Creditor Rights and Aggregate Factors in Loan Terms[*]

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Abstract

It is well known that conflicts of interests between borrowers and creditors can raise the cost of external financing. In this paper we provide new evidence that borrower-creditor conflicts of interests also affect the *sensitivity* of debt financing to aggregate business conditions. In the presence of incomplete contracts, creditors cannot fully observe or verify diversion of free cash flow by borrowers. Whereas strong creditor rights impose a high cost on defaulting borrowers, weak creditor rights enable borrowers to divert cash flows and avoid repayment more easily. When creditors cannot enforce their rights and assure repayment regardless of the individual borrower's underlying financial condition, creditors may choose to rely more on verifiable, aggregate information in their lending decisions, resulting in less discriminate loan pricing. Alternatively, creditors with few protections may resort to more borrower-specific information gathering in an effort to select the best borrowers and mitigate conflicts of interest. We test these contrasting predictions in a sample of international and domestic syndicated bank loans. Based on our analysis of international and domestic syndicated bank loans and country- and state-level variation in creditor rights, we find that industry factors have a *larger* impact on loan spreads and other terms when creditor protections are weak. The findings demonstrate a new channel for the effect of conflicts of interest on bank lending and yield important implications for lenders, borrowers, efficiency of capital allocation, and systemic risk.

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1. Introduction

It is well known that shareholder-bondholder conflicts of interest can distort investment policies, limit the availability of external debt financing, and raise the cost of debt. In this paper we focus on a different but potentially equally important implication of borrower-creditor conflicts of interest for bank financing – their effect on the *sensitivity* of the cost and terms of financing to aggregate business conditions. Our analysis contributes to the literature in several important ways. First, we provide additional insights about the impact of shareholder-debtholder conflicts on firms' access to bank financing. Second, our evidence helps further the understanding of systemic risk affecting bank-dependent firms by documenting a new channel behind a bank's propensity to make correlated lending decisions.

The relevance of industry factors for the cost and availability of debt financing has been explained with common risk factors and resulting information spillovers or with balance sheet contagion, where lenders attempt to curtail losses resulting from defaults by some borrowers in their portfolio by changing the terms for other borrowers. While the presence of industry effects on loan terms has been documented, the determinants of the sensitivity of lending decisions to aggregate and industry factors are largely unexplored.[1] Yet this question is crucial for borrowers and lenders deciding on the terms of borrowing. Further, if contracting frictions lead banks to treat borrowers with different investment opportunities similarly, on aggregate, this can translate into inefficient allocation of capital and increased cyclicality in lending (and systemic risk).

Weak creditor rights introduce frictions into borrower-lender contracting. When creditor rights are weak, borrowers retain more control over the bankruptcy process and the ability tunnel a portion of the firm's assets, yielding lower recovery rates for creditors and greater delays in the

[1] Hertzel and Officer (2012) find that industry effects are larger in competitive industries and in industries affected by bankruptcy waves but do not consider the effects of conflicts of interest or creditor rights.

event of default, which exacerbates borrower incentives for strategic default. In the presence of incomplete contracting, only some information about the borrower's investment projects and finances is verifiable, hence, covenants cannot guarantee that borrowers will invest in accordance with debtholder interests or even that borrowers with the ability to repay will pay back the loan. This contracting friction, combined with the well analyzed divergence between the interests of borrowers and creditors, leads to a borrower-lender agency conflict and potential for wealth transfers by the firm's insiders (acting on behalf of shareholders, or alternatively, in their own self-interest or in the interests of other stakeholders, such as employees). Such wealth transfers from creditors to borrowers can take the form of investment distortions, such as underinvestment or asset substitution, cash distributions to shareholders through dividends and repurchases, payments to other stakeholders, such as top management, employees, suppliers etc., all of which lower the firm's ability to repay debt, as well as outright diversion of free cash flow and assets, which can lead to strategic default by borrowers with the ability to repay and be followed by continued asset stripping during the insolvency process.[2] Following this argument, Qian and Strahan (2007) and Bae and Goyal (2009) demonstrate that weak creditor rights cause rational lenders to charge borrowers more to offset the higher probability of default and loss given default.

Rather than focus on the effect of weak creditor rights on the levels of spreads, we formulate hypotheses about the *sensitivity* of borrowing costs to aggregate factors when conflicts of interest are severe. To the extent that borrowers are able to transfer wealth from creditors and default strategically – regardless of their ability to repay – firm-specific information about the

[2] Investment distortions are examined Myers (1977), Jensen and Meckling (1976), Jensen and Smith (1985), and Smith and Warner (1979). Conflicts of interest over cash payouts are analyzed in Smith and Warner (1979), Kalay (1982), and Jensen and Smith (1985). Tunneling or diversion of cash flow and assets and its role in strategic default are the focus of Johnson, La Porta, Lopez-de-Silanes, and Shleifer (2000), Gilson (2006), Esty and Megginson (2003), Jiang, Lee, and Yue (2010), Lin, Ma, Malatesta and Xuan (2011), Aslan and Kumar (2012), among others. The above is by no means an exhaustive review.

borrower's financial condition, which is never fully verifiable, becomes less relevant for predicting default. At the same time, creditors can seize on observable and verifiable aggregate information, such as industry performance. This further weakens creditor incentives to invest in gathering costly borrower-specific information and leads rational lenders to rely more on aggregate information in pricing loans when creditor rights are weak. Empirically, greater reliance by lenders on aggregate information as opposed to borrower-specific information in pricing loans when creditor rights are weak will result in less intra-industry variation in loan spreads, all else equal; consistent with it, this hypothesis yields *a negative interaction term between the industry effect on loan spreads and the strength of creditor rights*.

Alternatively, weak creditor rights that exacerbate severe borrower-lender conflicts of interest may cause lenders to conduct *more* information gathering in an attempt to increase the amount of verifiable information about borrowers and offer loan terms that capture default risk (due to inability to repay or strategic default) more accurately, resulting in a diminished role of industry factors for loan terms.

Whether our main argument or the alternative holds will be assessed empirically.

We test the hypotheses using both international variation in creditor rights enforcement and US state-level differences in the protection creditors from wealth transfers to shareholders. Since similarities in borrower characteristics would also generate industry effects, our tests carefully control for relevant observable borrower characteristics linked to default risk.

Empirically, when creditor rights are weak, bank lending decisions are significantly more sensitive to aggregate factors associated with the borrower's industry. After controlling for commonly documented risk characteristics, loan spreads are more sensitive to borrower industry effects and better explained by industry factors when creditor rights are weak. Creditor protections

related to the enforcement of bankruptcy codes and the efficiency of insolvency proceedings, in particular, average recovery rates, cost of insolvency, time to resolution of insolvency and payment to creditors, and deviations from absolute priority, play the biggest role. Industry factors become less important in strong creditor rights environments, however, the decrease is partly offset in volatile industries, which are associated both with a higher level of aggregate risk and higher costs of firm-specific information collection. Creditor rights protection also affects the importance of industry factors for loan size.

We find additional support for our main argument using US data on differences in payout restrictions imposed by state laws. Payout restrictions aim to mitigate potential expropriation of creditors through cash distributions to shareholders. Statutory payout constraints take the form of minimum asset-liability ratios that have to be met before payouts to shareholders can be made. Consistent with the international evidence, loan spreads in states with worse creditor rights (no minimum asset-liability constraints) are significantly more sensitive to borrower industry effects.

Further, several other dimensions of the borrower's legal environment affect the relevance of industry factors for loan pricing when they are considered individually: protections against self-dealing; strength of accounting disclosure standards; and to an extent, expropriation risk. When several institutional characteristics are included jointly with creditor rights, creditor rights and accounting disclosure quality interactions with the industry effect remain significant.

Our paper relates to existing work on the determinants of lending terms and several studies documenting the levels effects of conflicts of interest and legal environment on the cost of debt. Qian and Strahan (2007) link weak creditor rights to wider loan spreads. In the bond market, Miller and Reisel (2012) find that bond covenants become more restrictive when creditor rights are weak.

Focusing on shareholder governance and shareholder-manager conflicts of interest, Bae and Goyal (2009) relate strong shareholders rights to a lower cost of bank debt. In a related vein, Lin, Ma, Malatesta, and Xuan (2011) find that greater separation of ownership and control rights is associated with higher borrowing costs. Aslan and Kumar (2012) show that better corporate governance is associated with lower borrowing costs, while the holdup problems and conflicts of interest due to concentrated share ownership are associated with wider spreads. In turn, looking at US governance data, Chava, Livdan and Purnanandam (2009), Cremers, Nair and Wei (2007), and Klock, Mansi and Maxwell (2005) find that firms with entrenched managers and extensive antitakeover defenses face lower debt costs, and Billett, King and Mauer (2004) show that bondholders of speculative grade targets benefit from takeovers.[3] Focusing on the country political environment, Qi, Roth and Wald (2010) show that better political rights are associated with narrower corporate bond spreads. Differently from those papers, our paper is focused on the effect of borrower-creditor conflicts of interest on the *sensitivity* of loan terms to aggregate conditions, and not on the direct levels effects of governance, political freedoms or creditor rights on the cost of debt. We demonstrate a larger impact of industry factors on loan pricing in environments with weak creditor rights protections (as well weak corporate governance and accounting disclosure standards).

In considering the role of aggregate information and industry conditions for lending decisions, our paper also relates to existing studies of informational and competitive spillovers in banking (e.g., Lang and Stulz, 1992; Hertzel, Li, Officer and Ridgers, 2008; Jorion and Zhang,

[3] Existing work also examines other determinants (at the borrower, lender, and deal level) of loan spreads and the cost of debt. For instance, Hubbard, Kuttner and Palia (2002) show that bank weakness increases loan spreads. Hao, Nandy and Roberts (2009) show that lending industry concentration, cross-shareholdings, and regulations influence lending terms. Knyazeva and Knyazeva (2012) examine the effects of location on loan terms. Valta (2012) finds a higher cost of borrowing for firms operating in more competitive product markets. Benmelech and Bergman (2009) find that the use of redeployable collateral reduces credit spreads. Graham, Li, and Qiu (2008) find that spreads rise following accounting restatements.

2007) and studies of systemic risk and contagion (Acharya and Yorulmazer, 2008; Paravisini, 2006; Chava and Purnanandam, 2010; etc.). We formulate a new hypothesis explaining why banks might treat multiple borrowers in a correlated way when borrower-creditor conflicts of interest are severe. Our empirical evidence establishes the relevance of weak creditor rights protections for explaining the extent of cyclicality in bank lending. The implication of our findings is that weak creditor rights can contribute to systemic risk and affect correlated changes to the pricing and availability of bank loans, which is of particular importance to financially constrained borrowers. Differently from the papers that have explored the overall mechanisms behind information or balance sheet contagion, the present paper investigates the importance of the *interaction* of creditor rights and shortcomings in debt enforcement with the reliance on aggregate factors.

The remainder of the paper is organized as follows. The second section discusses data, variables, and methodology. The third section presents the main results. The fourth section concludes.

2. Data

2.1. Sample

The first set of analyses is performed in the international sample that allows us to explore a greater amount of variation in creditor rights due to differences in country legal environments and bankruptcy codes. The sample period is 1994-2008Q3 (the provided data snapshot from Thomson Reuters). Loan Pricing Corporation's Dealscan data on loan terms is matched to Compustat Global data on borrower characteristics using the list of identifier matches provided by Chava and Roberts (2008). Similar to Qian and Strahan (2007), we use nonfinancial borrowers outside the public sector incorporated outside the US and Canada. We exclude facilities with missing information on loan spread, facility amount or any of the main control variables (firm size, profitability, leverage,

tangibility, or distress risk), observations from countries with missing La Porta et al. (1998) [LLSV] legal environment data or Djankov, McLiesh, and Shleifer (2007) [DMS] creditor rights data, as well as firms with market values below twenty million. To ensure a meaningful interpretation of industry effect coefficients, we exclude industries with fewer than three observations in a given year. For comparability, we limit our focus to facilities that use LIBOR as a benchmark.

The second set of analyses is based on the US sample (sample time period). The advantage of the US sample is a greater level of homogeneity in borrower risk and lending industry structure. To identify variation in creditor rights, we use Long and Wald (2007) data on differences in payout restrictions by state of incorporation. Presence of a payout restriction, defined as the minimum ratio of capital to debt that must be met before dividend payments or share repurchases can be made, mitigates some of the borrower-lender conflicts of interest. States that impose minimum asset-liability ratios, also known as total asset constraints (equal to 1 or 1.25 in the sample), are classified as having stronger creditor protections. States that do not require minimum asset-liability ratios (total asset constraint of 0) are considered to have weaker creditor protections. Due to better sample coverage, we consider loans to US nonfinancial borrowers starting in 1990. The remaining sample criteria are generally similar to the international sample.

