Relationship-Specific Investment, Contracting Environment and the Choice of Capital Structure

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Abstract

Firms in long-term bilateral relationships with their customers or suppliers are required to make relationship-specific investments in the form of physical equipment, human resources, specific production sites, or brand names. These dedicated assets are usually tied to a particular use or relationship and cannot be redeployed if the firm is liquidated. In the absence of legal enforcement, firms are required to limit their use of debt financing and, consequently, signal a reduced default risk to encourage investment by their contracting parties. Using a sample of 143,278 firm-year observations, and measures of industry-level relationship-specificity and the quality of legal enforcement across 57 countries, we find strong evidence that good quality contract enforcement mitigates the negative association between relationship-specificity and debt financing.

1. Introduction

A firm that produces or procures customized goods requires its suppliers or customers to make relationship-specific investments. These investments, which take the form of physical equipment, human resources, specific production sites, or other dedicated assets, are more valuable inside the unique relationship between the firm and its contracting parties. If the firm liquidates or reneges on its contractual obligations, the other parties face significant switching costs since their investments in relationship-specific assets are generally not redeployable to other uses or users. Consequently, the contracting parties require implicit or explicit assurances of a continuing relationship with the firm in order to invest in specific assets and, in turn, recognize long-term economic benefits (Klein, Crawford, & Alchian, 1978; Williamson, 1979).

One way a purchaser of customized products or services could induce relationship-specific investments from its suppliers is through reduced leverage. Lower leverage reduces the firm's probability of default and conveys its ability to maintain a long-standing relationship with its contracting parties. Titman & Wessels (1988) show that firms in durable goods industries, which can potentially impose high costs to their suppliers in the event of default, choose lower debt ratios. More recently, Banerjee, Dasgupta, & Kim (2008) find that a firm has lower debt ratios when it is a major customer for its suppliers and this effect is stronger if the firm or its dependent suppliers produce customized products. While these studies present the evidence on how a firm's relationship with its contacting parties influence its choice of capital structure, they generally ignore the role of the environment in which the contracting process takes place. In this study, we exploit the variation in legal systems across countries to provide stronger support for the view that firms adjust their leverage to respond to the importance of contracts in their industry.

Legal systems vary in their ability to enforce contracts (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998). The legal system in some countries provides better means to protect contracting parties from reneging and opportunistic behaviour compared to others. A supplier of customized products would be reluctant to make relationship-specific investment if the required safeguards

are not provided by the legal system. This, in turn, would lead to 'under-investment' in relationship-specific assets in countries with weak contract enforcement. Empirical evidence for this notion comes from Nunn (2007), who finds that countries with weak contract enforcement have a cost disadvantage in the production of goods which require significant relationship-specific investments.

Absent governmental contract enforcement, suppliers are more likely to rely on implicit contractual guarantees when they are required to invest in non-redeployable specialized assets. Moreover, they would be more sensitive to the uncertainty over the cash flows of their customer. Therefore, the customer firm could induce relationship-specific investment by reducing its cash flow uncertainty. In support of this notion, Dou, Hope, & Thomas (2013) find that firms which both reside in countries with weak contract enforcement and operate in industries in which significant relationship-specific investments are required from suppliers (henceforth 'relationship industries'), employ 'informational' income smoothing to portray more stable cash flows. In line with this argument, we predict that the need for a firm to reduce its debt ratios to induce relationship-specific investment becomes relatively more (less) important when the suppliers are less (more) likely to rely on contract enforcement provided by the country's legal system. In other words, we expect that firms which both operate in relationship industries and reside in countries with a weak legal system have significantly lower debt ratios compared to other firms.

In order to test this hypothesis, we examine the joint effect of relationship-specificity and the contracting environment on leverage. Our tests employ an international sample of firms from 57 countries and 30 three-digit North American Industry Classification System (NAICS) industries. We use a relationship-specificity variable constructed by Nunn (2007) to proxy for the relative importance of long-term contracting (contract-intensity) across industries. This variable measures, at the industry level, the proportion of 'specialized' intermediate inputs for each product. We obtain information on the country-level quality of contract enforcement from the World Bank's World Governance Indicator (WGI). We use the WGI's rule of law index as our primary measure of the quality of contract enforcement. Our regressions include both explanatory variables and

their interaction to examine the joint effect. Our final data consist of a large panel of 143,278 firm-year observations representing 17,364 unique firms over the 1996-2013 period.

The main finding in this paper is that firms in industries in which relationship-specificity is important have higher debt ratios when they reside in countries with good quality contract enforcement. That is, strong contract enforcement mitigates the negative effect of relationship-specificity on leverage. For example, in panel regressions with the two primary explanatory variables, their interaction, and a large set of country- and firm-specific control variables, a one standard deviation increase in rule of law is associated with a 1.71 percentage point increase in the long-term market debt ratio for firms that operate in industries with above median relationship-specificity. This effect is economically significant compared to the average long-term market debt ratio of 12.55 percent in the sample.

