It's Not You, It's Them: Industry Spillovers and Loan Portfolio Optimization*

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Abstract

I provide evidence that lenders with a high exposure to a particular industry extend loans with a higher covenant strictness to the firms in this industry. Specifically, these lenders deter debt-founded growth and induce a more conservative behavior by including more capital-based covenants and tangible net worth requirements. This is consistent with lenders internalizing industry spillovers arising from product market competition, adjusting loan contract terms to tame borrowers' growth appetite, and thus, maximizing loan portfolio expected returns. These results are not driven by time-varying unobserved heterogeneity at the bank or industry level. Exploiting bank mergers as an exogenous change in lender exposure, I verify these findings are robust to endogeneity concerns and alternative explanations.

JEL: G20, G21, G30, G32, E22
Keywords: Bank concentration, syndicated loans, debt covenants, capital structure, market competition

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1 Introduction

Under a traditional view, a lender extending a loan maximizes the expected return of the loan value by combining the interest rate with a certain covenant structure (Demerjian, 2011; Bradley and Roberts, 2015). Yet, consolidation and increased concentration in the banking sector (Vives, 2016) have led to significant industry-wide exposures of bank portfolios, often resulting in a bank lending to competing borrowers in the same market.[1] Consequently, departing from a strictly bilateral lender-borrower perspective can provide new insights, as lenders with a significant exposure to multiple firms in the same industry are affected by spillovers arising from product market competition (Saidi and Streitz, 2021).[2] Specifically, when a borrower of a lender with a high exposure to the borrower's peers implements a pro-competitive growth strategy, the borrower's success will likely be detrimental to its peers and, thus, to lender's overall portfolio value.

How do lenders that are significantly exposed to several firms competing in the same industry (in the following, for simplicity, called high-exposure banks) mitigate negative spillovers to their loan portfolio when extending a new loan to a borrower in this industry? In this paper, I argue these lenders adjust the strictness of their loan contract terms to curb growth appetite and tame product market competition between rival borrowers, thereby maximizing the expected returns of their total lending portfolio.

The strictness of loan covenants is a key monitoring tool used by lenders because borrowers have strong incentives to avoid breaching them. Thus, by adjusting the strictness of the loan covenants, the lender can set the borrower's distance to technical default when originating the loan (Demerjian and Owens, 2016), inducing borrowers to operate more conservative even well outside of payment default states (Nini et al., 2012).[3]

Previous literature has mainly emphasized the role of covenants in limiting borrower's agency risk (Demerjian, 2019) of extracting wealth from lenders after loan origination (Jensen and Meckling, 1976). In this way, stricter covenants can lead to an increase in firm value by reducing

[1] U.S. banking became increasingly concentrated over the last decades, with a decline in the total number of banks (Janicki and Prescott, 2006) and an increased market share of large banks (Vives, 2016), with the five largest banks representing less than 15% of total assets in 1992 but over a 40% in 2014. Kroszner and Strahan (2014) document that the decrease in the number of banks is related to a sharp increase of bank concentration at the national level, but also to a slight decrease in within-state local concentration.

[2] For example, recent empirical evidence demonstrates the consequences of fire sales and industry contagion, both from the perspective of the lender (Giannetti and Saidi, 2019) and the borrower (Carvalho, 2015), as well as the risk of sensitive information leakage (Asker and Ljungqvist, 2010).

[3] Covenant violation is costly for the borrower as it allows the lender to accelerate their claims and initiate costly renegotiations (Dichev and Skinner, 2002; Chodorow-Reich and Falato, 2017), in turn resulting in a higher influence of the lender on the borrower's corporate policy (Chava and Roberts, 2008; Ersahin et al., 2021). This motivates even very solvent firms to actively avoid technical default (Bradley and Roberts, 2015).

agency conflicts (Smith Jr and Warner, 1979).[4] However, this bilateral lender-borrower view overlooks the additional consequences of a borrower's pro-competitive actions on its industry peers, to which the bank might also be exposed. Given a high industry exposure, a bank's optimal covenant strictness of a marginal loan will thus depend on its pre-existing loan portfolio. High-exposure banks will prefer to increase covenant strictness over and above the level that would be optimal from a bilateral lender-borrower perspective, to induce a more conservative behavior on borrowers when there is the risk that externalities of product market competition deteriorate its exposures to the borrower's peers.

To test my conjecture, I obtain loan-level data from DealScan on large private corporate debt extended by lenders in the U.S. (Schwert, 2018) for the period 1990-2018. I include information on the strictness of loan covenants at the deal level (Demerjian and Owens, 2016), outstanding capital expenditure restrictions (Nini et al., 2009) and borrower characteristics (Compustat). Altogether, this dataset comprises 35,730 loan packages granted to 7,836 borrowers by 90 bank holding companies, with the average bank extending 460 loans deals to 72 different industries, which translates into an exposure of 3.1 borrowers per industry.[5]

I explore differences in loan contract terms between bank-industry pairs conditional on the lenders' industry exposure. I compare loans at origination, assuming exposure matters until end of maturity, and control for loan and borrower characteristics. To rule out other confounding factors, I include bank-quarter fixed effects to capture time-varying unobserved heterogeneity across banks (e.g., differences in credit supply), as well as industry-time fixed effects, to control for differences in loan demand at the industry level (Khwaja and Mian, 2008).

To measure the extent of lenders' industry exposure, I use the share of the outstanding debt extended by a particular lender over the total outstanding debt extended to the industry by all lenders (for simplicity, lending share). I find that high-exposure banks extend loans with stricter covenants: a lending share higher by a one standard deviation translates into a 2.6 percentage points (pp) increase in covenant strictness (Demerjian and Owens, 2016).[6] I verify that this result is robust to different fixed effect specifications.

There are two alternative explanations for this result, in addition to high-exposure banks

[4]See Jensen and Meckling (1976) for a description of the incentives of risky debtors extracting wealth from creditors. See also Smith Jr and Warner (1979); Garleanu and Zwiebel (2009); Demerjian (2011) for further discussions on how contractual provisions limit agency risk.

[5]Each bank-industry pair is defined at the 3-digit SIC level. Following the literature, I focus on lead arrangers (Chakraborty et al., 2018). I exclude loans granted to the government, financial or utilities sector.

[6]Covenant strictness is measured as the loan package aggregate probability of covenant violation at inception date. The probability of violation ranges from 0 to 100 percentage points and is estimated based on the number of covenants, the estimated slack for each covenant and the covariance between financial ratios (Murfin, 2012). Covenant strictness is also estimated specifically for capital related covenants.

including stricter covenants to tame product market competition. First, these lenders may be lending to relatively smaller firms in atomized industries. These firms will be limited in their ability to influence their industry peers through a more conservative behavior, and consequently, including stricter covenants on new loans to these borrowers will not permit the lender to tame product market competition. Rather, the stricter terms may respond to the lower quality of these borrowers. Second, a high industry exposure may provide lenders with a competitive advantage from industry specialization, which allows them to impose stricter terms.

Still, my results remain robust after I control for the number of firms in the industry, use an alternative measure for industry exposure that accounts for the size the borrower within the industry, and include different proxies for industry specialization in the regression, all of which indicates that these alternative explanations are not the main driver of my findings.

To further rule out that the lender share and loan covenant strictness are jointly determined; for example, because banks actively adjust loan contract terms to gain lending share in the industry, I exploit plausibly exogenous changes in lending shares stemming from bank mergers in a IV setting. Because of their nature and size, it is unlikely that these mergers are driven by the interest of the acquirer on a particular industry.[7] The results of the IV estimation confirm that results are robust to endogeneity concerns.

To provide further evidence in line with the conjecture that high-exposure banks include stricter covenants to prevent competition spillovers, I look at two settings in which the lenders' incentives to do so should be more relevant. First, given the asymmetric payoff structure of debt, high-exposure banks will be mainly concerned about the bankruptcy risk of borrower's peers and show less sensitivity from any additional upside on firm performance. Second, high-exposure banks should increase the covenant strictness of new loans when borrower's growth strategies are more likely to be to the detriment of industry peers.

Consistent with this, I find that high-exposure banks are only stricter when the industry peers of the borrower to which the lender is exposed have a high bankruptcy risk.[8] Also, I find that these banks are stricter when dealing with borrowers in mature industries, where growth opportunities are scarcer and firm growth likely leads to intense competition for market share, to the detriment of other peers.

Following, I go more into detail on how high-exposure banks induce a more conservative behavior on their borrowers. As these banks are interested in reducing borrowers' risk-taking,

[7]First, because corporate lending generally represents only a fraction of the balance sheet of these banks. Additionally, I define industry at a granular level (3-digit SIC), for which the lender exposure to a particular industry should also be immaterial for the merger decision.

[8]Measured as the average Z-score of rival borrowers within the industry.

it would be reasonable to observe they extend loans with stricter capital covenants. Capital covenants limit debt-funded growth and align the incentives of the contracting parties 'ex-ante', inducing a more conservative behavior after the loan is granted (Aghion and Bolton, 1992). Indeed, I find that these lenders are especially stricter on capital covenants. Also, they make more use of capital-based covenants (Christensen and Nikolaev, 2012) and demand borrowers to put more 'skin-in the-game' by including additional net worth covenants and tangible net worth requirements.

To deter borrowers from growing excessively, lenders with high industry exposure could also make more use of covenants that reduce investment incentives. In this direction, I find these lenders are less likely to include dividend payout restrictions and their borrowers are more likely to have capital expenditure limits, both curbing investing incentives.[9]

Taken together, these results are consistent with high-exposure banks inducing a more conservative behavior from their borrowers to tame competition and protect their lending portfolios. I further analyze different implications consistent with this conjecture.

As high-exposure banks aim to induce a more conservative behavior on their borrowers, they should also reduce the maturity of their new loans. Shorter maturities allow lenders to revise the terms of loan renewal more often (Myers, 1977; Bhattacharya and Chiesa, 1995; Billett et al., 2007), increasing monitoring frequency and preventing their borrowers from taking risks that could affect their industry peers. I find high-exposure banks complement the inclusion of stricter covenants with shorter loan maturities.

A subsequent question that follows the previous results is why borrowers accept these stricter terms. If stricter terms are merely imposed by rent-extracting banks, we should see that lenders with high industry exposure exert market power by also charging higher interest rates (Cetorelli et al., 2001). Alternatively, these lenders may need to share the benefits of a reduced risk in their portfolios with borrowers to be able to include stricter terms (Bradley and Roberts, 2015). I examine this question by looking at interest rate spreads of new loans and the 'spreads-to-strictness' ratio.[10] In line with the latter, I find evidence suggesting that these lenders extend cheaper loans to incentivize borrowers to accept stricter covenants.[11]

[9]Dividend payout restrictions place a minimum on investment expenditures, making profitable projects less likely to be turned down (Smith Jr and Warner, 1979; Kalay, 1982). On the contrary, the absence of these restrictions implies a reduced incentive for borrowers to reinvest profits. Capital expenditure covenants limit the amount assigned to investment projects or restrict them directly (Nini et al., 2009).

[10]This is, the ratio between the logarithm of the interest rate spread and covenant strictness of the loan, as measured in Demerjian and Owens (2016).

[11]This is consistent with findings in Saidi and Streitz (2021), who argue that a lower interest rate serves as an implicit collusion mechanism between borrowers from a common lender. This is because cheaper rates reduce the limited-liability effect of debt (Brander and Lewis, 1986) and allow borrowers to commit to a less competitive

Finally, if high-exposure banks incentivize their borrowers to be more conservative, this should result in a lower risk for industry peers. Using the average CDS spreads of borrower's peers as a proxy, I estimate the effect of loan announcement on industry risk, conditional on lender's industry exposure. As expected, I find that after banks announce a loan to a borrower in an industry in which they have a high exposure, industry peers experience a relative reduction in CDS spreads.

The findings of this paper contribute to two theoretical discussions. First, the literature on bank concentration has a long tradition analyzing the consequences of concentration on markets and industries. Petersen and Rajan (1995) analyze how bank concentration could shape lending relationships and credit availability, with consequences on firm entry and competition. In this line, Cetorelli and Strahan (2006) provide direct empirical evidence on the implications of bank concentration on industry structure.[12]

More recently, a stream of the literature has revised the implications of bank concentration, emphasizing the relevance of lender's ex-post incentives to internalize the industry spillovers of their own credit decisions. These incentives increase with the pre-existing exposure of the lender and has consequences that can accrue in a benefit for the borrower as well. In particular, Saidi and Streitz (2021) relate bank concentration to lower product market competition, reflected in a lower industry output and higher mark-ups, and find that firms may actively seek a lending relationship with these banks.[13]

I contribute to this discussion by presenting an explicit mechanism through which concentrated lenders tame product market competition, that is, by adjusting the strictness of loan contract terms. By doing so, lenders induce borrowers to have a more conservative behavior and deter them from taking growth strategies that could affect other firms to which the lender is exposed. Moreover, I find evidence suggesting that these lenders exchange stricter covenants for cheaper loans, rather than just imposing these terms.

