeover defenses, especially those with control-enhancing mechanisms, by charging higher interest rates.

[19] *Dealscan* does not provide the information on all types of covenants. Debt sweep, equity sweep, and assets sweep are general covenants stipulating the amount of loans that must be repaid from excess debt issuance, excess equity issuance, and excess asset sales, respectively. In untabulated tests, we repeat our analysis by reclassifying the sample loans based on only one covenant type and find similar results as those reported in Table IV for each of these three types of covenants.

In Panel C of Table IV, we divide our sample according to whether a firm is incorporated in a nimble-dividend state where managers have more flexibility in paying dividends.[20] We use only the subsample of loans without dividend restriction covenants in this panel and thus restrict attention to loans for which creditors are not protected from expropriation risk of excess dividends.[21] If managers have greater flexibility in paying dividends, creditors bear higher expropriation risk. Thus, the conflicts of interest hypothesis predicts the adverse effect of G-index on loan spreads for family firms to be more evident for loans whose borrowers are incorporated in nimble-dividend states. Consistent with this prediction, we find that the adverse effects of ATPs on loan spreads for family firms are evident only for loans issued to borrowers incorporated in nimble-dividend states. Specifically, the interaction term between *Family firm* and *High G-index* is positive and significant only in the subsample of loans whose borrowers are incorporated in nimble-dividend states (column (1)) and this result is more pronounced for family firms with control-enhancing mechanisms (column (3)).

In untabulated tests, we also measure potential conflicts between creditors and shareholders according to whether a firm pays high dividends. It is possible that firms pay high dividends to transfer wealth from creditors to shareholders, in which case high dividends could be an indication of high agency problems between shareholders and creditors. Following Ahmed et al. (2002), we split our sample according to the median level of a firm's dividends as a percentage of its total assets. We find that ATPs increase loan spreads of family firms with high takeover

[20] Nimble-dividend states include Arizona, Delaware, Kansas, Louisiana, Maine, Nevada, New Hampshire, Oklahoma, Rhode Island, and Vermont. See Qi and Wald (2008) and Chava, Livdan, and Purnanandam (2009) for more detailed discussion on the nimble-dividend states.

[21] Prior literature shows that dividend restriction covenants are an important contractual device that mitigates the conflicts between creditors and shareholders (e.g. Smith and Warner (1979), Kalay (1982), Healy and Palepu (1990)). Thus, when loans do not have any dividend restriction covenants, the agency problems between creditors and shareholders are expected to be severe. Moreover, DeAngelo and DeAngelo (2000) show that controlling family shareholders pay themselves large dividends at the expense of minority stockholders, suggesting agency conflicts arising from large dividend payments are more magnified in family firms than in nonfamily firms.

defenses, especially when these firms pay a higher level of dividends. The adverse effects of ATPs on the cost of bank loans is more pronounced in family firms with control-enhancing mechanisms that pay a higher level of dividends.

Overall, the findings in this subsection suggest that high shareholder-creditor conflicts intensify banks' concerns about potential expropriation by family shareholders protected by strong takeover defenses. Consequently, banks unprotected from this expropriation risk ex-ante charge higher interest rates to these family firms, in line with the conflicts of interest hypothesis.

### *B. Disciplinary Mechanisms*

In this subsection we investigate whether our findings in Table III are more pronounced if managers and family shareholders are insulated from internal or external disciplinary mechanisms.

We first consider the disciplinary effect of product market competition. When managers are insulated from market discipline due to a lack of competition, they are likely to have strong incentives to maximize their own benefits at the expense of shareholders (minority shareholders in the case of family firms). Because this managerial slack decreases firm value, low product market competition is likely to make it harder for firms to raise external capital, thereby increasing their financing costs (Bertrand and Mullainathan (2003), Qiu and Yu (2009)). To test this argument, we divide our sample firms according to their level of product market competition and examine whether the results in Table III vary across these subgroups. We consider a firm as in a high (low) competition industry if its Herfindahl index, measured as the firm's squared revenue share in its four-digit SIC industry, is below (above) the sample median.

The results are reported in the first four columns of Table V. In column (1), we find that for the low competition group, the coefficient estimates on both *Family firm* (-0.188) and *High G-index* (-0.190) are significantly negative at the 1% level, while the coefficient estimate on their interaction term (0.260) is significantly positive at the 1% level. The sum of the coefficient estimates on *High G-index* and its interaction with *Family firm* is not significantly different from zero (*p*-value of *F*-test = 0.31). These results suggest that while a high G-index decreases loan spreads for nonfamily firms, such a loan-spread-reducing benefit disappears for family firms with high agency problems. When the competition level is high, however, the interaction term between *Family firm* and *High G-index* is insignificant (column (2)). The difference in coefficient estimates on the interaction term between columns (1) and (2) is significant at the 1% level, suggesting that the adverse interaction effects of family control and high ATPs on bank loan rates are significantly larger when firms are shielded from product market competition.

In columns (3) and (4), we decompose family firms according to the presence of control-enhancing mechanisms. We find that for the low competition group, the coefficient estimates on both the interaction terms between *High G-index* and *Family firms with control-enhancing mechanisms* and between *High G-index* and *Family firms without control-enhancing mechanisms* are significantly positive albeit their magnitude and statistical significance are slightly higher for the former interaction term than for the latter. We also find that the coefficient estimates on both interaction terms are significantly larger in the low competition group than in high competition group. The results indicate that the lack of external and internal governance forces limits the positive role of ATPs in reducing takeover vulnerability and such reduced benefits are factored into in lenders' loan pricing decisions.

To further examine the effect of the agency problems between managers and shareholders and between family owners and minority shareholders on the cost of bank financing, we divide our sample according to the sample median of firms' leverage ratios. Jensen (1986) argues that high leverage plays an important role in disciplining managers and mitigating managerial agency conflicts. Similarly, Berger, Ofek, and Yermack (1997) show that entrenched managers choose lower leverage to avoid intensive monitoring.

The results are reported in columns (5) through (8) of Table V. We find similar results as those using product market competition. Specifically, the coefficient estimate on the interaction between *Family firm* and *High G-index* is significantly positive only for low leverage firms although its difference between low and high leverage firms is not significant (columns (5) and (6)). We also find that for both high and low leverage firms, the coefficient estimate on the interaction term between *High G-index* and *Family firm with control-enhancing mechanisms* is positive and significant, while the interaction term involving *Family firm without control-enhancing mechanisms* is insignificant (columns (7) and (8)). Although the magnitude and statistical significance of the coefficient estimate on the interaction term between *High G-index* and *Family firm with control-enhancing mechanisms* is higher for high leverage firms than for low leverage firms, the difference is not significant. A potential explanation for this insignificance is that while high leverage can function as a disciplinary mechanism for managerial agency conflicts, it can also aggravate asset substitution problems (Jensen and Meckling (1976)). These asset substitution problems increase creditors' concerns about potential

expropriation in family firms and consequently creditors demand high loan spreads for strong ATPs, especially for family firms with control-enhancing mechanisms. [22]

Overall, the findings in Table V suggest that creditors view product market competition and high leverage as important disciplinary forces that can reduce agency conflicts induced by strong ATPs, and consider the presence of such forces when determining loan prices. These results lend further support to the conflicts of interest hypothesis.

As an additional test of the effect of agency problems between managers and shareholders and between large and small shareholders on the cost of bank loans, we classify our sample firms into subgroups according to CEO characteristics that measure CEO power and entrenchment. We expect that these agency problems in family firms are higher when CEOs are more powerful and entrenched. We use three proxies for CEO power and entrenchment: CEO-chair duality, CEO age, and CEO pay. To the extent that chairman CEOs, older CEOs, and excessively compensated CEOs are more powerful and have greater entrenchment incentives (Finkelstein and D'Aveni (1994), Adams, Almeida, and Ferreira (2005), Faleye, Hoitash, and Hoitash (2011)), we expect the adverse effect of ATPs on the cost of bank debt to be more pronounced for family firms with powerful CEOs.

The results are reported in Table VI. In Panel A, we divide our sample according to whether a firm's CEO serves as chairman of the board and estimate the regression separately for these two subgroups. Consistent with our expectation, columns (1) and (2) show that the coefficient estimate on the interaction term between *Family firm* and *High G-index* is significantly positive only for firms with CEO-chair duality. These results suggest that the presence of strong ATPs

[22] Prior studies show that risky firms (i.e. speculative-grade firms) benefit from being the targets of firms with sound credit because such acquisitions make them less risky (Qiu and Yu (2009)). To control for this co-insurance effect, in untabulated tests we include in the Table VI regressions an indicator that takes the value of one if a firm's S&P credit rating is below BBB and zero otherwise. We find that the results do not change.

can be detrimental, especially for family firms with CEOs who exert excess power. In columns (3) and (4), we separate family firms according to the presence of control-enhancing mechanisms and find that the positive interaction effect for family firms with CEO-chair duality holds only for family firms with control-enhancing mechanisms. Thus, the adverse effect of ATPs on the cost of bank debt is particularly severe when family firms with too powerful CEOs use control-enhancing mechanisms.

In Panel B, we divide our sample firms according to the sample median of CEO age. In columns (1) and (2), we observe a positive and significant coefficient estimate on the interaction term between *Family firm* and *High G-index* only for firms with old CEOs. The results in columns (3) and (4) show that for both firms with old CEOs and firms with young CEOs, the adverse effects of ATPs on loan spreads are more evident when family firms use control-enhancing mechanisms than when they do not. However, the difference in adverse effects between firms with old CEOs and those with young CEOs is not significant (*p*-value of *F*-test = 0.16).