For more details on sample construction, see Tables A1 and A2 in the Appendix.

2.2. Variables

Definitions and summary statistics of the main variables are presented in Tables A1 and A2. An overview follows below. Unless specified otherwise, the variables of interest are defined similarly for the US sample.

Loan spreads

The main variable of interest is the all-in drawn loan spread. The average loan spread is 115 basis points. The average in the US sample is 168 basis points. Medians are significantly lower than averages, indicating the presence of a right tail. Therefore, following Qian and Strahan (2007) and other work, we use the log of loan spread in the main specification. Some specifications use actual spread expressed in basis points.

Although our focus is on the pricing of bank loans, in additional tests we also consider industry variation in loan size. Since larger facility amounts are highly correlated with large borrowers, we scale loan size by total assets of the borrower.

Control variables

Regression specifications include a set of controls intended to capture the risk of default that the borrower poses for the bank. Most borrower characteristics are obtained from Compustat Global. Data on US borrowers is obtained from annual Compustat files. Firm size is measured with log of firm value, equal to the book value of total assets plus the difference between market value and book value of common equity, converted into dollars to ensure comparability. Firm profitability is measured with the ratio of operating income to total assets. Leverage is the ratio of debt to total assets. Asset tangibility is the proportion of net property, plants, and equipment in total assets. Low distress risk indicator equals one for firms with Altman (1968) *z*-scores greater than or equal to three (since they are identified as being far away from bankruptcy). We also account for the presence of an S&P credit rating for this borrower in the S&P ratings dataset. Similar to Qian and Strahan (2007), the categorical rating measure varies from one to six for firms with nonmissing ratings, with categories corresponding to AAA, AA, A, BBB, BB, and B or below-rated borrowers (a separate category, for ratings of CCC or below is defined in the US sample), respectively, such that higher numerical values denote borrowers with worse credit

ratings, and vice versa. The rating is set to zero when missing, so a rating availability indicator is included as a separate control in all specifications that contain credit rating.

Larger, more profitable borrowers with more tangible assets and lower leverage are expected to enjoy more favorable lending terms. Rated borrowers, and among rated borrowers, borrowers with better credit ratings, are expected to be associated with lower spreads. The inclusion of these variables serves the dual purpose of accounting for previously documented sources of variation in default risk as well as accounting for potential similarities in key borrower fundamentals that may play an important role in explaining industry effects.

Our sample predates the brunt of the financial crisis, which has been linked to an increase in contagion, a reduction in lending and a widening of spreads, so our analysis is less affected by potential confounding effects of the crisis (e.g., Ivashina and Scharfstein, 2010; Santos, 2011). However, we include time fixed effects in all tests, and to capture time-varying country-level heterogeneity in the level of economic and financial development, we control for the percentage of market capitalization to GDP[4] and for economic growth measured by the rate of growth in GDP per capita. Both measures are obtained from the World Bank's World Development Indicators. This reassures us that the findings are not driven by an aggregate deterioration in interbank liquidity or lender financial condition, which triggers a tightening of bank lending and an increase in the cost of funds.

The tests also control for the number of firms in the industry to account for any mechanical sources of variation in the industry effect.

[4] The ratio of private credit to GDP is missing more often than market capitalization. Market capitalization and credit metrics are highly correlated financial development proxies used in prior studies, so we use the market capitalization measure to ensure more sample observations.

Robustness tests include additional controls for borrower return volatility and sovereign debt rating to capture other dimensions of risk. Given the findings of La Porta, Lopez-de-Silanes, and Shleifer (2002) [LLS] and Sapienza (2004), we also account for differences in the level of government ownership of banks using LLS data on the share of assets of the ten largest banks in the country owned by the state. Finally, we consider proxies for competition among prospective lenders. A lack of bank competition can lead lenders to hold up borrowers and offer unfavorable terms even to high-quality borrowers. We construct several measures aimed at capturing the level of lender activity: the number of lenders who extend loans to the borrower's industry (proxy for competition), ratio of the number of lenders to the number of borrowers in the firm's industry (similarly, expected to proxy for more competition among lenders), and the mean number of facilities per lender for the lenders in the borrower's industry (a small number of facilities per lender can indicate an atomistic loan market, but could also point to a less experienced and/or less active lender base).

Other robustness tests control for key non-price loan characteristics obtained from Dealscan, including loan size, loan maturity (in log terms), and the number of lenders involved with the loan (also in log terms), although we do not attribute causal inference to their coefficients in the regression.

To mitigate the impact of extreme observations, all continuous variables (dependent and explanatory) are winsorized at one percent of each tail.

Creditor rights

The main legal environment variable of interest is the DMS index of *creditor rights* provisions that improve creditor payoffs in the event of financial distress. The creditor rights index is higher if there are restrictions, such as creditor consent, on a debtor's reorganization filing; if

there is no automatic stay or asset freeze imposed by the court after reorganization is approved (so secured creditors can seize their collateral); if secured creditors have a first priority claim on liquidation proceeds; and if an administrator, rather than the firm's management, runs the business during reorganization (thwarting some agency problems and potential asset stripping).

In addition to the main creditor rights measures, we also consider several *creditor rights enforcement* measures from Djankov, Hart, McLiesh, and Shleifer (2008) (DHMS). Their aim is to capture the efficiency and cost of reorganization and other debt enforcement steps that can be undertaken against a defaulting debtor: overall efficiency of debt enforcement; average recovery rate; average time to payment to creditors; average time to resolution of the insolvency process (sale or retention as a going concern); average cost of insolvency; and whether the bankruptcy code imposes deviations from absolute priority. More efficient debt enforcement, higher recovery rates, a lower cost of insolvency, a faster reorganization process, and absolute priority of the secured creditor are all indicators of better creditor rights enforcement since protect creditors from ex post expropriation by the debtor.

Other institutional characteristics

Our analysis involves several other institutional environment characteristics. First, we use LLSV data on country level variation in private property rights, including the risk of expropriation by the state, control over corruption, and the overall level of rule of law. Second, we capture potential conflicts of interest involving insiders with country-level anti-director rights and anti-self-dealing indexes. The measures are obtained from Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008) [DLLS]. Higher values of the indexes indicate greater protection against insider conflicts of interest. Third, the quality of accounting standards measure from LLSV characterizes the level of sophistication of accounting and disclosure requirements in a given country. From the

standpoint of creditors, it can be viewed as a proxy for the cost of extracting accurate information from the firm's public accounting records.

2.3. Methodology

Univariate tests report pairwise correlations of loan spreads with the industry effects within each legal environment subsample. The industry effect is defined as the industry average of the respective loan characteristic. The current loan is excluded from the computation of the industry average for obvious reasons, to avoid artificially hardwiring our tests in smaller industries. We aggregate information on reported loans at one-digit SIC industry level for each country and sample year.[5] In the US sample, greater sample coverage allows us to pursue a more detailed industry analysis using three-digit SIC industry definitions. In addition, we tabulate adjusted R^2 from univariate regressions of loan spreads on the industry effect (with no other controls in the model) to evaluate the percentage of overall variation in spreads due to the borrower's industry.

In a multivariate context, the relevance of the industry effect is assessed in three ways. First, we concentrate on the signs and significance of estimates of sensitivity of loan spreads to the industry effect within subsamples based on creditor rights and other institutional characteristics. We also report tests of differences in industry effect coefficients across subsamples.

Second, tests performed in the full sample interact the industry effect with creditor rights and other variables of interest (as country-level law and finance variables are time-invariant, country fixed effects absorb direct terms). A negative interaction of creditor rights with the industry effect indicates a lesser role of the industry effect in strong creditor rights environments. Interactions of other institutional characteristics with the industry effect are interpreted similarly.

[5] Due to sample size considerations, we focus only on sector level effects (contained in aggregate, one-digit SIC industries) in order to avoid overestimating the importance of industry variation in a sample our size. The importance of industry-level effect at the two-digit or three-digit SIC level is likely greater.

We also assess the influence of the industry on lending terms in industry-years with high versus low volatility. The same approach is adapted to the US part of the analysis, except interactions with country creditor rights are replaced with interactions with the total asset constraint measure that varies at the state level.

Third, we examine the incremental explanatory power associated with the addition of the industry effect to the loan spread model. The baseline specification contains the main controls and country and year fixed effects. The improvement in explanatory power associated with the addition of the industry effect to this baseline model is given by the percentage change in the adjusted R^2 of the spread regression. A larger relative change in the model R^2 indicates that industry variation plays a greater role in explaining variation in loan spreads, all else equal.[6] Comparisons of incremental explanatory power of the industry effect are performed across subsamples based on creditor rights and other institutional characteristics.

Relative to most firm-level institutional variables, legal environment characteristics have the advantage of being mostly exogenous to an individual bank's loan pricing mechanisms or an individual borrower's default probability. Unlike loan specific covenants, country level creditor rights provide a source of variation unrelated to an individual firm's operating performance or asset structure or other variables potentially proxying for firm risk. To account for systematic differences at the country level, country fixed effects are used, which can partly alleviate causality concerns. Similarly, state of incorporation fixed effects are used in US tests.

Finally, to mitigate possible concerns about correlation of errors within countries, we report robust standard errors clustered by country. In unreported tests, double clustering by

[6] Earlier work has examined manager and director fixed effects, among others, on corporate decisions (see, e.g., Bertand and Schoar, 2003; Richardson et al., 2003) and peer effects in corporate governance (John and Kadyrzhanova, 2008). In a similar spirit, our methodology focuses on changes in the explanatory power of the model after the addition of the effect of interest to the baseline specification.

country and year, firm and year, or country and firm provides a similar overall pattern of significance. In the US sample, errors are clustered at the state of incorporation level.

The methodology used in our analysis is detailed in Table A3 of the Appendix.

3. Results

3.1. Univariate evidence

We begin with a univariate analysis of the relative importance of the industry effect in strong versus weak legal protection environments. Table 1 reports correlations of loan spreads with the industry effect within creditor rights and other legal environment subsamples. Subsamples are identified based on whether a given legal environment characteristic is above (strong) or below (weak) sample median.

[Table 1]

Although all correlations are positive and significant at the 5% level, higher correlations are observed in weak creditor rights environments. For example, correlation with the industry effect amounts to 0.7 in the weak creditor rights subsample, compared to the 0.5 correlation in the strong creditor rights subsample. Similar patterns are documented for subsamples based on the quality of debt enforcement. Correlation with the industry effect is around 0.7 when debt enforcement is strong and 0.5-0.6 in the presence of poor debt enforcement, as indicated by low efficiency of the enforcement process, high cost of insolvency proceedings, low recovery rate, a long time to payment, and mandatory deviations from absolute priority. Besides creditor rights, most other variables (except the rule of law index) capturing other institutional features of the legal environment, such as government and managerial expropriation and quality of disclosure standards, exhibit a similar pattern.

The last two columns tabulate the explanatory power of the industry effect in univariate loan spread regressions. Consistent with the evidence obtained from correlations, the industry effect explains a larger proportion of variation in loan spreads in weak creditor rights environments and in countries with weak overall protection of property rights.

Overall, univariate evidence suggests that industry factors are more important in the absence of protections of creditor rights against expropriation by the borrower firm, insiders, or the government.

3.2. The role of creditor rights for the industry effect on spreads (multivariate evidence)

Univariate evidence does not account for differences in other important characteristics correlated with spreads, so it can overstate or understate the influence of the borrower's industry on the cost of bank loans, as well as the relative difference in the importance of industry considerations in environments with varying legal protections. Therefore, our main tests incorporate a set of controls that have been found to predict loan spreads. Panel A of Table 2 shows multivariate evidence of the industry effect on loan spreads within subsamples based on the level of creditor rights protections. After controlling for various spread determinants, we find that the industry effect in weak creditor rights environments is double the industry effect in strong creditor rights settings. Findings from multivariate specifications are consistent with the earlier univariate evidence. Creditors facing fewer protections against incentive conflicts involving debt repayment place a greater weight on industry factors when setting loan spreads.

[Table 2]

Panel B documents differences in the incremental explanatory power of the industry effect, measured by the change in R^2 after the industry effect is added to a multivariate model of loan

spreads. The industry effect has the most explanatory power for loan spreads in weak creditor rights environments. The results are consistent with the findings in Panel A and univariate results.

Full sample tests are shown in Table 3. Creditor rights are interacted with the industry effect in spread regressions controlling for other risk characteristics. All else equal, while the industry effect is significant overall, it is larger when creditor rights protections are weak, consistent with the subsample findings. The results are observed both for logged and unlogged spread measures.