A second contribution relates to the literature on loan contracting, and more specifically on the purpose and use of debt loan covenants. This literature studies the role of loan contract terms in overcoming agency conflicts between debt and equity holders (Jensen and Meckling,

output strategy. Distinct to their contribution, I present an explicit though non-mutually exclusive mechanism through which common lenders can deter borrowers from taking growth strategies that would negatively affect its overall industry exposure.

[12]See Cetorelli et al. (2001) for a discussion on the heterogeneous effects of concentration across other industries.

[13]See also Favara and Giannetti (2017), who find that lenders with a high share of collateralized mortgage debt in their loan portfolios are more inclined to renegotiate their debt to avoid price-default spirals affecting non-distressed neighboring houses, and Giannetti and Saidi (2019), who find that banks with a high concentration in a particular industry are more prone to lend during downturns to avoid fire sales of specific assets used as collateral.

1976), either through interest alignment or decision right reallocation (Aghion and Bolton, 1992; Garleanu and Zwiebel, 2009), mainly concentrating in the optimal combination of contract terms that maximizes loan value (Bradley and Roberts, 2015) from a bilateral lender-borrower perspective. In this direction, most of the empirical efforts have been directed towards understanding borrower-side determinants for covenant type and tightness (Demerjian, 2011; Christensen and Nikolaev, 2012), with a strong focus on the consequences of covenant violation (Chava and Roberts, 2008; Nini et al., 2012; Gu et al., 2017; Ersahin et al., 2021).

Instead, I turn attention to the importance of lender's pre-existing portfolio as a determinant of the loan contract terms for the marginal loan. I contribute showing that high-exposure lenders adjust loan covenant strictness over and above the level that would be optimal from a bilateral lender-borrower perspective to tame competition and protect other firms to which they are also exposed, maximizing the value of their debt holdings at the industry level. This finding is closer to more recent papers looking at the role played by lender attributes in contract terms (Murfin, 2012) and loan renegotiation (Chodorow-Reich and Falato, 2017).

Lastly, a similar setting where a financial agent has incentives to reduce competition (Bernheim and Whinston, 1985) is depicted by the common ownership literature, which studies the implications of institutional investors owing shares across rival firms. For instance, Azar et al. (2018) provide empirical evidence on the anti-competitive implications of common equity holdings in the airline industry, and Antón et al. (2018) extend these findings and elaborate on the managerial incentives behind this behavior.[14]

However, while the potential consequences of common ownership resemble those discussed in this paper, the mechanism presented here reflects a different set of incentives. As debt-holders do not participate in the upside of firm performance, lenders exposed to several borrowers in the same industry will only influence competition incentives when the borrower's peers are at risk of entering the bankruptcy region. In this way, the findings presented here adds evidence to the discussion about the relation between bank concentration and product market competition, one of which channels is the existence of a common lender (Saidi and Streitz, 2021).

The rest of the paper is organized as follows. In the following section I expand on the theoretical background. In Section 3, I explain how my database is constructed and present descriptive statistics. In Section 4, I present the main results supporting the conjecture that high-exposure banks extend loans with stricter covenants. I exploit exogenous changes in lending

[14]These findings have been a matter of debate. For example, Dennis et al. (2021) criticize the findings on anti-competitive effects in the airline industry arguing they derive from measurement error and misinterpretation on the seminal work of O'Brien and Salop (2000).

shares to show that previous findings are robust to endogeneity concerns. In Section 5, I present a more granular analysis to pin down the mechanism behind my finding, looking at different capital-based and negative covenants. In Section 6, I corroborate the use of stricter covenants is consistent with other contract terms, such as loan maturity and interest rate spreads, and show that industry risk is relatively lower when a high-exposure bank is involved. Finally, I present the conclusions of my findings in Section 7 and include complementary material in the Appendix.

2 Theoretical Background

To understand how banks can deter product market competition by adjusting debt covenants, it is useful to review first how a lender defines loan contract terms when interacting with a single borrower. Consider a lender that has agreed to extend a loan to a risky borrower. When defining the initial contract terms, the lender will asses the likelihood that the borrower stops repaying the loan. After evaluating the expected payoffs in each scenario and its probabilities, the lender will estimate a required interest rate in accordance with the risk assumed.

At the same time, the lender can include provisions into the loan contract (i.e., financial covenants) that compel the borrower to guarantee its financial health will stand within pre-established thresholds or that circumscribe its actions in a predetermined way[15]. Their inclusion limits lender's uncertainty about borrower's default risk (Demerjian, 2011) and, consequently, the required interest rate (Bradley and Roberts, 2015). Altogether, the lender will combine these contract terms in such a way that maximizes the expected value of its loan exposure.

The lender may include different covenants, adjusting the exact definition and tightness of the pre-established thresholds (Demerjian and Owens, 2016) to its needs. As an illustrative example of covenant provisions in a loan contract, consider the case of Centex Corp., a home builder company headquartered in Texas, USA. In August 7th, 2003, the firm borrowed $800 million U.S. dollars from a syndicated loan lead by Bank of America[16]. The deal included three financial covenants that compelled the firm to have a maximum leverage ratio of 55%, a tangible net worth that is not below a composite value based on net income and net proceeds from future equity issuance, and a minimum interest coverage ratio of 2.0[17].

To be in agreement with the contract, Centex is obliged to meet all three provisions in each quarterly report. In a hypothetical situation in which any of these covenants is breached, Centex will be in 'technical default', giving Bank of America the right to accelerate payments of the loan. A situation like this would increase bank's bargain power and its capacity to reassess the whole deal (Chodorow-Reich and Falato, 2017).

While in practice a whole renegotiation is usually costly for both sides, the possibility itself generates strong incentives for borrowers to comply with its debt covenants. Moreover, if a breach occurred, the threat of harder consequences would allow the lender to increase its

[15]This is, "financial" or "negative" covenants, respectively

[16]Information obtained from SEC Filings for Centex

[17]Specifically, leverage ratio is defined as the ratio between unsubordinated debt over the sum of consolidated debt and tangible net worth. Minimum interest coverage ratio is defined as teh ratio of EBITDA over interest expenses. Tangible net value should not be below the sum between $1.7 Billion USD and the average between the cumulative consolidated net income and the net proceeds from any future equity issuance.

monitoring activity and even intervene the firm (Chava and Roberts, 2008; Nini et al., 2009). In sum, the consequences of their infringement make covenants a useful tool to influence borrower's corporate policy, even well outside of payment default states (Nini et al., 2012).

Specifically, the lender can adjust its control over the firm by defining how close to technical default will the borrower be when originating the loan. By introducing 'stricter' covenants in the contract, the lender reduces the agency uncertainty associated with the loan (Demerjian, 2019), that is, the risk upcoming from borrower's actions after loan origination. Stricter covenants will induce the borrower to be more conservative, protecting the value of lender's exposure by, for example, detering the borrower from embarking on an aggressive investment that exposes both, lender and borrower, to a risk that exceeds what was previously agreed.

Under a strictly bilateral perspective, the optimal strictness will be determined by the risk represented by the borrower over the loan value (Demerjian and Owens, 2016). However, this view overlooks the additional impact of the borrower on other firms to which the lender also has exposure.

When the lender has a high industry exposure, its sensitivity to competition between rival borrowers becomes more acute. Following the previous example, in 2003, Bank of America extended a loan to Centex while also being exposed to D.R. Horton, another home building company to which it had recently committed $775 million U.S. dollars[18]. All else equal, if Centex had decided to grow and gain market share, the bank would have been affected both directly and indirectly.

To start with, Bank of America would be negatively impacted by D.R. Horton's bankruptcy risk being augmented since its margins are being disputed by Centex. In addition, D.R. Horton's incentives to retaliate increase, pushing the firm to invest in ambitious projects, reduce margins and increase its leverage, exceeding its original risk. This amplifies competition within the industry and deteriorates Bank of America's loan portfolio. On top, borrower's success in outperforming their peers provides little benefit to the lender, who mostly cares about borrowers' repayment capacity.

More generally, when a borrower implements a pro-competitive growth strategy, its success will be to the detriment of industry peers to which the bank is also exposed. Contrary to equity-holders, creditors will perceive little benefit if the former is successful. However, they will be negatively affected by their exposure to competing borrowers. Moreover, such a strategy will result retaliation and borrowers taking additional risk.

[18]Through a revolving credit agreement granted in January, 2002. Obtained from SEC Filings for D.R. Horton

While rational for the borrower, from the perspective of the bank this level of competition will be excessive as it has an overall negative effect over its industry exposure. Therefore, to maximize the expected returns of its loan portfolio, the bank will adjust the contract terms of the marginal loan conditioned by its pre-existing portfolio (Figure 1) taking into account the spillovers of its own lending decision. Specifically, increasing covenant strictness will reduce competition externalities by deterring borrowers from taking growth strategies that could jeopardize the value of bank's debt holdings at the industry level.

This idea follows previous discussions in the literature. For example, when analysing the interaction between firm's financial conditions and industry peers, Carvalho (2015) shows that borrowers suffer from greater valuation losses if the long-term debt of a competitor is maturing during an industry downturn, amplifying the shock through a reduction in their collateral value. Giannetti and Saidi (2019) find evidence on how industry negative externalities "feedback" into bank's lending decision, where banks with high lending shares are more likely to provide liquidity during downturns to avoid fire sales ignition within the industry. Moreover, they observe that lenders also provide liquidity to new borrowers if this industry is in distress.

[Insert Figure 1 here]

In this direction, Saidi and Streitz (2021) argue that bank concentration is associated with a reduction in product market competition, reflected both in lower industry output and higher mark-ups. Authors show that common lenders extend cheaper loans, which works as an implicit mechanism that moderates the competitive effect of debt. Assuming higher marginal returns in better states of the world, a higher cost of debt would pre-commit borrowers to a more aggressive output strategy (i.e., limited-liability effect (Brander and Lewis, 1986)). However, by providing cheaper loans, common lenders moderate the limited liability effect of debt, and implicitly allow firms to commit to relatively less aggressive output strategies.

Following this discussion, I present an explicit mechanism through which high-exposure banks deter product market competition, complementary and non-mutually exclusive with this previous explanation. In short, I show that these lenders tend to provide loans with stricter covenants, reducing both the risk of the borrower and its competitors. Stricter covenants provide them with a tighter control on borrower's corporate policy, inducing a more conservative behavior and deterring debt-based growth that could reduce the overall value of the bank's exposure.

To demonstrate this, in the following sections I will compare the covenant strictness (Demer-

jian and Owens, 2016) of loans granted by banks with different lending shares in each industry and expand on other loan contract terms which allows me to characterize their behavior in more detail.

3 Data Sources and Descriptive Statistics

To test for differences in loan contract terms conditional on bank's industry exposure, I incorporate information on corporate loans, borrowers and lenders. I obtain information on private corporate debt extended in the U.S. during 1990-2018 from DealScan, which has the most extensive coverage on loan deals with comprehensive historical information on contract terms and loan pricing. I aggregate loan information at the loan deal level, and identify the industry of the borrower at the 3-digit SIC.[19]

I get financial information on borrowing firms from Compustat, including quarterly information on firms' balance sheet and income statement figures, as well as other characteristics relevant to the analysis (e.g., rating scores). I follow Chava and Roberts (2008) to merge borrower characteristics with loan-level data. I incorporate information on firm-level CDS spreads, which I obtain from Markit. A relevant part of my analysis is centered around different measures of loan covenant strictness, which I obtain from Demerjian and Owens (2016)[20]. Also, I include information about restrictions on capital expenditures from Nini et al. (2009).[21]

I follow Schwert (2018) to identify lenders across time, which allows me to track their loan portfolios at the bank holding level in a quarterly basis. In line with the prevailing literature, I attribute the whole amount of the loan to the lead arranger of the deal, in charge of its active management (Ivashina, 2009), and distribute it in equal parts if there is more than one leader. To identify lead arrangers I follow Chakraborty et al. (2018), who rank lenders in a loan based on the variables "lead arranger" and "lead arranger credit"[22]. I compare loans when first

[19] I exclude loans granted to the government, financial or utilities sector. Also, I assume the industry to be its most frequently reported industry at that period to correct for the cases in which a firm reports to have more than one industry during the same period. These assumptions do not significantly affect my results, which are robust to this correction.

[20] Authors provide estimates on the loan package aggregate probability of covenant violation at inception date. Murfin (2012) is the first to estimate the aggregate probability of financial covenants violation (or covenant "strictness") based on the number of covenants, the estimated slack at inception for each covenant, and the co-variance between financial ratios. Demerjian and Owens (2016) build on this to calculate a non-parametrically measure for a broader set of deals, including more covenant categories and minimizing the measurement error arising from covenant-specific definitions. Covenant strictness is also estimated separately for capital and performance related covenants. In all cases, the probability of violation ranges from 0 to 100 percentage points. The measure is available for loans with covenants originated from 1994 till 2020.

[21] I match restrictions on capital expenditures for all the firms that have loans with at least one covenant (i.e. Covenants = "Yes") on my sample.