In Panel C, we split sample firms according to the sample median level of excess CEO compensation. Following Faleye, Hoitash, and Hoitash (2011), we measure excess CEO compensation as the residual estimated by regressing the logarithm of CEO total compensation on firm size (log of market capitalization), ROA, book-to-market, the standard deviation of ROA, the standard deviation of stock returns, and year and industry indicators. The results show that the coefficient estimates on the interaction terms between *Family firm* and *High G-index* and between *Family firms with control-enhancing mechanisms* and *High G-index* are positive and significant only when CEO excess pay is higher. Moreover, in column (3), for the subgroup of firms that reward their CEOs higher excess pay, the sum of the coefficient estimates on *High G-*

*index* and its interaction with *Family firms with control-enhancing mechanisms* is significantly different from zero at the 1% level. Thus, strong takeover defenses appear to increase the cost of bank loans when family firms have control-enhancing mechanisms and their CEOs are excessively paid.

## IV. Alternative Classifications of Family Firms

Thus far, we have shown that the loan-spread-lowering effect of ATPs in family firms is subject to the presence of control-enhancing mechanisms. In this subsection, we follow Villalonga and Amit (2006) and classify family firms into various subgroups according to differences in perceived agency problems and examine whether the interaction effects of family control and ATPs on the cost of bank loans vary depending on the degree of agency conflicts in family firms.

The results are reported in Table VII. In column (1), we divide family firms into firms managed by a founder CEO and those managed by a descendant or a hired CEO. Family firms with a nonfounder CEO tend to face higher agency conflicts than family firms with a founder CEO (e.g., Villalonga and Amit (2006)). For example, nonfounder CEOs may have greater entrenchment incentives to strengthen their relatively unstable status, and thus adopt ATPs to maximize their self-interest. Supporting these arguments, Fahlenbrach (2009) and Li and Srinivasan (2011) document that family firms' high value is evident only when there exist founders who have invaluable firm-specific knowledge and a strong attachment to their firm. Perez-Gonzalez (2006) also shows that appointing a founder's descendant to CEO limits the scope of labor market competition and is associated with poor firm performance. Thus, according to the conflicts of interest hypothesis, the adverse effects of ATPs on the cost of bank

debt should be stronger for family firms with a nonfounder CEO than for those with a founder CEO.

We find that the coefficient estimates on both *Founder CEO family firm* and its interaction with *High G-index* are statistically insignificant. In contrast, the coefficient estimates on *Nonfounder CEO family firm* and its interaction with *High G-index* are significantly negative (-0.163) and significantly positive (0.194) at the 1% level, respectively. Thus, ATPs significantly increase the cost of bank loans for family firms with nonfounder CEOs but not for family firms with founder CEOs. These results are consistent with the conflicts of interest hypothesis.

In column (2), we classify family firms into founder- and descendant-controlled family firms. A founder-controlled family firm is a family firm in which only a founder or founder-generation family member is actively involved in the management as an officer, a board of director, or a blockholder. A descendant-controlled family firm is a family firm in which at least one second- or later-generation founding family member is active in the firm. We find that although both coefficient estimates on the interaction terms between the indicators for these two types of family firms and *High G-index* are significantly positive at the 10% and 1% level, respectively, the magnitude of the coefficient estimate is significantly larger for the interaction term involving *Descendent-controlled family firm* than the interaction term involving *Founder-controlled family firm* (*p*-value of *F*-test = 0.01). The results are largely consistent with those in column (1).

In column (3), we split family firms into *Family CEO firm* and *Nonfamily CEO firm* to capture the agency problems arising from potential conflicts between managers and shareholders. Villalonga and Amit (2006) show that these agency problems are higher in family firms with a nonfamily CEO than in family firms run by a family CEO. *Family CEO firm* corresponds to family firms in which either a founder or a descendant serves as CEO, and *Nonfamily CEO firm*

corresponds to family firms managed by an outside professional CEO. We find that only the coefficient estimate on the interaction term between *High G-index* and *Nonfamily CEO family firm* is positive and significant. In column (4), we classify family firms into four subgroups according to whether they are managed by family CEOs or outside CEOs and whether family firms use control-enhancing mechanisms. The former distinction is intended to reflect agency conflicts between managers and shareholders while the latter reflects agency conflicts between controlling and minority shareholders. The results show that irrespective of whether family firms are managed by family CEOs or outside CEOs, banks charge higher interest rates on loans when family firms have control-enhancing mechanisms. Specifically, we find that the coefficient estimates on the interaction terms between *High G-index* and *Family CEO firm with control-enhancing mechanisms* and between *High G-index* and *Nonfamily CEOs with control-enhancing mechanisms* are significant 0.183 and 0.245, respectively. However, the interaction between *High G-index* and *Nonfamily CEO family firm without control-enhancing mechanisms* is statistically insignificant. The results suggest that creditors pay more attention to agency conflicts between controlling and minority shareholders than to agency conflicts between managers and shareholders when they determine loan prices of family firms.

Overall, the results in this section support the view that lenders respond to various types of agency problems prevailing in family firms, and incorporate the impact of these agency problems on the potential costs and benefits of strong ATPs in their loan pricing decisions.

## V. Additional Tests

In this section, we conduct additional tests to check the robustness of our main results.

### *A. Change Regressions*

Thus far, we have not explicitly taken into account the endogeneity problem that some unobservable firm characteristics jointly affect both G-index and interest rates, resulting in a spurious correlation. This endogeneity concern is not likely to be a serious problem in our study because ATPs tend to be adopted at the time of firms' IPOs and rarely change thereafter (Chava, Livdan, and Purnanandam (2009)). Considering our sample firms' average age of 30 years, these firms' adoption of ATPs is likely to have occurred long before the issuance of loans. Moreover, family firm status tends to be constant. Thus, the interaction effects of family control and high ATPs on loan spreads are unlikely to be susceptible to time-varying omitted variable concerns.

However, there is still a possibility that our results are affected by potential time-invariant omitted variables. To address this concern, we follow Chava, Livdan, and Purnanandam (2009) and Lin et al. (2011) and estimate change regressions. Change regressions should mitigate endogeneity concerns because the potential effects of omitted variables on loan spreads are likely to be filtered out by using change variables.

Table VIII reports the results. In columns (1) and (2), we use the change in log loan spreads from one period to next period as the dependent variable and regress it on the changes in G-index scores and other control variables between the same periods. Because the change regression requires that borrowers have at least one bank loan outstanding in both periods, our analysis is conducted with a smaller sample of 3,436 observations.[23]

In column (1), we find that the coefficient estimate on the interaction term between the G-index change and *Family firm* is positive and significant (*p*-value = 0.05), while the G-index change is not significantly related to loan spreads for nonfamily firms. These findings confirm

[23] When there are multiple loans in a given year, we use the first loan observation in the analysis. Our results are qualitatively similar if we use a randomly selected loan in the analysis.

our earlier results that banks are concerned about strong takeover defenses when firms are under family control.

In column (2), we separate the family firm indicator into indicators for family firms with and without control-enhancing mechanisms. We find that the coefficient estimate on the G-index change (0.011) is insignificantly positive, while the coefficient estimate on its interaction with the indicator for family firms with control-enhancing mechanisms (0.075) is significantly positive (*p*-value = 0.03). The sum of the coefficient estimates on the G-index change and its interaction with the indicator for family firms with control-enhancing mechanisms is significantly different from zero (*p*-value of *F*-test = 0.1), indicating a significant increase in loan spreads when family firms add an antitakeover provision. In contrast, the coefficient estimate (0.021) on the interaction term between the G-index change and the indicator for family firms without control-enhancing mechanisms is positive and insignificant, and the sum of the coefficient estimates is not significantly different from zero. These results suggest that the adverse effect of having more ATPs is magnified in family firms, especially when they have control-enhancing mechanisms, in line with our prior results.

In columns (3) and (4), we use the change in log loan spreads from year *t-1* to year *t* as the dependent variable and regress it on contemporaneous changes in G-index scores and other control variables from year *t-1* to year *t*. We find that our results do not change. Therefore, our key findings in previous sections appear to be robust to controlling for time-invariant omitted variables.

### *B. Using Variation in State Antitakeover Laws as Natural Experiment: Difference-in-differences Test*

To further address endogeneity concerns, in this subsection, we exploit the variation in the state-level antitakeover laws (i.e., staggered adoption of antitakeover laws across the states) as a natural experiment and examine how the change in such laws affects a firm's cost of bank loans using a difference-in-differences approach. As Francis et al. (2010) point out, using the adoption of state antitakeover laws helps us to avoid the potential endogeneity problem inherent in the study of the effect of ATPs on the cost of capital since the adoption decision is largely made at the state level, not by the firm level. Following Bebchuk and Cohen (2003) and Francis et al. (2010), we create *State antitakover index* of a firm's incorporated state by summing up the number of antitakeover statutes – a Control Share statute, a Fair Price statute, Business Combination statutes, a Poison Pill Endorsement statute, and a Constituencies statute.[24] We obtain data on the states in which firms are incorporated from GMI Ratings and their proxy statements.

