Is Family More Important in Bad Times? *

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Abstract

The purpose of the paper is to examine the effect of founding family control on the cost of bank debt. We examine the cost of accessing the syndicated market and we use the financial crisis and the unexpected nature of Lehman Brother's collapse as a laboratory in order to tease out the effect of family ownership. We find that the increase in loan spreads around the Lehman crisis was by at least 24 basis points lower for family firms. Furthermore, the gap in spreads among family and non-family firms becomes wider among firms that had pre-crisis relationships with lenders with higher exposure to the shock. The evidence are consistent with family ownership lowering the cost of accessing debt financing especially when lenders are constrained. We further investigate potential channels that drive the effect of family ownership. We provide novel evidence that for 17% of the family firms creditors impose explicit restrictions in private credit agreements that require the founding family to maintain a minimum percentage of ownership or voting power. Thus, creditors value the presence of the family. Furthermore, the impact of family control on lowering the cost of bank debt is higher when family CEOs run the firms and among firms with higher ex ante agency conflicts.

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1 Introduction

Founders or their families control the majority of firms around the world (Faccio & Lang 2002). Even among public firms, families control 45% of the listed international firms (La Porta et al. 1999) and at least one third of large US public firms (Anderson & Reeb 2003). Despite the prevalence of family firms we have limited knowledge on how family control affects firm policies and outcomes. Prior research has mainly focused on implications of family ownership and control for equity valuation. The relationship between family control and the agency cost of debt has received limited attention.

Theoretical predictions on how family control should affect agency cost of debt are actually ambiguous. On one hand the concentrated ownership and control of the family can exacerbate agency conflicts and increase cost of debt. The existence of a controlling shareholder, elevates the risk of strategic default ((Hart & Moore 1994), (Bolton & Scharfstein 1996), (Hart & Moore 1998)). Furthermore, the family as a dominant shareholder can influence post-default restructuring and extract some of the surplus from creditors (Aslan & Kumar 2012). Moreover, the controlling family can extract private benefits on the expense of the firm's other constituents. Family firms are also more opaque than diffused shareholder firms (Anderson et al. 2009), which makes fraud more likely. On the other hand, family ownership and control might mitigate shareholder-debtholder conflicts and decrease cost of debt. The family has a long-term commitment to the firm, spanning various generations and also its reputation is tied to the firm. Moreover, the family has a large and highly undiversified investment in the firm. The combination of the long-term commitment, the reputation concerns and the high undiversified cash flows stakes suggest that the family is more likely to value firm survival over strict wealth maximization.

The empirical evidence on the link between family control and the cost of debt remains mixed. Anderson et al. (2003) looks into public debt for S&P 500 firms and find that family ownership is associated with lower cost of debt. Ellul et al. (2007) looks at international bond issues and find that the relationship between family ownership and cost of debt varies with the level of investor protection. In terms of private debt agreements, in an international setting Lin et al. (2011) finds that the higher the wedge between control and cash flow rights, the higher the cost of debt, especially for family firms. Also in an international setting, Aslan & Kumar (2012) finds that family

ownership is associated with higher spreads.

The challenge in identifying the effect of the family on the cost of debt is the endogeneity of family control. In this paper, we measure the direction and magnitude of the effect of founding family control on the cost of bank debt by taking advantage of the recent financial crisis and the unexpected nature of Lehman Brothers' collapse as a natural laboratory in order to tease out the effect of family control. We focus on private credit agreements in the syndicated loan market [1] for the years 2004-2010.

For our empirical analysis we employ a difference-in-differences approach and compare the change in spreads on syndicated loans during the crisis between family and non-family firms. One potential concern with this comparison is that family and non-family firms might have differential exposure to the shock. In order to alleviate any potential concerns (e.g due to family firms matching with better financial institutions) we exploit the cross-sectional dispersion in lender health induced by the collapse of Lehman Brothers as a source of exogenous variation in the exposure to the shock. Specifically, we hypothesize that, if financial frictions make it difficult for firms to access external capital or switch from one source of capital to another, firms that maintained lending relationships with financial institutions that were highly exposed to the negative liquidity shock during the crisis were forced to experience tighter financial constraints and a higher cost of accessing the syndicated loan market. Therefore, the research design that we consider compares firms with different ownership structure at the same point in time that have been subject to the same shock and have similar exposure to the shock based on their lending relationships with differentially liquidity-struck financial institutions.

We find that the increase in loan spreads around the Lehman crisis was by at least 24 basis points lower for family firms. Furthermore, the gap in spreads among family and non-family firms becomes wider among firms that had pre-crisis relationships with less healthy lenders. Specifically, in the group of firms that were highly exposed to the Lehman collapse, the spreads on loans taken by family firms during the crisis were by at least 73 basis points lower compared to the spreads on loans taken by non-family firms. This is sizeable given that the mean spread in the crisis period was 344 basis points. The results hold when we look separately into term loans and credit lines. The analysis shows that family ownership is associated with lower cost of debt in bad times and that the

[1] 80% of public firms in US have them, compared with only 15-20% that have public debt (Nini et al. 2009).

effect of family ties is exacerbated among firms with higher exposure to the liquidity shock. The results provide evidence that it is especially when lenders are constrained that family ownership and control have a greater effect in the cost on borrowing.

Furthermore, we investigate other contract terms and we do not find any significant difference in loan maturity or loan amounts. We also look into the extensive margin but we do not find any difference between family and non-family firms in the access to the bank lending market during the crisis. Furthermore, their financing decisions do not differ.

We provide numerous tests that show the robustness of our results. Our results are robust to using an alternative definition for exposure to the liquidity shock. Furthermore, the results are similar when we repeat the analysis in a subsample where we require firms not only to have accessed the bank lending market before and after the crisis, but also to have borrowed from the same lender the same type of loan. Furthermore we use a matching estimator approach to alleviate concerns that there might be pre-crisis characteristics that differ across the family and non-family group of firms which potentially explain both the endogenous decision of the founding family to maintain an ownership stake in the firm and the ability to secure bank financing in the crisis.

We next move to consider potential alternative interpretations of our result. One potential alternative interpretation is that family-controlled firms maintain a longer and tighter relation with financial institutions before the shock and, thus, the result is not driven by the ownership structure itself but by the difference in the length of the lending relations between family and non-family firms. Furthermore, another alternative explanation that may be potentially responsible for our results is that it is not family ownership per se but, in general, concentrated ownership that is valued by lenders in the presence of liquidity constraints, thus leading to lower cost of bank capital. Moreover, a potential concern is that our results are driven by founder-run firms which might not be family firms. Finally, we also examine whether family-controlled firms experience a lower cost in accessing bank financing because of accepting to incur stricter covenants in the lending agreements. We test and find no support for these alternative interpretations.

Having established the relationship between firm ownership structure and costs of debt, we proceed with unveiling potential (non-mutually) exclusive factors that influence the relation between family control and loan spreads. We find that the gap in spreads between family and non-family firms is higher in firms with higher expected shareholder-debtholder agency conflicts. Furthermore,

as previous literature has stressed the role of a family member acting as the CEO on firm performance, we explore the impact of CEO affiliation on costs of debt within the subsample of firms with founding-family ownership and find that credit spreads are lower when family CEOs run the firms. Furthermore, we provide novel evidence that for 17% of the family firms creditors impose explicit restrictions in private credit agreements that require the founding family to maintain a minimum percentage of ownership or voting power. These type of covenants show that creditors value the involvement of the founding family. Finally, we investigate covenant violations and we do not find any difference in covenant violations between family and non-family firms.

Our results make several contributions to the literature. To our knowledge, this is the first paper to document that agency costs of debt of family control become lower during a financial shock. Furthermore, we show that that the effect of family ties is exacerbated by lender constrains.Lins et al. (2013) provide international evidence that family control negatively affects minority shareholders during the 2008 crisis but there are no evidence how agency cost of debt is affected. Our results allow to better understand how family control affects firm policies and outcomes, since one important juncture in a firm's life is how it fares in challenging times. The findings, thus, contribute to the literature that investigates how family control affects firm valuation (e.g. (Anderson et al. 2003), (Anderson & Reeb 2003), (Villalonga & Amit 2006), Ellul et al. (2007), Bennedsen et al. (2007), Anderson et al. (2009))[2]. Moreover, we contribute to the literature that examines the link between ownership structure and cost of debt (Lin et al. (2011), Aslan & Kumar (2012)).

Furthermore, by taking advantage of the recent financial crisis and the unexpected nature of Lehman Brothers' collapse as a natural laboratory, we are able to tease out the effect of family control and ownership on the cost of private debt. Although we cannot randomly assign ownership structure to firms, the research design that we consider compares firms with different ownership structure at the same point in time that have been subject to the same shock and observe the effect on their debt cost. As Lemmon & Lins (2003) point out, financial crises represent a relative exogenous shock, at with respect to the individual firm. Moreover, in our empirical design we compare family to non-family firms with similar exposure to the shock, further alleviating concerns that family firms might have different exposure to the shock through their lenders.

Finally, our study provides novel evidence that in the case of family firms, creditors often

[2]See (Bennedsen et al. 2010)for a comprehensive survey.

use covenants that require the founding family to maintain a minimum percentage of ownership or voting power. These covenants show that creditors value the involvement of the family in mitigating private debt agency costs. This is particularly important as 80% of public firms in US have private credit agreements, compared with only 15-20% that have public debt.

2 Data

2.1 Sample Construction

To construct our sample we collect information on firms that are present in both the Thompson Reuters Dealscan database and Compustat. We connect the two databases using the linking table based on the information provided in Chava & Roberts (2008). The Thompson Reuters Dealscan database contains information on syndicated loans. The data that are available comprise the identities of the borrowing entity and the lending institution that participated in the deal at origination, the terms of the loan, and the purpose of the loan.

We focus on non-financial U.S. borrowers (i.e. we exclude borrowers with SIC codes 6011-6799, and we require that each deal has information on the interest spread of all tranches in the deal. Our main sample is restricted to borrowers that have obtained a syndicated loan both in the pre-crisis period (January 2004-2008) and the post-crisis period following the collapse of Lehman Brothers (October 2008-December 2010). [3]

For the purpose of exploring the heterogeneous response to the shock based on the type of the lending facility, we classify a loan as a term loan if the loan type is explicitly reported in Dealscan to be a term loan (e.g. Delay Draw Term Loan, Term Loan A, Term Loan B), while we classify a loan as a credit line in case the loan type is reported to be one of the following: 364-Day Facility, Revolver/Line $<$ 1 Yr., Revolver/Line $\geq$ 1 Yr., Demand Loan. To identify the lead financial institution of a syndicate, we follow Ivashina (2009). Specifically the administrative agent is defined to be the lead bank if identified; otherwise, the financial institutions that act as agent, arranger, bookrunner, lead arranger, lead bank, or lead manager are defined to be lead banks. We corroborate and complement the information on the role of a participant in a syndicate as a lead

[3] In Table 9 that tests the extensive margin, the sample contains all the borrowers that obtained a syndicated loan in the pre-crisis period, irrespectively of whether they obtained a loan in the post-crisis period.

arranger by taking advantage of the LeadArrangerCredit field available in Dealscan.

Information related to financial data of lending institutions is collected by hand-matching at the holding company level between the name, the geographic location and the operational period as reported in Dealscan and as presented in the Federal Financial Institutions Examination Council's (FFIEC) National Information Center (NIC) database, in case the highest level parent is either a domestic financial holding company or a domestic bank holding company. For foreign holding companies and investment banks, the relevant information is collected either from Bankscope or based on manual inspection of the financial statements of the financial institutions. In order to control for mergers prior to the burst of the crisis, the acquiring lenders inherit the target's syndicated lending relationships with both borrowers and other lenders, thus transferring the unexpired loans at the date of the merger to the acquirer's record. For mergers that take place following the collapse of Lehman Brothers, we maintain separate identifiers for the acquiring and the target firm, although in estimating the measure of change in lending supply, we consider as borrowing from the target if a borrower of the target in the pre-crisis period obtains a crisis loan from the acquirer.

Our final sample consists of 6,169 lending facilities extended by 71 banks to 1,171 borrowers, including 2,006 bank-firm pairs. The unit of observation is a bank-firm-loan triple. Out of the 1,171 borrowers, 313 firms are classified as family firms (26.7% of firms in the sample).

2.2 Definition of Family Firms

To identify family firms, we manually collect information on the presence of a founding family from 10-K and DEF14A fillings. We also corroborate the information with corporate histories for each firm in the sample. We collect corporate history information from Factiva, Hoovers and company press releases. In the case of family presence, we get information on family ownership, family involvement in boards of directors, and family involvement in firm management from 10-K and DEF14A fillings.