[22] Authors develop a ranking hierarchy. For each loan package, the lender(s) with the highest ranking is (are) considered the lead arranger(s). The ranking the following: " 1) lender is denoted as "Admin Agent", 2) lender is denoted as "Lead bank", 3) lender is denoted as "Lead arranger", 4) lender is denoted as "Mandated lead arranger", 5) lender is denoted as "Mandated arranger", 6) lender is denoted as either "Arranger" or"Agent" and has a "yes" for the lead arranger credit, 7) lender is denoted as either "Arranger" or "Agent" and has a "no" for the lead arranger credit, 8) lender has a "yes" for the lead arranger credit but has a role other than those previously listed ("Participant" and "Secondary investor" are also excluded), 9) lender has a "no" for the lead arranger credit but has a role other than those previously listed ("Participant" and "Secondary investor" are also excluded), and 10) lender is denoted as a "Participant" or "Secondary investor"". Similarly to the authors finding, approximately 90% of the loan packages in the sample have a lender that is ranked 6 or higher. I exclude

originated, and assume exposure matters until end of maturity. To approximate the time lag between the effective moment in which banks and firms commit to loan contract terms and the reported start date, I follow Murfin (2012), and consider the origination date of a package 90 days prior to the one reported in DealScan.

Mainly, I conjecture that high-exposure banks extend loans with stricter covenants to curtail pro-competitive growth strategies from rival borrowers that can adversely affect the lender's loan portfolios. My variable of interest is bank's lending share at the industry, which I use to proxy for the lender's industry-wide exposure and its incentives to internalize the negative spillovers from product market competition through the adjustment of loan contract terms. Similar to Giannetti and Saidi (2019) and Saidi and Streitz (2021), I define the bank's lending share as the proportion of outstanding loans originated by lender b in industry i, divided by all outstanding loans issued to the industry, both estimated as the average dollar amounts over the previous five years[23]:

$$Lending\ Share_{b,i,t} = \frac{\sum Outstanding\ loans\ from\ bank_{b,l,i,t}}{\sum Total\ Outstanding\ loans_{i,l,t}} \quad (1)$$

In Table 1, I present the definition of the main variables used in the empirical section, together with relevant descriptive statistics associated with these variables in Table 2.

[Insert Table 1 here]

[Insert Table 2 here]

Altogether, I end up with information on 35,730 loan packages granted to 7,836 borrowers by 90 Bank Holding Companies[24]. Observations are unique at the bank-deal level, with loans being arranged by one or more lenders to a single firm in a particular industry.

In my sample, the average bank extended 460 loans deals to 72 different industries. The average Bank-Industry pair is exposed to 3.1 (2.4) borrowers per industry in average (median), and its average (median) industry lending share is 19.9% (10.4%) at loan origination. The average loan has a general strictness of 37.8 (on a scale of 0 to 100), a capital strictness of 10.4,

any loan for which I cannot identify at least one lead arranger. Results are robust to using the categories in the lender role description, as in Ivashina (2009).

[23] As a first control on the joint determination between bank lending share and loan contract terms, I lag the explanatory variable by one year or four quarters. In line with the average maturity of a loan, I consider the average share over five years. That is, twenty quarters, from $t-4$ to $t-23$. I verify that my results are robust to alternative time frames on the explanatory variable in the Appendix section.

[24] For the purpose of comparison, I keep those lenders with at least 15 loans across the sample, however, this assumption does not affect the results in any significant way. When I refer to the bank, bank holding company or lender, I mean the lead arranger of the loan (Schwert, 2018).

a capital intensity of 0.71, a maturity of 47 months and an average spread of approximately 199 basic points.

4 Empirical Analysis

4.1 Loan Covenant Strictness

According to my conjecture, high-exposure will be negatively affected by the competition between rival borrowers, and thus, will have the incentives to adjust contract terms to tame product market competition. By including harsher terms, these banks will a have tigther control over borrowers' corporate policy (Nini et al., 2012; Chodorow-Reich and Falato, 2017), inducing conservatism and curbing pro-competitive growth strategies that could reduce the overall value of the bank's exposure to the industry.

To test this, I begin by comparing the covenant strictness on new loans conditional on the industry exposure of the bank. As a lender holds a larger share of the outstanding debt extended to the industry, it is more likely to be affected by the interaction between competing borrowers and assigning an increasing weight to the spillovers of its own lending decision (Giannetti and Saidi, 2019). Therefore, I expect banks with a higher lending share to extend loans with stricter covenants.

To rule out other confounding factors, I include bank-quarter fixed effects to capture time-varying unobserved heterogeneity across banks (e.g., differences in credit supply), loan and borrower risk characteristics, and industry-time fixed effects, to control for selection and differences in loan demand at the industry level (Khwaja and Mian, 2008). The empirical test is specified as follows:

$$Loan\ Covenant\ Strictness_{b,l,i,t} = \beta_1 Lending\ Share_{b,i,\overline{t-4}} +$$

$$+\gamma\ firm\ controls_{l,i,t-1} + \delta\ Loan\ controls_{l,i,t} + \alpha_b + Industry_i \times \alpha_t + \epsilon_{b,l,i,t} \quad (2)$$

Where *Loan Covenant Strictness* is defined in Table 1 and *Lending Share* proxies the industry exposure of the bank, as defined in equation 1. I control for firm and loan characteristics include size, leverage, tangibility, cash-flow-to-debt ratio, interest coverage, and profitability, all winsorized at 1%. Also, I control for firm rating (Non-rated are coded as zero) and loan characteristics including loan type, log of loan maturity, log of loan amount, and the number of total leaders.

[Insert Table 3 here]

My main specification is presented in Column 2 of Table 3. I find that a higher lending

share by one standard deviation translates into 2.9 pp increase in the covenant strictness of the new loans extended, and 1.2 pp without taking account industry-time fixed effects (Column 1). Complementary to this, I find a similar effect when performing the empirical analysis at the bank-industry level (Columns 3-4), with a one standard deviation increase in lending share translating into a 3.0 pp increase in average covenant strictness, and banks on the top 25% of lending share extending loans with 4.5 pp higher average covenant strictness.

Alternative explanations. There are two alternative explanations for this result, in addition to high-exposure banks including stricter covenants to tame product market competition. First, high exposure banks may be lending to relatively smaller firms in atomized industries. These firms will be limited in their ability to influence their industry peers through a more conservative behavior, and consequently, including stricter covenants on new loans to these borrowers will not permit the lender to tame product market competition. Rather, the stricter terms may respond to the lower quality of these borrowers.

To control for this, I first consider the number of firms in the industry. Additionally, I use an alternative measure for bank's high exposure consistent with the spillovers internalization mechanism. I proxy the extent of bank's exposure to influential borrowers in the industry by looking at the "*Bank-Industry HHI*" of each bank-industry pair. I construct this metric summing the squared lending shares of a bank with respect to each firm (Bank-firm lending share. For simplicity: *BFLS*).

$$BFLS_{b,f,t} = \frac{\sum Outstanding\ loans\ from\ bank\ to\ firm_{b,l,f,t}}{\sum Total\ Outstanding\ loans\ to\ firm_{f,l,t}} \quad (3)$$

Where *BFLS* is estimated as the outstanding loans extend by bank b over total outstanding loans extend to the firm by all banks, both measures in dollar amounts and estimated over the previous five years (twenty quarters, from $t-4$ to $t-23$). *BFLS* is then summed at the industry level and weighted by the relevance of the firm in the industry, as reflected by its market share in terms of sales:

$$Bank\ Industry\ HHI_{b,i,t} = \sum [Firm\ market\ share_{f,i,t} * (BFLS_{b,f,t})^2] \quad (4)$$

However, I find that after controlling for the number of firms, the higher strictness observed for highly-exposed banks remains practically unchanged (Column 1 in Table 4). At the same time, the effect of the *Bank-industry HHI* remains significant, with a one standard deviation increase in the measure being associated with a 1.6 pp rise in covenant strictness (Column 2 of

Table 4). These indicates that my results do not appear to be driven by high exposure banks lending to small firm in atomized industries.

[Insert Table 4 here]

Alternatively, higher lending shares may capture additional factors besides the ex-post incentives to internalize competition spillovers. In particular, it may capture an information advantage from bank specialization on the industry. An information advantage allows the lender to reduce uncertainty more efficiently, inducing these lenders to provide loans with more lenient conditions (Giometti and Pietrosanti, 2022). However, this efficiency may also provide a competitive advantage that allows them to impose stricter covenants, which would entangle the interpretation of the findings presented above.

I account for this explanation of the results in two different ways. First, I control for the relative share of the industry in bank's portfolio, which indicates a relative focus of bank's monitoring resources within the exposures of the bank. Second, I measure bank specialization based on abnormally large lending shares on a particular industry (Paravisini et al., 2020), which better captures an information advantage of the bank over other potential lenders.

As shown in Column 3 of Table 4, the coefficient of interest remains unaltered when controlling for portfolio concentration, with a one standard deviation increase lending share translating into a 3.0 pp increase in covenant strictness. Interestingly, when using abnormally large lending shares to proxy for bank specialization, I find that the relevance of the internalization of competition spillovers is stronger, with a lending share higher by a one standard deviation translates into a 4.9 pp increase in covenant strictness (Column 4 of Table 4). This suggests that the effect is rather non-monotonic and driven by less extreme values of lending shares.[25]

Altogether, these empirical results are consistent with the conjecture that high-exposure banks internalize industry spillovers by extending loans with stricter covenants to tame competition, while other alternative explanations do not appear to be the main driver of this finding.

Mature industries and risky rival borrowers I explore further implications of this conjecture. As high-exposure banks include stricter covenants to protect their overall debt holdings in a particular industry, I would expect these banks are more strict when loans are extended to firms that are more likely to jeopardize the value of their exposure to rival borrowers. I look at two settings in which lenders' incentives to prevent competition spillovers should be stronger.

[25] At the same time, specialized banks extend loans with more lenient covenants, which is consistent with findings in (Giometti and Pietrosanti, 2022).

First, given the asymmetric payoff structure of debt, banks will be mainly concerned about the bankruptcy risk of their borrowers and perceive little benefit from any additional upside on firm performance. Consequently, high-exposure banks should increase the covenant strictness of new loans only when borrower's growth is more likely to increase the bankruptcy risk of industry peers.

To test this, I analyze if lenders extend loans that are stricter when the borrower's peers, to which the lender also has exposure, have a higher bankruptcy risk. I estimate the average risk of all the competing borrowers (Altman's Z-Score) of the firm to which the loan is extended, defined within the industry. I then interact the *Lending Share* of the bank with the average risk of rival borrowers.

$$Loan\ Covenant\ Strictness_{b,l,i,t} = \beta_1 Lending\ Share_{b,i,\overline{t-4}} +$$

$$\beta_2 Rival\ Peers'\ Risk_{i,t-4} + \beta_3 [Lending\ Share_{b,i,\overline{t-4}} * Rival\ Peers'\ Risk_{i,t-4}]$$

$$+\gamma\ firm\ controls_{l,i,t-1} + \delta\ Loan\ controls_{l,i,t} + \alpha_b + Industry_i \times \alpha_t + \epsilon_{b,l,i,t} \quad (5)$$

Where *Rival Peers' Risk* is the average risk of other borrowers in the industry to which the bank is also exposed, estimated at the time of loan origination to the borrower. Risk is measure using Altman's Z-score in the previous year $(t-4)$.[26] The rest of the equation follows the same empirical specification as in equation 2. The coefficient of interest is β_3, which captures the additional effect of bank's *lending share* on loans extended to firms with risky borrowing peers.

As expected, I find that high-exposure banks include stricter covenants when the borrower's peers are closer to bankruptcy, and could therefore be more affected if the borrower initiated a pro-competitive growth strategy. As shown in Column 1 of Table 5, high-exposure banks include stricter covenants only when rival borrowers are at risk, with the effect diminish as the Z-score increases (and the peers' risk diminishes). For the ease of interpretation, I split safe vs. risky borrowing peers, using the average industry Z-score of borrowing peers at 3.00 (Column 2 of Table 5).

Splitting borrowing peers in such a way corroborates that high-exposed lenders provide loans with stricter covenants only when borrowing peers are risky, with a lending share higher by a one standard deviation translating into a 5.9 pp increase in covenant strictness when the borrower has risky rival borrowers in the same industry. In line with this, the effect in not significantly

[26] Z-score at the firm level is estimated as $1.2 \times \frac{cash}{assets} + 1.4 \times \frac{undistributedprofit}{assets} + 3.3 \times \frac{EBIT}{assets} + 1 \times \frac{marketvalueofequity}{liabilities} + 0.6 \times \frac{commonequity}{liabilities}$. An average Z-score below 3.00 indicates rival borrowers can have significant risk of entering into bankruptcy.

different from zero if the rival borrowers are safe. This is consistent with the incentives of the lender to prevent competition spillovers only being relevant when the rival borrowers of the firm have a high bankruptcy risk.

[Insert Table 5 here]

A similar logic applies to the case in which the borrower is in a mature industry. In these industries, growth opportunities are limited and the expansion a firm is more likely to successful only at the expense of the market share from borrower's peers. In consequence, high-exposure banks will have higher incentives to deter pro-competitive growth strategies in these industries.