Table IX reports the results. The dependent variable is the logarithm of AISD and the key independent variable of interest is the interaction of *Family firm* with the change in *State antitakeover index* (i.e., change in state antitakeover scores of a firm's incorporated state from the first firm-year to a given firm-year). In column (1), we find that the coefficient estimate on the change in *State antitakeover index* is insignificantly positive, while the coefficient estimate on the G-index is significantly negative. In column (2), we find that the coefficient estimate (0.235) on the interaction term between *Family firm* and the change in *State antitakeover index* is significantly positive at the 5% level, indicating a larger increase in loan spreads for family firms incorporated in states that adopt additional antitakeover statutes than for other firms. In column (3), we find that the coefficient estimate (0.034) on the interaction term between *Family firm* and

[24] We obtain data on state antitakeover statutes from Lucian Bebchuk's website (http://www.law.harvard.edu/faculty/bebchuk/data.shtml). For the period 2002-2006, we supplement these data using two additional sources: Riskmetrics for a Control Share statute, a Fair Price statute, and Business Combination statutes and Afonso (2011) for a Poison Pill Endorsement statute and a Constituencies statute. After excluding loans issued by firms that are incorporated outside of the U.S., we use a sample of 7,504 observations in the analysis.

G-index is significantly positive at the 1% level after controlling for the change in *State antitakeover index*. Thus, family firms with restrictive firm-level ATPs do not benefit from the low cost of capital even after controlling for state-level antitakeover statutes. In column (4), we include both interaction terms between *Family firm* and the change in *State antitakeover index* and between *Family firm* and G-index in the regression and find that the coefficient estimates on both interaction terms are significantly positive. In columns (5) to (8), we replace G-index with E-index and find that our results do not change.

### *C. Effects of Individual Components of ATPs on the Cost of Bank Loans*

In this subsection we examine the impact of individual components of ATPs on the cost of bank debt. Specifically, we repeat our prior analyses by replacing *High G-index* with indicators for six individual components of G-index as identified by Bebchuck, Cohen, and Ferrell (2009) and the score for other components of the G-index as computed by subtracting the sum of the scores for the six components from the full G-index score.[25]

In untabulated tests, we find that only the coefficient estimate on the staggered-board indicator is negative and significant at the 1% level for the full sample. When we interact the indicators for the six individual components with *Family firm*, the coefficient estimates on the interaction terms between *Family firm* and the indicator for limits to bylaw amendments and between *Family firm* and the indicator for poison pills are positive and significant. In contrast, the coefficient estimate on the interaction term between *Family firm* and the indicator for limits to charter amendments is negative and significant.

[25] These six provisions include staggered boards, limits to bylaw amendments, limits to charter amendments, supermajority requirements for mergers, poison pills, and golden parachutes. Bebchuck, Cohen, and Ferrell (2009) argue that these provisions play a significant role in driving the correlation between G-index and firm value, and provide detailed discussion on the effects of these individual components on firm value.

We also interact each of these provision indicators with indicators for family firms with (without) control-enhancing mechanisms and reestimate the regressions. We find that the coefficient estimate on the interaction term between the indicator for staggered boards and the indicator for family firms with control-enhancing mechanisms is positive and significant (*p*-value = 0.06), while the interaction involving the indicator for family firms without control-enhancing mechanisms is insignificant. Similarly, the coefficient estimate on the interaction term between the indicator for limits to bylaw amendments and the indicator for family firms with control-enhancing mechanisms is positive and significant at the 1% level, while the coefficient estimate on the interaction involving the indicator for family firms without control-enhancing mechanisms is insignificant. For the interaction terms involving an indicator for poison pills, the coefficient estimates on both interaction terms are positively and significantly associated with loan spreads. In contrast, the coefficient estimate on the interaction between the indicator for limits to charter amendments and the indicator for family firms with control-enhancing mechanisms is negative and significant.

Although it is beyond the scope of this study to disentangle the impacts of the individual G-index components on the cost of bank loans, our findings suggest that the different antitakeover provisions have different impacts on the cost of bank loans and the effects are not uniform across firms with different ownership structures.

### *D. Effects of Managerial Ownership on the Cost of Bank Loans*

Thus far, our results show that the positive impact of ATPs on the cost of bank debt is largely limited when ATPs are combined with family control. In this subsection we examine whether the level of managerial ownership in nonfamily firms affects the role of ATPs in reducing the cost of

bank debt. Specifically, we classify managerial ownership in nonfamily firms into five ranges as in Morck, Shleifer, and Vishny (1988), 0-5%, 5-15%, 15-25%, 25-50%, and over 50%, and create an indicator for each ownership range. We then estimate regressions of loan spreads on these indicators and other control variables. We find that none of these ownership indicators or their interactions with *High G-index* is significant while the coefficient estimate on *High G-index* is negative and significant at the 1% level. These findings suggest that the unique nature of family control itself, not management ownership, is an important factor that influences the role of ATPs in mitigating shareholder-debtholder conflicts and reducing the cost of bank debt.[26]

### *E. Controlling for Banker Directors and Governance Variables*

The negative association between family control and the cost of bank loans can also be subject to other omitted variable bias problems. For example, it is possible that the prevalence of banker directors who provide firms expertise in raising debt (Booth and Deli (1999)) are a source of family firms' lower cost of bank loans. Prior studies show that bankers are more likely to join boards of firms in which the conflicts of equity and debt claimants are lower. As family firms are less likely to encounter shareholder-creditor conflicts compared to nonfamily firms (Anderson, Mansi, and Reeb (2003)), bankers may have greater incentives to join boards of family firms. To address this concern, we check whether bank directors are more prevalent in family firms.[27] In

[26] Several studies show that family controlling owners are different from other controlling owners. For example, Lins, Volpin, and Wagner (2013) argue that family-controlled firms have stronger incentives to make survival-oriented corporate decisions than do other nonfamily controlled firms during the crisis. They show that family-controlled firms cut investment more due to their unique incentives magnified by the unexpected liquidity shock from the financial crisis and the investment cuts are associated with their underperformance.

[27] We identify commercial banker directors using director information (e.g., the name of a director's current primary employer and her employment titles) reported in RiskMetrics and BoardEx. We follow the filtering process of Guner, Malmendier, and Tate (2008) and classify the directors as banker directors only when they serve as an executive officer of a bank, not as its board member. We also require the name of a bank director's employer to be included in the FDIC list of U.S. chartered commercial banks. Out of 1,775 (3,921) family (nonfamily) firm-year observations, we identify 237 (489) firm-year observations with at least one banker director.

untabulated logit analysis, we find that family firms, especially those without control-enhancing mechanisms, are indeed more likely to have commercial bankers on their boards. We then examine whether the presence of bank directors helps family firms reduce the cost of bank loans by including in the Table III regressions an indicator that takes the value of one if a commercial banker sits on the board and zero otherwise. We find that our key results in Table III do not change after controlling for this indicator, while the banker-director indicator is insignificantly negatively related to loan spreads.

We also control for other governance variables such as board size, board independence, and the presence of institutional blockholders in the regressions. Our key results remain unchanged.

### *F. Other Robustness Tests*

We perform several additional robustness tests. First, we examine whether our results are driven by sample selection bias as our data on loan security are available only for 59% of the sample. To do so, we follow Chava, Livdan, and Purnanandam (2009) and run a probit regression using the loan security indicator as the dependent variable and all other control variables used in the Table III as the independent variables. We then reestimate the Table III regressions including the predicted value from this probit regression. Our results do not change.

Second, to address concerns that loan spreads and maturity are simultaneously determined in a debt contract, we follow Graham, Li, and Qiu (2008) and estimate a two-stage least squares regression using a firm's asset maturity as an instrumental variable. Graham, Li, and Qiu (2008) argue that asset maturity is an appropriate instrument for debt maturity since asset maturity and debt maturity are positively and significantly correlated with each other while asset maturity does not affect the residuals of loan spreads. The results are qualitatively similar.

Third, individual loans in the same deal facility may not be independent because loan contract terms are a part of deal-level negotiations. Thus, statistical significance can be overstated by treating loans independently. To alleviate this concern, following prior studies (Graham, Li, and Qiu (2008), Chava, Livdan, and Purnanandam (2009)), we reestimate the Table III regressions using deal-level data, controlling for year and industry fixed effects.[28] The results remain qualitatively the same.

Finally, we replace *High G-index* with Bebchuk, Cohen, and Ferrell's (2009) *High E-index*, which uses six components of the G-index to measure a firm's takeover defenses, and reestimate the Table III regressions. We obtain similar results.

## VI. Summary and Conclusion

In this paper we seek to improve our understanding of the role of antitakeover provisions (ATPs) as a device to alleviate shareholder-debtholder conflicts by investigating how their role differs between family and nonfamily firms. Prior literature focuses on the positive role of ATPs in mitigating potential conflicts between shareholders and creditors, and shows that ATPs benefit creditors, thus lowering a firm's cost of debt. However, the literature on family firms shows that the nature of agency problems is different between family and nonfamily firms, suggesting that creditors view strong ATPs combined with family control to have a different impact on their risk. We investigate this unexplored issue under two competing hypotheses, namely, the interest alignment hypothesis and the conflicts of interest hypothesis. We find strong support for the conflicts of interest hypothesis, which posits that family ownership intensifies the agency problems that ATPs create and thus banks charge higher loan spreads to family firms with strong ATPs.

[28] We aggregate loans into a deal-level observation using loan commitment size as a weight.