To define family firms, we follow Anderson & Reeb (2003) and Villalonga & Amit (2006), and classify firms as family firms if the founder or a member of his family by either blood or marriage is an officer, director or blockholder, either individually or as a group. Our main analyses are based on this definition. Furthermore, in subsequent tests we show the robustness of our results if we impose additional restrictions in the definition of family firms. Specifically, these restrictions

include the family being the largest voteholder, the family being the largest shareholder or being in the second generation or later. Our later test aims to alleviate concerns that our results are driven by founder-run firms which might not be family firms.

2.3 Measures of Exposure to the Lehman Shock

In order to estimate the heterogeneous impact of the collapse of Lehman Brothers on borrowing firms, we follow Ivashina & Scharfstein (2010) and construct a firm-level measure that depends on the exposure of each financial institution to Lehman through co-syndication. The measure relies on the assumption that borrower-lender relationships are sticky. Specifically, at the lender level, we estimate the exposure as the fraction of outstanding credit lines co-syndicated with Lehman and in which Lehman is the lead arranger, over the total number of outstanding revolving facilities of the lender at the time of the collapse. Then, at the firm level, we focus on the last pre-crisis syndicated loan for each firm i and we construct a weighted-average exposure measure based on each financial institution b that is part of the syndicate s with weights corresponding to the participation rates of each lender in the syndicate $a_{b,i,last}$. Thus, the magnitude of exposure to the shock is estimated based on the following weighted-average aggregation:

$$LehmanExposure_{i,s} = \sum_{b \in s} a_{b,i,last} LehmanExposure_b \tag{1}$$

The rationale is that the collapse of Lehman Brothers imposed a liquidity problem in the financial institutions with which Lehman maintained a co-syndication relationship, as the exposed financial institutions were forced both to replace the role of Lehman in the syndicated loan and to be confronted with additional drawdowns in case of maintaining credit lines with the borrowers. Besides, as the impact was heterogeneous among lenders based on the level of exposure to the failing institution, the exogenous variation created is useful to control for the differential response to the shock at the bank-firm level and examine the impact on contractual terms.

Moreover, we show that our results are robust to using as an alternative measure of exposure to the shock, the measure proposed in Chodorow-Reich (2014) that relies on the heterogeneous change in lending supply of financial institutions following the Lehman collapse. The subsection 11.1 discuss the details for the construction of the measure.

2.4 Descriptive Statistics

Table 1 provides summary statistics for the key variables in the analysis, broken down by family and non-family firms. We find that the percentage of family firms in our sample is 26.7% which is in line with the percentage of family firms that Villalonga & Amit (2006) and Anderson et al. (2003) report for Fortune 500 (37%) and S&P500 (34%) firms respectively. Panel A of Table 1 concentrates on firm characteristics. On average family firms are smaller in assets than non-family firms and also younger and the difference is statistically significant at the 5% level. The average leverage for family firms is 34% and it is not significantly different from non-family firms. Furthermore family firms do not differ in terms of cash flow, interest expense, cash holdings and S&P rating. Therefore, family and non-family firms appear to be balanced among the aforementioned observable characteristics apart from size and age; however, size and age are expected to induce a bias - if any - against our results as size is negatively correlated with credit spreads implying that non-family firms may experience favorable rates due to larger size or higher age. Nevertheless, we use a matching estimation approach to alleviate any concerns related to alternative sources of firm heterogeneity that underlie the observed relation.

Panel B of Table 1 compares the characteristics of loans taken out by family and non-family firms before the crisis. The loan characteristics measures come from Dealscan, which allows to identify deal-level data, and observe the terms of loans at origination.Credit spread is the main dependent variable we use in our analysis. The average spread on loans taken out by family firms is 190 basis points and is not significantly different than the average spread for loans taken by non-family firms. Also when we split the loans into term loans and credit lines, we do not find any statistically significant difference in the spreads betweens loans taken out by family and non-family firms. Furthermore the loans taken out by family firms do not differ in terms of maturity and average loan amount. Finally we compare whether pre-crisis family firms were matched with banks that had a higher fraction of their syndicated portfolio where Lehman Brothers has a lead role (Lehman exposure). We do not find a difference in exposure to Lehman between family and non-family firms.

Panel C of Table 1 provides summary statistics for bank characteristics. In particular, in our specifications, we use as control bank characteristics that are able to capture both the strength

of a financial institution to absorb potential losses (e.g. capital ratio) and the liquidity of its funding base (e.g. deposit ratio). We also include as control financial performance measures (e.g. profitability) and actual measures of loan portfolio quality that are based on the expectations of the loan portfolio behavior (e.g. provisions for loan losses). The final sample includes 71 banks. The average bank has $550 million in assets in the pre-crisis period.

Appendix Table 17 shows the distribution of family and non-family firms in our sample using the Fama-French 48 industry classification. Similar to Villalonga & Amit (2006) we find that family firms are present throughout the economy but there is difference in the percentage of family firms in the various industries. The industries with the highest percentage of family firms are apparel, beer and liquor, personal services and printing and publishing, while there are no family firms in defense, fabricated products, gold, metals and mining and tobacco products. The difference in the presence of family firms within and across industries, suggests that it is important to control for industry in all our analyses.

3 Results on Family Ownership and Bank Lending During the Crisis

3.1 Bank Lending During the Crisis: Credit Spreads

We start the analysis in Table 2 by investigating the change in loan spreads during the crisis for the firms in our sample. We compare the spreads on the loans before and after the crisis for firms whose banks had a higher exposure to Lehman Brothers in their syndicated portfolio and firms whose banks had a lower exposure to Lehman Brothers. To perform the analysis, we estimate the following regression model:

$$y_{it} = \alpha + \beta Post_{it} + \gamma LehmanExposure_i + \delta Post_{it} \times LehmanExposure_i + \zeta X_{it-1} + \theta Z_{bt-1} + \eta_b + \eta_s + \varepsilon_{it}, \quad (2)$$

where y_{it} is the credit spread for loans taken out by company i in quarter t. $Post_{it}$ (either 0 or 1) is an indicator variable that takes the value 1 between the fourth quarter of 2008 and the end of 2010, and 0 otherwise. $LehmanExposure_i$ measures the exposure to the liquidity shock

and is constructed following Ivashina & Scharfstein (2010)[4]. X_{it-1} are firm controls. We control for size (logarithm of assets), cash flow, leverage, cash holdings, interest expense and S&P rating. Furthermore, we include controls for bank characteristics Z_{bt-1}. Bank controls include assets, deposit ratio, capital ratio, profitability, and provision for loan losses. Section 2.4 describes in detail the firm and bank controls used in the tests. η_s are industry fixed effects. Finally, we add bank fixed effects η_b to control for time-invariant bank characteristics. Column 1 of Table 2 shows that credit spreads increased during the crisis, especially for firms with higher exposure to the liquidity shock. The results are robust when we add firm and bank controls as well as industry and bank-firm fixed effects. In terms of economic significance, the results in Table 2 show that in the period following the liquidity shock credit spreads increased by at least 138 basis points. Furthermore, firms maintaining lending relationships with financial institutions highly exposed to Lehman experienced an additional increase in interest rates, as a standard deviation increase in the exposure to the liquidity shock is associated with a 12 to 14 basis points increase in the credit spreads. These findings are consistent with prior findings in the literature (Santos (2010)).

3.2 Family Ownership and Credit Spreads during the Crisis

In this section, we study the effect of family ownership on loan spreads during the crisis. We first offer graphical evidence. Figure 1 depicts the time-series evolution of average credit spreads around the financial crisis for family and non-family firms. Figure 1 shows that around the crisis, credit spreads increased for all firms, but the increase was larger for non-family firms. Furthermore the figure shows that there are no noticeable differences in the trends of family and non-family firms before the crisis. Our main analysis that follows, confirms these evidence. In Table 3 we explore the change in loan spreads during the crisis for family and non-family firms. Panel A presents the univariate analysis. Column 1 presents mean loan spreads for family firms, Column 2 presents mean spreads for non-family firms, and Column 3 provides the difference in means between the loan spreads for family and non-family firms. Panel A shows that during the crisis loan spreads increased by 129.93 basis points for family firms and by 152.12 basis points for non-family firms.Thus non-family firms experienced a 22.2 basis point higher increase in loan spreads relative to family firms. The difference is not only statistically significant but also economically significant, since non-family

[4]Section 2.3 explains in detail the measure construction

firms experienced a 15% higher increase in spreads.

In Panel B we provide regression results.The dependent variable is the credit spread on loans. The specification we estimate is the following:

$$y_{it} = \alpha + \beta Post_{it} + \gamma Family_i + \delta Post_{it} \times Family_i + \zeta X_{it-1} + \theta Z_{bt-1} + \eta_b + \eta_s + \varepsilon_{it}, \quad (3)$$

The specification is similar to that in Equation 2, but we now introduce the dummy variable $Family$, which takes the value 1 for family firms and 0 for non-family firms. All specifications include bank fixed effects. In Column (1) we do not include any firm or bank controls, while in Column (2) we include similar firm and bank controls as in Table 2. In both Columns (1) and (2) we include industry fixed effects to absorb any time-invariant industry heterogeneity. Column (1) shows that spreads increased during the crisis for all firms as reported by the positive coefficient on the variable $Post$. But for family firms the increase in spreads was 28.96 basis points lower than the increase in spreads for non-family firms. The results are similar in Column (2) where we introduce firm and bank controls. In Column (3) we add firm fixed effects to account for firm time-invariant heterogeneity. $Family$ is not included as a stand-alone variable in the model because is subsumed by the firm fixed effects. The coefficient on $Post \times Family$ remains both economically and statistically significant. The results in Table 3 indicate that family firms experienced a smaller increase in the credit spreads relative to non-family firms and family ownership seems to affect the agency costs of debt.

One potential concern is that family and non-family firms might have different exposure to the liquidity shock though their banks. In order to address this concern, we split the sample in firms that experienced a larger exposure to the liquidity shock and firms with limited exposure and re-run the specification (3) that focuses on the impact of family ownership. We classify firm as having high exposure to the shock if the measure of exposure to the Lehman collapse ($LehmanExposure_i$) is on the top 25% of the distribution and as having low exposure to the shock if the measure of exposure to the Lehman collapse is at the bottom 25% of the distribution. The analysis in Table 4 allows us to isolate the impact of family control within a particular level of exposure,thus mitigating the concern that the results are driven by family-controlled firms having less exposure to the crisis

if they were matching with financial institutions that engaged less in co-syndication activity with Lehman. Furthermore the analysis in Table 4 allows to capture a potential heterogeneous impact of family control between different exposure levels to the shock.

The results in Table 4 show that firms in both subsamples experienced a higher cost in accessing the bank lending market, as reported by the positive coefficient on the variable *Post*, but as expected the increase in the cost of bank debt was higher for firms with highest exposure to the liquidity shock though their banks. Furthermore, Table 4 unveils an interesting observation. Family control is found to have a statistically and economically significant impact on the cost of acquiring bank credit in the crisis period only for the subsample of firms that maintained lending relationships with financial institutions highly exposed to the collapse of Lehman. Indeed, only family-controlled firms of the highly-exposed subsample (Columns (1) and (2)) experienced lower credit spreads in the lending facilities originated during the crisis compared to widely-held firms. The economic magnitude is in the level of 75 basis points implying that highly-exposed family-controlled firms experience a sizeable benefit in the cost of private debt compared to a mean spread of 344 basis points in the crisis period. In Columns 2 and 4 we add firm fixed effects to control for firm time-invariant heterogeneity. The coefficient on $Post \times Family$ shows that the results are robust when we include firm fixed effects.

Appendix Table 19 explores the impact of family ownership on credit spreads in subsamples of similar exposure to the shock, however examining term loans and credit lines separately, and reports similar results. The rationale of splitting our sample based on the type of lending facility is based on the fact that different loan types potentially involve heterogeneous pricing characteristics that the additive nature of our specification in Table 4 fails to incorporate. Specifically, Table 19 shows that family ownership is associated with a 120 to 123 basis points lower spread for highly-exposed firms in the case of term loans and a 42 to 47 basis point in the subsample that consists of credit lines.