To test this, I split industries by their degree of maturity, which allows the identification of differences in lender's incentives, as reflected in the strictness of their loan covenants. I use the following empirical specification:

$$Loan\ Covenant\ Strictness_{b,l,i,t} = \beta_1 Lending\ Share_{b,i,\overline{t-4}} +$$

$$\beta_2 Mature\ Industry_{i,t-4} + \beta_3 [Lending\ Share_{b,i,\overline{t-4}} * Mature\ Industry_{i,t-4}]$$

$$+\gamma\ firm\ controls_{l,i,t-1} + \delta\ Loan\ controls_{l,i,t} + \alpha_b + Industry_i \times \alpha_t + \epsilon_{b,l,i,t} \quad (6)$$

Where *Mature Industry* identifies the relative growth opportunities for each industry based on its median market-to-book ratio in the previous year $(t-4)$.[27] I identify the industry maturity in two different ways. First, I look at the continous variable, where a higher (lower) value reflects higher (lower) growth opportunities for the industry. Alternatively, industries are identified as *Mature* if they are below the 25^{th} percentile previous to loan origination (for the distribution at $t-4$). I include the same control variables and fixed effects as those in equation 2. The coefficient of interest is β_3, which captures the additional effect of bank's *lending share* on loans extended to firms in *mature* industries.

I corroborate that lenders are stricter when growth opportunities are limited. As observed in Column 3 of Table 5. I find that a lending share higher by one standard deviation translates into a 7.9 pp increase in covenant strictness, but the effect gets reversed with a reduction of 3.1 points when growth opportunities are more abundant and borrower's expansion is less likely to be compromising for the solvency of its competitors. Results in Column 4 confirm that high-exposure banks are stricter in mature industries, with a lending share higher by a one

[27] In the appendix, I present similar results when looking at alternative measures such as the industry sales growth and the change in the log market-to-book ratio, and alternative time frames.

standard deviation translates into a 6.1 points increase in loan covenant strictness for borrowers at industries in the bottom 25% of the maturity measure. Although smaller, the effect is also statistically significant when the firm is at a non-mature industry, but still confirms that most of the effect is driven by mature industries.

Taken together, all findings in Table 5 support the view that high-exposure banks deter competition when the expansion of a borrower is necessarily linked with the increase of the bankruptcy risk of other competing borrowers in the same industry.

4.2 IV Approach - Bank Mergers

The evidence provided so far shows that banks with a high lending share extend loans with relatively stricter covenants, particularly when firm growth can deteriorate the financial health of industry peers to which the bank is also exposed. This is consistent with high-exposure banks adjusting the contract terms of new loans to induce a conservative behavior from their borrowers, preventing competition spillovers, and thus, maximizing the expected returns of their lending portfolios.

Still, a concern may be raised about contract terms and lending shares being jointly determined.[28] In the previous tests, I cope with this by measuring lending shares with a lag of four quarters with respect to loan origination. To further rule out this concern, I repeat the analysis on loan contract strictness using a two-staged IV regression based on exogenous changes in lending shares stemming from bank mergers.

Because of their nature and size, it is unlikely that these mergers are driven by the interest of the acquirer on a particular industry. First, because I define industry at a granular level (3-digit SIC), for which the lender exposure to a particular industry should also be immaterial for the merger decision. Additionally, because corporate lending generally represents only a fraction of the balance sheet of these banks.

Therefore, I exploit 28 hand-collected bank mergers taking place between 1994-2016, which endogenously increased the lending share of the surviving banks across industries. Following a similar approach to Saidi and Streitz (2021), if the bank had a merger or acquisition on a particular year, I instrument the survivor's lending share as the sum of the historical share of the two entities, on the last quarter of pre-merger year.[29] I code the rest of the observations as zero. Using this IV measure for lending share ('Lending Share IV'), I estimate its impact on

[28] The setting of loan contract terms may be an active strategy of the bank to actively gain lending share in a particular industry (Petersen and Rajan, 1995).

[29] This is, using the average lending share of the previous twenty quarters.

Loan Covenant Strictness over loans extend within the first three years after loan origination.[30]

The empirical specification goes as follows:

$$Loan\ Covenant\ Strictness_{b,l,i,t+h} = \beta Lending\ Share\ IV_{b,i,\overline{t-4}}$$

$$+\gamma\ firm\ controls_{l,i,t-1} + \delta\ Loan\ controls_{l,i,t} + \alpha_b + Industry_i \times \alpha_t + \epsilon_{b,l,i,t} \quad (7)$$

Where *Loan Covenant Strictness* is observed during the three subsequent years after the bank merger starting at t, i.e., through quarters $t+h$ for $h = 0, ..., 11$, and *Lending Share IV* refers to the incremental lending share of bank b at industry i as a consequence of a bank merger in the same year as $t-4$. Control variables and fixed effects follow those in equation 2.

[Insert Table 6 here]

The results presented in Table 6 (Column 2) show that a lending share increase of one standard deviation, instrumented through increments stemming from a previous merger or acquisition, translates into a 9.0 pp increase in covenant strictness. This result indicates that the main conjecture on high-exposure banks including stricter covenants remains robust to endogeneity concerns.

I further verify that this result is robust to two different concerns. First, I check that the effect is not uniquely driven by extreme increments in the lending share after a bank merger. Second, I verify that the effect is not driven uniquely by mergers taking place in a particular moment in time. For example, several mergers took place during the financial crisis of 2008-2009 after government intervention. Also, many bank mergers occurred the year 1998.

[Insert Table 7 here]

To rule out these concerns, I repeat the test formulated in equation 7 by, first, winsorizing lending shares at the top 10%, and, second, excluding exclude each of these episodes from the instrumental variable approach.[31] As can be observe in Table 7, the results remain robust after taking into account these potential concerns.

[30] For example, if a bank experienced a merger on 1998-3q, the lending share which averages 1993-4q-1998-3q is instrumented with the sum of the average lending shares of each merging side between 1993-1q-1997-4q. In this way, any new contract on 1999, 2000 and 2001 is going to be regressed on the additional lending shares obtained from the acquired bank. In the Appendix, I corroborate that results are robust to only looking at the first year after the merger took place.

[31] In the appendix, I also verify that results remain robust to considering only a single year ahead of the bank merger shock. Then, I show that results are robust to including overlapping mergers - that is, mergers that took place sequentially and too close to each other to be included in the main analysis. Finally, I provide evidence on other contract terms analysed in the following sections (e.g., capital covenant strictness, interest rate spreads, spreads-to-strictness ratio) using a similar IV approach.

5 Capital Covenants and Investment Incentives

In this section I intend to pin down the different channels through which high-exposure banks induce a conservative on their borrowers and deter pro-competitive growth strategies. To do so, I go more into detail on the type of financial covenants used by these lenders, and on which they are more strict.

5.1 Capital covenants

Financial covenants require that one or more financial ratios remain within previously established thresholds, which can restrain borrowers actions. In particular, financial covenants based on capital ratios (in the following, capital-based covenants) align debt and shareholders incentives by imposing costly restrictions on borrowers' capital structure that deter debt-funded growth (Christensen and Nikolaev, 2012). Everything else equal, the compulsory provision of equity will make shareholders more sensitive to loses, motivating borrowers to behave more conservatively as they have more 'skin-in-the-game'. (Jensen and Meckling, 1976; Aghion and Bolton, 1992).

As previously conjectured, high-exposed lenders will be interested in preventing borrowers from taking growth strategies that increase the default probability of industry peers and the risk of retaliation by the latter. Consequently, I expect that they provide loans with stricter capital-based covenants to limit borrowers' debt capacity and growth appetite, while also increasing borrowers' sensitivity to peers' retaliation.

To test for this, I use the following empirical specification:

$$Capital\ Strictness_{b,l,i,t} = \beta Lending\ Share_{b,i,\overline{t-4}}$$

$$+\gamma\ firm\ controls_{l,i,t-1} + \delta\ Loan\ controls_{l,i,t} + \alpha_b + Industry_i \times \alpha_t + \epsilon_{b,l,i,t} \quad (8)$$

Where *Capital Strictness* refers to capital-based covenant strictness, as defined in Demerjian and Owens (2016). The remaining follow the same specifications that in equation 2.

As can be observed in Column 1 of Table 8, indeed high-exposure banks are more inclined to extend loans with stricter capital-based covenants, with a higher lending share by a one standard deviation translating into a 1.2 pp increase in strictness. This results provides further support to the initial conjecture on high-exposure banks internalizing competition spillovers, as it shows that these lenders are interested in limiting debt-funded growth and deter competition ´ex-

ante', which would also prevent from any retaliation effect for increased aggressiveness affecting the borrower itself.

[Insert Table 8 here]

Next, I complement this finding by looking at alternative covenant measures. In previous literature, relevant studies have relied on empirical strategies based on covenant count measures to test their hypothesis (Demerjian, 2011; Bradley and Roberts, 2015). While these measures are less accurate than covenant strictness ones provided in Demerjian and Owens (2016), they are available for a broader set of loan deals, and allow for a more granular analysis on the exact type of covenants used.

I start by counting the number of covenants related to capital requirements (Christensen and Nikolaev, 2012), also refered to as capital covenant 'intensity'. I test for this, I use the following empirical specification:

$$Capital\ Covenants\ Intensity_{b,l,i,t} = \beta Lending\ Share_{b,i,\overline{t-4}}$$

$$+\gamma\ firm\ controls_{l,i,t-1} + \delta\ Loan\ controls_{l,i,t} + \alpha_b + Industry_i \times \alpha_t + \epsilon_{b,l,i,t} \quad (9)$$

Where *Capital Covenants Intensity* refers to the number of capital-based covenants included in the loan contract, and the rest of the specification includes the same specification that in equation 2.

As observed in Column 2 of table 8, high-exposure banks tend to include more capital-based covenants to prevent competition spillovers in the industry. I find that a one standard deviation in lending share increases capital-covenant intensity in 6.3% of a standard deviation, in line with the previous finding on capital strictness.

Next, I expand on which covenants are more used by high-exposure banks by looking at the intensity of covenants in line with the implied mechanism. The conjecture that these banks require borrowers more 'skin-in-the-game' can be narrowly tested by checking on those covenants that require a higher equity stake. First, I look at whether these lenders tend to include more covenants that scrutinize over the net worth of the firm. Secondly, I verify if they tend to be more inclined to require that this net worth is tangible, implicating borrowers in a higher degree. To test this, I use the following empirical approach:

$$Net\ Worth\ Intensity_{b,l,i,t} = \beta Lending\ Share_{b,i,\overline{t-4}}$$

$$+\gamma\ firm\ controls_{l,i,t-1} + \delta\ Loan\ controls_{l,i,t} + \alpha_b + Industry_i \times \alpha_t + \epsilon_{b,l,i,t} \quad (10)$$

Where the explained variable *Net Worth Intensity* refers to count variables summing the total number of net worth related covenants, either by requiring a minimum net worth or a maximum debt over net worth, and the explicit requirement (or not) of this net worth to be tangible. I refer to each as "Net Worth Covenants", "Tangible Net Worth" and "Unspecified Net Worth". For the ease of interpretation, dependent variables are standardised.[32] The rest of the equation includes the same specification from equation 2.

As observed in columns 3 to 5 of table 8, high-exposure banks include more covenants scrutinizing over net worth levels, which limits debt-funded growth, with a one standard deviation increase in lending share implying a 4.0% of a standard deviation increase in total net worth covenants. On the same direction, I verify that most of this loan term adjustment is directed towards tangible net worth covenants, requiring borrowers more 'skin-in-the-game', with a slightly stronger effect of 4.3% of a standard deviation increase. On the contrary, there is no significant difference in the use of "unspecified" net worth covenants, which just refer to net worth without distinguishing from intangible assets.

These results provide both robustness and granularity to the findings presented in previous section and allow to better understand how high-exposure banks prevent competition spillovers by adjusting loan contract terms. By demanding borrowers with a larger equity-stake, in particular in the form of tangible assets, lenders can limit borrower's debt capacity and growth appetite, while also increasing its sensitivity to peers' retaliation. Altogether, this is consistent with a reduction of overall industry risk, which would maximize the expected returns of the loan portfolios of high-exposure banks.

5.2 Negative covenants

high-exposure banks can also curb investment-based growth strategies including negative covenants such as dividend payout and capital expenditures restrictions. These restrictions can reshape the incentives and ability of the firm to undertake investment projects and sustain pro-competitive growth strategy.

On one hand, payout restrictions can operate increasing equity stake marginally if shareholders cannot distribute as much as they would have preferred. On the opposite side, lower chances of including dividend restrictions may decrease shareholder's incentives to reinvest gains. In this

[32]To address any potential issues with using linear regression over count variables (Cohn et al., 2021), I repeat the tests presented in equation 9 and equation 10 using Poisson models and present the results in the appendix.

way, the inclusion of payout restrictions places a minimum on investment expenditures, making profitable projects less likely to be turned down (Smith Jr and Warner, 1979; Kalay, 1982). Consequently, the lack of this restriction could reflect that high-exposure banks are more lenient towards the distribution of profits and prone on reducing the incentives of the borrowers to reinvest them.