More specifically, we find that while nonfamily firms with more ATPs enjoy a lower cost of debt, family firms with more ATPs do not. The adverse effect of ATPs on the cost of debt for family firms is particularly severe when they adopt control-enhancing mechanisms that allow family shareholders to have control rights that exceed their cash flow rights. These results are more pronounced when family firms are largely insulated from internal and external disciplinary mechanisms and thus have more severe agency problems: ATPs do not reduce (and sometimes increase) the cost of bank loans for family firms, especially when loans are unsecured or do not have covenants, when family firms face low product market competition or have low leverage, or when CEOs of family firms exert excess power.

To alleviate the concern that our results are driven by endogeneity bias, we use change regressions as well as difference-in-differences regressions by exploiting the state-level variation in antitakeover laws. Our results do not change, suggesting that our key conclusion is unlikely to be affected by endogeniety concerns.

Overall, these results suggest that the level of a family firm's agency conflicts arising from its unique ownership structure and family shareholders' incentives to maintain control should be taken into account in assessing the net impact of ATPs on the cost of debt. The results also suggest that the benefits of ATPs as a device to mitigate shareholder-debtholder conflicts can be ensured only when adequate corporate governance mechanisms are in place.

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**Table I**
**Sample Distribution**

The sample consists of 5,068 firm-year observations for the period 1996-2006. Our initial sample includes all firms covered in *RiskMetrics*. We then restrict our sample to those firms whose loans are covered in *Dealscan* and whose stock returns and financial data are available in *CRSP* and *Compustat*, respectively. Finally, we exclude firms in the financial (SIC codes between 6000 and 6999) and utility (SIC codes between 4900 and 4999) industries. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in the top management.

Panel A. Sample distribution by year

| Year | Full sample | Family firms | | Nonfamily firms | |
|---|---|---|---|---|---|
| | N | N | % | N | % |
| 1996 | 325 | 117 | 36.00 | 208 | 64.00 |
| 1997 | 446 | 154 | 34.53 | 292 | 65.47 |
| 1998 | 412 | 171 | 41.50 | 241 | 58.50 |
| 1999 | 472 | 175 | 37.08 | 297 | 62.92 |
| 2000 | 490 | 199 | 40.61 | 292 | 59.59 |
| 2001 | 559 | 212 | 37.92 | 347 | 62.08 |
| 2002 | 471 | 174 | 36.94 | 297 | 63.06 |
| 2003 | 501 | 178 | 35.53 | 323 | 64.47 |
| 2004 | 500 | 167 | 33.40 | 333 | 66.60 |
| 2005 | 476 | 177 | 37.18 | 299 | 62.82 |
| 2006 | 416 | 132 | 31.73 | 284 | 68.27 |
| Total | 5,068 | 1,856 | 36.62 | 3,212 | 63.38 |

Panel B. Sample distribution by industry (two-digit SIC code)

| Industries | Full sample | Family firms | | Nonfamily firms | |
|---|---|---|---|---|---|
| | N | N | % | N | % |
| Agriculture, forestry, and fishing (01-09) | 7 | 3 | 42.86 | 4 | 57.14 |
| Mining and construction (10-17) | 396 | 141 | 35.61 | 255 | 64.39 |
| Manufacturing (20-39) | 2,769 | 904 | 32.65 | 1,865 | 67.35 |
| Transportation and Communications (40-48) | 304 | 115 | 37.83 | 189 | 62.17 |
| Wholesale and retail trade (50-59) | 856 | 387 | 45.21 | 469 | 54.79 |
| Services (70-89) | 736 | 306 | 41.58 | 430 | 58.42 |
| Total | 5,068 | 1,856 | 36.62 | 3,212 | 63.38 |

**Table II**
**Summary Statistics**

The sample consists of 8,006 bank loans issued to 1,549 firms during the period 1996 to 2006. Our initial sample includes all firms covered in *RiskMetrics*. We then restrict our sample to those firms whose loans are covered in *Dealscan* and whose stock returns and financial data are available in *CRSP* and *Compustat*, respectively. Finally, we exclude firms in the financial (SIC codes between 6000 and 6999) and utility (SIC codes between 4900 and 4999) industries. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in top management. The Appendix provides detailed descriptions of the variables.

| | All firms | | Family firms: A | | Nonfamily firms: B | | Test of difference: A-B (*p*-value) | |
|---|---|---|---|---|---|---|---|---|
| | Mean | Median | Mean | Median | Mean | Median | *t*-test | Wilcoxon *z*-test |
| **Loan characteristics** | | | | | | | | |
| Loan spread (basis points) | 128.22 | 100.00 | 127.70 | 100.00 | 128.52 | 93.75 | (0.739) | (0.049) |
| Loan commitment size ($ millions) | 483.80 | 250.00 | 417.90 | 204.00 | 521.64 | 250.00 | (0.000) | (0.000) |
| Loan maturity (months) | 43.33 | 48.00 | 43.29 | 48.00 | 43.36 | 48.00 | (0.907) | (0.758) |
| Number of lenders | 10.78 | 8.00 | 10.33 | 8.00 | 11.04 | 8.00 | (0.002) | (0.002) |
| Performance pricing (indicator) | 0.53 | 1.00 | 0.54 | 1.00 | 0.53 | 1.00 | (0.165) | (0.165) |
| Term loan (indicator) | 0.20 | 0.00 | 0.20 | 0.00 | 0.20 | 0.00 | (0.978) | (0.978) |
| **Macro variables** | | | | | | | | |
| Credit spread (basis points) | 0.85 | 0.81 | 0.85 | 0.81 | 0.85 | 0.81 | (0.770) | (0.904) |
| Term spread (basis points) | 1.11 | 0.78 | 1.05 | 0.74 | 1.13 | 0.80 | (0.001) | (0.001) |
| **Firm characteristics** | | | | | | | | |
| G-index | 9.28 | 9.00 | 8.56 | 8.00 | 9.68 | 10.00 | (0.000) | (0.000) |
| Market capitalization ($ billions) | 7.66 | 1.77 | 6.03 | 1.56 | 8.61 | 1.84 | (0.000) | (0.000) |
| Firm age | 29.66 | 25.00 | 24.19 | 19.00 | 32.80 | 31.00 | (0.000) | (0.000) |
| EBITDA/sales | 0.16 | 0.14 | 0.17 | 0.14 | 0.16 | 0.14 | (0.007) | (0.253) |
| Leverage | 0.28 | 0.27 | 0.28 | 0.27 | 0.28 | 0.27 | (0.532) | (0.648) |
| Z-score | 1.98 | 1.82 | 2.13 | 1.98 | 1.89 | 1.75 | (0.000) | (0.000) |
| Board size | 9.72 | 9.00 | 9.76 | 9.00 | 9.69 | 9.00 | (0.226) | (0.103) |
| Board independence (%) | 0.65 | 0.67 | 0.56 | 0.57 | 0.70 | 0.75 | (0.000) | (0.000) |
| **CEO characteristics** | | | | | | | | |
| CEO-chair duality (indicator) | 0.70 | 1.00 | 0.65 | 1.00 | 0.72 | 1.00 | (0.000) | (0.000) |
| CEO age | 55.18 | 55.00 | 55.34 | 55.00 | 55.09 | 55.00 | (0.119) | (0.954) |
| CEO tenure | 7.02 | 5.00 | 9.74 | 7.00 | 5.48 | 4.00 | (0.000) | (0.000) |
| CEO pay ($ millions) | 5.23 | 2.97 | 4.65 | 2.39 | 5.57 | 3.37 | (0.000) | (0.000) |
| **Family firm characteristics** | | | | | | | | |
| Family firm (indicator) | 0.37 | 0.00 | 1.00 | 1.00 | - | - | - | - |
| Family firm with control-enhancing mechanisms (indicator) | - | - | 0.73 | 1.00 | - | - | - | - |
| Founder CEO firm (indicator) | - | - | 0.36 | 1.00 | - | - | - | - |
| Family CEO firm (indicator) | - | - | 0.59 | 1.00 | - | - | - | - |

**Table III**
**Family Control, ATPs, and the Cost of Bank Loans**

The table presents estimates of OLS regressions in which the dependent variable is the log the of all-in-spread-drawn (AISD), the rate the borrower pays in basis points over LIBOR or the LIBOR equivalent. The high G-index indicator takes the value of one if the number of antitakeover provisions a firm adopts (Gompers, Ishii, and Metrick, (2003)) is higher than the sample median and zero otherwise. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in top management. Family firms with (without) control-enhancing mechanisms are those that adopt (do not adopt) voting or control mechanisms such as multiple share classes, pyramids, cross-holdings, and voting agreements (Villalonga and Amit (2006)). The Appendix provides detailed descriptions of the variables. *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

| Independent variables | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| High G-index (indicator): a | -0.090*** | | -0.146*** | -0.147*** |
| | (0.002) | | (0.000) | (0.000) |
| Family firm (indicator): b | | -0.029 | -0.101*** | |
| | | (0.310) | (0.005) | |
| Family firm with control-enhancing mechanisms (indicator): c | | | | -0.134*** |
| | | | | (0.001) |
| Family firm without control-enhancing mechanisms (indicator): d | | | | -0.014 |
| | | | | (0.799) |
| a×b | | | 0.145** | |
| | | | (0.014) | |
| a×c | | | | 0.209*** |
| | | | | (0.002) |
| a×d | | | | -0.019 |
| | | | | (0.843) |
| Log (market cap) | -0.226*** | -0.227*** | -0.227*** | -0.228*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| EBITDA/sales | -0.502*** | -0.495*** | -0.482*** | -0.481*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Leverage | 0.479*** | 0.466*** | 0.477*** | 0.484*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Z-score | -0.121*** | -0.123*** | -0.118*** | -0.116*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Log (firm age) | -0.075*** | -0.088*** | -0.075*** | -0.073*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Log (loan maturity) | 0.037** | 0.036** | 0.036** | 0.035** |
| | (0.014) | (0.017) | (0.015) | (0.018) |
| Number of lenders in syndicate | -0.001 | -0.002 | -0.002 | -0.002 |
| | (0.239) | (0.197) | (0.214) | (0.194) |
| Performance pricing (indicator) | -0.083*** | -0.086*** | -0.082*** | -0.083*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Term loan (indicator) | 0.430*** | 0.432*** | 0.429*** | 0.429*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Credit spread | 0.167** | 0.168** | 0.170** | 0.175** |
| | (0.030) | (0.027) | (0.027) | (0.023) |
| Term spread | 0.027 | 0.025 | 0.027 | 0.026 |
| | (0.144) | (0.176) | (0.156) | (0.160) |
| Constant | 5.956*** | 6.017*** | 6.027*** | 6.042*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Year fixed effects | Y | Y | Y | Y |
| Industry fixed effects | Y | Y | Y | Y |
| Loan purpose indicators | Y | Y | Y | Y |
| Number of observations | 7,512 | 7,579 | 7,512 | 7,512 |
| Adjusted $R^2$ | 0.554 | 0.554 | 0.555 | 0.557 |