In the Appendix, Table 18 reports the results of a triple difference specification that takes advantage of the continuous variation in the Lehman exposure and explores the change in credit spreads during the crisis for family and non-family firms that have similar exposure to the liquidity shock. The dependent variable is the credit spread on loans. The specification we estimate is the following:

$$
\begin{aligned}
y_{it} =& \alpha + \beta Post_{it} + \gamma LehmanExposure_i + \theta Family_i + \mu Family_i \times Post_{it} + \\
&+ \nu Family_i \times LehmanExposure_i + \delta Post_{it} \times LehmanExposure_i + \\
&+ \phi Post_{it} \times LehmanExposure_i \times Family_i + \zeta X_{it-1} + \chi Z_{bt-1} + \eta_{bi} + \eta_s + \varepsilon_{it},
\end{aligned} \tag{4}
$$

The specification is the same as that in Equation 3, but we now introduce the interactions of $Family$ with the variables $Lehman$ and $Post$. All the specifications include firm and bank controls, as well as bank and industry fixed effects. In Column (1), we investigate credit spreads on all loans taken out. In Columns (2) and (3), we present results separately for term loans and credit lines.

The main coefficient of interest in Column (1) is the coefficient on the triple interaction $Post \times Family \times Lehman$. The negative coefficient shows that among the firms that had high exposure to the liquidity shock, family firms got a lower credit spread compared to non-family firms in their loans taken out during the crisis. In terms of economic significance, a standard deviation increase in the exposure to the liquidity shock is associated with a 26 basis points lower cost of bank capital for family firms compared to non-family firms. In Columns (2) and (3) we repeat the analysis separately for term loans and credit lines and we find similar results. Specifically, a standard deviation increase in the exposure to the liquidity shock is associated with a 32 basis points lower spread for family firms in the case of term loans and a 22 basis point in the case of credit lines.

Therefore, the results show that family ownership is associated with lower cost of debt in bad times and that the effect of family ties is exacerbated especially among firms with higher exposure to the liquidity shock. The results provide evidence that it is especially when lenders are constrained that family ownership has a greater effect in the cost on borrowing, since it is the highly affected group where agency conflicts become binding. In Section 7 we will further investigate various potential factors that can drive the effect of family ownership.

3.3 Other Contract Terms: Maturity and Loan Amount

In Table 5 we examine the change in loan maturity and loan amount for loans taken before and after the crisis for family and non-family firms. The specification we estimate is similar to Equation 4, but now the dependent variable is either loan maturity or the log of the loan amount. All the

specifications include industry and bank fixed effects. In Columns (1) and (2), we investigate loan maturity and in columns (3) and (4) the log of loan amount. The negative coefficient on the variable *Post* in Columns (1) and (2) indicates that loan maturity decreased by about 10 to 12 months during the Great Recession period, while the negative coefficient on the variable *Post* in Column (4) provides evidence in support of a decline in the amount of lending in the crisis period. Furthermore, the coefficient on the interaction $Post \times Family$ is insignificant in both cases in the case of maturity, which shows that there was no difference in the maturity of loans taken out by family and non-family firms during the crisis, while there is limited evidence that family firms have also accessed a larger pool of funds during the crisis period.

3.4 Access to the Bank Lending Market

Table 6 focuses on the extensive margin and examines whether family-controlled firms have heterogeneous access to the bank lending market during the crisis, by considering a probit specification. For this test, the sample contains all the borrowers that obtained a syndicated loan in the pre-crisis period. The dependent variable is an indicator corresponding to whether the borrower who had obtained a loan in the pre-crisis period obtained a new loan commitment between October 2008 and December 2010. The results indicate that there are no differences between family and non-family firms in accessing the bank lending market in the crisis period.

4 Financing Decisions

In Table 7, we examine whether family firms make different financing decisions during the crisis relative to non-family firms. Specifically we investigate their policies regarding dividends, cash holdings and leverage. The specification we estimate is similar to Equation 3, but now the dependent variable is the respective financing decision. All the specifications include quarter fixed effects and industry fixed effects. Columns (1)-(4) present the results for firms with high exposure to the collapse of Lehman Brothers, while Columns (5)-(8) for firms with low exposure. The coefficients on $Post \times Family$ show that family-controlled firms do not differ in their crisis period decisions about cash holdings, cash, leverage and short-term debt compared with non-family firms.

5 Robustness Tests

5.1 Subsample of Borrowers Borrowing from the Same Lender

Our previous results show that family firms get lower credit spreads during the crisis, compared to non-family firms. Furthermore, we show that this is mainly driven by firms that had high exposure to the liquidity shock. In this section we repeat the analysis in a subsample where we require firms not only to have accessed the bank lending market before and after the crisis, but also to have borrowed from the same lender the same type of loan. This subsample alleviates concerns that the results are driven by firms that switch lenders or firms that switched to different types of loans taken out from the same lender. For example, as revolving facilities are shorter in maturity compared to term loans leading potentially to lower credit spreads, there is the concern that family firms experience a lower cost of raising bank funding not due to reasons related to the ownership structure, but because of a change in the loan type structure towards credit line-type facilities in the post-crisis period. The results in Appendix Table 21 alleviate these concerns.

5.2 Matching Results

The purpose of our paper is to identify the potential impact of family control on the ability to access the syndicated loan market in a downturn. If firms were randomly assigned to an ownership structure in the pre-crisis period, then it would be suffice to make causal inferences by just comparing the outcomes of family (treated) and non-family (control) firms. However, there are pre-crisis characteristics that differ across the family and non-family group of firms. This raises the potential concern that the observed fundamental differences in the covariates of firms at least partially explain both the endogenous decision of the founding family to maintain an ownership stake in the firm and the ability to secure bank financing in the crisis. By just including a battery of observable firm controls in our baseline specifications to capture the additional sources of firm heterogeneity is uncertain that alleviates the potential concerns. One way to address the issue is to allow for nonlinear and nonparametric methods with the use of matching estimators. The rationale of a matching estimator approach is to achieve the optimal matching of treated firms with control firms based on multiple observable characteristics so as to restrict the set of counterfactuals to the matched controls, or in other words, expect the treated firms behave in a similar manner to the

control group in the absence of treatment.

Therefore, we take advantage of the Abadie & Imbens (2011) matching estimator that minimizes the Mahalanobis distance between the set of observable firm variables prior to the exogenous shock that have been used as controls across family and non-family firms, so as to define a counterfactual control group. Compared to a propensity score matching analysis, the Abadie-Imbens estimator provides the opportunity to achieve exact matching on categorical variables and, thus, we are able to identify a control group of firms that match precisely on industry. Moreover, the process minimizes the distance among a vector of continuous covariates, including firm size, profitability, and exposure to the collapse of Lehman Brothers among others, by applying a bias-correction component to the estimates.

Panel A of Table 8 reports that following the matching process, both the family and non-family group are identical on the set of observable characteristics. Indeed, contrary to the pre-crisis differences in the univariate approach, the matching process leads to a sample with no statistically significant differences in the pre-crisis characteristics.

Having identified a matched sample of control firms, in the second stage we compare changes in the outcome variables between the groups around the liquidity shock instead of comparing levels of the outcome variables in the treatment and control groups. Therefore, inferences about the heterogeneous exposure to the shock are based on the average effect of the treatment on the treated (ATT). The intuition behind selecting to compare differences rather than levels is that the outcome levels for treated and controls potentially differ prior to the shock, and keep on being different after as well, in which case the inferences might be potentially biased by the uncontrolled firm-specific differences. The outcome variables are presented in Panel B confirming that, even after matching for firms with similar observable characteristics, firms that are family-controlled experience favorable access in the syndicated loan market, as evident by significantly lower credit spreads and greater loan amounts. In particular, both types of firms experience an increasing cost of bank capital following the collapse of Lehman Brothers, consistent with the anecdotal evidence of limited access to the syndicated lending market; however, family-controlled firms that access the syndicated loan market obtain a lower credit spread by 32 basis points.

As a result, the findings of the matching process alleviate the concern that pre-crisis differences in firm characteristics may explain the impact of family control on lending terms in the crisis period.

5.3 Selection Concerns

As the focus of our paper is on the impact of family control on loan pricing in the intensive margin of firms following the liquidity crisis, a potential concern is that family-controlled firms that accessed bank lending in the crisis period are selected from a different part of the distribution compared to non-family firms that accessed bank lending in the crisis period, and specifically that family firms that accessed bank debt during the crisis were selected from the top part of the distribution. In other words, the potential selection issue reflects the fact that the distribution of family firms rationed out is different from the distribution of non-family firms, providing room for an explanation that only a handful of the top family firms are allowed to access the bank market, while, in the same time, a wider part of the non-family firms distribution borrows in the crisis period, thus leading to heterogeneous loan pricing. In order to mitigate the potential selection issue, we compare both the firm and the loan characteristics of family and non-family firms that accessed the debt market in the pre-crisis period, but did not access the market in the crisis period. Panel A of Table 9 focuses on firm characteristics, while Panel B compares the characteristics of loans taken out by family and non-family firms. On average the credit-rationed family firms remain significantly smaller in assets than non-family firms. Furthermore, family firms have higher cash flow, lower leverage, and, hold more cash, though the differences are statistically insignificant. Regarding the loan characteristics, both credit spread and maturity are not significantly different between family and non-family firms, thus providing support that the results are not driven by a selection effect.

5.4 Alternative Measure of Exposure to the Shock

In Table 20 of the Appendix, we verify the validity of our results by using as an alternative measure of exposure to the liquidity shock, the change in lending supply of financial institutions following the Lehman collapse. In order to get a comparable expected sign on the liquidity shock measure with our previous specification, we slightly divert from the construction of the measure as originally proposed in Chodorow-Reich (2014) by estimating the inverted ratio of the measure. As a result, the higher the value of the credit supply measure the larger the contraction in the lending activity occurring by the respective financial institution in the syndicated loan market. Table 20 reports the results of splitting the sample in highly-exposed firms and firms experiencing limited exposure

to the shock and confirms that family-controlled firms have favorable access to the bank lending market during the crisis. Specifically, family ownership is associated with a 60 basis points lower spread for highly-exposed firms that increases to 85 basis points in the case of term loans. In the credit lines subsample the coefficient is still negative, though statistically insignificant. Thus, our results remain robust when using an alternative measure of exposure to the shock.

6 Robustness to Alternative Stories

As demonstrated by our main results, family-controlled firms appear to experience a lower cost of obtaining access to bank financing compared to non-family firms. Moreover, we provided evidence that the wedge in the credit spreads during the crisis between family-controlled and widely-held firms is larger in case the bank providing the financing has been actively participating in syndicated lending originated by Lehman before the collapse and, thus has been highly affected by the shock. Our findings are consistent with the importance of family ownership for the provision of relationship-based funding precisely at times when the need to take advantage of relationship lending is critical. The intuition is that the long-term orientation perspective or personal commitment in the survival of the firm in family firms, mitigates agency conflicts.

However, a potential alternative interpretation is that family-controlled firms maintain a longer and tighter relation with financial institutions before the shock and, thus, the result is not driven by the family control itself but by the difference in the length of the lending relations between family and non-family firms. Furthermore, another alternative explanation that may be potentially responsible for our results is that it is not family control per se but, in general, that concentrated ownership is valued by lenders in the presence of liquidity constraints, thus leading to lower cost of bank capital. The intuition is that family control is accompanied by a significant ownership stake, and as a result, the observed difference in credit spreads is a manifestation of the different ownership structure in terms of concentrated ownership. Moreover, an additional concern is that our results are not capturing the effect of the family but are driven by founder-run firms, which might not be family firms. Finally, we also examine whether family-controlled firms experience a lower cost in accessing bank financing because of accepting to incur stricter covenants in the lending agreements. In the sections below we provide additional tests to investigate and rule out

these alternative channels [5].

6.1 Length of Relationship

In Table 10 we re-run our baseline specifications by controlling for measures that capture the level of lending relationships. We consider the following three measures: (1) a dummy variable equal to 1 if the firm has obtained a lending facility over the previous year from the financial institution responsible for the current lending facility following Santos (2010), (2) the duration of the lending relationship, captured by the time elapsed since the origination of the first loan with the lender, and (3) the fraction of the syndicated loans of a firm in which a specific lender has participated. Although the measures are coarse due to limitations in the available information in the dataset, considering different aspects of the lending relationship contributes to alleviating our concerns. The results are presented in Table 10 and demonstrate that the inclusion of controls capturing the lending relationship of a bank-firm pair has no material impact on our results.

6.2 Blockholding

In Table 11 we examine whether the results are explained by concentrated ownership instead of family involvement. We investigate the concentrated ownership channel by re-running our baseline specifications by separating firms based on the presence of a large shareholder and not founding family control. We measure concentrated ownership using a dummy variable that takes the value of 1 if an institutional investor holds 10% or more of the common stocks of the firm. The data come from the Thompson-Reuters Institutional Holdings (13F) database that tracks the portfolios of institutional investors that are obliged to report their common stock holdings and transactions on Form 13F filed with the SEC. The results are presented in Table 11, demonstrating that the presence of a large shareholder (institutional investor in our case) has no significant impact on a firm's ability to obtain bank funding under favorable terms. The results in Table 11 provide further support that it is the family involvement that is valued by creditors and not just the presence of a large shareholder.