In addition, having restrictions on capital expenditures can limit borrowers on the magnitudes and types of investments they make (Nini et al., 2009), reducing also their ability to embark and sustain ambitious investment-based growth strategies.

To compare the likelihood of including payout restrictions in a loan or that a firm has a capex restriction, I present below a set of tests following linear probability models with interacted fixed effects, similar to previous specifications. I include additional tests in the appendix, using non-linear probability models (probit and poisson) consistent with approach in Nini et al. (2009)[33]. All tests are based on the following specification:

$$Loan\ Contract\ Restriction_{b,l,i,t} = \beta Lending\ Share_{b,i,\overline{t-4}}$$

$$+\gamma\ firm\ controls_{l,i,t-1} + \delta\ Loan\ controls_{l,i,t} + \alpha_b + Industry_i \times \alpha_t + \epsilon_{b,l,i,t} \quad (11)$$

Where *Loan Contract Restriction* is a binary dummy that accounts alternatively for the inclusion of payout restriction in a loan or a borrower having a capex restriction at the moment the loan is originated[34]. When looking at payout restrictions, I follow the same specification as in equation 2, and then when looking at capital restrictions I control for growth opportunities and only include Bank-Time fixed effects.

[Insert Table 9 here]

I find lending share is negatively related to the loan impeding dividend payouts and positively related to the probability that the borrower has a restriction in its capital expenditures.

As show in Column 1 of Table 9, a higher lending share by one standard deviation translates into a 1.6 pp decrease in the probability of including a payout restriction, reflecting lender's leniency towards the distribution of profits, which reduces borrower's incentives to reinvest them

[33]Specifically, probit models controlling for relevant characteristics such as growth opportunities, sequentially adding bank-time fixed effects. However, probit models can be inconsistent with FE (Arellano et al., 2005). Consequently, my main approach is based on linear probability models. To account for non-linearity while considering fixed effects, I also replicate these tests using Poisson models (more in Appendix).

[34]Information is obtained from Nini et al. (2009) allows to identify if the borrower has a capex restriction at a particular quarter-year

Based on previous evidence, the possibility that lenders are more restrictive on dividend payouts would have been consistent with their requirements for a higher equity stake from shareholders to align risk-taking incentives. However, considering previous evidence, this is already required through stricter capital covenants (Christensen and Nikolaev, 2012). In this way, payout leniency is more likely to act as a disincentive on reinvesting profits. Additionally, this could also explain how increased mark-ups from lower competition (Saidi and Streitz, 2021) are channeled to shareholders.

In column 2 of table 9, I show that a higher lending share by a one standard deviation translates into a 2.7 pp increase in the probability of the borrower having a capital expenditures restriction, suggesting it is more likely lenders limit firm's ability to implement ambitious investment projects. As a direct consequence, this restrains borrower's capacity to embark and sustain growth strategies to gain market share, protecting other borrowers to which the bank also has exposure.

Altogether, these results corroborate that high-exposure banks make use of these negative covenants to deter investment-based growth and tame product market competition between rival borrowers.

6 Further Implications

In this section I verify different implications of my conjecture. I begin by analysing if high-exposure banks extend loans with shorter maturities, which would be consistent with the use of stricter covenants to influence borrowers' corporate policy. Following, I shed additional light on the reasons behind borrowers accepting this stricter terms, and how high-exposure lenders may incentivize them to do so. Finally, I provide evidence consistent with high exposure banks reducing industry risk, which is a key implication of their intention to induce a more conservative behavior on their borrowers.

6.1 Other contract terms

Loan Maturity. As high-exposure banks aim to induce a more conservative behavior on their borrowers, they may as well reduce the maturity of their new loans.

Shorter maturities allow lenders to revise the terms of loan renewal more often (Myers, 1977; Bhattacharya and Chiesa, 1995; Billett et al., 2007), increasing monitoring frequency and preventing their borrowers from taking risks that could affect their industry peers. At the same time, frequently monitoring and renegotiation of contracts imply higher costs for the lender. On the other hand, high-exposure banks may complement the use of covenants with a shorter loan maturity if stricter covenants reduce renegotiation costs for the lender, which is possible if covenants align the incentives of debt and equity holders, and thus, reduce their incentives to take risk "ex-post".

I verify this following the empirical approach in equation 12, which relates again to equation 2 and substitute the dependent variable for the logarithm of loan maturity. As shown in Table 10, lenders with higher incentives to internalize spillovers appear to complement the use of covenant strictness with a relatively lower maturity in their loans, with a higher lending share by a one standard deviation translating into a 1.1% reduction in loan maturity. This result suggests that in addition to stricter covenants, high-exposure banks are also able to check on their borrowers more often, which allows them to have an earlier awareness over how much risk they are taking and how this could affect other firms to which they are exposed.

Average Loan Spreads and Spreads-to-Strictness Ratio. Following the results presented so far, a subsequent question is why borrowers accept these stricter terms.

If stricter terms are merely imposed by rent-extracting banks, we should see that lenders with high industry exposure exert market power by also charging higher interest rates (Cetorelli

et al., 2001). Alternatively, these lenders may need to share the benefits of a reduced risk in their portfolios with borrowers to be able to include stricter terms (Smith Jr and Warner, 1979; Bradley and Roberts, 2015).[35]

I examine if indeed banks share part of these benefits with their borrowers by reducing the cost of debt, measured as the average interest rate spread of the loan. Additionally, I analyze the relation between these spreads and covenant strictness using a ration between the variables (i.e., "spreads-to-strictness" ratio) which should increase with the cost of debt and decrease with as covenant strictness increases.

I test this using the following empirical specification:

$$Other\ Contract\ Term_{b,l,i,t} = \beta\ Lending\ Share_{b,i,\overline{t-4}}$$

$$+\gamma\ firm\ controls_{l,i,t-1} + \delta\ Loan\ controls_{l,i,t}$$

$$+\alpha_b + Industry_i \times \alpha_t + \epsilon_{b,l,i,t} \quad (12)$$

Where *Other Contract Term* refers alternatively to logarithm of the loan maturity (measured in months), the average drawn spreads at the loan level, weighted by the relative size of each tranche within the loan (whenever this tranche includes information about interest rates spreads) and the 'Spreads-to-Strictness' ratio, which is the ratio between the logarithm of the interest rate spread and covenant strictness of the loan, as measured in (Demerjian and Owens, 2016).[36]. The rest of the equation follows the same specifications that in equation 2.

[Insert Table 10 here]

As shown in table 10, I find evidence suggesting that these lenders extend cheaper loans to incentivize borrowers to accept stricter covenants. I find that a lending share higher by a one standard deviation translates into an approximately 3.0% reduction in loan spreads (Column 3 of Table 10). I also verify this by showing that the new loans extend by high-exposure banks have a lower 'Spreads-to-Strictness' ratio, with a lending share higher by a one standard deviation translating into an approximately 0.09 standard deviations reduction of the ratio. Altogether, these results are consistent with findings in Bradley and Roberts (2015) and Saidi and Streitz

[35]Smith Jr and Warner (1979) argue that even if covenants are costly for borrowers their inclusion can increase the value of the firm by reducing agency conflicts, with this cost-reducing benefits accruing to shareholders. Bradley and Roberts (2015) show that this benefit translates into a lower cost of debt, with covenant inclusion being negatively associated to corporate bond yields.

[36]In the appendix, I verify this result is robust to alternative definitions.

(2021), and indicate that these lenders provide relatively cheaper loans alongside with stricter terms.[37]

6.2 CDS Spreads

Lastly, if high-exposure banks incentivize their borrowers to be more conservative, this should result in a lower risk for industry peers. The evidence shown so far presents a clear picture on how banks adjust contract terms to account for the competition externalities at industries in which they have a high exposure. In short, it appears that high-exposure banks provide stricter but cheaper loans, curb debt-funded growth strategies by requiring borrowers more "skin-in-the-game", and limit the ability of borrowers invest.

[Insert Figure 2 here]

Yet, a question that remains is if indeed these banks are able to reduce industry risk in order to maximize their loan portfolio returns. To analyse this, I test if the risk of industry peers is relatively lower when one of these banks extend a loan to a firm in this industry. In this way, I look at the change in CDS spreads at the industry level, using the following empirical specification:

$$\Delta log(CDS\ Spreads)_{b,l,i,d(t)+v} = \beta\ Lending\ Share_{b,i,\overline{t-4}}$$

$$+\gamma\ industry\ controls_{l,i,d(t-1)} + \delta\ Loan\ controls_{l,i,d(t)} + \alpha_b + Industry_i + \alpha_t + \epsilon_{b,l,i,d(t),v} \quad (13)$$

Where the dependent variable $\Delta log(CDS\ Spreads)_{b,l,i,d(t)+v}$ is the the change in the logarithm of the average CDS spreads of borrower's peers in industry i (excluding the borrower itself), accumulated with respect to base day $d-4$, during the v days d before and after public announcement of loan origination, respectively, for different leads, $v = \{-3, ..., 3\}$. I look at CDS Spreads with 5-year maturity and the changes are trimmed at 1% to control for extreme values.

[Insert Table 11 here]

As can be verified in table 11, the change in CDS spreads is relatively lower after a loan is announced when the loan was originated by a high-exposure bank. I find that a higher lending

[37] Saidi and Streitz (2021) argue that a lower interest rate serves as an implicit collusion mechanism between borrowers from a common lender. This is because cheaper rates reduce the limited-liability effect of debt (Brander and Lewis, 1986) and allow borrowers to commit to a less competitive output strategy. Distinct to their contribution, I present an explicit though non-mutually exclusive mechanism through which common lenders can deter borrowers from taking growth strategies that would negatively affect its overall industry exposure.

share by a one standard deviation translates into a 0.13% reduction in industry peers' average CDS spreads after three days of loan announcement.

7 Conclusions

Altogether, the evidence provided in this paper supports the idea that high-exposure banks maximize the expected returns of their lending portfolios adjusting the strictness of the conditions on their loan contracts to account for competition externalities between rival borrowers.

high-exposure banks are more prone to internalize the spillovers from their own lending decisions (Giannetti and Saidi, 2019), especially those arising from product market competition (Saidi and Streitz, 2021). I present an explicit channel through which these lenders can influence corporate policy and induce further conservatism. I show that these lenders extend loans with stricter contract terms, in particular those related to capital requirements, while charging lower spreads (Bradley and Roberts, 2015) and 'Spreads-to-Strictness' ratio. Stricter covenants allow lenders to have a relatively tighter control on borrowers' corporate policy (Demerjian and Owens (2016); Nini et al. (2012)). Consistent with the previous, I also find that these lenders complement their strategy with relatively shorter maturities. Altogether, this curbs debt-funded growth strategies and reduces product market competition, thus protecting bank's overall exposure at the industry level.

Consistent with this, I find that high-exposure banks become stricter when lending to firms in mature industries, where growth opportunities are limited, and when rival borrowers are at a higher risk of entering into bankruptcy. Also, these lenders are more inclined to include capital expenditures restrictions, and less inclined to include dividend payout ones, lowering the incentives to reinvest profits and sustain investment-based growth strategies. Lastly, I find that high-exposure banks provide loans that are more intense in capital covenants, being more likely to restrain the issue of additional debt and prone to require a higher tangible stake from borrowers, thus reducing risk-taking incentives by requiring more 'skin-in-the-game'.

Altogether, these results shed light on banks loan contracting strategies when departing from a strictly bilateral lender-borrower and taking into account the previous exposure of the lender, showing how high-exposure banks use covenants not only to restrict borrower's agency risk (Demerjian, 2019), but also to prevent the consequences of borrowers' pro-competitive actions on industry peers to which the bank also has a lending exposure.

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8 Figures and Tables

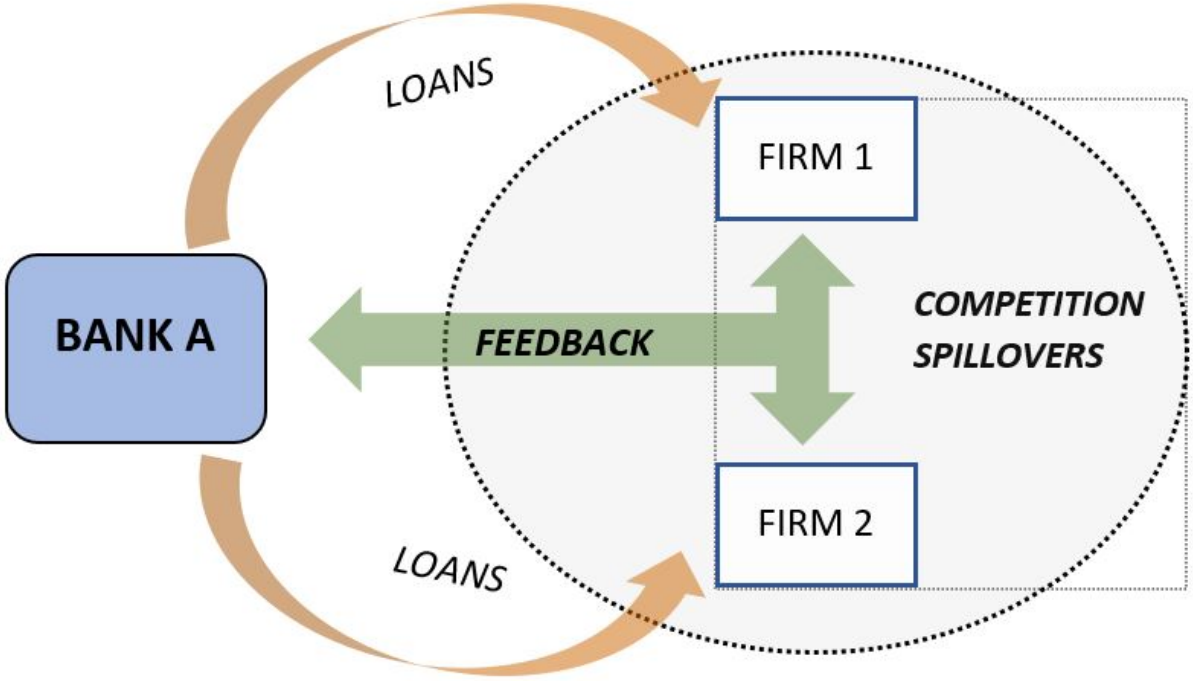

Figure 1: Feedback Effect. Diagram on the internalization of competition spillovers on bank's lending decision

Figure 2: Industry risk reduction after loan announcement. Industry risk is measured as the change in the logarithm of the average CDS spreads of all industry peers of the borrower after loan announcement, accumulated from the three days prior to the three days after loan announcement.