[Table 3]

Key controls enter with expected signs. Larger firms are characterized by lower risk and information costs, resulting in lower spreads. Similarly, more profitable firms pose fewer risks and pay lower spreads. A high existing level of debt increases the risk of default, which is reflected in higher spreads. Unrated firms have more information asymmetries, leading to higher spreads. Conditional on being rated, a worse credit rating (a higher numerical value of the rating variable, which corresponds to categories such as B, BB, or BBB) is associated with higher spreads. In regressions using unlogged spreads in basis points, higher economic growth and better financial development predict more favorable loan terms. All tests control for country and time effects and log of the number of industry observations.

3.3. Creditor rights enforcement

We now extend the main analysis, which has focused on an aggregate creditor rights index, using a more detailed set of proxies for *enforcement* of creditor rights in the event of a default. Debt enforcement variables have been discussed in the data section.

Univariate evidence on the impact of debt enforcement on the industry effect is shown in Table 1. A less efficient, more costly insolvency process that yields a lower average recovery rate

for creditors and takes more time is associated with substantially less discriminate loan pricing within a given industry, as indicated by a larger industry effect. The industry effect is similarly more pronounced when the bankruptcy code prescribes deviations from absolute priority, placing secured creditor claims behind other claimholders. The evidence is consistent with the main results obtained using the creditor rights index. Multivariate tests performed in subsamples with weak versus strong creditor rights enforcement are presented in Table 4.

[Table 4]

Inefficiencies in the debt enforcement process raise the importance of industry factors for loan pricing. The exception is absolute priority, for which the difference is not statistically significant in subsample tests.

Full sample multivariate tests of debt enforcement interactions with the industry effect, similar to the tests performed in Table 3, are presented in Table 5.

[Table 5]

Since individual debt enforcement variables are highly correlated with each other and the creditor rights measure, they are included separately. All else equal, a higher level of efficiency of debt enforcement and a higher average recovery rate reduce the magnitude of the industry effect on loan spreads. In turn, the industry effect is larger when more time is required to complete the insolvency process and make payments to creditors. Similarly, deviations from absolute priority (e.g., if the law puts secured creditors behind employees, tax authorities, suppliers, or even shareholders) strengthen the industry effect.

Intuitively, more efficient and more expedient enforcement of creditor rights against a defaulting debtor limits conflicts of interest and hold-up problems involving borrowers and creditors and amplifies the relative importance of firm-specific risk and ability to repay the loan

for setting loan terms, which in turn prompts banks to collect and reflect more borrower-specific information in loan prices.

3.4. Property rights and other institutional characteristics

Besides creditor rights protections, other aspects of the legal environment can affect the extent to which banks incorporate industry factors into the loan pricing decision. In this section we evaluate the importance of shareholder rights, disclosure quality, and other institutional characteristics for the industry effect on loan spreads (see, e.g., LLSV; La Porta et al., 1999; Bae and Goyal, 2008). Univariate evidence on the relevance of these institutional characteristics for the magnitude of the industry effect is presented in Table 1. With the exception of the rule of law, strong property rights and better legal environment quality translate into a larger industry effect and greater explanatory power of the industry for loan pricing. In Table 6 we report multivariate tests that control for key loan spread determinants within subsamples based on legal environment quality.

First, we consider the role of insider-shareholder conflicts of interest for the relevance of industry factors in loan pricing. As we discussed earlier, self-dealing transactions and other forms of tunneling by insiders hurt the interests of all outside claim holders, including creditors. If insiders strip a firm's assets or divert corporate funds through related party transactions or otherwise expend firm cash flow to derivate private benefits, the odds of loan repayment and the average recovery rate decrease. Similar to the effect of corruption, the problem of diversion of corporate resources due to self-dealing is likely to have an industry-specific component. Unobservable aspects of investment projects, asset structure and free cash flow would vary with the borrower industry. Since conflicts of interest are conditional on aggregate factors, lenders may

limit costly firm specific information acquisition.[7] The empirical prediction is a larger industry effect on loan spreads in the presence of weak anti-self-dealing protections or shareholder rights.

We recognize that existing agency literature may yield an alternative prediction that managerial entrenchment partly mitigates shareholder-debtholder conflicts and benefits debtholder interests. If this alternative holds, our hypothesized effect may be partially offset or reversed. Ultimately, we consider this an empirical question.

Industry effect estimates in subsamples with strong and weak shareholder rights are shown in Table 6. The industry effect is larger in countries with stronger self-dealing protections (but not stronger anti-director rights). The findings are consistent with the notion that insider ability to misappropriate corporate resources affects all external claimants, including outside shareholders and debtholders. Insider diversion of firm funds through self-dealing transactions has a similar effect on creditor payoffs and loan pricing as government rent-seeking.[8]

[Table 6]

Second, we examine the effect of government expropriation and rent-seeking on the sensitivity of loan terms to aggregate factors. These sources of risk to private property rights have been shown to have an adverse impact on overall firm value, market value of equity, and cost of debt in earlier work. While these effects are less direct than expropriation of creditors measured by creditor rights provisions, they might similarly affect the role of industry factors for loan pricing. The vulnerability of the borrower to government expropriation is likely to depend on the borrower's industry. Factors such as the type of assets and investment opportunities and reliance on regulatory approvals vary dramatically from industry to industry and have a direct bearing on

[7] Knyazeva, Knyazeva, Morck, and Yeung (2008) use the premise of costly information acquisition in the context of correlation of managerial investment decisions with those of industry peers.

[8] After controlling for observable attributes of the borrower risk profile, we do not find support for the alternative proposed in John et al. (2008) that insider conflicts of interest partly mitigate shareholder-creditor incentive conflicts.

the borrower's exposure to expropriation (e.g., more prevalent in the mining, energy, export-import businesses etc.). Further, when government officials are imperfectly informed about firm-specific outcomes, the likelihood of rent-seeking will depend on aggregate industry performance. In turn, government expropriation of borrowers in a given industry exogenously lowers all industry firms' ability to repay loans, making costly information gathering about firm-specific risks less valuable to the lender. The empirical prediction is greater impact of industry factors on loan pricing in the presence of government expropriation. Empirically, differences due to control over corruption (but not risk of expropriation or rule of law) are economically important and statistically significant. Compared to less corrupt environments, highly corrupt countries exhibit a more than eighty percent higher industry effect on spreads. An implicit tax on value or cash flows, corruption affects all claim holders, including creditors. This suggests that rent seeking has an industry component due to similarity in projects and regulations that expose industry firms to corrupt officials.

Third, we look at whether accounting standards matter for the role of industry in loan pricing. Poor quality of accounting disclosures makes them less informative about borrower fundamentals and raises lender costs of extracting information about firm-specific borrower risks. As a result lenders might be unable to significantly improve on noisy aggregate data about default risks, yielding a larger industry effect on loan terms when disclosure quality is weak. We find that the industry effect is markedly larger in the presence of poor disclosure quality. Compared to the good disclosure quality subsample, the subsample with poor disclosure standards exhibits a sixty-six percent higher industry effect. Banks do not appear to redouble their private information gathering efforts to compensate for the low quality of accounting standards. Rather, poor quality of accounting disclosures appears to interfere with the bank's loan pricing decision, which

highlights the role of processing of existing firm-specific information in the lender's information efforts.[9]

Full sample evidence is presented in Table 7. Initially, individual institutional characteristics are interacted with the industry effect in separate specifications. In the second part of the table, key interaction effects are included jointly.

[Table 7]

Consistent with the subsample evidence, self-dealing protections and quality of accounting standards interact significantly with the industry effect in the full sample. The interaction with control over corruption is not significant. When creditor rights and various institutional characteristics are interacted with the industry effect at the same time, we find that creditor rights and accounting standards continue to significantly reduce the relevance of industry factors for loan pricing. Other institutional variables do not exhibit significant interactions. The caveat is that creditor rights are correlated with other institutional characteristics, so joint inclusion of these variables introduces collinearity problems.

Significant controls enter with expected signs. For instance, large profitable firms with low leverage ratios receive the lowest rates. By comparison, small highly levered loss-making borrowers pay more for bank loans. Of the multitude of legal environment features that may affect loan contracting through their influence on the relative importance of aggregate versus firm-specific information for the pricing of default risk, creditor rights and quality of accounting disclosures (and considered individually, self-dealing protections) have the largest impact.

[9] It is also possible that a borrower's decision to fudge accounting numbers when lax disclosure standards permit it is correlated with aggregate industry factors. For example, discretionary accruals and other accounting choices may vary systematically at the industry level; assuming weak disclosure standards, this may result in correlated manipulation of accounting statements within industries. Whether it is banks' reliance on public disclosures containing such industry bias or banks' impaired ability to extract an accurate firm-specific signal and subsequent reliance on aggregate industry information for risk assessment, the industry component of loan terms is clearly more important in the absence of sound accounting standards.

3.5. Conditioning the analysis on volatility in the industry

Next we condition the relation between creditor rights and the industry effect on volatility. A high level of volatility in the industry indicates greater aggregate risk which affects all borrowers in the industry, and, by consequence, the payoffs of creditors. It can also add noise and cost to the bank's task of extracting firm-specific default risk information. Therefore, it is possible that industry factors gain importance during periods of high volatility, even in environments with strong creditor rights. Alternatively, a high level of volatility can amplify gains from costly signal extraction, pushing banks towards more scrutiny of prospective borrowers and more discriminate loan pricing. We test these two alternatives empirically.

In Table 8 we evaluate the impact of industry volatility on the main analysis performed in Table 3. Our main volatility proxy is average volatility of returns in the industry in the twelve months preceding the loan. To allow for medium-term volatility effects, we extend the period to twenty-four and thirty-six months, respectively. We add the overall level of volatility, the interaction of volatility with the industry effect, and the interaction of volatility, creditor rights, and the industry effect, to our main specification.

[Table 8]

As in the original regression, the direct industry effect remains positive and significant and the interaction of creditor rights with the industry effect continues to be negative and significant. On its own, volatility does not appear to interact significantly with the industry effect on spreads, after we have accounted for other firm-, industry-, and country-specific determinants of spreads. However, the coefficient of interaction between creditor rights and the industry effect is lower in high volatility industries and periods. Thus, although industry factors are overall less important for loan costs in strong creditor rights environments, the reduction is smaller during high volatility

periods that raise the importance of aggregate risks and the cost of borrower-specific information gathering. By comparison, in weak creditor rights environments, loan spreads are already highly dependent on industry wide concerns. In other words, the level of volatility affects the relevance of the industry effect conditional on the creditor rights environment.

3.6. Robustness checks

Additional full sample tests that include robustness controls and evaluate several alternative explanations are presented in Table 9.

[Table 9]

Panel A introduces additional controls that might affect the industry effect in loan spreads. Banks lending in riskier countries may put more weight on aggregate factors (that in turn can be partly captured by the industry effect) when determining loan spreads. Sovereign credit rating is a proxy for overall country risk. While the categorical sovereign rating variable itself is not significant, the indicator for the presence of a sovereign rating is associated with significantly lower spreads, even after we control for the rating status and credit rating of the borrower firm (both of which enter with expected signs). Importantly, the creditor rights interaction with the industry effect retains its sign and significance (column I).

Government ownership of banks has been linked to the level of financial development as well as the cost of bank loans (see, e.g., LLS; Sapienza, 2004). In the context of industry effects, we may observe more similarity in loan terms if large government-owned banks have ‘cornered the market’. Empirically, government ownership of banks does not appear to affect the role of

industry for loan spreads, nor does it explain the interaction of creditor rights and the industry effect (column II).[10]

Our present set of proxies for borrower-specific default risk relies on the *z*-score and other accounting-based metrics, as well as credit ratings. In columns III-V, we add a risk measure based on stock returns. Return volatility is computed from monthly returns over the past twelve, twenty-four, and thirty-six months, respectively. As a market-driven measure, it could provide us with a more comprehensive picture of overall firm risk. Consistent with riskier firms being less likely to repay debt on time, return volatility is associated with significantly higher loan spreads, all else equal. Further, although similarity of risk profiles of borrowers in the industry might explain some of the industry effect, it does not explain the coefficients of interest.

Finally, limited competition among banks for prospective borrowers could lead to greater potential for rent extraction in the form of higher loan spreads (e.g., Hao et al., 2009). At the same time, a concentrated loan market dominated by a small number of lenders can also explain greater similarity in loan terms. Industries covered by a larger number of lenders might see more attractive loan terms as those lenders compete for business, however, we expect the effect to taper off when the number of lenders gets large, so we include a linear as well as a quadratic term for the logged number of lenders. Consistent with the intuition about lender competition and pricing, loan spreads are significantly lower in the presence of more lenders. The effect is indeed nonlinear – the quadratic term has the opposite sign. We also consider the average number of lenders per prospective borrower to capture the intensity of competition, however, this variable does not add significant explanatory power. Finally, to account for the possibility that poorly diversified lender banks contribute to balance sheet contagion, we also control for the average number of loans per

[10] Since the LLS government ownership measure is time-invariant, its direct effect will be absorbed by country controls.

lender, however, this variable is not significant. Importantly, the main effect continues to hold throughout these robustness checks.