[5] In unreported tests we also test whether the effect is due to differences in cash flow volatility between family and non-family firms. We do not find any differences in the cash flow volatility in the pre-crisis period between family and non-family firms. Furthermore, our results remain unchanged when we control for cash flow volatility in our specifications

6.3 Alternative Definition of Family Firms

In Table 12 we show the robustness of our results if we impose additional restrictions in the definition of family firms. Specifically, we consider three alternative definitions of family firms. The first definition requires the family to be the largest voteholder. The second definition requires the family to be the largest shareholder. Finally, the third definition requires one or more family members from the second or later generations to be officers, directors, or stockholders. Our later test aims to alleviate concerns that our results are driven by founder-run firms which might not be family firms. Table 12 reports the coefficient of $Post_{it} \times Family_i$ for the different definitions of a family firm. The results remain robust.

6.4 Covenant Strictness

The results demonstrate that family-controlled firms appear to access bank financing at a lower cost compared to non-family firms. However, a potential explanation is that family-controlled firms experience a lower cost in accessing bank financing because of accepting to incur stricter covenants in the lending agreements. Therefore, the implication is that family-controlled firms potentially trade off the lower funding cost for tighter covenant terms. To address the concern, we investigate whether family firms differ with respect to covenant strictness compared to non-family firms in Appendix Table 22, where we re-run our main specification with covenant strictness as dependent variable. Following Murfin (2012) we construct a covenant strictness measure that reflects the probability that a firm violates any of the covenants over the next quarter. Column 1 presents the results for the subsample of firms that were highly exposed to the Lehman collapse, while Column 2 focuses on firms that were less affected. In both subsamples, covenant strictness is not significantly different between family and non-family firms, and thus, differences in covenant strictness do not seem to drive the wedge in credit spreads.

7 Factors Influencing the Link Between Family Control and Cost of Bank Debt

The results of the main analysis show that family firms have lower cost of accessing private debt markets during the crisis. What is different about family firms? In this section we examine potential channels that can contribute to the lower cost of debt financing for family firms. Specifically, we investigate factors that influence the relation between family control and loan spreads.

7.1 Firm Differences in Agency Conflicts

To further assess the interpretation of our results, in Table 13 we test whether the impact of family control on the cost of debt during the crisis is more pronounced in firms with higher ex ante debt agency conflicts. We classify firms as having high potential for agency conflicts if they have leverage that is at the top 30% of the distribution (Panel A) or they are closer to bankruptcy, as predicted by an Altman Z-score at the top 30% of the distribution (Panel B). The results in Table 13 show as before, that the impact of family control on cost of debt is concentrated among firms with higher exposure to the shock, through their banks. Moreover, the result show that within firms with high exposure to the shock, the impact is concentrated on firms with higher potential of agency conflicts. These results further reinforce the interpretation that family control mitigates agency conflicts between shareholders and debtholders.

7.2 Covenants on Retaining Minimum Percentage of Family Ownership

Creditors use covenants to mitigate shareholder-debtholder conflicts. We provide novel evidence that in the case of family firms, creditors often use covenants that require the founding family to maintain a minimum percentage of ownership or voting power. The control covenant contained in the 2009 10-K for Ralph Lauren Corporation is a typical example: "Additionally, the Credit Facility provides that an Event of Default will occur if Mr. Ralph Lauren, our Chairman of the Board and Chief Executive Officer, and entities controlled by the Lauren family fail to maintain a specified minimum percentage of the voting power of our common stock." These type of covenants show that creditors value the involvement of the founding family.

In this section, we examine how common it is for creditors to require minimum percentage

of family ownership and control. For the family firms in our sample, we collect information on ownership and control covenants from the 10-K filings. Table 14 shows that 17% of the family firms in our sample mention the existence of control covenants in their 10-K fillings at some point between 2004 and 2010. The percentage is similar when we look at family firms where the family has more than 20% voting power or when the CEO is a member of the founding family. Across size categories, restrictions are more common in small firms, but a substantial fraction of firms with over $1 billion in book assets also have control and ownership restrictions. Since companies are not obliged to mention such agreements in the 10-K fillings Table 14 underestimates the usage of such restrictions. Moving forward we are collecting information on control and ownership restrictions at the credit agreement level, so that we can match information on the existence of credit agreements with information on other contact terms as rates and maturity.

7.3 Family or Outside CEO

Anderson & Reeb (2003) has shown that having a family member as CEO is associated with higher cost of debt, in the case of public debt. In Table 15 we investigate the relationship between family CEOs and cost of bank debt for the family firms in our sample. CEO is a dummy variable that takes the value 1 if the CEO is a family member and 0 otherwise. Column (1) looks at all credit agreements, while column (2) and (3) look at term loans and credit lines respectively. We find that in the case of private debt agreements, having a family CEO is associated with 49 to 71 basis points lower cost of debt financing during the crisis. The coefficient of $Post \times CEO$ is negative and statistically significant in all three columns.

The results in Table 15 unveil that the relationship between family CEO and cost of bank debt is opposite to the one that prior literature has shown for public debt. One potential explanation comes from the fact that private debt is relationship-based, implying that the providers of bank capital value the fact that the family owning a large part of the company is also the one that has the management of the company.

7.4 Violation of Covenants

In Table 16 we investigate whether family firms differ with respect to covenant violations compared to non-family firms. Following Nini et al. (2009), we use a text-search program to collect information

from 10-K and 10-Q filings on whether firms violate a covenant. We collect data on covenant violations for all firms in our sample for the years 2004-2010.

The dependent variable in Table 16 is an indicator that takes the value of 1 if a covenant has been violated, and 0 otherwise. In Column (1) the coefficient on $Family$ shows that throughout the period 2004-2010, family firms did not have higher propensity to violate their covenants compared to non-family firms. Furthermore, in Column (2) we examine whether covenant violations were different in the crisis period for family firms but we do not find any difference between family and non-family firms. Thus, differences in covenant violations do not seem to drive the wedge in credit spreads.

8 Conclusion

The purpose of the paper is to examine the impact of firm ownership structure on the agency cost of debt. In particular, we focus on the market for private debt and we analyze the potential heterogeneity in the terms of debt contracts between firms with founding-family ownership and firms with non-family ownership. We find that firms with founding-family control received lower rates compared to firms with non-family control when accessing the syndicated loan market during the crisis. Furthermore, we find that the effect of family control on the cost of debt is amplified in the presence of tighter liquidity constraints.

In order to alleviate any potential endogeneity concerns (e.g due to family firms matching with better financial institutions), we exploit the cross-sectional dispersion in lender health induced by the collapse of Lehman Brothers as a source of exogenous variation in the availability of bank credit to borrowers. Specifically, we hypothesize that firms that maintained lending relationships with financial institutions that were highly exposed to the negative liquidity shocks during the crisis were forced to experience tighter financial constraints and a higher cost of accessing the syndicated loan market. Indeed, the government decision not to provide financial support and allow Lehman Brothers to go bankrupt was considered unexpected, thus providing a useful laboratory to identify the relationship between private debt markets and ownership structure. Therefore, the research design that we consider compares firms with different ownership structure at the same point in time that have been subject to the same shock in an heterogeneous manner, based on the level of exposure

to the differentially liquidity-struck financial institutions. Furthermore, we proceed with unveiling the potential channels through which founding-family control is beneficial for debt agency conflicts. Specifically, we find that the effect is concentrated on firms that maintained lending relations with banks highly exposed to the collapse of Lehman, implying that the importance of founding-family control for lending relationships is amplified when lenders are constrained. Furthermore, as previous literature has stressed the role of a family member acting as the CEO on firm performance, we explore the impact of CEO affiliation on costs of debt within the subsample of firms with founding-family ownership. Finally, we investigate the importance of covenants linked with founding-family ownership as a manifestation of the importance of family-ownership for lending relations and the role of long-term orientation on the cost of accessing the private debt market.

9 Figures

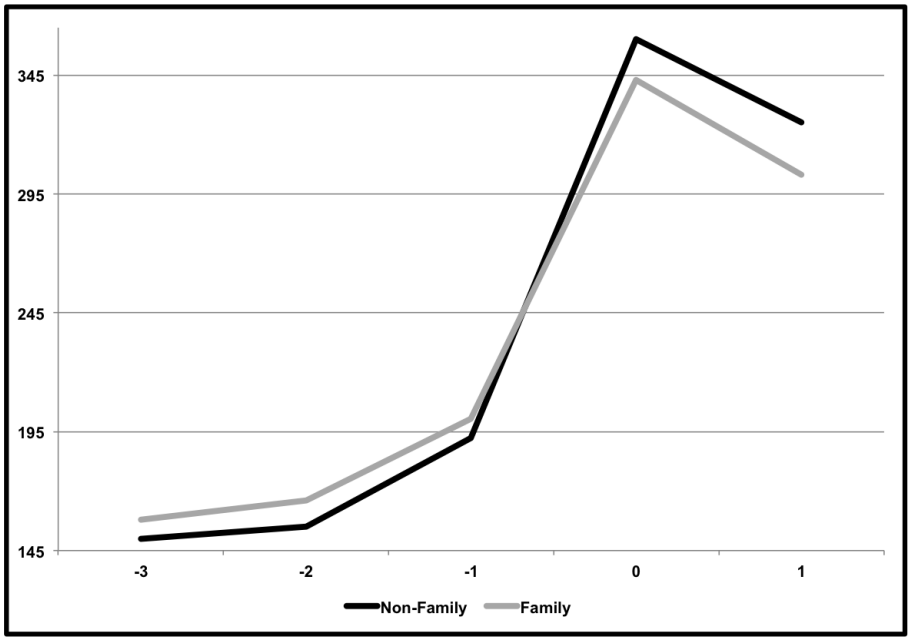

Figure 1: Pre-Trends

The figure depicts the time-series evolution of average credit spreads around the financial crisis for family and non-family firms. The sample period starts in January 2004 and ends in December 2010.

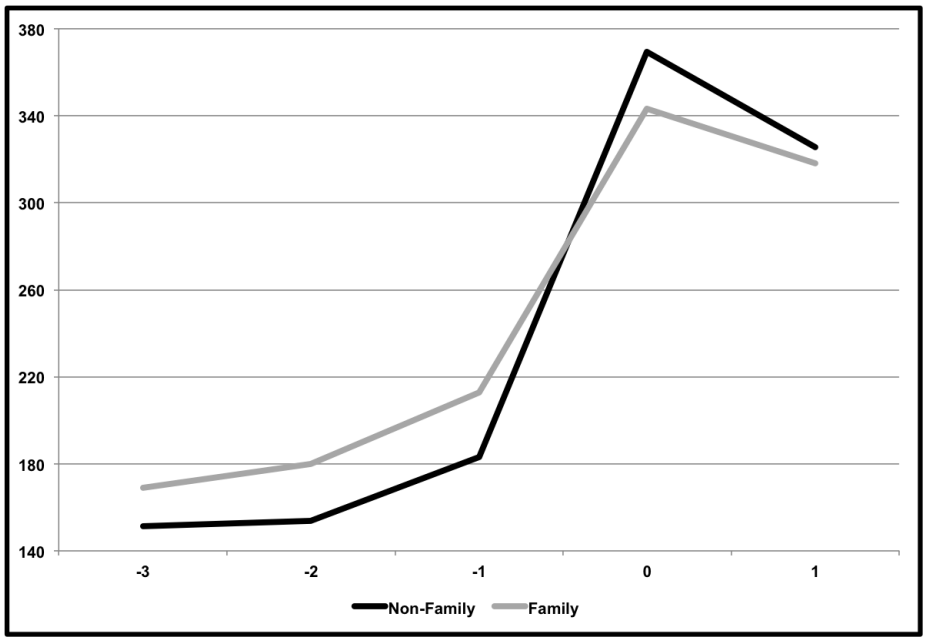

Figure 2: Pre-Trends - High Lehman Exposure

The figure depicts the time-series evolution of average credit spreads around the financial crisis for family and non-family firms that maintain relationships with financial institutions highly exposed ($LehmanExposure_i$ is at the top 25% of the distribution) to the Lehman collapse. The sample period starts in January 2004 and ends in December 2010.