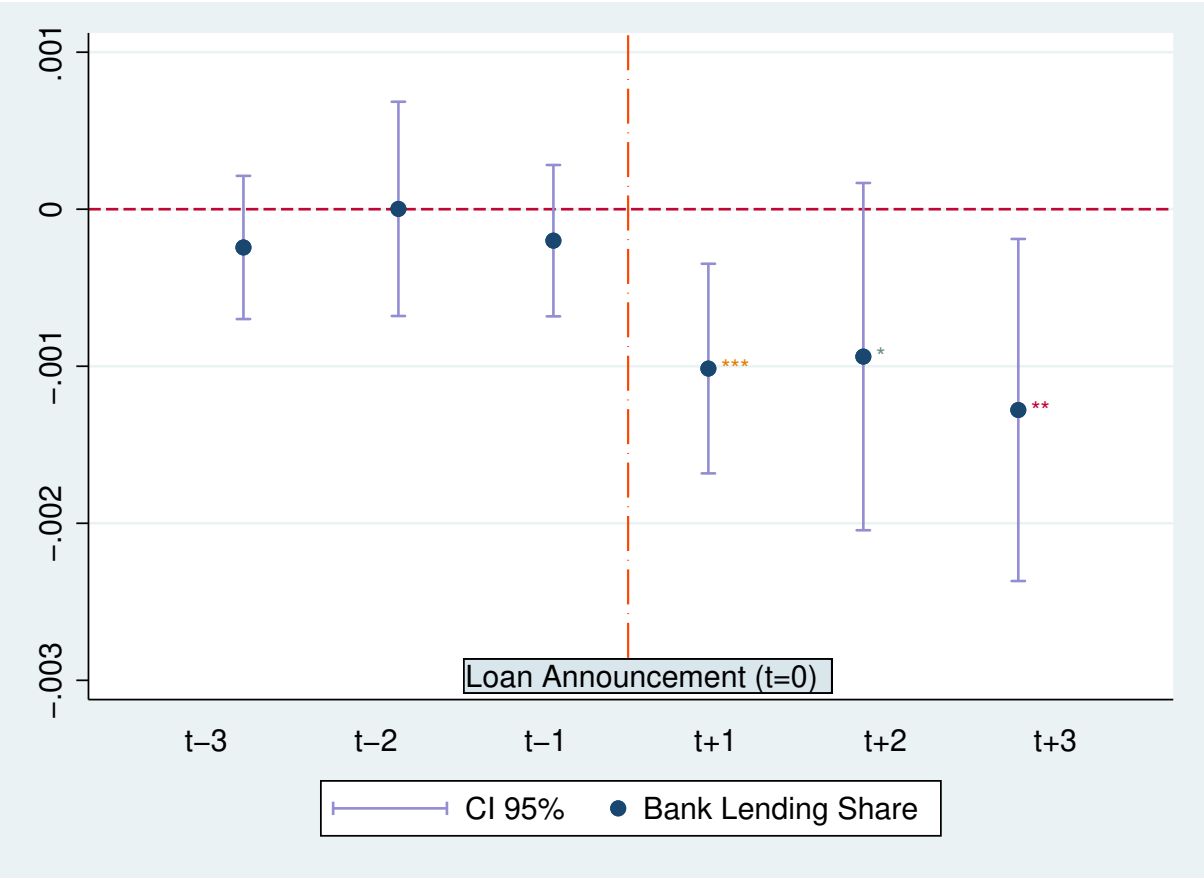

Table 1: Definition of main variables

Panel A: Explanatory variables and controls

Variable	***Description***
Lending Share$^{*}_{b,t-4}$	Bank lending volume to industry over total lending volume to industry
Size$_{f,t-1}$	Natural logarithm of assets
Leverage$_{f,t-1}$	Total debt over equity
Tangible N.W. $_{f,t-1}$	Tangible net worth over assets
Debt-to-Cash-Flow$_{f,t-1}$	EBIT over total debt
Debt Service Ratio$_{f,t-1}$	EBIT over interest expenses and current debt obligations
Profitability$_{f,t-1}$	EBITDA over assets
Rating$_{f,t-1}$	Firm rating. Categorical variable. Non-rated coded as zero
Loan Maturity$_{l,t}$	Log of loan maturity (months)
Loan Amount$_{l,t}$	Log of loan amount (thousand USD)
Number of leaders$_{l,t}$	Total leaders in loan
Loan type$_{l,t}$	Term loan, credit loan, both or special type
Market-to-Book Ratio$_{f,t-4}$	Assets plus difference of market and book value of equity, all divided by assets
Z-score$_{f,t-4}$	Z-score at the firm level is estimated as: $1.2 \times \frac{cash\ holdings}{assets} + 1.4 \times \frac{undistributed\ profit}{assets} + 3.3 \times \frac{EBIT}{assets} + 1 \times \frac{market\ value\ of\ equity}{liabilities} + 0.6 \times \frac{common\ equity}{liabilities}$. An average Z-score below 3.00 indicates rival borrowers can have significant risk of entering into bankruptcy

Panel B: Outcome Variables

Variable	***Description***
Covenant Strictness$_{l,t}$	Ex-ante probability of default of loan based on the slack, variability, number and co-variance of its financial covenants (Demerjian and Owens, 2016) (pp)
Capital Strictness$_{l,t}$	Same measure for sub-group of capital-based covenants, as defined in Christensen and Nikolaev (2012) (pp)
Average Drawn Spreads$_{l,t}$	Logarithm of loan average drawn spread over base rate, as reported in DealScan
Capital Intensity$_{l,t}$	Count measure on capital-based covenants
Net Worth Intensity$_{l,t}$	Count measure on covenants with net worth requirements
Tangible Net Worth Intensity$_{l,t}$	Count measure on covenants with tangible net worth requirements
Payout Restriction$_{l,t}$	Inclusion of dividend payout restriction
Capex Restriction$_{f,t}$	Borrower has a capital expenditures restriction in t (Nini et al., 2009)
CDS Spreads$_{i,f,d(t)}$	Δ log of average CDS spreads at industry level (exc. borrower f), accumulated with respect to day 4 previous to loan announcement (5 year Maturity)

All continuous variables are winsorized at 1%

**Lending Share is calculated on a 20-quarter rolling average up to* $t-4$ *before origination*

Table 2: Descriptive statistics

	Observations	Mean	Std. Dev.	10 %	50 %	90 %
Panel A: Bank-Industry Metrics and Explanatory variables						
Deals per bank	90	460.3	1030.9	28.5	167	902
Industries per bank	90	72.2	57.4	15	65.5	148
Lending share (at origination, %)	34,001	19.95	23.56	0.50	10.30	53.67
Avg. borrowers per bank-industry pair	6,502	3.07	2.09	1.47	2.41	5.78
Panel B: Explained variables						
Covenant strictness	13,664	37.8	41.7	0.0	12.6	99.7
Capital strictness	13,664	10.3	26.1	0.0	0.0	31.3
Int. drawn spreads (bps.) (weighted by tranche size)	31,125	199.7	143.9	40.0	175.0	375.0
Capital intensity	17,241	0.71	0.80	0.0	1.0	2.0
N.W. intensity	17,244	0.18	0.37	0.0	0.0	1.0
Tangible N.W. intensity	17,244	0.21	0.41	0.0	0.0	1.0
Capex restriction	2,944	0.3	0.5	0.0	0.0	1.0
Payout restriction	15,351	0.8	0.4	0.0	1.00	1.0
Spreads-to-Strictness	12,602	3.88	1.05	2.63	3.88	5.30
Panel C: Firm and Loan level risk controls						
Size (log)	36,585	6.95	1.94	4.37	6.93	9.58
Leverage	36,390	1.061	4.057	0.000	0.706	2.845
Tangible N.W.	36,564	0.331	3.49	0.088	0.379	0.682
Cash-flow-to-debt	32,534	0.342	1.13	0.017	0.093	0.454
Debt service ratio	36,108	3.76	14.43	-0.376	0.596	7.152
Profitability	34,145	0.033	0.029	0.006	0.032	0.065
Rating	18,427	10.44	3.55	6.00	10.00	15.00
Total leaders	33,814	1.19	0.79	1.00	1.00	2.00
Loan maturity (months)	33,878	47.2	24.3	15.0	48.0	78.0
Loan amount (log)	38,397	18.92	1.66	16.76	19.09	20.95
Market-to-book	28,548	1.685	0.991	0.907	1.368	2.809
Z-score	16,223	2.41	2.98	0.77	1.79	4.33
Δ Log(CDS spreads$_{t+3}$) (pp)	9,001	-0.04	4.60	-4.83	-0.09	4.94

Table 3: Bank industry exposure on covenant strictness

	Covenant Strictness			
	Bank-Loan Level		Bank-Ind. Level	
Lending Share	1.21*	2.94***	2.99***	
	(0.055)	(0.002)	(0.000)	
Top Share (25%)				4.46***
				(0.000)
N	7,875	4,373	41,619	41,619
R^2	0.323	0.691	0.468	0.467
Fixed Effects:				
Bank-Quarter	✓	✓	✓	✓
Industry-Quarter	✗	✓	✓	✓

This table presents estimation results from Specification 2 for the period 1990-2018, at the bank-loan level (columns 1-2) and bank-industry level (columns 3-4). I include Bank-Time and Industry-Time (Columns 2-4) fixed effects. The dependent variable is the loan covenant strictness as reported in Demerjian and Owens (2016). The variable *Lending Share* represents the importance of the lender in the industry (zero to one) measured as the dollar amount of outstanding debt in the industry originated by the lender over the total outstanding debt in the industry, averaged across the previous 20 quarters $[t-4, t-23]$ and standardised. The variable *Top Share* is a binary variable that identifies the bank-industry pairs at the top 25% of the lending share distribution (Column 4), compared at period t on the lending shares estimated over quarters $[t-4, t-23]$. Additionally, I incorporate a set of lagged control variables, including firm risk measures as size, leverage, tangibility, debt-to-cash-flow ratio, debt service ratio, profitability (all winsorised at 1%), and rating, plus controls on loan characteristics: type, log maturity, log amount, and total leaders. Firm and loan level characteristics are averaged at the industry level for bank-industry level regressions (Cols. 3-4). Standard errors are clustered at bank level and p-values are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 4: Bank industry exposure on covenant strictness: Complementary tests

	Covenant Strictness			
Lending Share	3.18***		2.99***	4.86***
	(0.000)		(0.001)	(0.001)
Bank-Industry HHI		2.55**		
		(0.039)		
Total firms in industry	-0.19			
	(0.299)			
Portfolio Share			1.41	
			(0.021)	
Bank Specialization				-12.39***
				(0.007)
N	4,126	4,373	4,373	4,373
R^2	0.701	0.691	0.691	0.692
Fixed Effects:				
Bank-Quarter			✓	
Industry-Quarter			✓	