Panel B introduces other controls to the main specification. To avoid potential mechanical effects, all tests already account for borrower density, measured as the logged count of borrowers in the industry. In column I, for robustness we add an interaction of borrower density with the industry effect. Columns II and III control for indicator variables denoting major currencies and deal purpose types, respectively. Without inferring causality, in column IV we incorporate other deal characteristics, such as the amount, maturity, and number of lenders on the loan, into the model. While longer maturity loans are associated with higher spreads, as expected, the interaction of creditor rights with the industry effect retains its significance and sign.

Panel C relaxes some of the sample selection criteria and uses variations of the main measure. In column I, we include borrowers from financial and public sectors, which are excluded from the main analysis, back into the sample. In column II, we reintroduce observations from countries with missing LLSV data on property rights, as long as they have nonmissing information on the creditor rights index in DMS. Column III uses industry median spread instead of the average spread. Finally, column IV substitutes the DMS version of the creditor rights index for the original LLSV creditor rights index. The main findings remain very similar after these robustness checks.

3.7. Loan size

Similar to other banking literature, our analysis has focused on loan prices as the most important indication of how lenders reflect risk in their lending decisions. However, quantity can also be viewed as a relevant aspect of borrower access to bank loans and a way for banks to respond to borrower risk and conflicts of interest. Industry effects on loan size and the role of

creditor rights for the industry effect are examined in Table 10. The specification is adapted from the loan spread regression shown in Table 3.

[Table 10]

We expect the effects to extend to the choice of other loan attributes. In an optimal loan contracting framework, in addition to using loan pricing, lenders can manage their exposure to a particular borrower by varying loan size. From the standpoint of a prospective borrower, the borrower's industry will matter for quantity as well as price characteristics, and the relevance of the industry for both of these dimensions of bank lending will depend on the strength of creditor rights. Indeed, the main patterns identified for loan spreads continue to hold for loan size. Weak creditor rights decrease within-industry variation in the size of extended loans. Whereas the industry effect is meaningful for the average borrower in the sample, it loses most of its significance in environments with the strongest creditor rights. The magnitude of the effect remains economically important.

3.8. Evidence from the US

The preceding analysis has focused on the role of cross-country variation in creditor rights for the industry effect on loan pricing. It has enabled us to exploit considerable differences in creditor rights protections and bankruptcy codes that do not exist within the US due to the uniformity of bankruptcy rules set and enforced at the federal level. However, existing work has documented state level variation along a different dimension of creditor protections. In particular, some state laws constrain firms from making shareholder payouts in the form of dividends or repurchases unless a minimum ratio of assets to liabilities is met in order to protect the interests of the firm's creditors (Long and Wald, 2007). The relevance of payout restrictions for creditor interests is supported by conceptual arguments about the shareholder-bondholder agency conflict

involving cash distributions to shareholders. Previous literature has considered payout constraints as a means of addressing the agency conflict between shareholders and creditors and protecting creditors from ex post wealth transfers to the firm's shareholders (see, e.g., John and Kalay, 1982; Kalay, 1982; Smith and Warner, 1979). Hypothetically, a firm not bound by a payout restriction can distribute its entire value to shareholders, leaving creditors with claims to a worthless firm. Statutory payout restriction provisions vary by the borrower's state of incorporation, enabling us to use total asset constraint as a source of state-level variation in creditor protections in the US sample. The constraint variable is zero if there is no constraint in place or 1 or 1.25 if a constraint is imposed. Given the infrequency of reincorporations, statutory constraints are significantly more exogenous than facility-level restrictions.

The advantage of using the US sample is relative homogeneity in aggregate sources of risk and banking industry practices (with a considerable role for federal regulations and extensive interstate lending) that affect loan spreads, as well as a larger sample size, which allows us to estimate the industry effect and its interaction with creditor rights more precisely. Besides using the standard set of controls from the main specification, we disaggregate the analysis to three-digit SIC industry level and add state of incorporation fixed effects to filter out a greater amount of heterogeneity among borrowers. We repeat the main tests of Tables 2 and 3 in the US sample. The results are shown in Tables 11 and 12.

[Table 11]

Panel A shows estimates of the industry effect from multivariate spread regressions within the subsample of borrowers in states with a total asset constraint (strong creditor rights) and states without a total asset constraint (weak creditor rights). The main specification accounts for borrower size, profitability, leverage, distress risk, asset tangibility, number of industry

observations, and state and time fixed effects. Subsequent tests add credit rating availability indicator and creditor rating controls. The last test uses loan spreads expressed in basis points instead of logged spreads. In all cases, the industry effect remains significant in both creditor rights subsamples. Importantly, the industry effect is significantly larger in the weak creditor rights subsample, consistent with our previous findings based on international data. Compared to the strong creditor rights subsample, the industry effect is 0.07-0.11 (approximately 21-31%) larger in the weak creditor rights subsample. The difference in industry effect coefficients is statistically significant.

Panel B documents the additional explanatory power of the industry effect when it is introduced into the benchmark model of loan spreads. In all specifications, the industry effect has more explanatory power for loans in states without restrictions (weak creditor rights states), which parallels the findings of a similar analysis conducted in the international sample.

[Table 12]

In Table 12 we repeat the main test that involves interactions of creditor rights with the industry effect in the full sample, after accounting for unobservable state level heterogeneity, time effects and standard controls. As expected, the industry effect enters with a statistically significant coefficient. Crucially, the interaction with the state total asset constraint is significant and negative. Therefore, the industry effect is smaller in states with stronger creditor protections from conflicts of interest. For instance, the industry effect in logged spread regressions is 0.33-0.35 in states with constraints, compared to 0.39-0.40 in states without a constraint.

Other controls enter with predicted signs. Large borrowers have lower borrowing costs. Profitability and presence of tangible assets are similarly associated with lower spreads. Firms at low risk of financial distress, firms that have a credit rating – and amongst those, firms with better

credit ratings (lower numerical values of the rating variable, which correspond to investment grade ratings) – have lower loan spreads.

Evidence from the US sample obtained using a different dimension of creditor rights strength is consistent with the findings presented earlier in the paper on the role of international differences in creditor rights on the industry effect in loan spreads. Overall, in environments with stronger creditor rights, loan spreads appear to differentiate more among the risks posed by individual borrowers from the same industry, holding well documented risk characteristics and other factors constant.

4. Conclusions

We have examined the implications of creditor rights and other institutional differences for the role of the borrower's industry in explaining loan terms. The presented evidence supports a new implication of borrower-creditor conflicts of interest: when creditor rights are weak, loan spreads are more sensitive to industry factors and the borrower's industry accounts for a larger proportion of variation in loan spreads, holding other characteristics fixed.

The evidence is consistent with the idea that conflicts of interest between borrowers and creditors exacerbated by weak creditor rights diminish the importance of borrower-specific financial condition for bank financing. Weak creditor rights allow borrowers to transfer wealth from creditors and divert corporate assets or free cash flow, a behavior that cannot be eliminated due to contracting frictions and that contributes to a higher likelihood of default and lower recovery rates conditional on default. Greater potential for strategic default even among borrowers with the ability to repay the loan further reduces lender incentives to engage in costly gathering of firm-specific information about the borrower's ability to repay and prompts lenders to rely increasingly on verifiable aggregate information about performance and the risk of default. All

else equal, this results in a larger role of aggregate factors for loan pricing and availability in the presence of significant borrower-creditor conflicts of interest and expropriation of creditors. Specifically, industry factors are more important when creditor rights enforcement is poor, average recovery rates are low, the cost of insolvency is high, the time to resolution of insolvency and payment to creditors is considerable, and in the presence of absolute priority deviations. Creditor rights have a similar effect on explaining the importance of industry factors for loan size, suggesting that lender decisions about the quantity as well as prices of loans are more responsive to industry level information in the presence of severe borrower-creditor conflicts of interest.

Several other dimensions of the borrower's institutional environment that facilitate asset stripping, and as a consequence, wealth transfers from creditors, such as a lack of self-dealing protections, weak accounting standards, and to some extent, corruption, impact the industry effect on loan spreads. When included jointly, creditor rights and accounting disclosure quality interact significantly with the industry effect.

We obtain further support for our main findings in the US sample using differences in state law provisions on minimum asset-liability ratios. Since shareholders can expropriate creditors by paying out generous dividends, the presence of statutory payout constraints provides a relatively exogenous source of variation in creditor protections in a larger and more homogeneous sample of US syndicated loans. Consistent with the findings from international creditor rights data, loan spreads are significantly more dependent on industry factors when payouts to shareholders can be made without meeting minimum asset-liability ratios. In turn, loan spreads offered to borrowers incorporated in states with minimum asset-liability constraints are significantly less sensitive to the borrower's industry.

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Appendix: Data

Table A1. Definitions and summary statistics of the main variables (international sample)

This table presents definitions and summary statistics for the main variables used in the analysis of loan spreads in the international sample. The sample is constructed as follows. The sample period is 1994-2008 (Sep.). Data constraints require matching of Loan Pricing Corporation's Dealscan data on loan terms to Compustat Global data on borrower characteristics using the list of matches between Dealscan borrower identifiers and Compustat gvkey's provided by Chava and Roberts (2008). Country indexes of property rights protections are obtained from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) [LLSV]. The updated country index of creditor rights is obtained from Djankov, McLiesh, and Shleifer (2007) [DMS]. Following Qian and Strahan (2007), financial industry and public administration borrowers (with primary one-digit SIC codes 6 and 9) and borrowers incorporated in the US and Canada are excluded. Observations with firm market value below twenty million, facilities with benchmark rates other than LIBOR, observations from country-industry pairs with fewer than three nonmissing observations in a year, observations with missing information on spread, facility amount, main control variables, LLSV law and finance measures, or DMS creditor rights index are excluded. Tests using creditor rights enforcement measures from DHMS and robustness tests using additional control variables have varying observation counts, as do robustness tests varying certain sample selection criteria.

Variable	Obs.	Mean	Med.	SD	Definition
Loan characteristics					
Spread (bps)	2036	114.63	75.00	103.03	Drawn all-in loan spread in basis points. Source: Dealscan.
Spread	2036	4.37	4.32	0.89	Log of drawn all-in loan spread in basis points. Source: Dealscan.
Loan size	2036	0.17	0.06	0.54	Ratio of loan amount to borrower assets. Source: Dealscan and Compustat Global (CG).
Maturity	1947	3.77	4.09	0.72	Log of loan maturity in months. Source: Dealscan.
Number of lenders	2035	2.14	2.30	1.00	Log of the number of lenders on the loan. Source: Dealscan.
Firm characteristics					
Firm size	2036	8.68	8.72	1.66	Log of firm market value, defined as book value of total assets plus the difference between market value and book value of common equity expressed in dollars. Source: CG.
Firm profitability	2036	0.08	0.07	0.07	Ratio of operating income to total assets. Source: CG.
Leverage	2036	0.33	0.33	0.16	Ratio of the sum of long-term debt and debt in current liabilities to total assets. Source: CG.
Asset tangibility	2036	0.40	0.37	0.25	Ratio of net property, plants and equipment to total assets. Source: CG.
Low distress risk	2036	0.20	0.00	0.40	Indicator variable equal to 1 if the firm's Altman (1968) *z*-score is greater than or equal to 3, and 0 otherwise. Source: CG.
Rating available	2036	0.29	0.00	0.45	Indicator variable equal to 1 if the firm has a nonmissing S&P long-term credit rating in S&P ratings. Source: S&P Ratings.
Rating	2036	1.12	0.00	1.84	Numerical value assigned to the firm's S&P long-term credit rating using the following scale (Qian and Strahan, 2007): 1 if AAA; 2 if AA; 3 if A; 4 if BBB; 5 if BB; 6 if B or below; set to 0 if not rated or rating missing. Source: S&P Ratings. Excluding observations with missing rating, mean is 3.84; median 4.00 (BBB); standard dev. 1.09.