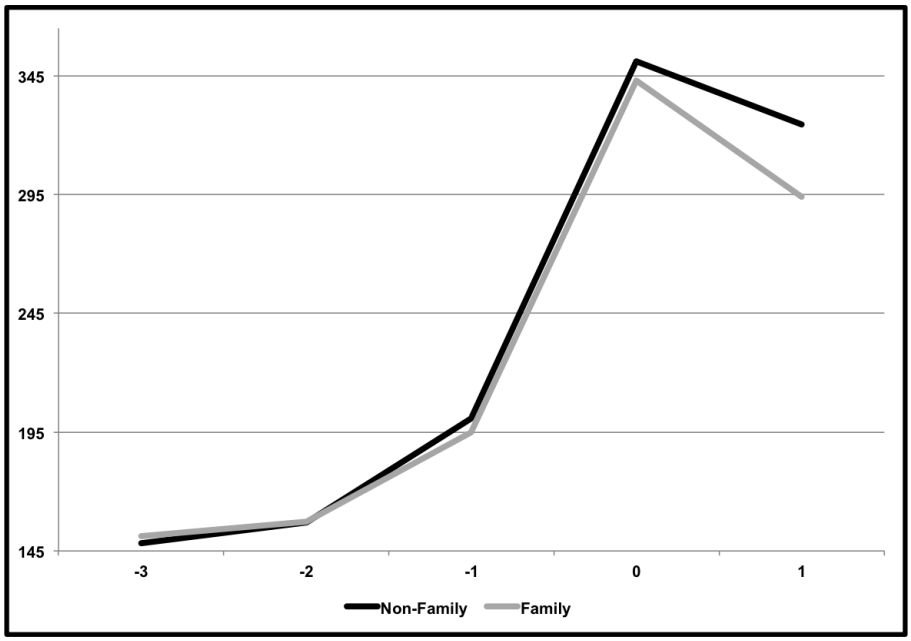

Figure 3: Pre-Trends - Low Lehman Exposure

The figure depicts the time-series evolution of average credit spreads around the financial crisis for family and non-family firms that maintain relationships with financial institutions less exposed ($LehmanExposure_i$ is at the bottom 25% of the distribution) to the Lehman collapse. The sample period starts in January 2004 and ends in December 2010.

10 Tables

Table 1: **Summary Statistics**

The table reports descriptive statistics for the sample used in the analysis, broken down by family and non-family firms. Panel A provides summary statistics on firm characteristics in the period before the crisis. The last column in Panel A provides the difference in means between the characteristics of family and non-family firms. Panel B describes the characteristics of loans taken out by firms in the pre-crisis period. The last column in Panel B provides the difference in means between the characteristics of the loans taken out by family and non-family firms. Panel C provides summary statistics on the bank characteristics for the pre-crisis period.

Pre-Crisis													
Panel A: Firm Variables													
	Family Firms						**Non-Family Firms**						
Variables	**N**	**Mean**	**Std Dev.**	**p10**	**p50**	**p90**	**N**	**Mean**	**Std Dev.**	**p10**	**p50**	**p90**	**Difference**
Log Assets	1,103	7.17	1.64	5.08	7.05	9.43	2,937	7.65	1.67	5.59	7.56	9.97	-0.47***
Cash Flow	1,080	0.037	0.031	0.012	0.036	0.069	2,893	0.035	0.035	0.012	0.033	0.064	0.002
Leverage	1,103	0.34	0.25	0.04	0.33	0.64	2,937	0.38	0.28	0.08	0.32	0.70	-0.03
Interest Expense	981	0.007	0.009	0.001	0.005	0.014	2,703	0.008	0.008	0.001	0.005	0.016	0
Cash	1,103	0.066	0.102	0.003	0.031	0.155	2,937	0.065	0.090	0.003	0.033	0.158	0.001
S&P Rating	610	12	4	8	11	17	2,000	12	4	8	11	17	0
Age	1,116	17	14	3	13	42	2,945	25	19	5	18	56	-8***
Number of Firms	313						858						

Pre-Crisis													
Panel B: Loan Variables													
	Family Firms						**Non-Family Firms**						
Variables	**N**	**Mean**	**Std Dev.**	**p10**	**p50**	**p90**	**N**	**Mean**	**Std Dev.**	**p10**	**p50**	**p90**	**Difference**
Credit Spread													
All Loans	1,149	190	137	50	175	325	3,232	187	142	35	175	350	2.76
Term Loans	386	254	159	113	225	450	1,081	267	162	100	225	475	-13.70
Credit Lines	763	157	111	33	150	275	2,151	146	111	30	125	288	10.82
Maturity	1,117	54	21	22	60	81	3,187	53	21	12	60	81	0.55
Log Amount	1,149	19.06	1.42	17.22	19.11	20.91	3,232	19.24	1.36	17.50	19.28	20.95	-0.17
Lehman Exposure	1,149	0.071	0.054	0.037	0.058	0.119	3,232	0.074	0.047	0.041	0.065	0.116	-0.003

Panel C: Bank Variables						
	Pre-Crisis					
Variables	**N**	**Mean**	**Std Dev.**	**p10**	**p50**	**p90**
Assets (in million $)	71	550.2	622.2	48.4	206.9	1,494.1
Deposits/Assets	71	0.24	0.13	0.12	0.23	0.40
Profitability	71	0.006	0.006	0.002	0.006	0.013
Capital/Assets	71	0.079	0.032	0.034	0.085	0.105
Loan Net Charge-Offs	71	0.002	0.002	0	0.001	0.005
Lehman Exposure	71	0.068	0.082	0.013	0.057	0.119
Number of Loans Ratio (Post/Pre)	71	0.50	0.56	0.10	0.38	0.89

Table 2: **Lehman Exposure and Credit Spread**

The table investigates the change in loan spreads during the crisis for the firms in our sample. We report estimates of the following regression: $y_{it} = \alpha + \beta Post_{it} + \gamma LehmanExposure_i + \delta Post_{it} \times LehmanExposure_i + \zeta X_{it-1} + \theta Z_{bt-1} + \eta_b + \eta_s + \varepsilon_{it}$, where y_{it} is the credit spread for loans taken out by company i in quarter t. $Post_{it}$ is an indicator variable that takes the value 1 between the fourth quarter of 2008 and the end of 2010, and 0 otherwise. Lehman Exposure measures the exposure to the liquidity shock and is constructed following Ivashina & Scharfstein (2010). X are firm controls. We control for size (logarithm of assets), cash flow, leverage, cash holdings, interest expense and S&P rating. Furthermore, we include bank characteristics controls (Z). Bank controls include assets, deposit ratio, capital ratio, profitability, and provision for loan losses. η_s are industry fixed effects. Finally, we add bank fixed effects η_b. In each column, we report estimated coefficients and their standard errors. Standard errors are robust to heteroskedasticity and are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	**(2)**
Variables		
Post	145.04***	138.77***
	(10.13)	(13.35)
LehmanExposure	44.02	22.20
	(77.84)	(67.30)
Post × *LehmanExposure*	258.01**	222.10**
	(44.94)	(44.67)
Firm Controls	No	Yes
Bank Controls	No	Yes
Industry Fixed Effects	Yes	Yes
Bank Fixed Effects	Yes	Yes
Observations	6,141	5,151
R^2	0.30	0.41

Table 3: **Family Ownership and Credit Spread**

The table explores the change in loan spreads during the crisis for family and non-family firms. Panel A presents the univariate test. Column 1 presents mean loan spreads for family firms, Column 2 presents mean spreads for non-family firms, and Column 3 provides the difference in means between the loan spreads for family and non-family firms. Panel B presents regression analysis. The dependent variable is the credit spread on loans. We report estimates of the following regression: $y_{it} = \alpha + \beta Post_{it} + \gamma Family_i + \delta Post_{it} \times Family_i + \zeta X_{it-1} + \theta Z_{bt-1} + \eta_b + \eta_s + \varepsilon_{it}$, where y_{it} is the credit spread for loans taken out by company i in quarter t. $Post_{it}$ is an indicator variable that takes the value 1 between the fourth quarter of 2008 and the end of 2010, and 0 otherwise. $Family$ is a dummy variable which takes the value 1 for family firms and 0 for non-family firms. X are firm controls. We control for size (logarithm of assets), cash flow, leverage, cash holdings, interest expense and S&P rating. Furthermore, we include bank characteristics controls (Z). Bank controls include assets, deposit ratio, capital ratio, profitability, and provision for loan losses. η_s are industry fixed effects. Finally, we add bank fixed effects η_b.In Column 3 we include firm fixed effects. In each column, we report estimated coefficients and their standard errors. Standard errors are robust to heteroskedasticity and are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Univariate Test			
	(1)	**(2)**	**(3)**
Variables	**Family**	**Non-Family**	**Difference**
Pre-Crisis	176.89***	171.81***	5.08
Crisis	306.82***	323.93***	-17.12*
Difference	129.93***	152.12***	
Difference-in-Differences			-22.20**

Panel B: Regression Analysis			
		(1)	**(2)**
	(1)	**(2)**	**(3)**
Variables			
Post	170.04***	160.86***	167.74***
	(7.85)	(13.62)	(13.312)
Family	-0.43	10.52	
	(8.27)	(6.91)	
Post × *Family*	-28.96**	-24.69**	-20.60*
	(12.46)	(11.64)	(12.22)
Firm Controls	No	Yes	Yes
Bank Controls	No	Yes	Yes
Industry Fixed Effects	Yes	Yes	No
Bank Fixed Effects	Yes	Yes	Yes
Firm Fixed Effects	No	No	Yes
Observations	6,157	4,965	4,965
R^2	0.30	0.42	0.62

Table 4: **Credit Spread by Lehman Exposure**

The table explores the change in credit spreads during the crisis for family and non-family firms. The sample is divided into firms that maintain relationships with financial institutions highly exposed ($LehmanExposure_i$ is at the top 25% of the distribution) or less exposed (bottom 25%) to the Lehman collapse, so that we compare family and non-family firms with similar exposure to the shock. Lehman Exposure measures the exposure to the liquidity shock at the firm level and is constructed following Ivashina & Scharfstein (2010). The dependent variable is the credit spread on loans. We report estimates of the following regression: $y_{it} = \alpha + \beta Post_{it} + \gamma Family_i + \delta Post_{it} \times Family_i + \zeta X_{it-1} + \theta Z_{bt-1} + \eta_b + \eta_s + \varepsilon_{it}$, where y_{it} is the credit spread for loans taken out by company i in quarter t. $Post_{it}$ is an indicator variable that takes the value 1 between the fourth quarter of 2008 and the end of 2010, and 0 otherwise. $Family$ is a dummy variable which takes the value 1 for family firms and 0 for non-family firms. X are firm controls. We control for size (logarithm of assets), cash flow, leverage, cash holdings, interest expense and S&P rating. Furthermore, we include controls for bank characteristics (Z_{bt-1}). Bank controls include assets, deposit ratio, capital ratio, profitability, and provision for loan losses. η_s are industry fixed effects. Finally, we add bank fixed effects η_b. In specifications (2) and (4) we add firm fixed effects. In each column, we report estimated coefficients and their standard errors. Standard errors are robust to heteroskedasticity and are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	**(2)**	**(3)**	**(4)**
Variables				
	High Lehman		**Low Lehman**	
Post	185.83***	191.90***	136.73***	132.87***
	(30.48)	(24.17)	(19.37)	(21.64)
Family	23.89		-9.17	
	(15.83)		(12.24)	
Post × *Family*	-75.54***	-51.52**	1.66	2.05
	(25.31)	(23.44)	(18.61)	(21.73)
Firm Controls	Yes	Yes	Yes	Yes
Bank Controls	Yes	Yes	Yes	Yes
Bank Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	No	Yes	No
Firm Fixed Effects	No	Yes	No	Yes
Observations	1,211	1,211	1,333	1,333
R^2	0.45	0.64	0.38	0.55

Table 5: **Other Contract Terms**

The table explores the change in other contract terms during the crisis for family and non-family firms. The dependent variable is the either the maturity or the log amount on loans. We report estimates of the following regression: $y_{it} = \alpha + \beta Post_{it} + \gamma Family_i + \delta Post_{it} \times Family_i + \zeta X_{it-1} + \theta Z_{bt-1} + \eta_b + \eta_s + \varepsilon_{it}$, where y_{it} is the credit spread for loans taken out by company i in quarter t. $Post_{it}$ is an indicator variable that takes the value 1 between the fourth quarter of 2008 and the end of 2010, and 0 otherwise. $Family$ is a dummy variable which takes the value 1 for family firms and 0 for non-family firms. X are firm controls. We control for size (logarithm of assets), cash flow, leverage, cash holdings, interest expense and S&P rating. Furthermore, we include bank characteristics controls (Z). Bank controls include assets, deposit ratio, capital ratio, profitability, and provision for loan losses. η_s are industry fixed effects, and η_b bank fixed effects. In each column, we report estimated coefficients and their standard errors. Standard errors are robust to heteroskedasticity and are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	**(2)**	**(3)**	**(4)**
Variables				
	Maturity		**Loan Amount**	
Post	-10.44***	-12.29***	-0.07	-0.29***
	(0.80)	(1.43)	(0.05)	(0.10)
Family	1.14	1.77	-0.04	0.02
	(1.24)	(1.17)	(0.09)	(0.06)
Post × *Family*	-0.07	-0.54	0.09	0.12*
	(1.35)	(1.38)	(0.08)	(0.07)
Firm Controls	No	Yes	No	Yes
Bank Controls	No	Yes	No	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Bank Fixed Effects	Yes	Yes	Yes	Yes
Observations	6,608	5,357	6,777	5,463
R^2	0.12	0.18	0.17	0.56