This table presents estimation results from Specification 2 for the period 1990-2018. I include Bank-Time and Industry-Time fixed effects. The dependent variable is covenant strictness as reported in Demerjian and Owens (2016). The variable *Lending Share* represents the importance of the lender in the industry (zero to one) measured as the dollar amount of outstanding debt in the industry originated by the lender over the total outstanding debt in the industry, averaged across the previous 20 quarters $[t-4, t-23]$ and standardised. The variable *Total firms in industry* (Column 1) is a count variable on the number of firms in the industry on the previous year $(t-4)$. The variable *Bank-industry HHI* (Column 2) follows equation 4. This variable represents the importance of the lender in the industry (zero to one) when accounting for the size of the borrower in the industry, and is averaged across the previous 20 quarters $[t-4, t-23]$ and standardised. The variable *Portfolio Share* (Column 3) represents the importance of the industry on the lender portfolio measured in terms of the dollar amounts of its outstanding debt-holdings (zero to one), averaged across the previous 20 quarters $[t-4, t-23]$. Bank *Specialization* (Column 4) is a dummy variable that identifies a bank as specialized if its lending share has been higher than the 75^{th} percentile plus 1.5 times the inter-quantile range of the lending shares at some quarter during the previous 20 quarters $[t-4, t-23]$ (Paravisini et al., 2020; Giometti and Pietrosanti, 2022). Additionally, I incorporate a set of lagged control variables, including firm risk measures as size, leverage, tangibility, debt-to-cash-flow ratio, debt service ratio, profitability (all winsorised at 1%), and rating, plus controls on loan characteristics: type, log maturity, log amount, and total leaders. Standard errors are clustered at bank level and p-values are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 5: Bank industry exposure on covenant strictness: Risky rivals and mature industries

	Covenant Strictness			
Lending Share	4.43***	-2.39	7.92***	2.29**
	(0.000)	(0.269)	(0.010)	(0.028)
Lending Share x Peers' Risk (continuous)	-0.92***			
	(0.002)			
Lending Share x Risky Peers (dummy)		5.89***		
		(0.010)		
Lending Share x Mature Industry (continuous)			-3.12*	
			(0.065)	
Lending Share x Mature Industry (Bottom 25%)				6.10***
				(0.002)
N	4,981	4,981	4,357	4,357
R^2	0.696	0.696	0.692	0.692
Fixed Effects:				
Bank-Quarter		✓		
Industry-Quarter		✓		

This table presents estimation results from Specifications 5 (Columns 1-2) and 6 (Columns 3-4) for the period 1990-2018. I include Bank-Time and Industry-Time fixed effects. The dependent variable is the general covenant strictness of the deal, as estimated by Demerjian and Owens (2016). The variable *Lending Share* represents the importance of the lender in the industry (zero to one), averaged across the previous 20 quarters $[t-4, t-23]$ and standardised. The variable *Peers' Risk* is a continuous variable (Column 1) capturing the average Z-score of all firms in industry i that are peers of the borrower and to which bank b has an outstanding lending exposure (i.e., excluding the borrower of the loan itself). Z-score at the firm level is estimated as $1.2 \times \frac{cash}{assets} + 1.4 \times \frac{undistributedprofit}{assets} + 3.3 \times \frac{EBIT}{assets} + 1 \times \frac{marketvalueofequity}{liabilities} + 0.6 \times \frac{commonequity}{liabilities}$, and averaged as explained in $t-4$. The variable *Risky Peers* is equal to one if the average Z-score of borrower's peers is below 3.00, indicating rival borrowers can have significant risk of entering into bankruptcy (Column 2). The variable *Mature Industry* is continuous variable identifying the median market-to-book ratio at the industry level in the previous year at $t-4$ (Column 3) as a proxy for industry growth opportunities, also represented as a dummy variable equal to one for industries with relatively lower growth prospects. Comparing across industries, the dummy is equal to one when the industry is below the 25^{th} percentile (Bottom 25%) (Column 4). Additionally, I incorporate a set of lagged control variables, including firm risk measures as size, leverage, tangibility, debt-to-cash-flow ratio, debt service ratio, profitability (all winsorised at 1%), and rating, plus controls on loan characteristics: type, log maturity, log amount, and total leaders. Standard errors are clustered at bank level and p-values are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 6: Bank industry exposure on loan covenant strictness: IV Estimates

	Covenant Strictness	
Merger-Implied Lending Share	0.727*** (0.000)	
Lending Share (IV Estimate)		9.074*** (0.001)
F-stat (1S)	131.00	
N	4,377	4,377
Fixed Effects:		
Bank-Quarter	✓	
Industry-Quarter	✓	

This table presents estimation results from Specification 7 for the period 1990-2018. I include Bank-Time and Industry-Time fixed effects. The dependent variable is covenant strictness as estimated in Demerjian and Owens (2016). *Merger-Implied Lending Share* is the instrumentation of survivor's lending share using the sum of corresponding lending shares of prior entities at the last quarter of the pre-merger year, for contracts taking place on the three years after the merger took place. Otherwise, it is coded as zero (Column 1). The variable *Lending Share - IV Estimate* represents the importance of the lender in the industry (zero to one), averaged across the previous 20 quarters $[t-4, t-23]$ and instrumented by the incremental share of bank mergers (Column 2).Additionally, I incorporate a set of lagged control variables, including firm risk measures as size, leverage, tangibility, debt-to-cash-flow ratio, debt service ratio, profitability (all winsorised at 1%), and rating, plus controls on loan characteristics: type, log maturity, log amount, and total leaders. Standard errors are clustered at bank level and p-values are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 7: Bank industry exposure on loan covenant strictness: Robustness

	Covenant Strictness		
	Exc. 1998	Exc. 2008-2009	Winsor 10%
Lending Share	7.02***	10.11***	8.943**
(IV Estimate)	(0.004)	(0.001)	(0.001)
N	4,377	4,377	4,377
R^2	0.048	0.049	0.052
Fixed Effects:			
Bank-Quarter		✓	
Industry-Quarter		✓	

This table presents the second stage estimation results from Specification 7 for the period 1990-2018. I include Bank-Time and Industry-Time fixed effects. The dependent variable is covenant strictness as estimated in Demerjian and Owens (2016).*Lending Share - IV Estimate* represents the importance of the lender in the industry (zero to one), averaged across the previous 20 quarters $[t-4, t-23]$ and instrumented by the incremental share of bank mergers. In column 1, I exclude year 1998 from the IV variable. In column 2 I exclude years 2008-20009 from the IV variable. In column 3, I winsorize the top 10% of lending shares. Additionally, I incorporate a set of lagged control variables, including firm risk measures as size, leverage, tangibility, debt-to-cash-flow ratio, debt service ratio, profitability (all winsorised at 1%), and rating, plus controls on loan characteristics: type, log maturity, log amount, and total leaders. Standard errors are clustered at bank level and p-values are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 8: Bank industry exposure on capital covenants

	Capital Strictness	Capital Intensity	Net Worth Covenants	Tangible N.W.	Unspecified N.W.
Lending Share	1.19**	0.063***	0.040**	0.043**	0.010
	(0.031)	(0.005)	(0.043)	(0.041)	(0.762)
N	4,373	6,035	6,035	6,035	6,035
R^2	0.644	0.718	0.714	0.642	0.575
Fixed Effects:					
Bank-Quarter			✓		
Industry-Quarter			✓		

This table presents estimation results from Specifications 8, 9 and 10 (Column 1, Columns 2-3 and Columns 4-5, respectively) for the period 1990-2018. I include Bank-Time and Industry-Time fixed effects. The dependent variables are the capital covenants strictness as defined in Demerjian and Owens (2016) (Column 1), and count variables on the total number of capital-based covenants ("Capital Intensity") (Col. 2), covenants requiring net worth (N.W.), either as a Min. N.W. or a Max. Debt over N.W. (Col. 3), and covenants explicitly requiring tangible N.W. (Col. 4) or not specified N.W. (Col. 5). All dependent variables are standardised. The variable *Lending Share* represents the importance of the lender in the industry (zero to one), averaged across the previous 20 quarters $[t-4, t-23]$ and standardised. Additionally, I incorporate a set of lagged control variables, including firm risk measures as size, leverage, tangibility, debt-to-cash-flow ratio, debt service ratio, profitability (all winsorised at 1%), and rating, plus controls on loan characteristics: type, log maturity, log amount, and total leaders. Standard errors are clustered at bank level and p-values are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 9: Bank industry exposure on negative covenants

	Payout Restriction	Capex Restriction
Lending Share	-0.016**	0.027**
	(0.017)	(0.017)
N	13,640	1,412
R^2	0.617	0.485
Fixed Effects:		
Bank-Quarter	✓	✓
Industry-Quarter	✓	✗

This table presents estimation results from Specification 11 for the period 1990-2018. I include Bank-Time (Columns 1-2) and Industry-Time (Column 1) fixed effects. The dependent variable is a binary variable equal to one if the deal has a capital expenditure (Col. 1) or Dividend Payout (Col. 2) restriction. The variable *Lending Share* represents the importance of the lender in the industry (zero to one), averaged across the previous 20 quarters $[t-4, t-23]$ and standardised. Additionally, I incorporate a set of lagged control variables, including firm risk measures as size, leverage, tangibility, debt-to-cash-flow ratio, debt service ratio, profitability (all winsorised at 1%), and rating, plus controls on loan characteristics: type, log maturity, log amount, and total leaders. Standard errors are clustered at bank level and p-values are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 10: Bank industry exposure on other contract terms

	Loan Maturity	Average Loan Spread	Spread-to Strictness
Lending Share	-0.011*	-0.03**	-0.09***
	(0.072)	(0.012)	(0.007)
N	13,650	12,904	4,207
R^2	0.581	0.856	0.683
Fixed Effects:			
Bank-Quarter		✓	
Industry-Quarter		✓	

This table presents estimation results from Specification 12 for the period 1990-2018. I include Bank-Time and Industry-Time fixed effects. The dependent variables are the logarithm of loan maturity (Col. 1), the logarithm of the average deal spread (Col. 2), weighted by the relative size of the tranche within the deal, and the ratio between the average loan spread and loan covenant strictness of the loan, the denominator obtained from Demerjian and Owens (2016) (Col. 3). The variable *Lending Share* represents the importance of the lender in the industry (zero to one), averaged across the previous 20 quarters $[t-4, t-23]$ and standardised. Additionally, I incorporate a set of lagged control variables, including firm risk measures as size, leverage, tangibility, debt-to-cash-flow ratio, debt service ratio, profitability (all winsorised at 1%), and rating, plus controls on loan characteristics: type, log maturity, log amount, and total leaders. Standard errors are clustered at bank level and p-values are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 11: Bank industry exposure on industry CDS spreads

	Accumulated industry $\Delta log(CDS\ Spreads)$					
	-3	-2	-1	1	2	3
Lending Share	-0.024%	0.000%	-0.000%	-0.101%***	-0.094%*	-0.128%**
	(0.288)	(0.995)	(0.408)	(0.004)	(0.094)	(0.022)
N	6,569	6,577	6,571	6,559	6,560	6,565
R^2	0.094	0.097	0.131	0.147	0.155	0.173
Fixed Effects:						
Bank				✓		
Quarter				✓		
Industry				✓		

This table presents estimation results from Specification 13 for the period 1990-2018. I include Bank, Time and Industry fixed effects. The dependent variables is the change in the log of the average of the 5-year maturity CDS spreads (closing value) for all those industry peers of the borrower, using the accumulate change on average spreads with respect to four days before loan announcement, and shown over the three days previous and posterior to loan announcement (on each column respectively), where loan announcement occurs between day $t-1$ and $t+1$. The variable *Lending Share* represents the importance of the lender in the industry (zero to one), averaged across the previous 20 quarters $[t-4, t-23]$ and standardised. Additionally, I incorporate a set of lagged control variables at the industry level, including industry average for size, leverage, and profitability (all winsorised at 1%), plus previous quarter rating, and controls on loan characteristics: type, log maturity, and log amount. Standard errors are clustered at bank level and p-values are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

9 Appendix

In the following section, I present a set of alternative specifications on the main empirical findings with the purpose of providing further insights, ruling out confounding concerns, and getting to know the limits of the results presented above.

I present a set of robustness checks on the results in Section 4.1. I begin by looking excluding loans with more than one main lead arranger (Column 1 of Table 12), defining the explanatory variables using alternative standard error clustering (Columns 2-3 of Table 12), and using a different set of control variables for borrower risk (Column 4 of Table 12). Altogether, results remain robust to these alternative specifications, supporting the view that lenders with a high-exposure banks internalize competition spillovers into their lending decisions, extending cheaper loans with stricter terms in terms of their covenant strictness, capital strictness and maturity, deterring firms from taking risk and embarking in pro-competitive product market strategies.

Next, I revise the results on Section 4.1, using a longer time frame (Table 13) and alternative measures for industry maturity based on the change in average industry sales and change in the logarithm of industry market-to-book ratio (Table 14).

Following, I presenting alternative specifications to corroborate my main results are consistent with other findings in the literature. I address concerns related to information advantages arising from bank specialization. Banks with a high lending share may become specialized in the sector, gaining an information advantage over other potential lenders that reduces their uncertainty about borrower's risk and allows them to be more permissive. Therefore, I disentangle the effect of lending specialization on covenant strictness from those derived from product market competition externalities. To do so, I explore the differential effect of lending share on covenant strictness when controlling for bank specialization following Paravisini et al. (2020) and Giometti and Pietrosanti (2022). I find that after controlling for bank specialization the relevance of feedback effects from industry spillovers is stronger, with banks providing loans with even harsher covenants (Table 15).

A concern that may arise from the use of bank mergers to instrument exogenous changes in lending shares is that the occurrence of subsequent mergers may contaminate findings. In the tests presented in Section 4 I excluded subsequent mergers. I verify this assumption does not materially affect my results by repeating the tests presented in Section 4 without excluding second mergers that occurred less than 3 years subsequent to a previous merger. Next, I repeat the same test but only considering loans extend one year after bank merger (Table 16). Lastly, I use the same IV approach to verify results on other contract terms discussed in the paper are

robust to endogeneity concerns (Table 17).