**Table IV**
**Family Control, ATPs, and the Cost of Bank Loans:**
**Subsample Analyses according to Loan Security, Covenants, and Dividend Payment Flexibility**

The table presents estimates of OLS regressions in which the dependent variable is the log the of all-in-spread-drawn (AISD), the rate the borrower pays in basis points over LIBOR or the LIBOR equivalent. In Panel A, "Secured" ("Unsecured") loans are those loans that are (are not) secured by collateral. In Panel B, "Covenant" ("No covenant") loans are those loans that include at least one (none) of debt sweep, equity sweep, and assets sweep covenants in their contracts. Panel C uses only loans without dividend restriction covenants. "Nimble states" loans are loans to borrowing firms incorporated in the following states: Arizona, Delaware, Kansas, Louisiana, Maine, Nevada, New Hampshire, Oklahoma, Rhode Island, and Vermont. The high G-index indicator takes the value of one if the number of antitakeover provisions a firm adopts (Gompers, Ishii, and Metrick, (2003)) is higher than the sample median and zero otherwise. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in top management. Family firms with (without) control-enhancing mechanisms are those that adopt (do not adopt) voting or control mechanisms such as multiple share classes, pyramids, cross-holdings, and voting agreements (Villalonga and Amit (2006)). The Appendix provides detailed descriptions of the variables. *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Subsample analysis according to loan security

| Independent variables | Unsecured | Secured | Unsecured | Secured |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| High G-index (indicator): a | -0.172*** | 0.022 | -0.173*** | 0.022 |
| | (0.000) | (0.503) | (0.000) | (0.503) |
| Family firm (indicator): b | -0.105** | -0.039 | | |
| | (0.045) | (0.276) | | |
| Family firm with control-enhancing mechanisms (indicator): c | | | -0.142** | -0.048 |
| | | | (0.012) | (0.264) |
| Family firm without control-enhancing mechanisms (indicator): d | | | 0.009 | -0.023 |
| | | | (0.902) | (0.637) |
| a×b | 0.184*** | 0.012 | | |
| | (0.005) | (0.842) | | |
| a×c | | | 0.259*** | -0.006 |
| | | | (0.000) | (0.935) |
| a×d | | | -0.042 | 0.040 |
| | | | (0.730) | (0.641) |
| Control variables (same as Table III) | Y | Y | Y | Y |
| Test (*p*-value) that the difference in coefficient estimates on the interaction terms between the two regressions = 0: | | | | |
| a × b | 0.005 | | | |
| a × c | | | 0.000 | |
| a × d | | | 0.438 | |
| Year fixed effects | Y | Y | Y | Y |
| Industry fixed effects | Y | Y | Y | Y |
| Loan purpose indicators | Y | Y | Y | Y |
| Number of observations | 2,229 | 2,524 | 2,229 | 2,524 |
| Adjusted $R^2$ | 0.487 | 0.346 | 0.490 | 0.346 |

Panel B: Subsample analysis according to covenants

| Independent variables | No covenant | Covenant | No covenant | Covenant |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| High G-index (indicator): a | -0.157*** | -0.048 | -0.159*** | -0.047 |
| | (0.000) | (0.256) | (0.000) | (0.259) |
| Family firm (indicator): b | -0.122*** | -0.038 | | |
| | (0.003) | (0.430) | | |
| Family firm with control-enhancing mechanisms (indicator): c | | | -0.172*** | -0.037 |
| | | | (0.000) | (0.513) |
| Family firm without control-enhancing mechanisms (indicator): d | | | 0.017 | -0.041 |
| | | | (0.784) | (0.538) |
| a×b | 0.167** | 0.042 | | |
| | (0.011) | (0.602) | | |
| a×c | | | 0.268*** | -0.007 |
| | | | (0.000) | (0.936) |
| a×d | | | -0.111 | 0.130 |

| | | | | |
|---|---|---|---|---|
| | | | (0.221) | (0.336) |
| Control variables (same as Table III) | Y | Y | Y | Y |
| Test (*p*-value) that the difference in coefficient estimates on the interaction terms between the two regressions = 0: | | | | |
| a × b | 0.050 | | | |
| a × c | | | 0.000 | |
| a × d | | | 0.015 | |
| Year fixed effects | Y | Y | Y | Y |
| Industry fixed effects | Y | Y | Y | Y |
| Loan purpose indicators | Y | Y | Y | Y |
| Number of observations | 5,551 | 1,961 | 5,551 | 1,961 |
| Adjusted $R^2$ | 0.523 | 0.419 | 0.526 | 0.419 |

Panel C: Subsample analysis according to nimble states

| Independent variables | Nimble states | No nimble states | Nimble states | No nimble states |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| High G-index (indicator): a | -0.301*** | -0.172 | -0.301*** | -0.166 |
| | (0.000) | (0.102) | (0.000) | (0.118) |
| Family firm (indicator): b | -0.095 | 0.016 | | |
| | (0.241) | (0.907) | | |
| Family firm with control-enhancing mechanisms (indicator): c | | | -0.115 | 0.010 |
| | | | (0.184) | (0.945) |
| Family firm without control-enhancing mechanisms | | | 0.012 | 0.039 |
| (indicator): d | | | (0.925) | (0.867) |
| a×b | 0.277** | 0.000 | | |
| | (0.016) | (1.000) | | |
| a×c | | | 0.305** | 0.131 |
| | | | (0.012) | (0.387) |
| a×d | | | 0.142 | -0.271 |
| | | | (0.477) | (0.377) |
| Control variables (same as Table VI) | Y | Y | Y | Y |
| Test (*p*-value) that the difference in coefficient estimates on the interaction terms between the two regressions = 0: | | | | |
| a × b | 0.044 | | | |
| a × c | | | 0.248 | |
| a × d | | | 0.158 | |
| Year fixed effects | Y | Y | Y | Y |
| Industry fixed effects | Y | Y | Y | Y |
| Loan purpose indicators | Y | Y | Y | Y |
| Number of observations | 820 | 406 | 820 | 406 |
| Adjusted $R^2$ | 0.573 | 0.555 | 0.572 | 0.560 |

**Table IV**
**Family Control, ATPs, and the Cost of Bank Loans:**
**Subsample Analyses according to Loan Security, Covenants, and Dividend Payment Flexibility**

The table presents estimates of OLS regressions in which the dependent variable is the log the of all-in-spread-drawn (AISD), the rate the borrower pays in basis points over LIBOR or the LIBOR equivalent. In Panel A, "Secured" ("Unsecured") loans are those loans that are (are not) secured by collateral. In Panel B, "Covenant" ("No covenant") loans are those loans that include at least one (none) of debt sweep, equity sweep, and assets sweep covenants in their contracts. Panel C uses only loans without dividend restriction covenants. "Nimble states" loans are loans to borrowing firms incorporated in the following states: Arizona, Delaware, Kansas, Louisiana, Maine, Nevada, New Hampshire, Oklahoma, Rhode Island, and Vermont. The high G-index indicator takes the value of one if the number of antitakeover provisions a firm adopts (Gompers, Ishii, and Metrick, (2003)) is higher than the sample median and zero otherwise. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in top management. Family firms with (without) control-enhancing mechanisms are those that adopt (do not adopt) voting or control mechanisms such as multiple share classes, pyramids, cross-holdings, and voting agreements (Villalonga and Amit (2006)). The Appendix provides detailed descriptions of the variables. *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Subsample analysis according to loan security

| Independent variables | Unsecured | Secured | Unsecured | Secured |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| High G-index (indicator): a | -0.172*** | 0.022 | -0.173*** | 0.022 |
| | (0.000) | (0.503) | (0.000) | (0.503) |
| Family firm (indicator): b | -0.105** | -0.039 | | |
| | (0.045) | (0.276) | | |
| Family firm with control-enhancing mechanisms (indicator): c | | | -0.142** | -0.048 |
| | | | (0.012) | (0.264) |
| Family firm without control-enhancing mechanisms (indicator): d | | | 0.009 | -0.023 |
| | | | (0.902) | (0.637) |
| a×b | 0.184*** | 0.012 | | |
| | (0.005) | (0.842) | | |
| a×c | | | 0.259*** | -0.006 |
| | | | (0.000) | (0.935) |
| a×d | | | -0.042 | 0.040 |
| | | | (0.730) | (0.641) |
| Control variables (same as Table III) | Y | Y | Y | Y |
| Test (*p*-value) that the difference in coefficient estimates on the interaction terms between the two regressions = 0: | | | | |
| a × b | 0.005 | | | |
| a × c | | | 0.000 | |
| a × d | | | 0.438 | |
| Year fixed effects | Y | Y | Y | Y |
| Industry fixed effects | Y | Y | Y | Y |
| Loan purpose indicators | Y | Y | Y | Y |
| Number of observations | 2,229 | 2,524 | 2,229 | 2,524 |
| Adjusted $R^2$ | 0.487 | 0.346 | 0.490 | 0.346 |