Table 6: **Extensive Margin**

The table reports the results of the regressions that consider the impact of exposure to the collapse of Lehman and family control on the likelihood of obtaining bank credit during the crisis. The sample contains all the borrowers that obtained a syndicated loan in the pre-crisis period. The dependent variable is an indicator corresponding to whether the borrower who had obtained a loan in the pre-crisis period obtained a new loan commitment between October 2008 and December 2010. The results indicate that there are no differences between family and non-family firms in accessing the bank lending market in the crisis period. *LehmanExposure* measures the exposure to the liquidity shock at the firm level and is constructed following Ivashina & Scharfstein (2010). *Family* is a dummy variable which takes the value 1 for family firms and 0 for non-family firms. We control for size (logarithm of assets), cash flow, leverage, cash holdings, interest expense and S&P rating. Furthermore, we include controls for bank characteristics (Z_{bt-1}). Bank controls include assets, deposit ratio, capital ratio, profitability, and provision for loan losses. η_s are industry fixed effects. Finally, we add bank fixed effects η_b. In each column, we report estimated coefficients and their standard errors. Standard errors are robust to heteroskedasticity and are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	**(2)**	**(3)**
Variables			
LehmanExposure	0.89		1.01
	(0.76)		(0.86)
Family		0.06	0.08
		(0.06)	(0.12)
Family × *Lehman*			-0.24
			(1.72)
Firm Controls	Yes	Yes	Yes
Bank Controls	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
Bank Fixed Effects	Yes	Yes	Yes
Observations	3,492	3,492	3,492

Table 7: **Financing Decisions**

The table reports the change in financing decisions during the crisis for family and non-family firms. The sample is divided into firms that maintain relationships with financial institutions highly exposed ($LehmanExposure_i$ is at the top 25% of the distribution) or less exposed (bottom 25%) to the Lehman collapse. Lehman Exposure measures the exposure to the liquidity shock at the firm level and is constructed following Ivashina & Scharfstein (2010).In each column, we report estimated coefficients and their standard errors. Standard errors are robust to heteroskedasticity and are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Variables								
	High Lehman				**Low Lehman**			
	Dividends	Cash	Leverage	Short-Term Debt	Dividends	Cash	Leverage	Short-Term Debt
Family	-0.001	0.005	0.042	0.001	0.001	0.008	-0.019	-0.025
	(0.001)	(0.013)	(0.030)	(0.020)	(0.001)	(0.013)	(0.021)	(0.032)
Post × *Family*	0.000	0.002	-0.011	0.024	0.001	-0.010	0.024	0.006
	(0.001)	(0.011)	(0.020)	(0.024)	(0.001)	(0.010)	(0.016)	(0.035)
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Quarter Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,167	6,384	6,189	5,952	7,090	7,384	7,120	6,231
R^2	0.03	0.34	0.54	0.18	0.04	0.31	0.42	0.21

Table 8: **ATT Matching Estimator**

The table presents the results of the difference-in-differences Abadie and Imbens matching estimator around the Lehman collapse imposing treated and control firms to be similar in terms of observable characteristics. Treated firms are the firms that are family-controlled. Panel A reports that following the matching process, both the family and non-family group are identical on the set of observable characteristics. Panel B compares changes in the outcome variables between family an non-family firms around the liquidity shock. The dependent variables that have been considered are the credit spread, the maturity and the amount of the lending facilities. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Control Variables			
	(1)	**(2)**	**(3)**
Variables	**Family**	**Non-Family**	**Difference**
Log Assets	6.75***	6.74***	0.01
Cash Flow	0.036***	0.036***	0.000
Leverage	0.28***	0.30***	-0.02
Cash	0.079***	0.084***	-0.004
Lehman Exposure	0.061***	0.060***	0.001

Panel B: Outcomes			
	(1)	**(2)**	**(3)**
Variables	**Family**	**Non-Family**	**Difference**
		Credit Spread	
Before	176.89***	171.81***	5.08
After	306.82***	323.93***	-17.12*
Difference	129.93***	152.12***	
Difference-in-Differences			-22.20**
Matching Estimator			-26.01***
		Maturity	
Before	52.79***	51.78***	1.01
After	43.05***	41.81***	1.24
Difference	-9.74***	-9.97***	
Difference-in-Differences			0.23
Matching Estimator			-0.85
		Loan Amount	
Before	18.81***	19.07***	-0.25***
After	18.96***	19.07***	-0.11
Difference	0.15***	0.01	
Difference-in-Differences			0.14**
Matching Estimator			0.09

Table 9: **Robustness to Selection**

The table reports descriptive statistics for the sample of firms that accessed the syndicated loan market in the pre-crisis period but did not access it in the crisis period. The summary statistics are broken down by family and non-family firms. Panel A provides summary statistics on firm characteristics in the period before the crisis. The last column in Panel A provides the difference in means between the characteristics of family and non-family firms. Panel B describes the characteristics of loans taken out by firms. The last column in Panel B provides the difference in means between the characteristics of the loans taken out by family and non-family firms in the pre-crisis period.

Pre-Crisis

Panel A: Firm Variables

	Family Firms						**Non-Family Firms**						
Variables	**N**	**Mean**	**Std Dev.**	**p10**	**p50**	**p90**	**N**	**Mean**	**Std Dev.**	**p10**	**p50**	**p90**	**Difference**
Log Assets	1,049	6.57	1.63	4.45	6.57	8.66	2,721	7.24	1.93	4.63	7.31	9.83	-0.67***
Cash Flow	995	0.036	0.045	-0.001	0.036	0.077	2,562	0.035	0.036	0.006	0.033	0.069	0.002
Leverage	1,049	0.31	0.23	0.04	0.28	0.60	2,721	0.33	0.22	0.07	0.31	0.61	-0.03
Interest Expense	952	0.007	0.008	0.001	0.005	0.014	2,483	0.007	0.007	0.001	0.005	0.013	0
Cash	1,047	0.097	0.124	0.006	0.048	0.249	2,721	0.086	0.115	0.005	0.039	0.218	0.011
S&P Rating	433	12	3	8	11	15	1,588	12	4	8	12	17	0
Number of Firms	384						831						

Pre-Crisis

Panel B: Loan Variables

	Family Firms						**Non-Family Firms**						
Variables	**N**	**Mean**	**Std Dev.**	**p10**	**p50**	**p90**	**N**	**Mean**	**Std Dev.**	**p10**	**p50**	**p90**	**Difference**
Credit Spread													
All Loans	955	196	144	50	175	350	2,478	187	141	40	175	350	9
Term Loans	270	280	177	113	225	565	769	264	161	100	225	450	17
Credit Lines	685	163	112	45	150	300	1,709	152	116	30	125	300	11
Maturity													
All Loans	1,023	51	20	18	60	72	2,650	52	22	12	60	78	-1
Term Loans	289	60	22	35	50	84	813	60	23	26	60	84	0
Credit Lines	734	47	19	13	59	60	1,836	48	20	12	60	60	-1

Table 10: **Lending Relationship Control**

The table reports the change in credit spreads during the crisis for family and non-family firms. The sample is divided into firms that maintain relationships with financial institutions highly exposed ($LehmanExposure_i$ is at the top 25% of the distribution) or less exposed (bottom 25%) to the Lehman collapse, so that we compare family and non-family firms with similar exposure to the shock. Lehman Exposure measures the exposure to the liquidity shock at the firm level and is constructed following Ivashina & Scharfstein (2010). The dependent variable is the credit spread on loans. We report estimates of the following regression: $y_{it} = \alpha + \beta Post_{it} + \gamma Family_i + \delta Post_{it} \times Family_i + \zeta X_{it-1} + \theta Z_{bt-1} + \phi Relationship_{ibt} + \eta_b + \eta_s + \varepsilon_{it}$, where y_{it} is the credit spread for loans taken out by company i in quarter t. $Post_{it}$ is an indicator variable that takes the value 1 between the fourth quarter of 2008 and the end of 2010, and 0 otherwise. $Family$ is a dummy variable which takes the value 1 for family firms and 0 for non-family firms. $Relationship_{ibt}$ is one of the following: (1) a dummy variable equal to 1 if the firm has obtained a lending facility over the previous year from the financial institution responsible for the current lending facility following Santos (2010), (2) the duration of the lending relationship, captured by the time elapsed since the origination of the first loan with the lender, and (3) the fraction of the syndicated loans of a firm in which a specific lender has participated. X are firm controls. We control for size (logarithm of assets), cash flow, leverage, cash holdings, interest expense and S&P rating. Furthermore, we include controls for bank characteristics (Z_{bt-1}). Bank controls include assets, deposit ratio, capital ratio, profitability, and provision for loan losses. η_s are industry fixed effects. Finally, we add bank fixed effects η_b. In each column, we report estimated coefficients and their standard errors. Standard errors are robust to heteroskedasticity and are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Variables						
	High Lehman			**Low Lehman**		
	Last-Year Lending	**Relationship Time**	**Fraction of Lending**	**Last-Year Lending**	**Relationship Time**	**Fraction of Lending**
Post	181.46***	192.15***	174.43***	129.81***	119.80***	144.10***
	(33.20)	(36.19)	(27.59)	(19.50)	(22.78)	(26.64)
Family	22.88	20.34	23.29	-9.24	-7.57	-9.42
	(15.86)	(16.72)	(15.99)	(12.22)	(12.03)	(12.18)
Post × *Family*	-74.79***	-71.40***	-78.38***	-2.05	0.54	1.85
	(25.32)	(25.66)	(26.84)	(18.05)	(18.72)	(18.69)
Relationship	-16.64	-0.67	12.20	0.52	-1.27***	12.20
	(11.14)	(0.41)	(20.36)	(10.37)	(0.42)	(16.69)
Post × *Relationship*	0.41	-0.11	19.76	46.97	1.32**	-10.93
	(46.48)	(0.68)	(46.48)	(29.41)	(0.59)	(31.84)
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,211	1,211	1,211	1,333	1,333	1,333
R^2	0.42	0.43	0.42	0.35	0.35	0.35

Table 11: **Concentrated Institutional Ownership $\geq$ 10%**

The table reports the change in credit spreads of credit loans during the crisis for firms with institutional ownership greater than 10% accounting for the heterogeneous exposure to the shock. The sample is divided into firms that maintain relationships with financial institutions highly exposed ($LehmanExposure_i$ is at the top 25% of the distribution) or less exposed (bottom 25%) to the Lehman collapse. Lehman Exposure measures the exposure to the liquidity shock at the firm level and is constructed following Ivashina & Scharfstein (2010). The dependent variable is the credit spread on loans. We report estimates of the following regression: $y_{it} = \alpha + \beta Post_{it} + \gamma ConcentratedIO_i + \delta Post_{it} \times ConcentratedIO_i + \zeta X_{it-1} + \theta Z_{bt-1} + \phi Relationship_{ibt} + \eta_b + \eta_s + \varepsilon_{it}$, where y_{it} is the credit spread for loans taken out by company i in quarter t. $Post_{it}$ is an indicator variable that takes the value 1 between the fourth quarter of 2008 and the end of 2010, and 0 otherwise. $ConcentratedIO$ is a dummy variable which takes the value 1 for firms with institutional ownership greater than 10% and 0 otherwise. X are firm controls. We control for size (logarithm of assets), cash flow, leverage, cash holdings, interest expense and S&P rating. Furthermore, we include controls for bank characteristics (Z_{bt-1}). Bank controls include assets, deposit ratio, capital ratio, profitability, and provision for loan losses. η_s are industry fixed effects. Finally, we add bank fixed effects η_b. In each column, we report estimated coefficients and their standard errors. Standard errors are robust to heteroskedasticity and are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Variables						
	High Lehman			**Low Lehman**		
	All	Term Loans	Credit Lines	All	Term Loans	Credit Lines
Post	167.79***	206.27***	141.76***	181.27***	227.63***	161.89***
	(32.14)	(61.12)	(18.72)	(27.29)	(57.67)	(19.32)
ConcentratedIO	-6.64	-29.19	4.49	1.80	22.92	-1.20
	(10.97)	(27.57)	(10.31)	(10.67)	(24.33)	(9.16)
Post × *ConcentratedIO*	-6.45	-8.31	12.33	-4.69	-30.79	-8.08
	(26.81)	(43.36)	(20.27)	(21.46)	(49.45)	(17.86)
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,211	516	785	1,356	378	1,053
R^2	0.42	0.37	0.54	0.51	0.47	0.56