Another concern arises on the use of count data for covenant intensity (count) measures tested in Section 6.1. Following the recent literature (Cohn et al., 2021), I use Poisson regression models to address potential shortcomings from the use linear regressions on covenant count, and verify that my results remain robust (Table 18).

Lastly, I follow a similar approach to extend the results on Section 6.2 using non-linear probability (Probit) and Poisson regression models. In particular, I look at the probability of a loan including a capital expenditure or dividend payout restriction (Table 19). Altogether, results are consistent with those estimated using linear probability models.

9.1 Appendix Tables

Table 12: Bank industry exposure on covenant strictness - Robustness

	Covenant Strictness			
	Alternative Controls	Single Lead Arrangers	Alternative Clustering	
Lending Share	2.07**	3.36**	2.94*	2.94**
	(0.019)	(0.012)	(0.055)	(0.048)
N	4,412	3,580	4,373	4,373
R^2	0.660	0.679	0.691	0.691
SE Clustering	*Bank*	*Bank*	*Industry*	*Bank-Industry*
Fixed Effects:				
Bank-Quarter			✓	
Industry-Quarter			✓	

This table presents robustness check on the results from Specification 2, for the period 1990-2018 at the bank-loan level. I include Bank-Time and Industry-Time fixed effects. The dependent variable is the loan covenant strictness as reported in Demerjian and Owens (2016). The variable *Lending Share* represents the importance of the lender in the industry (zero to one), averaged across the previous 20 quarters $[t-4, t-23]$ and standardised. In Column 1 I include additional control variables: current ratio, loan purpose, and debt over tangible net worth. In column 2, I exclude loans extend by more than one lead arranger. In Columns 3 and 4, I cluster standard errors at the industry and bank-industry level, respectively. In Columns 2-4, I only incorporate the main set of lagged control variables: firm risk measures as size, leverage, tangibility, debt-to-cash-flow ratio, debt service ratio, profitability (all winsorised at 1%), and rating, plus controls on loan characteristics, including loan type, log maturity, log amount, and total leaders. Standard errors clustered at bank level in Columns 1 and 2. p-values are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 13: Bank industry exposure on covenant strictness - Time frame robustness

	Covenant Strictness		
Lending Share (2 Years)	2.221*** (0.001)		
Lending Share (3 Years)		2.586*** (0.010)	
Lending Share (4 Years)			-0.026*** (0.013)
N	4,269	4,324	4,355
R^2	0.691	0.691	0.691
Fixed Effects:			
Bank-Quarter		✓	
Industry-Quarter		✓	

This table presents robustness check on the results from Specification 2, for the period 1990-2018 at the bank-loan level. I include Bank-Time and Industry-Time fixed effects. The dependent variable is the loan covenant strictness as reported in Demerjian and Owens (2016). The variable *Lending Share* represents the importance of the lender in the industry (zero to one), averaged across the previous 8 quarters $[t-4, t-11]$ (Column 1), 12 quarters $[t-4, t-15]$ (Column 2), and 16 quarters $[t-4, t-19]$ (Column 3). and standardised. I incorporate the main set of lagged control variables: firm risk measures as size, leverage, tangibility, debt-to-cash-flow ratio, debt service ratio, profitability (all winsorised at 1%), and rating, plus controls on loan characteristics, including loan type, log maturity, log amount, and total leaders. Standard errors clustered at bank level. p-values are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 14: Bank industry exposure on covenant strictness at mature industries:

Mature industry split - Alternative measures.

	Covenant Strictness			
	Sales Growth		$\triangle\ log(M/B)$	
Lending Share	3.96***	1.71*	3.49***	1.89*
	(0.000)	(0.036)	(0.001)	(0.036)
Lending Share x Mature Industry (Continous)	-24.57**		-21.07*	
	(0.021)		(0.058)	
Lending Share x Mature Industry (Bottom 25%)		7.445**		6.08**
		(0.010)		(0.032)
N	4,362	4,362	4,368	4,368
R^2	0.692	0.692	0.691	0.691
Fixed Effects:				
Bank-Quarter		✓		
Industry-Quarter		✓		

This table presents estimation results from Specifications 5 for the period 1990-2018. I include Bank-Time and Industry-Time fixed effects. The dependent variable is the general covenant strictness of the deal, as estimated by Demerjian and Owens (2016). The variable *Lending Share* represents the importance of the lender in the industry (zero to one), averaged across the previous 20 quarters $[t-4, t-23]$ and standardised. The variable *Mature Industry* is continuous variable identifying the change in industry average sales (Columns 1 and 2) and the change in the logarithm of industry market-to-book ratio (Columns 3 and 4) at $t-4$, both to proxy for growth opportunities at the industry level, and also represented as a dummy variable equal to one for industries with relatively lower growth prospects (Comparing across industries, the dummy is equal to one when the industry is below the 25^{th} percentile, i.e., *Bottom 25%*, in Columns 2 and 4). Additionally, I incorporate a set of lagged control variables, including firm risk measures as size, leverage, tangibility, debt-to-cash-flow ratio, debt service ratio, profitability (all winsorised at 1%), and rating, plus controls on loan characteristics: type, log maturity, log amount, and total leaders. Standard errors are clustered at bank level and p-values are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 15: Bank industry exposure on covenant strictness: Controlling for bank specialization

	Covenant Strictness			
Lending Share	4.32***	4.91***	5.35***	4.86***
	(0.004)	(0.001)	(0.000)	(0.001)
Specialization (2 Years)	-6.17**			
	(0.029)			
Specialization (3 Years)		-6.75**		
		(0.021)		
Specialization (4 Years)			-7.72***	
			(0.007)	
Specialization (5 Years)				-12.39***
				(0.007)
N	4,269	4,324	4,355	4,373
R^2	0.691	0.691	0.692	0.692
Fixed Effects:				
Bank-Quarter			✓	
Industry-Quarter			✓	

This table presents estimation results from Specification 2 for the period 1990-2018. I include Bank-Time and Industry-Time fixed effects. The dependent variable is the general covenant strictness of the deal, as estimated by Demerjian and Owens (2016). The variable *Lending Share* represents the importance of the lender in the industry (zero to one), averaged across the previous 20 quarters $[t-4, t-23]$ and standardised. Bank *Specialization* is a dummy variable that identifies a bank as specialized if its lending share has been higher than the 75^{th} percentile plus 1.5 times the inter-quantile range of the lending shares at some quarter during the previous 2, 3, 4 and 5 years (Col. 1, 2, 3 and 4, respectively) (Paravisini et al., 2020; Giometti and Pietrosanti, 2022). Additionally, I incorporate a set of lagged control variables, including firm risk measures as size, leverage, tangibility, debt-to-cash-flow ratio, debt service ratio, profitability (all winsorised at 1%), and rating, plus controls on loan characteristics: type, log maturity, log amount, and total leaders. Standard errors are clustered at bank level and p-values are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 16: Bank industry exposure on loan covenant strictness: IV Estimates (1-year)

	Covenant Strictness	
	1-year	Subsequent Mergers
Lending Share	6.87***	5.17**
(IV Estimate)	(0.039)	(0.027)
N	4,377	4,377
R^2	0.056	0.058
Fixed Effects:		
Bank-Quarter		✓
Industry-Quarter		✓

This table presents the second stage estimation results from Specification 7 for the period 1990-2018. I include Bank-Time and Industry-Time fixed effects. The dependent variable is covenant strictness as estimated in Demerjian and Owens (2016).*Lending Share - IV Estimate* represents the importance of the lender in the industry (zero to one), averaged across the previous 20 quarters $[t-4, t-23]$ and instrumented by the incremental share of bank mergers. I instrument *Lending Share* only for those loans extended over the first year after the bank merger. In column 2, I also include subsequent mergers in the IV, which had been excluded from the original Specification 7 given the concerns on the effect of overlapping mergers being less than three years apart. Additionally, I incorporate a set of lagged control variables, including firm risk measures as size, leverage, tangibility, debt-to-cash-flow ratio, debt service ratio, profitability (all winsorised at 1%), and rating, plus controls on loan characteristics: type, log maturity, log amount, and total leaders. Standard errors are clustered at bank level and p-values are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 17: Bank industry exposure on loan covenant strictness: IV Estimates (Other)

	Capital Strictness	Capital Intensity	Interest Spreads	Loan Maturity	Spreads-to-Strictness	Spreads-to-Capital Str.
Lending Share	2.73**	0.086*	-0.067***	-0.049**	-0.12**	-0.23**
(IV Estimate)	(0.021)	(0.071)	(0.002)	(0.030)	(0.025)	(0.011)
N	4,377	6,040	12,345	13,664	4,210	5,852
R^2	0.010	0.035	0.112	0.038	0.029	0.043
Fixed Effects:						
Bank-Quarter				✓		
Industry-Quarter				✓		

This table presents the second stage estimation results from Specification 7 for the period 1990-2018. I include Bank-Time and Industry-Time fixed effects. The dependent variables are the capital-based covenant strictness (Demerjian and Owens, 2016) (Column 1), the capital-based covenant intensity (count measure) (Column 2), the logarithm of the average interest rate spread of the loan (Column 3), the logarithm of the loan maturity measured in months (Column 4), the ratio between the logarithm of the loan average interest rate spread over loan covenant strictness (Column 5) and over loan capital-based loan strictness (Column 6) as estimated in Demerjian and Owens (2016). *Lending Share - IV Estimate* represents the importance of the lender in the industry (zero to one), averaged across the previous 20 quarters $[t-4, t-23]$ and instrumented by the incremental share of bank mergers. For robustness, I exclude years 2008-2009 and winsorize the top 10% of lending shares. Additionally, I incorporate a set of lagged control variables, including firm risk measures as size, leverage, tangibility, debt-to-cash-flow ratio, debt service ratio, profitability (all winsorised at 1%), and rating, plus controls on loan characteristics: type, log maturity, log amount, and total leaders. Standard errors are clustered at bank level and p-values are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 18: Bank industry exposure on capital covenants: Poisson

	Capital Intensity	Net Worth Covenants	Tangible N.W.	Unspecified N.W.
Lending Share	0.108***	0.0837***	0.228**	-0.0591
	(0.000)	(0.005)	(0.011)	(0.432)
N	4172	4128	2066	2087
$pseudo - R^2$	0.157	0.163	0.219	0.154
Fixed Effects:				
Bank-Quarter		✓		
Industry-Quarter		✓		

This table presents estimation results from Specifications 8, 9 and 10 (Column 1, Columns 2-3 and Columns 4-5, respectively) for the period 1990-2018. I include Bank-Time and Industry-Time fixed effects. The *dependent variables* are categorical variables that identify how many capital-based covenants ("Capital Intensity") in the loan contract (Col. 1), how many covenants impose requirements over net worth (N.W.), either as a Min. N.W. or a Max. Debt over N.W. (Col. 2), and if the covenants explicitly require that this N.W. is tangible (Col. 3) or if this is not specified (Col. 4). The variable *Lending Share* represents the importance of the lender in the industry (zero to one), averaged across the previous 20 quarters $[t-4, t-23]$ and standardised. Additionally, I incorporate a set of lagged control variables, including firm risk measures as size, leverage, tangibility, debt-to-cash-flow ratio, debt service ratio, profitability (all winsorised at 1%), and rating, plus controls on loan characteristics: type, log maturity, log amount, and total leaders. Standard errors are clustered at bank level and p-values are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 19: Bank industry exposure on negative covenants: Non-linear probability models

	Payout Restriction		Capex Restriction	
	Probit	Poisson	Probit	Poisson
Lending Share	-0.0234*	-0.0423***	0.0774**	0.0701***
	(0.083)	(0.003)	(0.026)	(0.001)
N	1,981	1,762	20,335	15,657
$pseudo - R^2$	0.253	0.194	0.121	0.112
Fixed Effects:				
Bank-Year	✗	✓	✗	✓
Industry-Year	✗	✗	✗	✓

Table presents the results of both Probit (Columns 1 and 3) and Poisson (Columns 2 and 4) regressions at the bank-loan level for loans extended during the period 1990-2018. I include Bank-Year fixed effects in Poisson models, plus Industry-Time fixed effects when looking at Payout restrictions (Column 2). Due to limitations in sample size, I do not saturate the regression further for capital expenditures (Column 3-4). The *dependent variables* is a binary variable equal to one if the deal has a dividend payout (Columns 1-2) restriction or capital expenditure (Columns 3-4). The variable *Lending Share* represents the importance of the lender in the industry (zero to one), averaged across the previous 20 quarters $[t-4, t-23]$ and standardised. Additionally, I incorporate a set of lagged control variables, including firm risk measures as size, leverage, tangibility, debt-to-cash-flow ratio, market-to-book ratio (Columns 3-4), debt service ratio, profitability (all winsorised at 1%), and rating, plus controls on loan characteristics: type, log maturity, log amount, and total leaders. Standard errors are clustered at bank level and p-values are reported in parentheses. Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.