Country characteristics					
Creditor rights	2036	2.82	3.00	1.36	Index that adds one for each of the four creditor rights protection provisions: restriction, such as creditors' consent or minimum dividend, on filing for reorganization; secured creditors' ability to gain possession of the security once the reorganization petition is approved (no automatic stay); first priority given to secured creditors in the distribution of liquidation proceeds; removal of the debtor from the administration of its property during the resolution of the reorganization. The index varies from zero to four. Higher values reflect stronger creditor rights protection. Source: DMS. A robustness check uses the LLSV version of the creditor rights index, as specified.
Efficiency of debt enforcement	1941	79.80	92.30	20.85	Measure of efficiency of debt enforcement procedure. Higher values reflect better creditor rights enforcement. Source: Djankov, Hart, McLiesh, and Shleifer, 2008 (DHMS).
Recovery	1941	76.05	90.70	23.71	Average recovery rate for the secured creditor. Higher values reflect better creditor rights enforcement. Source: DHMS.
Time to payment	1941	1.46	1.00	0.95	Estimated time in years from default to receipt of payment by secured creditors. Higher values reflect worse creditor rights enforcement. Source: DHMS.
Time to sale	1941	1.14	0.60	1.00	Estimated time to resolve the insolvency case from default to resolution (sale as a going concern, piecemeal sale, or successful reorganization). Higher values reflect worse creditor rights enforcement. Source: DHMS.
Cost of insolvency	1941	0.07	0.06	0.04	Estimated cost of the debt enforcement proceeding for all parties as a percentage of value, including court/bankruptcy authority costs, attorney fees, bankruptcy administrator fees, accountant fees, notification and publication fees, assessor or inspector fees, asset storage and preservation costs, auctioneer fees, government levies, and other associated insolvency costs. Higher values reflect worse creditor rights enforcement. Source: DHMS.
Priority	1941	1.36	1.00	0.75	Priority of secured creditors. A value of 1 indicates highest priority. A value of 2, 3, or 4 indicates that other parties have a higher priority than the secured creditor (a mandated deviation from absolute priority). Value of 1 reflects better creditor rights enforcement. Values of 2, 3, 4 reflect worse creditor rights enforcement. Source: DHMS.
Expropriation protections	2036	9.24	9.71	0.92	Measure of protection from the threat of government expropriation in the country. Higher values reflect lower expropriation risk. Source: LLSV.
Control over corruption	2036	8.22	9.11	1.66	Measure of control over corruption in government produced by International Country Risk Guide. Lower scores indicate the “high government officials are likely to demand special payments” and “illegal payments are generally expected throughout lower levels of government” in the form of “bribes connected with import and export licenses, exchange controls, tax assessment, policy protection, or loans.” Higher values reflect a lower level of corruption. Source: LLSV.
Rule of law	2036	8.04	8.57	1.56	Measure of the country’s law and order tradition produced by International Country Risk Guide. Higher values reflect better rule of law. Source: LLSV.
Anti-director rights	2036	4.38	5.00	0.89	Index of shareholder legal protections that captures the right to vote by mail; not to deposit shares prior to the General Shareholders’ Meeting; to vote cumulatively; to challenge a resolution of the shareholders and/or the board (oppressed minorities mechanism); to call an Extraordinary Shareholders’ Meeting when the minimal ownership stake required is less than or equal to ten percent; the preemptive right to buy new issues of shares. Higher values reflect stronger shareholder rights. Source: Djankov, La Porta, Lopez-de-Silanes, and Shleifer, 2008 (DLLS).
Self-dealing protections	2036	0.66	0.76	0.30	Measure of ex ante and ex post ability of shareholders for private enforcement against self-dealing by insiders. It captures requirements for approval by disinterested shareholders, disclosure by the parties, independent review of transactions, disclosure in periodic filings, the ability to sue or rescind the transaction,

					hold the parties to the transaction liable, and access transaction-related evidence. Higher values reflect strong protections against self-dealing. Source: DLLS.
Accounting standards	2015	70.04	76.00	9.14	Measure of disclosure and accounting standards quality. The measure reflects the inclusion or omission of items in the disclosure categories of general information, income statements, balance sheets, funds flow statement, accounting standards, stock data, and special items. Source: LLSV.
Economic growth	2036	2.80	2.62	2.06	Growth in the country's GDP per capita, expressed in percentage terms. Source: World Bank World Development Indicators.
Financial development	2036	119.13	121.66	54.49	Percentage ratio of market capitalization to the country's GDP, expressed in percentage terms. Source: World Bank World Development Indicators.
Robustness variables					
Sovereign rating available	2036	1.00	1.00	0.04	Indicator variable equal to 1 if the country has a S&P foreign currency long-term debt rating as of the time of the loan, 0 otherwise. Source: S&P, http://www.standardandpoors.com/ratings/articles/en/us/?assetID=1245213114875.
Sovereign rating	2036	3.03	1.00	3.78	Numerical value assigned to the country's S&P foreign currency long-term debt rating using the following scale: 1 if AAA; 2 if AA; 3 if A; 4 if BBB; 5 if BB; 6 if B or below; set to 0 if not rated or rating missing. Source: see above.
Government ownership of banks	2036	0.15	0.02	0.21	Share of the assets of the top ten banks in the country owned by the government of that country in 1995. The percentage of the assets owned by the government in a given bank is calculated by multiplying the share of each shareholder in that bank by the share the government owns in that shareholder, and then summing the resulting shares. Source: La Porta, Lopez-de-Silanes, and Shleifer, 2002 (LLS).
Number of lenders in the industry (log)	2006	4.43	4.47	0.78	Log of the number of lenders that have participated in at least one loan to a borrower in the firm's industry in a given year. A quadratic term (squared log of number of lenders in the industry) is included to capture the nonlinear nature of the effect. Source: Dealscan.
Lender-to-borrower ratio in the industry	2006	5.06	4.00	3.65	Ratio of the number of lenders that have that have participated in at least one loan to a borrower in the firm's industry to the number of borrowers in the firm's industry that have received at least one loan, for a given year. Source: Dealscan.
Industry average loans per lender (log)	2006	5.15	5.22	0.52	Log of the number of loans in which a lender has participated in a given year, averaged across all observations for lenders participating in loans to borrowers in the firm's country and industry, for a given year. Source: Dealscan.
Return volatility (12m)	2013	2.30	2.26	0.58	Log of standard deviation of monthly percentage returns over the 12 months preceding the month of the loan. Return volatility (12 mo) in the industry is average of return volatility in the one-digit SIC industry in a given country and year, excluding the loan in question. Source: CG Issues.
Return volatility (24m)	2013	2.36	2.32	0.54	See above, except 24 months preceding the month of the loan are used.
Return volatility (36m)	2013	2.40	2.36	0.52	See above, except 36 months preceding the month of the loan are used.

To account for potential for extreme observations, all continuous variables are winsorized at one percent of each tail of the distribution.

Table A2. Definitions and summary statistics of the main variables (US sample)

This table presents definitions and summary statistics for the main variables used in the analysis of loan spreads in the US sample. The sample is constructed as follows. The sample period is 1990 to 2008 (Sep.). Annual Compustat data is matched to Loan Pricing Corporation's Dealscan data on loan terms using the list of matches between Dealscan borrower identifiers and Compustat gvkey's provided by Chava and Roberts (2008). Financial industry borrowers (with primary one-digit SIC code 6), borrowers incorporated outside the US, borrowers with headquarters located outside the US, and borrowers with firm market value below twenty million are excluded. Observations with missing data on controls, facilities with benchmark rates other than LIBOR, observations from country-industry pairs with fewer than three nonmissing observations in a year, and facilities denominated in currencies other than USD are excluded. States of borrower incorporation are obtained from Compustat. Only US lenders are used. Information on payout restriction statutes is obtained from Wald and Long (2007).

Variable	Obs.	Mean	Med.	SD	Definition
Loan characteristics					
Spread (bps)	14764	167.50	150.00	117.15	Drawn all-in loan spread in basis points. Source: Dealscan.
Spread	14764	4.82	5.01	0.86	Log of drawn all-in loan spread in basis points. Source: Dealscan.
Firm characteristics					
Firm size	14764	7.18	7.15	1.85	Log of firm market value, defined as book value of total assets plus market value of equity minus book value. Source: Compustat.
Firm profitability	14764	0.13	0.13	0.11	Ratio of operating income before depreciation to total assets. Source: Compustat.
Leverage	14764	0.33	0.30	0.24	Ratio of the sum of long-term debt and debt in current liabilities to total assets. Source: Compustat.
Asset tangibility	14764	0.35	0.30	0.23	Ratio of net property, plants and equipment to total assets. Source: Compustat.
Low distress risk	14764	0.44	0.00	0.50	Indicator variable equal to 1 if the firm's Altman (1968) *z*-score is greater than or equal to 3, and 0 otherwise. Source: Compustat.
Rating available	14764	0.57	1.00	0.50	Indicator variable equal to 1 if the firm has a nonmissing S&P long-term credit rating in S&P ratings. Source: Compustat ratings data.
Rating	14764	2.38	3.00	2.38	Numerical value assigned to the firm's S&P long-term credit rating using the following scale: 1 if AAA; 2 if AA; 3 if A; 4 if BBB; 5 if BB; 6 if B; 7 if CCC or below; set to 0 if not rated or rating missing. Source: S&P Ratings. Excluding observations with missing rating, mean is 4.07; median 4.00 (BBB); standard dev. 1.64.
Creditor rights					
Total asset constraint (minimum ratio of assets to liabilities)	14764	0.37	0.00	0.49	Minimum ratio of the amount of book capital to the amount of debt before a dividend payment or share repurchase can be made based on the state law in the borrower's state of incorporation. Values of 1 and 1.25 indicate a tighter constraint and stronger protection of creditor interests from shareholder-bondholder conflicts of interest. Value of 0 indicates a lack of a constraint and weaker protection of creditor interest. Source: Wald and Long, 2007 [WL]

To account for potential for extreme observations, all continuous variables are winsorized at one percent of each tail of the distribution.

Table A3. Methodology used to examine industry effects

Test	Description	Table
Univariate tests		
Correlation with the industry effect	Pairwise correlation of loan spread with the industry effect. The industry effect is the average loan spread in the one-digit SIC industry in a given country and year, excluding the loan in question. A robustness test uses industry median spread, as specified. The US sample uses three-digit SIC industries.	Table 1
Explanatory power of the industry effect (univariate)	Adjusted R^2 from a regression of loan spread on the industry effect without inclusion of any controls	Table 1
Multivariate tests in subsamples		
Estimates of the industry effect (*Industry effect*)	Coefficient estimate from a multivariate regression of loan spread on the industry effect, controls, fixed effects for the borrower's country of incorporation (state of incorporation in the US sample), fixed effects for the year of facility, and log of the number of observations used to compute the industry effect. Regressions are estimated within subsamples based on whether a given measure of creditor rights, creditor rights enforcement, or property rights is above or below the sample median (whether the borrower's state of incorporation imposes a total asset constraint in the US sample). Tests of significance of differences in coefficients across subsamples are also reported.	Table 2 (Panel A), Table 4, Table 6, Table 11 (Panel A)
Incremental explanatory power of the industry effect	Percentage change in adjusted R^2 from adding the industry effect (as defined above) to the baseline model. The baseline model contains firm size, profitability, leverage, asset tangibility, low distress risk indicator, economic growth and financial development (not included in the US sample), fixed effects for the borrower's country of incorporation (state of incorporation in the US sample), fixed effects for the year of facility, and log of the number of observations used to compute the industry effect, as well as rating availability indicator and rating where indicated. Baseline regressions and regressions that add the industry effect are estimated within subsamples based on whether a given measure of creditor rights is above or below the sample median (whether the borrower's state of incorporation imposes a total asset constraint in the US sample).	Table 2 (Panel B), Table 11 (Panel B)
Full sample multivariate tests		
Estimates of the industry effect interaction with creditor rights (*Industry effect*Creditor rights*)	Coefficient estimate of the interaction term from a multivariate regression of loan spread on the industry effect, the interaction of the industry effect and creditor rights (or creditor rights enforcement, property rights, or total asset constraint), controls, fixed effects for the borrower's country of incorporation (state of incorporation in the US sample), year fixed effects, and log of the number of observations used to compute the industry effect. Country (state of incorporation) fixed effects included to account for unobservable variation in spreads absorb direct time-invariant creditor rights or law and finance effects.	Tables 3, Table 5, Table 7, Table 8, Table 9, Table 10, Table 12

To account for possible correlation of residuals within countries, multivariate tests use robust standard errors clustered by the borrower's country of incorporation. In unreported tests, significance patterns are generally similar when standard errors are double clustered at the country and year level, borrower and year level, or country and industry level. Multivariate tests in the US sample use robust standard errors clustered by the borrower's state of incorporation.