Table 12: **Alternative Definitions of Family Firms**

The table reports, for different definitions of a family firm, the coefficient of $Post_{it} \times Family_i$ based on the following regression: $y_{it} = \alpha + \beta Post_{it} + \gamma Family_i + \delta Post_{it} \times Family_i + \zeta X_{it-1} + \theta Z_{bt-1} + \eta_b + \eta_s + \varepsilon_{it}$, where y_{it} is the credit spread for loans taken out by company i in quarter t. $Post_{it}$ is an indicator variable that takes the value 1 between the fourth quarter of 2008 and the end of 2010, and 0 otherwise. $Family$ is a dummy variable which takes the value 1 for family firms and 0 for non-family firms. X are firm controls. We control for size (logarithm of assets), cash flow, leverage, cash holdings, interest expense and S&P rating. Furthermore, we include controls for bank characteristics (Z_{bt-1}). Bank controls include assets, deposit ratio, capital ratio, profitability, and provision for loan losses. η_s are industry fixed effects. Finally, we add bank fixed effects η_b. We consider three alternative definitions of family firms: 1. The family is the largest voteholder, 2. the family is the largest shareholder and 3. one or more family members from the second or later generations are officers, directors, or stockholders. The sample is divided into firms that maintain relationships with financial institutions highly exposed ($LehmanExposure_i$ is at the top 25% of the distribution) or less exposed (bottom 25%) to the Lehman collapse, so that we compare family and non-family firms with similar exposure to the shock. Lehman Exposure measures the exposure to the liquidity shock at the firm level and is constructed following Ivashina & Scharfstein (2010). Standard errors are robust to heteroskedasticity and are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)
Variables			
	Number of Family Firms	**High Lehman**	**Low Lehman**
Largest Voteholder	171	-58.04*	1.06
Largest Shareholder	167	-58.04*	3.68
Second Generation	145	-52.01**	23.59

Table 13: **Firm Level Differences in Agency Conflicts**

The table presents the change in credit spreads during the crisis for family and non-family firms based on the heterogeneous exposure to the shock and a firm-level measure of differences in ex ante agency conflicts. In Panel A, firms are divided based on their pre-crisis leverage, while in Panel B firms are divided based on their pre-crisis Altman's Z-Score. Both in Panels A and B, the sample is divided into firms that maintain relationships with financial institutions highly exposed ($LehmanExposure_i$ is at the top 25% of the distribution) or less exposed (bottom 25%) to the Lehman collapse, so that we compare family and non-family firms with similar exposure to the shock. Lehman Exposure measures the exposure to the liquidity shock at the firm level and is constructed following Ivashina & Scharfstein (2010). The dependent variable is the credit spread on loans. We report estimates of the following regression: $y_{it} = \alpha + \beta Post_{it} + \gamma Family_i + \delta Post_{it} \times Family_i + \zeta X_{it-1} + \theta Z_{bt-1} + \eta_b + \eta_s + \varepsilon_{it}$, where y_{it} is the credit spread for loans taken out by company i in quarter t. $Post_{it}$ is an indicator variable that takes the value 1 between the fourth quarter of 2008 and the end of 2010, and 0 otherwise. $Family$ is a dummy variable which takes the value 1 for family firms and 0 for non-family firms. X are firm controls. We control for size (logarithm of assets), cash flow, leverage, cash holdings, interest expense and S&P rating. Furthermore, we include controls for bank characteristics (Z_{bt-1}). Bank controls include assets, deposit ratio, capital ratio, profitability, and provision for loan losses. η_s are industry fixed effects. Finally, we add bank fixed effects η_b. In each column, we report estimated coefficients and their standard errors. Standard errors are robust to heteroskedasticity and are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	Panel A: Leverage			
	(1)	**(2)**	**(3)**	**(4)**
Variables				
	High Lehman		**Low Lehman**	
	High Leverage	**Low Leverage**	**High Leverage**	**Low Leverage**
Post	227.39***	237.06***	124.39***	110.12***
	(59.01)	(38.35)	(43.67)	(21.53)
Family	24.57	2.07	-23.95	-4.54
	(22.37)	(23.29)	(28.80)	(16.72)
Post × *Family*	-102.41**	-66.29	-33.81	-12.34
	(45.60)	(44.86)	(46.81)	(22.12)
Controls	Yes	Yes	Yes	Yes
Bank Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Observations	543	302	196	757
R^2	0.38	0.65	0.34	0.39
	Panel B: Altman's Z-Score			
	(1)	**(2)**	**(3)**	**(4)**
Variables				
	High Lehman		**Low Lehman**	
	High Z-Score	**Low Z-Score**	**High Z-Score**	**Low Z-Score**
Post	139.81***	243.84***	165.26***	127.36***
	(26.70)	(28.10)	(30.80)	(22.18)
Family	37.02	37.44	10.56	-5.75
	(23.41)	(24.11)	(27.43)	(15.45)
Post × *Family*	-68.24**	-46.73	-25.28	25.67
	(29.733)	(36.608)	(48.401)	(21.35)
Controls	Yes	Yes	Yes	Yes
Bank Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Observations	576	329	304	683
R^2	0.50	0.63	0.40	0.43

Table 14: **Control Covenants**

The table provides information on the fraction of family-controlled firms that have ownership and control covenants, as reported in the 10-K fillings.

	Fraction With Control Covenant
Fraction of Family Firms	0.17
Fraction of Family Firms With Voting Power of 20% or More	0.17
Family CEO Firms	0.18
By Size	
$<$ \$100M	0.20
\$100M - \$250M	0.13
\$250M - \$500M	0.23
\$500M - \$1000M	0.23
\$1000M - \$2,500M	0.12
\$2,500M - \$5,000M	0.15
$\geq$ \$5,000M	0.15

Table 15: **Family CEO and Credit Spread**

The table explores the relationship between family CEOs and the cost of private debt for family firms. *CEO* is a dummy variable that takes the value 1 if the CEO is a family member and 0 otherwise. Column (1) incorporates all credit agreements, while column (2) and (3) focus on term loans and credit lines respectively. Firm controls include size (logarithm of assets), cash flow, leverage, cash holdings, interest expense and S&P rating, while bank controls include assets, deposit ratio, capital ratio, profitability, and provision for loan losses. Furthermore year, industry, and bank fixed effects are included. In each column, we report estimated coefficients and their standard errors. Standard errors are robust to heteroskedasticity and are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	**(2)**	**(3)**
Variables			
	All	Term Loans	Credit Lines
Post	151.22***	161.27***	160.20***
	(25.81)	(46.09)	(23.12)
CEO	14.16	28.16	16.22
	(10.98)	(24.44)	(10.47)
Post × *CEO*	-54.53***	-70.78*	-49.30***
	(20.44)	(41.42)	(18.22)
Firm Controls	Yes	Yes	Yes
Bank Controls	Yes	Yes	Yes
Bank Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
Observations	1,411	418	993
R^2	0.50	0.50	0.54

Table 16: **Covenant Violation**

The table reports the relationship between family control and the incidence of violating a covenant. The dependent variable is an indicator that takes the value of 1 if a covenant has been violated, and 0 otherwise. *Post* is an indicator variable that takes the value 1 between the fourth quarter of 2008 and the end of 2010, and 0 otherwise. *Family* is a dummy variable which takes the value 1 for family firms and 0 for non-family firms. Column (1) reports the impact of family control, while column (2) examines whether there is a change in the relation between family control and covenant violation during the crisis. Firm controls include size (logarithm of assets), cash flow, leverage, cash holdings, interest expense and S&P rating. In each column, we report estimated coefficients and their standard errors. Standard errors are robust to heteroskedasticity and are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	**(2)**
Variables		
Family	0.024	0.010
	(0.048)	(0.056)
Post		-0.064
		(0.059)
Post × *Family*		0.050
		(0.100)
Firm Controls	Yes	Yes
Observations	26,532	26,532

11 Appendix

11.1 Alternative Measure for Exposure to the Shock

The alternative measures that we use to capture the heterogeneous exposure to the shock is the one proposed in Chodorow-Reich (2014) that relies on the heterogeneous change in lending supply of financial institutions following the Lehman collapse. Specifically, the lending supply measure is defined based on the difference in the quantity of loans initiated by lender b to all borrowers other than firm i before and after the collapse of Lehman Brothers. The pre-crisis period that is considered for the construction of the measure is the 9-month periods from October 2005 to June 2006 and October 2006 to June 2007, while the crisis period is from October 2008 to June 2009. The loan quantities have been weighted based on the participation rates of the lender in the syndicated loan. Hence, letting $L_{-i,b}$ equal 1 if bank b has a lending relationship with borrower j in period t and $a_{b,j,t}$ equal the participation rate of the syndicated loan, the change in the credit supply for a lender-borrower pair is constructed as follows:

$$\Delta L_{-i,b} = \frac{\sum_{j \neq i} a_{b,j,crisis} L_{b,j,crisis}}{0.5 \sum_{j \neq i} a_{b,j,pre-crisis} L_{b,j,pre-crisis}} \tag{5}$$

Then, the final measure of bank health corresponding to the last pre-crisis syndicated loan of each borrower is based on the participation rates of each lender of the last pre-crisis syndicated loan and the above measure of change in lending quantities before and after the Lehman collapse:

$$\Delta \tilde{L}_{i,s} = \sum_{b \in s} a_{b,i,last} \Delta L_{-i,b} \tag{6}$$

In case the actual share of each lender in a loan commitment is missing in Dealscan, the participation rate is calculated as the average share of lead lenders and participants in a facility involving the same structure.

Previous research has examined the effectiveness of our measures, demonstrating that there is a significant contraction in the bank lending channel following the Lehman collapse, the dispersion of which among financial institutions is sufficiently captured by the bank health measures proposed. In particular, Chodorow-Reich (2014) shows that the credit supply measure is negatively correlated with exposure to Lehman through co-syndication controlling for a battery of observable bank

characteristics, indicating that the contraction in bank credit is supply-driven.

11.2 Additional Tables

Table 17: **Industry Distribution**

The table presents the industry distribution of firms by family ties. Firms are sorted by industry using the Fama-French 48 industry classification.

	Non-Family Firms		**Family Firms**			
Industry	**N**	**Percentage**	**N**	**Percentage**	**Total**	**Family Firms in Industry**
Agriculture	6	0.7%	1	0.3%	7	14%
Aircraft	5	0.6%	3	1.0%	8	38%
Apparel	7	0.8%	7	2.2%	14	50%
Automobiles & Trucks	23	2.7%	6	1.9%	29	21%
Beer & Liquor	1	0.1%	1	0.3%	2	50%
Business Services	71	8.3%	38	12.1%	109	35%
Business Supplies	14	1.6%	8	2.6%	22	36%
Candy & Soda	2	0.2%	2	0.6%	4	50%
Chemicals	33	3.9%	6	1.9%	39	15%
Coal	9	1.1%	1	0.3%	10	10%
Computers	11	1.3%	7	2.2%	18	39%
Construction	10	1.2%	6	1.9%	16	38%
Construction Materials	25	2.9%	3	1.0%	28	11%
Consumer Goods	19	2.2%	6	1.9%	25	24%
Defense	3	0.4%	0	0.0%	3	0%
Electrical Equipment	6	0.7%	1	0.3%	7	14%
Electronic Equipment	30	3.5%	10	3.2%	40	25%
Entertainment	13	1.5%	6	1.9%	19	32%
Fabricated Products	1	0.1%	0	0.0%	1	0%
Food Products	23	2.7%	10	3.2%	33	30%
Gold	3	0.3%	0	0.0%	3	0%
Healthcare	26	3.0%	7	2.2%	33	21%
Machinery	28	3.3%	9	2.9%	37	24%
Measuring & Control Equipment	9	1.1%	2	0.6%	11	18%
Medical Equipment	14	1.6%	6	1.9%	20	30%
Metals & Mining	5	0.6%	0	0.0%	5	0%
Other	3	0.4%	1	0.3%	4	25%
Personal Services	10	1.2%	8	2.6%	18	44%
Petroleum & Natural Gas	54	6.3%	36	11.5%	90	40%
Pharmaceutical Products	17	2.0%	3	1.0%	20	15%
Printing & Publishing	13	1.5%	9	2.9%	22	41%
Recreation	5	0.6%	2	0.6%	7	29%
Restaurants & Hotels	31	3.6%	14	4.5%	45	31%
Retail	68	7.9%	29	9.3%	97	30%
Rubber & Plastic Products	13	1.5%	2	0.6%	13	13%
Shipbuilding & Railroad Equipment	3	0.4%	0	0.0%	3	0%
Shipping Containers	6	0.7%	1	0.3%	7	14%
Steel	18	2.1%	3	1.0%	21	14%
Telecommunications	34	4.0%	28	9.0%	62	45%
Textiles	10	1.2%	1	0.3%	11	9%
Tobacco Products	1	0.1%	0	0.0%	1	0%
Transportation	25	2.9%	13	4.2%	38	34%
Utilities	109	12.7%	4	1.3%	113	4%
Wholesale	41	4.8%	13	4.2%	54	24%
Total	**858**		**313**		**1,171**	