Panel B: Subsample analysis according to covenants

| Independent variables | No covenant | Covenant | No covenant | Covenant |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| High G-index (indicator): a | -0.157*** | -0.048 | -0.159*** | -0.047 |
| | (0.000) | (0.256) | (0.000) | (0.259) |
| Family firm (indicator): b | -0.122*** | -0.038 | | |
| | (0.003) | (0.430) | | |
| Family firm with control-enhancing mechanisms (indicator): c | | | -0.172*** | -0.037 |
| | | | (0.000) | (0.513) |
| Family firm without control-enhancing mechanisms (indicator): d | | | 0.017 | -0.041 |
| | | | (0.784) | (0.538) |
| a×b | 0.167** | 0.042 | | |
| | (0.011) | (0.602) | | |
| a×c | | | 0.268*** | -0.007 |
| | | | (0.000) | (0.936) |
| a×d | | | -0.111 | 0.130 |
| | | | (0.221) | (0.336) |

| | | | | |
|---|---|---|---|---|
| Control variables (same as Table III) | Y | Y | Y | Y |
| Test (*p*-value) that the difference in coefficient estimates on the interaction terms between the two regressions = 0: | | | | |
| a × b | 0.050 | | | |
| a × c | | | 0.000 | |
| a × d | | | 0.015 | |
| Year fixed effects | Y | Y | Y | Y |
| Industry fixed effects | Y | Y | Y | Y |
| Loan purpose indicators | Y | Y | Y | Y |
| Number of observations | 5,551 | 1,961 | 5,551 | 1,961 |
| Adjusted $R^2$ | 0.523 | 0.419 | 0.526 | 0.419 |

Panel C: Subsample analysis according to nimble states

| Independent variables | Nimble states | No nimble states | Nimble states | No nimble states |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| High G-index (indicator): a | -0.301*** | -0.172 | -0.301*** | -0.166 |
| | (0.000) | (0.102) | (0.000) | (0.118) |
| Family firm (indicator): b | -0.095 | 0.016 | | |
| | (0.241) | (0.907) | | |
| Family firm with control-enhancing mechanisms (indicator): c | | | -0.115 | 0.010 |
| | | | (0.184) | (0.945) |
| Family firm without control-enhancing mechanisms | | | 0.012 | 0.039 |
| (indicator): d | | | (0.925) | (0.867) |
| a×b | 0.277** | 0.000 | | |
| | (0.016) | (1.000) | | |
| a×c | | | 0.305** | 0.131 |
| | | | (0.012) | (0.387) |
| a×d | | | 0.142 | -0.271 |
| | | | (0.477) | (0.377) |
| Control variables (same as Table VI) | Y | Y | Y | Y |
| Test (*p*-value) that the difference in coefficient estimates on the interaction terms between the two regressions = 0: | | | | |
| a × b | 0.044 | | | |
| a × c | | | 0.248 | |
| a × d | | | 0.158 | |
| Year fixed effects | Y | Y | Y | Y |
| Industry fixed effects | Y | Y | Y | Y |
| Loan purpose indicators | Y | Y | Y | Y |
| Number of observations | 820 | 406 | 820 | 406 |
| Adjusted $R^2$ | 0.573 | 0.555 | 0.572 | 0.560 |

**Table V**
**Family Control, ATPs, and the Cost of Bank Loans:**
**Subsample Analyses according to Product Market Competition and Leverage**

The table presents estimates of OLS regressions in which the dependent variable is the log of the all-in-spread-drawn (AISD), the rate the borrower pays in basis points over LIBOR or the LIBOR equivalent. "Low competition" ("High competition") indicates that a firm operates in the industry whose Herfindahl index is above (below) the sample median, where the Herfindahl index is calculated as the sum of the squared revenue share of each firm in the same four-digit-SIC industry. "Low leverage" ("High leverage") indicates that a firm's leverage ratio is below (above) the sample median. The high G-index indicator takes the value of one if the number of antitakeover provisions a firm adopts (Gompers, Ishii, and Metrick (2003)) is higher than the sample median and zero otherwise. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in top management. Family firms with (without) control-enhancing mechanisms are those that adopt (do not adopt) voting or control mechanisms such as multiple share classes, pyramids, cross-holdings, and voting agreements (Villalonga and Amit (2006)). The Appendix provides detailed descriptions of the variables. *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

| Independent variables | Low competition | High competition | Low competition | High competition | Low Leverage | High Leverage | Low leverage | High Leverage |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| High G-index (indicator): a | -0.188*** | -0.090* | -0.188*** | -0.092* | -0.168*** | -0.126*** | -0.170*** | -0.126*** |
| | (0.000) | (0.086) | (0.000) | (0.078) | (0.000) | (0.007) | (0.000) | (0.007) |
| Family firm (indicator): b | -0.190*** | -0.015 | | | -0.134*** | -0.083* | | |
| | (0.000) | (0.755) | | | (0.007) | (0.078) | | |
| Family firm with control-enhancing mechanisms (indicator): c | | | -0.204*** | -0.052 | | | -0.183*** | -0.096** |
| | | | (0.001) | (0.324) | | | (0.002) | (0.047) |
| Family firm without control-enhancing mechanisms (indicator): d | | | -0.147** | 0.075 | | | -0.019 | -0.048 |
| | | | (0.046) | (0.278) | | | (0.750) | (0.558) |
| a×b | 0.260*** | -0.009 | | | 0.152** | 0.103 | | |
| | (0.001) | (0.912) | | | (0.041) | (0.200) | | |
| a×c | | | 0.277*** | 0.101 | | | 0.204** | 0.162* |
| | | | (0.004) | (0.240) | | | (0.022) | (0.074) |
| a×d | | | 0.208* | -0.255* | | | 0.024 | -0.031 |
| | | | (0.079) | (0.053) | | | (0.800) | (0.821) |
| Control variables (same as Table III) | Y | Y | Y | Y | Y | Y | Y | Y |
| Test (*p*-value) that the difference in coefficient estimates on the interaction terms between the two regressions = 0: | | | | | | | | |
| a × b | 0.000 | | | | 0.419 | | | |
| a × c | | | 0.011 | | | | 0.536 | |
| a × d | | | 0.000 | | | | 0.564 | |
| Year fixed effects | Y | Y | Y | Y | Y | Y | Y | Y |
| Industry fixed effects | Y | Y | Y | Y | Y | Y | Y | Y |
| Loan purpose indicators | Y | Y | Y | Y | Y | Y | Y | Y |
| Number of observations | 3,599 | 3,561 | 3,599 | 3,561 | 3,764 | 3,748 | 3,764 | 3,748 |
| Adjusted $R^2$ | 0.586 | 0.541 | 0.586 | 0.543 | 0.534 | 0.576 | 0.536 | 0.577 |

**Table VI**
**Family Control, ATPs, and the Cost of Bank Loans:**
**Subsample Analyses according to CEO-Chair Duality, CEO Age, and CEO Compensation**

The table presents estimates of OLS regressions in which the dependent variable is the log of the all-in-spread-drawn (AISD), the rate the borrower pays in basis points over LIBOR or the LIBOR equivalent. In Panel A, "CEO-chair duality" ("no CEO-chair duality") indicates that a firm's CEO is also (is not) the chairman of the board. In Panel B, "Old CEO" ("Young CEO") indicates that the age of a firm's CEO is above (below) the sample median. In Panel C, "High CEO pay" ("Low CEO pay") indicates that the level of a firm's excess CEO compensation is above (below) the sample median. The high G-index indicator takes the value of one if the number of antitakeover provisions a firm adopts (Gompers, Ishii, and Metrick (2003)) is higher than the sample median and zero otherwise. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in top management. Family firms with (without) control-enhancing mechanisms are those that adopt (do not adopt) voting or control mechanisms such as multiple share classes, pyramids, cross-holdings, and voting agreements (Villalonga and Amit (2006)). The Appendix provides detailed descriptions of the variables. *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Subsample analysis according to CEO-chair duality

| Independent variables | CEO-chair duality | No CEO-chair duality | CEO-chair duality | No CEO-chair duality |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| High G-index (indicator): a | -0.154*** | -0.123** | -0.153*** | -0.125** |
| | (0.000) | (0.017) | (0.000) | (0.016) |
| Family firm (indicator): b | -0.067 | -0.160*** | | |
| | (0.133) | (0.002) | | |
| Family firm with control-enhancing mechanisms (indicator): c | | | -0.104** | -0.180*** |
| | | | (0.044) | (0.002) |
| Family firm without control-enhancing mechanisms (indicator): d | | | 0.029 | -0.104 |
| | | | (0.651) | (0.153) |
| a×b | 0.175** | 0.071 | | |
| | (0.016) | (0.347) | | |
| a×c | | | 0.226*** | 0.124 |
| | | | (0.006) | (0.144) |
| a×d | | | 0.035 | -0.037 |
| | | | (0.781) | (0.748) |
| Control variables (same as Table III) | Y | Y | Y | Y |
| Test (*p*-value) that the difference in coefficient estimates on the interaction terms between the two regressions = 0: | | | | |
| a × b | | 0.096 | | |
| a × c | | | | 0.154 |
| a × d | | | | 0.464 |
| Year fixed effects | Y | Y | Y | Y |
| Industry fixed effects | Y | Y | Y | Y |
| Loan purpose indicators | Y | Y | Y | Y |
| Number of observations | 5,196 | 2,316 | 5,196 | 2,316 |
| Adjusted $R^2$ | 0.557 | 0.569 | 0.558 | 0.570 |