Table 1. Creditor rights and the industry effect on loan spreads in univariate tests

This table reports univariate evidence on the relevance of the industry for loan spreads. The variable of interest is *spread* (logged). The industry effect is the average loan spread in the one-digit SIC industry in a given country and year, excluding the loan in question. Sample criteria and variable definitions are shown in Table A1 of the Appendix.
The first two columns, *correlation with the industry effect*, present correlations of the loan spread with the industry effect within subsamples. All correlations are significant at 5%.
The last two columns, *explanatory power of the industry effect* (*univariate*), show adjusted R^2 from a regression of loan spread on the industry effect without inclusion of any controls.
Subsamples are based on whether the criterion on the left is above or below sample median. Higher values of the main measure of creditor rights indicate stronger creditor rights protections. For the supplementary measures of creditor rights enforcement, higher values of efficiency, recovery and creditor priority and lower values of time to payment, time to sale and cost of insolvency indicate better creditor rights enforcement. For miscellaneous property rights and institutional characteristics, higher values of the measures indicate stronger legal protections. In each pair of columns, the subsample with strong legal protections appears first, followed by the subsample with weak legal protections.

Criterion used to define subsamples	*Correlation with the industry effect*		*Explanatory power of the industry effect (univariate)*	
The main measure				
	STRONG	WEAK	STRONG	WEAK
Creditor rights	0.46	0.70	0.21	0.49
Supplementary measures - creditor rights enforcement				
	HIGH	LOW	HIGH	LOW
Efficiency of debt enforcement	0.53	0.72	0.28	0.51
Recovery	0.53	0.72	0.28	0.52
	LOW	HIGH	LOW	HIGH
Time to payment	0.52	0.72	0.27	0.52
Time to sale	0.47	0.72	0.22	0.51
Cost of insolvency	0.53	0.75	0.28	0.55
	HIGHEST	LOWER	HIGHEST	LOWER
Priority	0.58	0.74	0.33	0.54
Other characteristics and property rights	STRONG	WEAK	STRONG	WEAK
Expropriation protections	0.55	0.68	0.31	0.47
Control over corruption	0.53	0.70	0.28	0.49
Rule of law	0.72	0.56	0.51	0.31
Anti-director rights	0.52	0.71	0.27	0.50
Self-dealing protections	0.49	0.69	0.24	0.48
Accounting standards	0.50	0.69	0.25	0.48

Table 2. The industry effect on loan spreads in creditor rights subsamples

Panel A: Regressions of loan spreads on the industry effect and controls in subsamples based on creditor rights in the borrower's country of incorporation. The dependent variable is *spread* (logged) in tests I-II and *spread* (expressed in basis points) in test III. The industry effect is the average loan spread in the one-digit SIC industry in a given country and year, excluding the loan in question. Sample criteria and variable definitions are shown in Table A1 of the Appendix. For brevity only the industry effect coefficients are reported. All specifications also include firm size, profitability, leverage, asset tangibility, low distress risk indicator, economic growth, financial development, country effects based on the borrower's country of incorporation, time effects, and log of the number of industry observations. Specification in test II also includes rating availability indicator and rating. Subsamples are based on whether creditor rights in the borrower's country of incorporation are above or below sample median. Robust standard errors with clustering at the country level are in the parentheses. Observation counts are in the brackets. Statistical significance at the 1%, 5%, and 10% level is denoted with ***, **, and *, respectively.

Panel B: Incremental explanatory power of the industry effect for loan spreads in subsamples based on creditor rights in the borrower's country of incorporation. It is defined as the percentage change in adjusted R^2 from adding the industry effect (the average loan spread in the one-digit SIC industry in a given country and year, excluding the loan in question) to the baseline model. The dependent variable is *spread* (logged) in tests I-II and *spread* (expressed in basis points) in test III. The baseline model contains firm size, profitability, leverage, asset tangibility, low distress risk indicator, economic growth, financial development log of the number of industry observations, country fixed effects, and time effects. The baseline model in test II also contains rating availability indicator and rating.

Panel A: The industry effect on loan spreads in creditor rights subsamples

	Dependent variable	*Criterion used to define subsamples*	*Industry effect in the first subsample*	*Industry effect in the second subsample*	*Difference in the industry effects in the two subsamples*
			STRONG	WEAK	WEAK-STRONG
I	*Spread*	Creditor rights	0.311 ***	0.637 ***	0.326 ***
			(0.001)	(0.054)	
			[932]	[1104]	
			STRONG	WEAK	WEAK-STRONG
II	*Spread*	Creditor rights	0.318 ***	0.616 ***	0.298 ***
			(0.002)	(0.052)	
			[932]	[1104]	
			STRONG	WEAK	WEAK-STRONG
III	*Spread* (*bps*)	Creditor rights	0.325 ***	0.735 ***	0.410 ***
			(5.E-5)	(0.046)	
			[932]	[1104]	

Panel B: Explanatory power of the industry effect for loan spreads in creditor rights subsamples

	Dependent variable	*Criterion used to define subsamples*	*Explanatory power* (*industry effect*)	*Explanatory power* (*industry effect*)
			STRONG	WEAK
I	*Spread*	Creditor rights	3.3%	36.9%
			STRONG	WEAK
II	*Spread*	Creditor rights	3.1%	31.9%
			STRONG	WEAK
III	*Spread* (*bps*)	Creditor rights	4.7%	89.0%

Table 3. Creditor rights and the industry effect on loan spreads in the full sample

Regressions of loan spreads on the industry effect and controls in the full sample. The dependent variable is *spread* (logged) in columns I-II and *spread* (expressed in basis points) in column III. The industry effect is the average loan spread in the one-digit SIC industry in a given country and year, excluding the loan in question. Sample criteria and variable definitions are shown in Table A1 of the Appendix. The industry effect is interacted with *creditor rights* in the borrower's country of incorporation (the direct effect of creditor rights is absorbed by country fixed effects). Country effects based on the borrower's country of incorporation, time effects, and log of the number of industry observations are included in all specifications. Robust standard errors with clustering at the country level are in the parentheses. Statistical significance at the 1%, 5%, and 10% level is denoted with ***, **, and *, respectively.

Dependent variable:	*Spread*		*Spread*		*Spread* (*bps*)	
	I		II		III	
Industry effect	0.714	***	0.707	***	0.794	***
	(0.068)		(0.066)		(0.043)	
Industry effect*Creditor rights	-0.052	*	-0.060	**	-0.044	***
	(0.026)		(0.022)		(0.015)	
Firm size	-0.180	***	-0.166	***	-14.199	***
	(0.021)		(0.025)		(2.191)	
Profitability	-1.197	***	-1.137	***	-171.835	***
	(0.220)		(0.194)		(31.343)	
Leverage	0.850	***	0.772	***	87.851	***
	(0.137)		(0.131)		(19.664)	
Asset tangibility	-0.049		-0.023		-4.769	
	(0.062)		(0.066)		(6.431)	
Low distress risk	0.063		0.065		9.648	
	(0.061)		(0.055)		(7.616)	
Rating availability			-0.665	***		
			(0.182)			
Rating (lowest - AAA)			0.186	***		
			(0.041)			
Economic growth	-0.010		-0.008		-3.104	***
	(0.012)		(0.013)		(0.915)	
Financial development	-0.001		-0.002		-0.077	**
	(0.001)		(0.001)		(0.032)	
Obs.	2036		2036		2036	
R^2	0.50		0.52		0.43	
Adj. R^2	0.49		0.50		0.43	

Table 4. The industry effect on loan spreads in creditor rights enforcement subsamples

Regressions of loan spreads on the industry effect and controls in subsamples based on measures of creditor rights enforcement rights in the borrower's country of incorporation. The dependent variable is *spread* (logged). The industry effect is the average loan spread in the one-digit SIC industry in a given country and year, excluding the loan in question. Sample criteria and variable definitions are shown in Table A1 of the Appendix. For brevity only the industry effect coefficients are reported. All specifications also include firm size, profitability, leverage, asset tangibility, low distress risk indicator, economic growth, financial development, country effects based on the borrower's country of incorporation, time effects, and log of the number of industry observations. Subsamples are based on whether measures of enforcement of creditor rights in the borrower's country of incorporation are above or below sample median; priority subsamples are based whether secured creditors have the highest (first) priority or a lower priority in bankruptcy proceedings. High values of efficiency of debt enforcement, recovery rate, and creditor priority and low values of time to payment, time to sale, and cost of insolvency indicate better quality of creditor rights enforcement. In each case, the subsample with strong legal protections appears first, followed by the subsample with weak legal protections. Robust standard errors with clustering at the country level are in the parentheses. Observation counts are in the brackets. Statistical significance at the 1%, 5%, and 10% level is denoted with ***, **, and *, respectively.

Criterion used to define subsamples	*Industry effect in the first subsample*	*Industry effect in the second subsample*	*Difference in the industry effects in the two subsamples*
Efficiency of debt enforcement	HIGH	LOW	LOW-HIGH
	0.474 ***	0.667 ***	0.194 *
	(0.087)	(0.056)	
	[1117]	[824]	
Recovery	HIGH	LOW	LOW-HIGH
	0.462 ***	0.682 ***	0.220 **
	(0.081)	(0.052)	
	[1140]	[801]	
Time to payment	LOW	HIGH	HIGH-LOW
	0.471 ***	0.682 ***	0.211 *
	(0.095)	(0.054)	
	[1133]	[808]	
Time to sale	LOW	HIGH	HIGH-LOW
	0.302 **	0.650 ***	0.348 ***
	(0.020)	(0.053)	
	[948]	[993]	
Cost of insolvency	LOW	HIGH	HIGH-LOW
	0.483 ***	0.702 ***	0.219 **
	(0.060)	(0.055)	
	[1306]	[635]	
Priority	HIGHEST	LOWER	HIGHEST-LOWER
	0.543 ***	0.685 ***	0.142
	(0.069)	(0.083)	
	[1511]	[430]	

Table 5. Creditor rights enforcement and the industry effect on loan spreads in the full sample

Regressions of loan spreads on the industry effect and controls in the full sample. The dependent variable is *spread* (logged). Sample criteria and variable definitions are shown in Table A1 of the Appendix. The industry effect is the average loan spread in the one-digit SIC industry in a given country and year, excluding the loan in question. The industry effect is interacted with measures of creditor rights enforcement and credit information sharing in the borrower's country of incorporation (the direct effects of creditor rights are absorbed by country fixed effects). High values of efficiency of debt enforcement, recovery rate, and creditor priority and low values of time to payment, time to sale, and cost of insolvency indicate better quality of creditor rights enforcement. Country effects based on the borrower's country of incorporation, time effects, and log of the number of industry observations are included in all specifications. Robust standard errors with clustering at the country level are in the parentheses. Statistical significance at the 1%, 5%, and 10% level is denoted with ***, **, and *, respectively.

Dependent variable: Spread	I		II		III		IV		V		VI	
Industry effect	0.913	***	0.863	***	0.577	***	0.573	***	0.674	***	0.579	***
	(0.086)		(0.073)		(0.061)		(0.063)		(0.10)		(0.081)	
Industry effect* Efficiency of debt enforcement	-0.004	***										
	(0.001)											
Industry effect* Recovery			-0.003	***								
			(0.001)									
Industry effect* Time to payment					0.060	***						
					(0.020)							
Industry effect* Time to sale							0.062	***				
							(0.022)					
Industry effect* Cost of insolvency									0.522			
									(0.678)			
Industry effect*Priority											0.063	**
											(0.028)	
Firm size	-0.175	***	-0.175	***	-0.176	***	-0.175	***	-0.173	***	-0.175	***
	(0.022)		(0.022)		(0.022)		(0.022)		(0.023)		(0.022)	
Profitability	-1.259	***	-1.250	***	-1.229	***	-1.229	***	-1.239	***	-1.222	***
	(0.206)		(0.208)		(0.207)		(0.207)		(0.212)		(0.212)	
Leverage	0.782	***	0.783	***	0.794	***	0.794	***	0.793	***	0.793	***
	(0.158)		(0.157)		(0.152)		(0.153)		(0.156)		(0.153)	
Asset tangibility	-0.046		-0.048		-0.051		-0.052		-0.044		-0.048	
	(0.065)		(0.065)		(0.065)		(0.065)		(0.066)		(0.066)	
Low distress risk	0.056		0.056		0.060		0.061		0.062		0.059	
	(0.056)		(0.057)		(0.060)		(0.061)		(0.063)		(0.061)	
Economic growth	-0.002		-0.003		-0.003		-0.002		-0.009		-0.007	
	(0.011)		(0.011)		(0.012)		(0.012)		(0.012)		(0.012)	
Financial development	-0.001		-0.001		-0.001		-0.001		-0.001		-0.001	
	(0.001)		(0.001)		(0.001)		(0.001)		(0.001)		(0.001)	
Obs.	1941		1941		1941		1941		1941		1941	
R^2	0.51		0.51		0.51		0.51		0.50		0.51	
Adj. R^2	0.49		0.49		0.49		0.49		0.49		0.49	

Table 6. The industry effect on loan spreads in property rights subsamples

Regressions of loan spreads on the industry effect and controls in subsamples based on property rights in the borrower's country of incorporation. The dependent variable is *spread* (logged). The industry effect is the average loan spread in the one-digit SIC industry in a given country and year, excluding the loan in question. Sample criteria and variable definitions are shown in Table A1 of the Appendix. For brevity only the industry effect coefficients are reported. All specifications also include firm size, profitability, leverage, asset tangibility, low distress risk indicator, economic growth, financial development, country effects based on the borrower's country of incorporation, time effects, and log of the number of industry observations. Subsamples are based on whether property rights in the borrower's country of incorporation are above or below sample median. Robust standard errors with clustering at the country level are in the parentheses. Observation counts are in the brackets. Statistical significance at the 1%, 5%, and 10% level is denoted with ***, **, and *, respectively.