Table 18: **Family Ownership and Credit Spread - Continuous Lehman Measure**

The table presents the change in credit spreads during the crisis for family and non-family firms for different loan types based on the heterogeneous exposure to the shock. $LehmanExposure_i$ measures the exposure to the liquidity shock at the firm level and is constructed following Ivashina & Scharfstein (2010). The dependent variable is the credit spread on loans. We report estimates of the following regression: $y_{it} = \alpha + \beta Post_{it} + \gamma LehmanExposure_i + \theta Family_i + \mu Family_i \times Post_{it} + \nu Family_i \times LehmanExposure_i + \delta Post_{it} \times LehmanExposure_i + \phi Post_{it} \times LehmanExposure_i \times Family_i + \zeta X_{it-1} + \chi Z_{bt-1} + \eta_{bi} + \eta_s + \varepsilon_{it}$, where y_{it} is the credit spread for loans taken out by company i in quarter t. $Post_{it}$ is an indicator variable that takes the value 1 between the fourth quarter of 2008 and the end of 2010, and 0 otherwise. $Family$ is a dummy variable which takes the value 1 for family firms and 0 for non-family firms. X are firm controls. We control for size (logarithm of assets), cash flow, leverage, cash holdings, interest expense and S&P rating. Furthermore, we include controls for bank characteristics (Z_{bt-1}). Bank controls include assets, deposit ratio, capital ratio, profitability, and provision for loan losses. η_s are industry fixed effects. Finally, we add bank fixed effects η_b. In each column, we report estimated coefficients and their standard errors. Standard errors are robust to heteroskedasticity and are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	**(2)**	**(3)**
Variables			
	All Loans	**Term Loans**	**Credit Lines**
Post	141.25***	159.81***	130.45***
	(15.82)	(28.01)	(12.15)
Family	-16.95	-21.05	-20.13
	(11.42)	(15.57)	(12.39)
LehmanExposure	-23.71	-48.63	6.02
	(74.66)	(86.54)	(63.78)
Post × *Family*	11.50	16.26	19.95
	(19.85)	(33.72)	(19.78)
Post × *Lehman*	359.17***	387.79**	259.30**
	(136.55)	(197.01)	(104.72)
Family × *Lehman*	302.92**	225.16*	341.95*
	(148.904)	(132.528)	(177.309)
Post × *Family* × *Lehman*	-522.36**	-549.71**	-510.95**
	(233.82)	(276.89)	(251.65)
Firm Controls	Yes	Yes	Yes
Bank Controls	Yes	Yes	Yes
Bank Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
Observations	5,075	1,507	3,568
R^2	0.43	0.38	0.52

Table 19: **Credit Spread by Lehman Exposure for Term Loans and Credit Lines**

The table presents the change in credit spreads during the crisis for family and non-family firms for different loan types. The sample is divided into firms that maintain relationships with financial institutions highly exposed ($LehmanExposure_i$ is at the top 25% of the distribution) or less exposed (bottom 25%) to the Lehman collapse, so that we compare family and non-family firms with similar exposure to the shock.Lehman Exposure measures the exposure to the liquidity shock at the firm level and is constructed following Ivashina & Scharfstein (2010). The dependent variable is the credit spread on loans. We report estimates of the following regression: $y_{it} = \alpha + \beta Post_{it} + \gamma Family_i + \delta Post_{it} \times Family_i + \zeta X_{it-1} + \theta Z_{bt-1} + \eta_b + \eta_s + \varepsilon_{it}$, where y_{it} is the credit spread for loans taken out by company i in quarter t. $Post_{it}$ is an indicator variable that takes the value 1 between the fourth quarter of 2008 and the end of 2010, and 0 otherwise. $Family$ is a dummy variable which takes the value 1 for family firms and 0 for non-family firms. X are firm controls. We control for size (logarithm of assets), cash flow, leverage, cash holdings, interest expense and S&P rating. Furthermore, we include controls for bank characteristics (Z_{bt-1}). Bank controls include assets, deposit ratio, capital ratio, profitability, and provision for loan losses. η_s are industry fixed effects. Finally, we add bank fixed effects η_b. In each column, we report estimated coefficients and their standard errors. Standard errors are robust to heteroskedasticity and are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Variables								
	Term Loans				**Credit Lines**			
	High Lehman		**Low Lehman**		**High Lehman**		**Low Lehman**	
Post	257.96***	235.38***	152.44***	173.53***	181.14***	163.08***	122.63***	120.63***
	(33.81)	(62.37)	(28.39)	(40.77)	(10.90)	(18.26)	(9.14)	(14.57)
Family	-19.30	-0.98	7.45	-3.06	30.27	26.38	-23.18	-11.35
	(27.01)	(21.53)	(35.21)	(37.30)	(19.61)	(17.01)	(17.44)	(9.51)
Post × *Family*	-123.10***	-120.87***	-36.17	-25.15	-42.05*	-46.95**	15.55	13.66
	(40.47)	(45.58)	(41.22)	(42.82)	(23.73)	(19.99)	(16.38)	(15.04)
Firm Controls	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank Controls	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fixed Effects	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	614	471	409	359	829	740	1,043	974
R^2	0.32	0.37	0.22	0.23	0.45	0.56	0.35	0.46

Table 20: **Credit Spread - High/Low Delta**

The table presents the change in credit spreads during the crisis for family and non-family firms for different loan types based on the heterogeneous exposure to the shock. The sample is divided into firms that maintain relationships with financial institutions highly exposed ($\Delta\tilde{L}_{i,s}$ is at the top 25% of the distribution) or less exposed (bottom 25%) to the Lehman collapse. $\Delta\tilde{L}_{i,s}$ measures the availability of bank credit at the firm level and is constructed following Chodorow-Reich (2014). The dependent variable is the credit spread on loans. We report estimates of the following regression: $y_{it} = \alpha + \beta Post_{it} + \gamma Family_i + \delta Post_{it} \times Family_i + \zeta X_{it-1} + \theta Z_{bt-1} + \eta_t + \eta_b + \eta_s + \varepsilon_{it}$, where y_{it} is the credit spread for loans taken out by company i in quarter t. $Post_{it}$ is an indicator variable that takes the value 1 between the fourth quarter of 2008 and the end of 2010, and 0 otherwise. $Family$ is a dummy variable which takes the value 1 for family firms and 0 for non-family firms. X are firm controls. We control for size (logarithm of assets), cash flow, leverage, cash holdings, interest expense and S&P rating. Furthermore, we include controls for bank characteristics (Z_{bt-1}). Bank controls include assets, deposit ratio, capital ratio, profitability, and provision for loan losses. η_t are year fixed effects and η_s are industry fixed effects. Finally, we add bank fixed effects η_b. In each column, we report estimated coefficients and their standard errors. Standard errors are robust to heteroskedasticity and are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Variables						
	High Delta			**Low Delta**		
	All	Term Loans	Credit Lines	All	Term Loans	Credit Lines
Post	229.78***	298.11***	176.13***	113.89***	78.70**	116.14***
	(34.67)	(65.55)	(22.62)	(15.95)	(37.32)	(14.13)
Family	7.81	-16.93	10.66	0.45	11.27	-8.07
	(17.53)	(26.07)	(17.95)	(11.27)	(30.49)	(8.86)
Post × *Family*	-59.42**	-84.71**	-21.76	-15.86	-32.75	-3.74
	(31.28)	(50.18)	(27.12)	(14.88)	(35.78)	(13.34)
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
Bank Controls	Yes	Yes	Yes	Yes	Yes	Yes
Bank Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,188	523	665	1,328	277	1,051
R^2	0.37	0.37	0.49	0.44	0.42	0.51

Table 21: **Subsample of Borrowers Borrowing From the Same Lender the Same Type of Loan**

The table focuses on the subsample of firms borrowing during the crisis from the same lender the same type of loan and presents the change in credit spreads during the crisis for family and non-family firms accounting for the heterogeneous exposure to the shock. The sample is divided into firms that maintain relationships with financial institutions highly exposed ($LehmanExposure_i$ is at the top 25% of the distribution) or less exposed (bottom 25%) to the Lehman collapse. Lehman Exposure measures the exposure to the liquidity shock at the firm level and is constructed following Ivashina & Scharfstein (2010). The dependent variable is the credit spread on loans. We report estimates of the following regression: $y_{it} = \alpha + \beta Post_{it} + \gamma Family_i + \delta Post_{it} \times Family_i + \zeta X_{it-1} + \theta Z_{bt-1} + \eta_b + \eta_s + \varepsilon_{it}$, where y_{it} is the credit spread for loans taken out by company i in quarter t. $Post_{it}$ is an indicator variable that takes the value 1 between the fourth quarter of 2008 and the end of 2010, and 0 otherwise. $Family$ is a dummy variable which takes the value 1 for family firms and 0 for non-family firms. X are firm controls. We control for size (logarithm of assets), cash flow, leverage, cash holdings, interest expense and S&P rating. Furthermore, we include controls for bank characteristics (Z_{bt-1}). Bank controls include assets, deposit ratio, capital ratio, profitability, and provision for loan losses. η_s are industry fixed effects. Finally, we add bank fixed effects η_b. In each column, we report estimated coefficients and their standard errors. Standard errors are robust to heteroskedasticity and are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	**(2)**
Variables		
	High Lehman	**Low Lehman**
Post	133.74***	149.72***
	(27.01)	(17.57)
Family	26.55	-5.63
	(23.47)	(11.55)
Post × *Family*	-59.32**	-15.41
	(26.20)	(20.25)
Firm Controls	Yes	Yes
Bank Controls	Yes	Yes
Bank Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	Yes
Observations	813	880
R^2	0.47	0.42

Table 22: **Family Ownership and Strictness**

The table explores the change in covenant strictness during the crisis for family and non-family firms. The sample is divided into firms that maintain relationships with financial institutions highly exposed ($LehmanExposure_i$ is at the top 25% of the distribution) or less exposed (bottom 25%) to the Lehman collapse, so that we compare family and non-family firms with similar exposure to the shock. Lehman Exposure measures the exposure to the liquidity shock at the firm level and is constructed following Ivashina & Scharfstein (2010). The dependent variable is the covenant strictness measure constructed following Murfin (2012) that reflects the probability that a firm violates any of the covenants over the next quarter. We report estimates of the following regression: $y_{it} = \alpha + \beta Post_{it} + \gamma Family_i + \delta Post_{it} \times Family_i + \zeta X_{it-1} + \theta Z_{bt-1} + \eta_b + \eta_s + \varepsilon_{it}$, where y_{it} is the credit spread for loans taken out by company i in quarter t. $Post_{it}$ is an indicator variable that takes the value 1 between the fourth quarter of 2008 and the end of 2010, and 0 otherwise. $Family$ is a dummy variable which takes the value 1 for family firms and 0 for non-family firms. X are firm controls. We control for size (logarithm of assets), cash flow, leverage, cash holdings, interest expense and S&P rating. Furthermore, we include controls for bank characteristics (Z_{bt-1}). Bank controls include assets, deposit ratio, capital ratio, profitability, and provision for loan losses. η_s are industry fixed effects. Finally, we add bank fixed effects η_b. In each column, we report estimated coefficients and their standard errors. Standard errors are robust to heteroskedasticity and are clustered by firm. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% level, respectively.

	(1)	**(2)**
Variables		
	High Lehman	**Low Lehman**
Post	-0.019	-0.014
	(0.015)	(0.011)
Family	-0.004	0.011
	(0.012)	(0.008)
Post × *Family*	0.020	-0.014
	(0.013)	(0.012)
Firm Controls	Yes	Yes
Bank Controls	Yes	Yes
Bank Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	Yes
Observations	1,332	1,453
R^2	0.08	0.05

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