Panel B: Subsample analysis according to CEO age

| Independent variables | Old CEO | Young CEO | Old CEO | Young CEO |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| High G-index (indicator): a | -0.151*** | -0.148*** | -0.152*** | -0.147*** |
| | (0.002) | (0.000) | (0.002) | (0.000) |
| Family firm (indicator): b | -0.141*** | -0.064 | | |
| | (0.007) | (0.149) | | |
| Family firm with control-enhancing mechanisms (indicator): c | | | -0.166*** | -0.109** |
| | | | (0.005) | (0.024) |
| Family firm without control-enhancing mechanisms (indicator): d | | | -0.065 | 0.038 |
| | | | (0.353) | (0.580) |
| a×b | 0.231*** | 0.067 | | |
| | (0.003) | (0.374) | | |
| a×c | | | 0.260*** | 0.164* |

| | | | | |
|---|---|---|---|---|
| | | | (0.003) | (0.064) |
| a×d | | | 0.143 | -0.167 |
| | | | (0.251) | (0.147) |
| Control variables (same as Table III) | Y | Y | Y | Y |
| Test (*p*-value) that the difference in coefficient estimates on the interaction terms between the two regressions = 0: | | | | |
| a × b | 0.007 | | | |
| a × c | | | 0.161 | |
| a × d | | | 0.001 | |
| Year fixed effects | Y | Y | Y | Y |
| Industry fixed effects | Y | Y | Y | Y |
| Loan purpose indicators | Y | Y | Y | Y |
| Number of observations | 3,685 | 3,803 | 3,685 | 3,803 |
| Adjusted $R^2$ | 0.555 | 0.569 | 0.555 | 0.571 |

Panel C: Subsample analysis according to CEOs' excess compensation

| Independent variables | High CEO pay | Low CEO pay | High CEO pay | Low CEO pay |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| High G-index (indicator): a | -0.146*** | -0.131*** | -0.150*** | -0.132*** |
| | (0.001) | (0.008) | (0.001) | (0.008) |
| Family firm (indicator): b | -0.096** | -0.118** | | |
| | (0.040) | (0.026) | | |
| Family firm with control-enhancing mechanisms (indicator): c | | | -0.175*** | -0.121** |
| | | | (0.000) | (0.049) |
| Family firm without control-enhancing mechanisms (indicator): d | | | 0.065 | -0.109* |
| | | | (0.354) | (0.073) |
| a×b | 0.213*** | 0.091 | | |
| | (0.008) | (0.242) | | |
| a×c | | | 0.386*** | 0.084 |
| | | | (0.000) | (0.350) |
| a×d | | | -0.195 | 0.110 |
| | | | (0.185) | (0.328) |
| Control variables (same as Table III) | Y | Y | Y | Y |
| Test (*p*-value) that the difference in coefficient estimates on the interaction terms between the two regressions = 0: | | | | |
| a × b | 0.059 | | | |
| a × c | | | 0.000 | |
| a × d | | | 0.005 | |
| Year fixed effects | Y | Y | Y | Y |
| Industry fixed effects | Y | Y | Y | Y |
| Loan purpose indicators | Y | Y | Y | Y |
| Number of observations | 3,317 | 3,323 | 3,317 | 3,323 |
| Adjusted $R^2$ | 0.555 | 0.559 | 0.561 | 0.559 |

**Table VII**
**Alternative Classifications of Family Firms**

The table presents estimates of OLS regressions in which the dependent variable is the log of the all-in-spread-drawn (AISD), the rate the borrower pays in basis points over LIBOR or the LIBOR equivalent. Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in top management. A founder CEO family firms is a family firm in which a firm's founder serves as a CEO and a nonfounder CEO family firm is a family firm in which either a descendant of the founder or a professional manager serves as a CEO. A founder-controlled family firm is a family firm in which only a founder or founder-generation family member is actively involved in the management as an officer, a board of director, or a blockholder, and a descendant-controlled family firm is a family firm in which at least one second- or later-generation founding family member is active in the firm. Family CEO firm corresponds to family firms in which either a founder or a descendant serves as CEO, and Nonfamily CEO firm corresponds to family firms managed by an outside professional CEO. Family firms with (without) control-enhancing mechanisms are those that adopt (do not adopt) voting or control mechanisms such as multiple share classes, pyramids, cross-holdings, and voting agreements (Villalonga and Amit (2006)). The Appendix provides detailed descriptions of the construction of the variables. *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

| Independent variables | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| High G-index (indicator): a | -0.152*** | -0.152*** | -0.149*** | -0.150*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Founder CEO family firm (indicator): b | -0.009 | | | |
| | (0.816) | | | |
| Nonfounder CEO family firm (indicator): c | -0.163*** | | | |
| | (0.000) | | | |
| Founder-controlled family firm (indicator): d | | -0.049 | | |
| | | (0.209) | | |
| Descendant-controlled family firm (indicator): e | | -0.214*** | | |
| | | (0.000) | | |
| Family CEO firm (indicator): f | | | -0.060 | |
| | | | (0.121) | |
| Nonfamily CEO family firm (indicator): g | | | -0.163*** | |
| | | | (0.002) | |
| Family CEO firm with control-enhancing mechanisms (indicator): h | | | | -0.119*** |
| | | | | (0.007) |
| Family CEO firm without control-enhancing mechanisms (indicator): i | | | | 0.074 |
| | | | | (0.172) |
| Nonfamily CEO family firm with control-enhancing mechanisms (indicator): j | | | | -0.155** |
| | | | | (0.012) |
| Nonfamily CEO family firm without control-enhancing mechanisms (indicator): k | | | | -0.198** |
| | | | | (0.022) |
| a×b | 0.097 | | | |
| | (0.257) | | | |
| a×c | 0.194*** | | | |
| | (0.006) | | | |
| a×d | | 0.111* | | |
| | | (0.090) | | |
| a×e | | 0.241*** | | |
| | | (0.008) | | |
| a×f | | | 0.113 | |
| | | | (0.127) | |
| a×g | | | 0.199*** | |
| | | | (0.009) | |
| a×h | | | | 0.183** |
| | | | | (0.034) |
| a×i | | | | -0.044 |
| | | | | (0.727) |
| a×j | | | | 0.245*** |
| | | | | (0.005) |
| a×k | | | | 0.098 |
| | | | | (0.457) |
| Control variables (same as Table III) | Y | Y | Y | Y |

| | | | | |
|---|---|---|---|---|
| Year fixed effects | Y | Y | Y | Y |
| Industry fixed effects | Y | Y | Y | Y |
| Loan purpose indicators | Y | Y | Y | Y |
| Number of observations | 7,512 | 7,512 | 7,512 | 7,512 |
| Adjusted $R^2$ | 0.557 | 0.557 | 0.556 | 0.558 |

**Table VIII**
**Family Control, ATPs, and the Cost of Bank Loans: Change Regressions**

The table presents estimates of OLS regressions in which the dependent variable is the change in the log of the all-in-spread-drawn (AISD), the rate the borrower pays in basis points over LIBOR or the LIBOR equivalent. In columns (1) and (2), the change in AISD and the changes in independent variables are calculated by subtracting the variables in one period from those in next period. We require that borrowers have at least one bank loan outstanding at both periods. In columns (3) and (4), the corresponding changes are calculated by subtracting the variables in year *t-1* from those in year *t*. G-index score is the sum of the number of antitakeover provisions that a firm adopts (Gompers, Ishii, and Metrick (2003)). Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in top management. Family firms with (without) control-enhancing mechanisms are those that adopt (do not adopt) voting or control mechanisms such as multiple share classes, pyramids, cross-holdings, and voting agreements (Villalonga and Amit (2006)). The Appendix provides detailed descriptions of the variables. *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

| Independent variables | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| ΔG-index: a | 0.011 | 0.011 | 0.005 | 0.005 |
| | (0.575) | (0.575) | (0.793) | (0.793) |
| Family firm (indicator): b | -0.013 | | -0.007 | |
| | (0.406) | | (0.697) | |
| Family firm with control-enhancing | | -0.018 | | -0.013 |
| mechanisms (indicator): c | | (0.333) | | (0.547) |
| Family firm without control-enhancing | | -0.002 | | 0.011 |
| mechanisms (indicator): d | | (0.949) | | (0.724) |
| a×b | 0.058** | | 0.076* | |
| | (0.045) | | (0.066) | |
| a×c | | 0.075** | | 0.093** |
| | | (0.025) | | (0.041) |
| a×d | | 0.021 | | 0.006 |
| | | (0.572) | | (0.932) |
| Δ Log (market cap) | -0.102*** | -0.102*** | -0.035 | -0.035 |
| | (0.000) | (0.000) | (0.246) | (0.241) |
| Δ Leverage | 0.340*** | 0.339*** | 0.137 | 0.135 |
| | (0.001) | (0.001) | (0.439) | (0.444) |
| Δ EBITDA/sales | -0.009*** | -0.008*** | 0.060 | 0.056 |
| | (0.000) | (0.000) | (0.854) | (0.865) |
| Constant | 0.075*** | 0.075*** | 0.057*** | 0.057*** |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Number of observations | 3,436 | 3,436 | 2,240 | 2,240 |
| Adjusted $R^2$ | 0.017 | 0.016 | 0.001 | 0.001 |