Criterion used to define subsamples	*Industry effect in the first subsample*	*Industry effect in the second subsample*	*Difference in the industry effects in the two subsamples*
Anti-director rights	STRONG	WEAK	WEAK-STRONG
	0.497 ***	0.620 ***	0.123
	(0.096)	(0.053)	
	[1194]	[821]	
Self-dealing protections	STRONG	WEAK	WEAK-STRONG
	0.399 ***	0.624 ***	0.225 **
	(0.093)	(0.061)	
	[1003]	[1012]	
Expropriation protection	STRONG	WEAK	WEAK-STRONG
	0.463 ***	0.610 ***	0.147
	(0.10)	(0.076)	
	[1181]	[834]	
Control over corruption	STRONG	WEAK	WEAK-STRONG
	0.361 ***	0.654 ***	0.293 ***
	(0.062)	(0.062)	
	[1114]	[901]	
Rule of law	STRONG	WEAK	WEAK-STRONG
	0.554 ***	0.548 ***	-0.007
	(0.052)	(0.078)	
	[508]	[1507]	
Accounting standards	STRONG	WEAK	WEAK-STRONG
	0.380 ***	0.630 ***	0.250 **
	(0.079)	(0.061)	
	[1009]	[1006]	

Table 7. Property rights, creditor rights, and the industry effect on loan spreads in the full sample

Regressions of loan spreads on the industry effect and controls in the full sample. The dependent variable is *spread* (logged). Sample criteria and variable definitions are shown in Table A1 of the Appendix. The industry effect is the average loan spread in the one-digit SIC industry in a given country and year, excluding the loan in question. The industry effect is interacted with *creditor rights* and various measures of property rights in the borrower's country of incorporation (the direct effects of creditor and property rights are absorbed by country fixed effects). Country effects based on the borrower's country of incorporation, time effects, and log of the number of industry observations are included in all specifications. Robust standard errors with clustering at the country level are in the parentheses. Statistical significance at the 1%, 5%, and 10% level is denoted with ***, **, and *, respectively.

Dependent variable: spread	I		II		III		IV		V		VI		VII		VIII		IX		X	
Industry effect	1.083	**	0.797	***	0.671	**	0.702	***	0.708	***	1.281	***	1.045	**	1.193	***	1.295	***	1.222	***
	(0.425)		(0.244)		(0.257)		(0.122)		(0.058)		(0.291)		(0.388)		(0.40)		(0.318)		(0.314)	
Industry effect* Creditor rights													-0.041	***	-0.035	***	-0.044	**	-0.042	***
													(0.015)		(0.012)		(0.018)		(0.014)	
Industry effect* Expropriation protection	-0.054												0.023		0.008					
	(0.047)												(0.039)		(0.038)					
Industry effect* Control over corruption			-0.026														0.025			
			(0.030)														(0.032)			
Industry effect* Rule of law					-0.010														0.024	
					(0.029)														(0.030)	
Industry effect* Anti-director rights							-0.029						0.036							
							(0.037)						(0.046)							
Industry effect* Self-dealing protections									-0.246	**					0.029		0.127		0.123	
									(0.090)						(0.132)		(0.167)		(0.124)	
Industry effect* Accounting standards											-0.010	**	-0.011	**	-0.009	*	-0.013	*	-0.012	***
											(0.004)		(0.005)		(0.005)		(0.007)		(0.004)	
Firm size	-0.183	***	-0.182	***	-0.182	***	-0.181	***	-0.181	***	-0.183	***	-0.182	***	-0.182	***	-0.182	***	-0.182	***
	(0.020)		(0.021)		(0.021)		(0.020)		(0.021)		(0.020)		(0.019)		(0.020)		(0.020)		(0.020)	
Profitability	-1.131	***	-1.127	***	-1.133	***	-1.127	***	-1.128	***	-1.124	***	-1.152	***	-1.145	***	-1.152	***	-1.143	***
	(0.232)		(0.233)		(0.237)		(0.239)		(0.235)		(0.234)		(0.224)		(0.227)		(0.222)		(0.230)	
Leverage	0.839	***	0.841	***	0.841	***	0.847	***	0.841	***	0.838	***	0.843	***	0.847	***	0.849	***	0.852	***
	(0.137)		(0.137)		(0.138)		(0.139)		(0.139)		(0.140)		(0.138)		(0.137)		(0.138)		(0.138)	

Asset tangibility	-0.051	-0.053	-0.049	-0.050	-0.054	-0.058	-0.055	-0.056	-0.054	-0.057
	(0.064)	(0.064)	(0.064)	(0.065)	(0.064)	(0.064)	(0.064)	(0.063)	(0.065)	(0.063)
Low distress risk	0.064	0.064	0.066	0.067	0.062	0.060	0.059	0.061	0.062	0.061
	(0.062)	(0.063)	(0.064)	(0.066)	(0.062)	(0.060)	(0.056)	(0.059)	(0.059)	(0.059)
Economic growth	-0.009	-0.015	-0.017	-0.017	-0.016	-0.004	-0.007	-0.004	-0.002	-0.004
	(0.013)	(0.013)	(0.014)	(0.014)	(0.013)	(0.012)	(0.016)	(0.014)	(0.013)	(0.013)
Financial development	-0.001	-0.001	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Obs.	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015
R^2	0.50	0.50	0.50	0.50	0.50	0.50	0.51	0.50	0.50	0.50
Adj. R^2	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49

Table 8. Creditor rights and industry effects on loan spreads: high versus low volatility periods

Robustness regressions of loan spreads on the industry effect and controls in the full sample. The dependent variable is *spread* (logged). The industry effect is the average loan spread in the one-digit SIC industry in a given country and year, excluding the loan in question, unless specified otherwise. Sample criteria and variable definitions are shown in Table A1 of the Appendix. The industry effect is interacted with *creditor rights* in the borrower's country of incorporation (the direct effect of creditor rights is absorbed by country fixed effects) and/or average return *volatility in the industry*. Country effects based on the borrower's country of incorporation, time effects, and log of the number of industry observations are included in all specifications. Robust standard errors with clustering at the country level are in the parentheses. Statistical significance at the 1%, 5%, and 10% level is denoted with ***, **, and *, respectively.

Dependent variable: Spread	I		II		III	
Industry effect	0.801	***	0.901	***	0.805	***
	(0.119)		(0.139)		(0.156)	
Industry effect*Creditor rights	-0.105	***	-0.116	***	-0.092	***
	(0.020)		(0.020)		(0.025)	
Industry effect*Creditor rights*Return volatility (12m) in the industry	0.016	**				
	(0.007)					
Industry effect*Creditor rights*Return volatility (24m) in the industry			0.018	***		
			(0.006)			
Industry effect*Creditor rights*Return volatility (36m) in the industry					0.008	
					(0.005)	
Firm size	-0.169	***	-0.166	***	-0.162	***
	(0.019)		(0.019)		(0.019)	
Profitability	-0.855	***	-0.761	***	-0.639	***
	(0.192)		(0.179)		(0.188)	
Leverage	0.844	***	0.867	***	0.839	***
	(0.136)		(0.141)		(0.145)	
Asset tangibility	-0.040		-0.028		-0.011	
	(0.042)		(0.046)		(0.049)	
Low distress risk	0.051		0.053		0.047	
	(0.057)		(0.059)		(0.058)	
Economic growth	-0.012		-0.011		-0.011	
	(0.012)		(0.012)		(0.011)	
Financial development	-0.002	*	-0.002	*	-0.001	
	(0.001)		(0.001)		(0.001)	
Industry effect*Return volatility (12m) in the industry	-0.014					
	(0.058)					
Industry effect*Return volatility (24m) in the industry			-0.055			
			(0.065)			
Industry effect*Return volatility (36m) in the industry					-0.021	
					(0.062)	
Return volatility (12m) in the industry	-0.003					
	(0.223)					
Return volatility (24m) in the industry			0.203			
			(0.279)			
Return volatility (36m) in the industry					0.250	
					(0.278)	
Obs.	2001		2001		2001	
R^2	0.52		0.52		0.53	
Adj. R^2	0.51		0.51		0.52	

Table 9. Robustness checks

Robustness regressions of loan spreads on the industry effect and controls in the full sample. The dependent variable is *spread* (logged). The industry effect is the average loan spread in the one-digit SIC industry in a given country and year, excluding the loan in question, unless specified otherwise. Sample criteria and variable definitions are shown in Table A1 of the Appendix. The industry effect is interacted with *creditor rights* in the borrower's country of incorporation (the direct effect of creditor rights is absorbed by country fixed effects). Country effects based on the borrower's country of incorporation, time effects, and log of the number of industry observations are included in all specifications. Robust standard errors with clustering at the country level are in the parentheses. Statistical significance at the 1%, 5%, and 10% level is denoted with ***, **, and *, respectively.

Panel A: Additional controls. Sovereign rating availability indicator and sovereign rating are added in column I. The industry effect is interacted with government ownership of banks in column II. Return volatility controls are added in columns III-V. Controls for competition for lending to industry firms are added in columns VI-VII.

Panel B: Other controls. The industry effect is interacted with log of the number of observations in the industry in column I; major currency dummies are added in column II; sector (one-digit SIC industry) dummies are added in column III; dummies for main deal purpose types (corporate purchases, takeovers, debt repayment, and misc.) are added in column IV; deal characteristics are added in column V.

Panel C: Firms in one-digit SIC industries 6 and 9 are included into the sample in column I. Observations with missing information on country property rights protections are included into the sample in column II. The industry effect is defined as industry median of logged spread in the borrower's one-digit SIC industry and year in column III. The previous, La Porta et al. (1998), version of the creditor rights index is used in column IV.

Panel A: Additional controls

Dependent variable: *Spread*	I		II		III		IV		V		VI		VII	
Industry effect	0.700	***	0.750	***	0.718	***	0.725	***	0.708	***	0.702	***	0.703	***
	(0.065)		(0.067)		(0.065)		(0.067)		(0.064)		(0.058)		(0.060)	
Industry effect*Creditor rights	-0.059	**	-0.066	***	-0.066	***	-0.071	***	-0.069	***	-0.060	***	-0.057	***
	(0.022)		(0.023)		(0.024)		(0.024)		(0.021)		(0.017)		(0.020)	
Firm size	-0.165	***	-0.166	***	-0.158	***	-0.154	***	-0.150	***	-0.171	***	-0.172	***
	(0.025)		(0.025)		(0.024)		(0.024)		(0.024)		(0.023)		(0.025)	
Profitability	-1.133	***	-1.149	***	-0.883	***	-0.805	***	-0.666	***	-1.015	***	-1.112	***
	(0.190)		(0.20)		(0.175)		(0.176)		(0.163)		(0.191)		(0.223)	
Leverage	0.776	***	0.774	***	0.776	***	0.795	***	0.774	***	0.765	***	0.733	***
	(0.129)		(0.134)		(0.136)		(0.140)		(0.145)		(0.119)		(0.134)	
Asset tangibility	-0.023		-0.013		-0.028		-0.020		0.001		-0.008		-0.007	
	(0.065)		(0.063)		(0.057)		(0.055)		(0.054)		(0.055)		(0.064)	
Low distress risk	0.065		0.067		0.052		0.054		0.047		0.065		0.062	
	(0.057)		(0.054)		(0.054)		(0.056)		(0.055)		(0.049)		(0.049)	
Rating availability	-0.665	***	-0.649	***	-0.646	***	-0.624	***	-0.615	***	-0.622	***	-0.641	***
	(0.182)		(0.186)		(0.193)		(0.183)		(0.177)		(0.209)		(0.184)	
Rating (lowest - AAA)	0.186	***	0.184	***	0.180	***	0.174	***	0.168	***	0.165	***	0.184	***

	(0.041)	(0.041)	(0.042)	(0.040)	(0.039)	(0.048)	(0.042)
Economic growth	-0.009	-0.011	-0.007	-0.006	-0.008	0.005	-0.002
	(0.012)	(0.014)	(0.012)	(0.012)	(0.012)	(0.015)	(0.017)
Financial development	-0.001	-0.001	-0.002	-0.002	-0.002	-0.002 *	-0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Sovereign rating availability	-0.646 **						
	(0.265)						
Sovereign rating (lowest - AAA)	0.074						
	(0.053)						
Industry effect*Government ownership of banks		-0.142					
		(0.167)					
Return volatility (12m)			0.126 **				
			(0.056)				
Return volatility (24m)				0.172 **			
				0.062			
Return volatility (36m)					0.244 ***		
					(0.043)		
Number of lenders in the industry (log)						-0.391 **	
						(0.180)	
Number of lenders in the industry $(log)^2$						0.056 ***	
						(0.019)	
Lender-to-borrower ratio in the industry							0.002
							(0.011)
Industry average loans per lender (log)							-0.001
							(0.087)
Obs.	2036	2036	2013	2013	2013	2006	2006
R^2	0.52	0.52	0.52	0.53	0.53	0.52	0.51
Adj. R^2	0.50	0.50	0.51	0.51	0.52	0.51	0.50

Panel B: Other controls and alternative explanations

Dependent variable: *Spread*	I		II		III		IV		V	
Industry effect	0.795	***	0.694	***	0.700	***	0.685	***	0.676	***
	(0.111)		(0.064)		(0.071)		(0.081)		(0.071)	
Industry effect*Creditor rights	-0.053	***	-0.053	**	-0.060	**	-0.054	**	-0.055	**
	(0.019)		(0.019)		(0.022)		(0.024)		(0.022)	
Firm size	-0.166	***	-0.169	***	-0.172	***	-0.165	***	-0.150	***
	(0.025)		(0.027)		(0.027)		(0.026)		(0.026)	
Profitability	-1.120	***	-1.141	***	-1.097	***	-1.119	***	-1.215	***
	(0.195)		(0.207)		(0.205)		(0.179)		(0.189)	
Leverage	0.772	***	0.786	***	0.776	***	0.760	***	0.779	***
	(0.131)		(0.128)		(0.144)		(0.117)		(0.131)	
Asset tangibility	-0.025		-0.017		-0.084		-0.027		-0.060	
	(0.067)		(0.060)		(0.081)		(0.070)		(0.061)	
Low distress risk	0.063		0.059		0.061		0.055		0.060	
	(0.057)		(0.056)		(0.060)		(0.063)		(0.058)	
Rating availability	-0.665	***	-0.657	***	-0.711	***	-0.631	***	-0.644	***
	(0.182)		(0.182)		(0.174)		(0.190)		(0.213)	
Rating (lowest - AAA)	0.185	***	0.178	***	0.196	***	0.179	***	0.178	***
	(0.041)		(0.039)		(0.039)		(0.044)		(0.048)	
Economic growth	-0.007		-0.006		-0.010		-0.007		-0.002	
	(0.013)		(0.013)		(0.013)		(0.014)		(0.013)	
Financial development	-0.001		-0.002		-0.002		-0.002		-0.001	
	(0.001)		(0.001)		(0.001)		(0.001)		(0.001)	
Industry effect*Log of number of firms	-0.059									
	(0.071)									
Loan maturity (log)									0.184	***
									(0.019)	
Number of lenders on the loan (log)									-0.032	
									(0.029)	
Loan size									-0.060	
									(0.069)	
Obs.	2036		2036		2036		2036		1946	
R^2	0.52		0.52		0.52		0.53		0.53	
Adj. R^2	0.50		0.51		0.51		0.52		0.52	

Panel C: Alternative sample criteria and definitions of variables of interest

Dependent variable: *Spread*	I		II		III		IV	
Industry effect	0.703	***	0.707	***	0.780	***	0.719	***
	(0.064)		(0.063)		(0.054)		(0.063)	
Industry effect*Creditor rights	-0.056	**	-0.057	***	-0.049	***	-0.064	***
	(0.021)		(0.021)		(0.017)		(0.020)	
Firm size	-0.164	***	-0.164	***	-0.136	***	-0.165	***
	(0.024)		(0.024)		(0.026)		(0.025)	
Profitability	-1.094	***	-1.174	***	-1.099	***	-1.120	***
	(0.186)		(0.185)		(0.199)		(0.195)	
Leverage	0.815	***	0.763	***	0.727	***	0.775	***
	(0.141)		(0.131)		(0.120)		(0.132)	
Asset tangibility	-0.018		-0.020		0.022		-0.027	
	(0.064)		(0.065)		(0.057)		(0.065)	
Low distress risk	0.076		0.058		0.067		0.062	
	(0.052)		(0.053)		(0.044)		(0.054)	
Rating availability	-0.667	***	-0.628	***	-0.636	***	-0.661	***
	(0.181)		(0.184)		(0.165)		(0.182)	
Rating (lowest - AAA)	0.185	***	0.175	***	0.173	***	0.184	***
	(0.041)		(0.043)		(0.042)		(0.041)	
Economic growth	-0.007		-0.015		-0.007		-0.007	
	(0.013)		(0.012)		(0.012)		(0.012)	
Financial development	-0.002		-0.001		-0.001		-0.001	
	(0.001)		(0.001)		(0.001)		(0.001)	
Obs.	2057		2116		2036		2036	
R^2	0.52		0.52		0.57		0.52	
Adj. R^2	0.51		0.51		0.56		0.50	

Table 10. Creditor rights and industry effects on loan size.

Regressions of *loan size* on the industry effect and controls in the full sample. The dependent variable is *loan size* in columns I-IV. The industry effect is the average loan size in the one-digit SIC industry in a given country and year, excluding the loan in question. Sample criteria and variable definitions are shown in Table A1 of the Appendix. The industry effect is interacted with *creditor rights* in the borrower's country of incorporation (the direct effect of creditor rights is absorbed by country fixed effects). Country effects based on the borrower's country of incorporation, time effects, and log of the number of industry observations are included in all specifications. Robust standard errors with clustering at the country level are in the parentheses. Statistical significance at the 1%, 5%, and 10% level is denoted with ***, **, and *, respectively.

Dependent variable:	*Loan size*			
	I		II	
Industry effect	1.228	***	1.227	***
	(0.287)		(0.287)	
Industry effects*Creditor rights	-0.289	***	-0.289	***
	(0.098)		(0.097)	
Firm size	-0.037	***	-0.045	***
	(0.008)		(0.009)	
Profitability	0.343	*	0.327	
	(0.190)		(0.196)	
Leverage	0.212	***	0.199	
	(0.038)		(0.040)	
Asset tangibility	-0.044		-0.048	
	(0.035)		(0.035)	
Low distress risk	0.035	*	0.042	**
	(0.019)		(0.020)	
Rating available			0.078	
			(0.066)	
Rating (lowest - AAA)			-0.004	
			(0.023)	
Economic growth	-0.008		-0.010	*
	(0.005)		(0.006)	
Financial development	-4.E-04		-3.E-04	
	(0.001)		(0.001)	
Obs.	2036		2036	
R^2	0.33		0.33	
Adj. R^2	0.32		0.32	

Table 11. Industry effects on loan spreads in US creditor rights subsamples

Panel A: Regressions of loan spreads on the industry effect and controls in subsamples based on the total asset constraint requirement in the borrower's state of incorporation. The dependent variable is *spread* (logged) in tests I and II and *spread* (expressed in basis points) in test III. The industry effect is the average spread in the three-digit SIC industry in a given year, excluding the loan in question. Sample criteria and variable definitions are shown in Table A2 of the Appendix. Subsamples are based on whether a statute that imposes a total asset constraint (a minimum ratio of assets to liabilities has to be met before a dividend or a repurchase can be undertaken) is present in the borrower's state of incorporation; presence of a total asset constraint is used as a proxy for stronger creditor protections. For brevity, only the industry effect coefficients are reported. All specifications include firm size, profitability, leverage, asset tangibility, low distress risk indicator, state effects based on the borrower's state of incorporation, time effects, and log of the number of industry observations are included in all specifications. Specifications in tests II and III also include rating availability indicator and rating. Robust standard errors with clustering at the state level are in the parentheses. Statistical significance at the 1%, 5%, and 10% level is denoted with ***, **, and *, respectively.
Panel B: Incremental explanatory power of the industry effect for loan spreads in subsamples based on the total asset constraint. It is captured by percentage change in adjusted R^2 from adding the industry effect (defined above) to the baseline model. The dependent variable is *spread* (logged) in tests I and II and *spread* (expressed in basis points) in test III. The baseline model includes firm size, profitability, leverage, asset tangibility, low distress risk indicator, rating availability indicator, rating, log of the number of industry observations, state of incorporation fixed effects, and time effects. The baseline model in tests II and III also includes rating availability indicator and rating.

Panel A: The industry effect on loan spreads in total asset constraint subsamples

	Dependent variable	*Criterion used to define subsamples*	*Industry effect in the first subsample*	*Industry effect in the second subsample*	*Difference in the industry effects in the two subsamples*
			YES (1 or 1.25)	NO (0)	NO-YES
I	*Spread*	Total asset constraint (minimum ratio of assets to liabilities)	0.334 ***	0.405 ***	0.071 **
			(0.032)	(0.008)	
			[5401]	[9323]	
			YES (1 or 1.25)	NO (0)	NO-YES
II	*Spread*	Total asset constraint (minimum ratio of assets to liabilities)	0.319 ***	0.388 ***	0.069 **
			(0.031)	(0.007)	
			[5401]	[9323]	
			YES (1 or 1.25)	NO (0)	NO-YES
III	*Spread* (*bps*)	Total asset constraint (minimum ratio of assets to liabilities)	0.349 ***	0.456 ***	0.107 ***
			(0.028)	(0.004)	
			[5401]	[9323]	

Panel B: Incremental explanatory power of the industry effect for loan spreads in total asset constraint subsamples

	Dependent variable	*Criterion used to define subsamples*	*Explanatory power* (*industry effect*)	
			YES	NO
I	*Spread*	Total asset constraint (minimum ratio of assets to liabilities)	6.0%	8.7%
			YES	NO
II	*Spread*	Total asset constraint (minimum ratio of assets to liabilities)	5.3%	7.6%
			YES	NO
III	*Spread* (*bps*)	Total asset constraint (minimum ratio of assets to liabilities)	8.0%	13.2%

Table 12. Creditor rights and industry effects on loan spreads in the US (full sample)

Regressions of loan spreads on the industry effect and controls in the full sample. The dependent variable is *spread* (logged) in columns I-II and *spread* (expressed in basis points) in column III. The industry effect is the average spread in the three-digit SIC industry in a given year, excluding the loan in question. Sample criteria and variable definitions are shown in Table A2 of the Appendix. The industry effect is interacted with the total asset constraint (the minimum ratio of assets to liabilities that has to be met before a dividend or a repurchase can be undertaken) in the borrower's state of incorporation. Presence of a total asset constraint is used as a proxy for stronger creditor protections. The coefficient of interest is the interaction of the industry effect and the total asset constraint (the direct effect of total asset constraints is absorbed by state of incorporation fixed effects). State effects based on the borrower's state of incorporation, time effects, and log of the number of industry observations are included in all specifications. Robust standard errors with clustering at the state level are in the parentheses. Statistical significance at the 1%, 5%, and 10% level is denoted with ***, **, and *, respectively.

Dependent variable:	*Spread*		*Spread*		*Spread* (*bps*)	
	I		II		III	
Industry effect	0.404	***	0.388	***	0.455	***
	(0.008)		(0.008)		(0.005)	
Industry effect*Total asset constraint	-0.056	*	-0.063	**	-0.096	***
	(0.028)		(0.026)		(0.023)	
Firm size	-0.258	***	-0.273	***	-30.743	***
	(0.004)		(0.006)		(0.766)	
Profitability	-0.908	***	-0.829	***	-136.205	***
	(0.108)		(0.085)		(16.282)	
Asset tangibility	-0.157	***	-0.164	***	-17.815	***
	(0.044)		(0.035)		(4.254)	
Low distress risk	-0.243	***	-0.211	***	-27.516	***
	(0.021)		(0.019)		(2.701)	
Rating available			-0.209	***	-11.140	**
			(0.031)		(4.254)	
Rating (lowest - AAA)			0.085	***	6.808	***
			(0.005)		(0.819)	
Obs.	14724		14724		14724	
R^2	0.56		0.58		0.49	
Adj. R^2	0.56		0.57		0.49	