**Table IX**
**Impact of State Antitakeover Laws on the Cost of Bank Loans**

The table presents estimates of OLS regressions in which the dependent variable is the log of the all-in-spread-drawn (AISD), the rate the borrower pays in basis points over LIBOR or the LIBOR. ΔState Antitakeover Index is the change in the state antitakeover index of a firm's incorporated state from the first firm-year to a given firm-year, where the state antitakeover index is calculated as the sum of the number of antitakeover statutes -- a Control Share statute, a Fair Price statute, Business Combination statutes, a Poison Pill Endorsement statute, and a Constituencies statute (Bebchuk and Cohen (2003)). Family firms are defined as those in which founding family members, either individually or as a group, have equity ownership exceeding 5%, or at least one founding family member sits on the board or works in top management. The Appendix provides detailed descriptions of the variables. *p*-values in parentheses are based on standard errors adjusted for heteroskedasticity and allow for clustering within firms. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level, respectively.

| Independent variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| Family firm (indicator): a | -0.040 | -0.051* | -0.344*** | -0.358*** | -0.044 | -0.056* | -0.211*** | -0.225*** |
| | (0.163) | (0.079) | (0.001) | (0.000) | (0.125) | (0.054) | (0.000) | (0.000) |
| Δ State Antitakeover Index: b | 0.006 | -0.120 | 0.007 | -0.122 | 0.003 | -0.132 | -0.006 | -0.144* |
| | (0.925) | (0.164) | (0.909) | (0.155) | (0.968) | (0.120) | (0.924) | (0.085) |
| G-index: c | -0.014** | -0.014** | -0.028*** | -0.028*** | | | | |
| | (0.013) | (0.014) | (0.000) | (0.000) | | | | |
| E-index: d | | | | | -0.029*** | -0.030*** | -0.063*** | -0.064*** |
| | | | | | (0.006) | (0.005) | (0.000) | (0.000) |
| a×b | | 0.235** | | 0.239** | | 0.249** | | 0.255** |
| | | (0.038) | | (0.033) | | (0.027) | | (0.020) |
| a×c | | | 0.034*** | 0.034*** | | | | |
| | | | (0.002) | (0.002) | | | | |
| a×d | | | | | | | 0.080*** | 0.080*** |
| | | | | | | | (0.000) | (0.000) |
| Constant | 6.041*** | 6.059*** | 6.166*** | 6.185*** | 6.015*** | 6.035*** | 6.129*** | 6.151*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Control variables (same as Table III) | Y | Y | Y | Y | Y | Y | Y | Y |
| Year fixed effects | Y | Y | Y | Y | Y | Y | Y | Y |
| Industry fixed effects | Y | Y | Y | Y | Y | Y | Y | Y |
| Loan purpose indicators | Y | Y | Y | Y | Y | Y | Y | Y |
| Number of observations | 7,481 | 7,481 | 7,481 | 7,481 | 7,504 | 7,504 | 7,504 | 7,504 |
| Adjusted $R^2$ | 0.546 | 0.547 | 0.548 | 0.549 | 0.547 | 0.548 | 0.550 | 0.551 |

## Appendix

The Appendix provides a detailed description of the construction of all the variables used in the tables.

| Variable | Description | Source |
|---|---|---|
| **Loan characteristics** | | |
| Covenant (indicator) | One if a loan has any of the following three covenants: debt sweep, equity sweep, and assets sweep covenants, and zero otherwise | Dealscan |
| Credit spread (basis points) | Difference in spreads between BAA and AAA yields | Dealscan |
| Loan commitment size ($ millions) | Commitment amount of loan | Dealscan |
| Loan maturity (months) | Loan maturity in months | Dealscan |
| Loan purpose (indicator) | One if a loan has a given purpose, including debt repayment, general corporate purposes, financing acquisitions, and commercial paper backup, zero otherwise | Dealscan |
| Loan spread (basis points) | All-in-spread-drawn (AISD), a rate the borrower pays in basis points over LIBOR or the LIBOR equivalent for each dollar of loan drawn | Dealscan |
| Log (loan spread) | Natural log of loan spread | Dealscan |
| Number of lenders | Total number of lenders in the loan syndicate | Dealscan |
| Performance pricing (indicator) | One if the loan has the performance pricing clause and zero otherwise | Dealscan |
| Secured (indicator) | One if the loan facility is secured by collateral and zero otherwise | Dealscan |
| Term loan (indicator) | One if the loan is a term loan and zero otherwise | Dealscan |
| Term spread (basis points) | Difference in spreads between 10-year and 1-year treasury notes | Dealscan |
| **Firm characteristics** | | |
| Board size | Number of directors sitting on a board | RiskMetrics |
| Board independence (%) | The ratio of the number of independent directors to the total number of directors on the board | RiskMetrics |
| EBITDA/sales | Operating income before depreciation/sales | Compustat |
| Firm age | Max (years in CRSP, years in Compustat) | Compustat, CRSP |
| High G-index (indicator) | One if the number of antitakeover defenses a firm adopts (Gompers, Ishii, and Metrick (2003)) is higher than the sample median and zero otherwise | RiskMetrics |
| Leverage | (long-term debt + debt in current liabilities) / total assets | Compustat |
| Market capitalization ($ billions) | Market value of equity | Compustat |
| Z-score | Modified Altman's (1968) Z-score = (1.2working capital + 1.4retained earnings + 3.3EBIT + 0.999sales) / total assets | Compustat |
| State Antitakeover Index | The sum of the number of antitakeover statutes of a firm's incorporated state -- a Control Share statute, a Fair Price statute, Business Combination statutes, a Poison Pill Endorsement statute, and a Constituencies statute | Bebchuk and Cohen (2003) |
| **CEO characteristics** | | |
| CEO-chair duality (indicator) | One if CEO is also the chairman of the board and zero otherwise | RiskMetrics |
| CEO pay | ExecuComp variable (TDC1) that includes salary, bonus, restricted stock awards, stock option grants, long-term | ExecuComp |

| | | |
|---|---|---|
| | incentive payouts, and all others | |
| High CEO pay (indicator) | One if the level of a firm's excess CEO compensation is above the sample median and zero otherwise. The excess CEO compensation is computed by the residual estimated from the following OLS regression: Log (CEO compensation) = constant + log (market cap) + ROA + book-to-market ratio + standard deviation (ROA) + standard deviation (stock returns) + year and Fama and French (1997) 48 industry dummies. CEO compensation is ExecuComp variable (TDC1) that includes salary, bonus, restricted stock awards, stock option grants, long-term incentive payouts, and all others. (Faleye, Hoitash, Hoitash (2011)) | ExecuComp |
| Log (CEO age) | Natural log of CEO age | RiskMetrics |
| Log (CEO tenure) | Natural log of the number of years the CEO has been in office. Corrections are made for missing or incorrect information based on the list from Guthrie, Sokolowsky, and Wan (2010) | ExecuComp |
| Old CEO (indicator) | One if CEO's age is above the sample median and zero otherwise. | RiskMetrics |
| Young CEO (indicator) | One if CEO's age is below the sample median and zero otherwise. | RiskMetrics |
| **Family firm characteristics** | | |
| Descendant-controlled family firm (indicator) | One for a firm in which at least one of second or later generation founding family members is active in the firm as a manager, a director, or a blockholder, and zero otherwise | Various sources |
| Family firm (indicator) | One for a firm in which founding family members, either individually or as a group, have block equity ownership, or at least one founding family member sits on the board or works in the top management, and zero otherwise | Various sources |
| Founder CEO family firm (indicator) | One for a family firm in which its founder serves as CEO and zero otherwise | Various sources |
| Founder-controlled family firm (indicator) | One for a family firm in which only a founder or founder-generation family member is active in the firm as a manager, a director, or a blockholder, and zero otherwise | Various sources |
| Family firm with control-enhancing mechanisms (indicator) | One for a family firm that adopts voting or control mechanisms, such as multiple share classes, pyramids, cross-holdings, and voting agreements, and zero otherwise | Various sources |
| Family CEO firm (indicator) | One for a family firm in which either a founder or a descendant of a founder serves as a CEO, and zero otherwise | Various sources |
| Nonfamily CEO family firm (indicator) | One for a family firm in which an outside professional CEO manages the firm, and zero otherwise | Various sources |
| Nonfounder CEO family firm (indicator) | One for a family firm in which either a descendant of the founder or a professional manager serves as a CEO, and zero otherwise | Various sources |
| **Macro variables** | | |
| Credit spread (basis points) | Difference in spreads between BAA and AAA yields | Federal Reserve Bank |
| Term spread (basis points) | Difference in spreads between 10-year and 1-year treasury notes | Federal Reserve Bank |