We explore a variety of robustness tests to rule out chance or spurious correlation as potential explanations for findings in this study. Specifically, we include country fixed effects in place of country-level variables, use alternative measures of leverage, relationship-specificity and contract enforcement, and employ different regression methods. The main findings remain unaffected. Moreover, we show that relationship-specificity affects the probability of maintaining positive debt and the cost of debt negatively, while the interaction between relationship-specificity and contract enforcement affects both variables positively. This provides additional support for the notion that firms in relationship industries maintain lower debt levels, but only in countries with weak legal enforcement.

Another possible explanation is that countries with stronger contract enforcement also provide better access to debt financing and firms in relationship industries are more affected by the increased availability of external financing, including debt. To control for this explanation, we examine the relationship between creditor protection, relationship-specificity and leverage. Our analysis shows that higher credit protection impacts debt ratios negatively while the joint effect of credit protection and relationship-specificity on debt ratios is positive. However, including credit protection in our regressions has little effect on the coefficient of the relationship-specificity

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variable or the main interaction variable. This suggests that although strong creditor rights likely increase the availability of debt financing to firms in relationship industries, it cannot explain the positive association between debt ratios and the interaction of relationship-specificity and the quality of contract enforcement.

This study contributes to a growing literature that investigates how a firm's relationship with its contracting parties affects its operating decisions, including the choice of capital structure. It builds on Titman & Wessels (1988) and Banerjee, Dasgupta, & Kim (2008) by showing that the variation in the quality of contract enforcement is an important factor that shapes corporate capital structure in conjunction with the degree of relationship-specificity. Our evidence suggests that it is important to consider the contracting environment in studies that examine the association between supplier-buyer relationship and overall corporate strategy.

The rest of this paper is organized as follows. Section 2 provides a brief review of the related literature and develops our main hypotheses. Section 3 explains the data and the study methodology. Section 4 discusses the main results, robustness tests, and alternative explanations. Section 5 concludes the paper.

2. Hypothesis Development

There is a large body of economics literature that examines how relationship-specific investments affect the governance form of supplier-buyer transactions, such as relational contracting and vertical integration (Klein, Crawford, & Alchian, 1978; Williamson, 1979; Grossman & Hart, 1986; Hart & Moore, 1990). The nature of contracts between parties in long-term bilateral relationships is complex, which makes it prohibitively costly to write a complete contract that foresees all possible future contingencies (Williamson, 1983). When assets are tied to specific relationships and contracts are incomplete, contracting parties are susceptible to *ex post* opportunism and 'hold-up' problems.

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One way to curb *ex post* opportunistic renegotiations and avoid hold-up problems is to provide the prospective cheating firm with a 'premium' stream. This premium, which could be rewarded through promises of preferred pricing or trading terms in future transactions, is a return on the firm's 'reputation' or 'brand-name' capital and a guarantee for contractual performance (Klein, Crawford, & Alchian, 1978; Klein & Leffler, 1981; MacLeod, 2007). In so far as suppliers cannot observe the firm's private information regarding its future performance, they would rely on their perception of the firm's reputation or its ability to maintain long-term relationships. On the one hand, the firm could find it favourable to withdraw from a contract provided that the present value of the future premium stream is less than the one-time gains from reneging (Klein, Crawford, & Alchian, 1978). On the other hand, the firm could be forced to terminate its relationships and default on its contractual obligations as a result of liquidation. In either case, the firm's contracting parties (i.e., suppliers of specialized intermediate goods) face high switching costs due to the difficulty of redeploying their relationship-specific assets. In order to mitigate suppliers' concerns regarding its future performance, the firm could signal its willingness to fulfill its contractual obligations and maintain long-term relationships by reducing the uncertainty of its cash flow distribution.

In support of this notion, Raman & Shahrur (2008) and Dou, Hope, & Thomas (2013) show that firms use income smoothing to signal lower cash flow risk and, in turn, induce relationship-specific investments. Moreover, Dou, Hope, & Thomas demonstrate that firms in relationship industries engage in 'informational' income smoothing, particularly in countries where governmental contract enforcement is weak. Banerjee, Dasgupta, & Kim (2008) assert that firms in durable goods industries rely on capital structure to signal less risky cash flows. They argue that not only a supplier of customized goods maintains lower leverage to reduce its own risk, it also prefers its customers to be less levered to avoid the possible substantial loss of non-redeployable assets in the event that a customer is liquidated. They find that suppliers and customers in durable goods industries maintain lower leverage compared to similar firms in non-durable goods industries. Similarly, Kale & Shahrur (2007) show that a firm's leverage is negatively related to

the R&D intensities, a proxy for the degree of relationship-specificity, of its suppliers and customers or to the degree to which strategic alliances and joint ventures are prevalent in the supplier or customer industries.

Banerjee, Dasgupta, & Kim and Kale & Shahrur build on the work by Titman & Wessels (1988), who show that a firm in a bilateral relationship chooses a capital structure policy that takes into consideration the effect of its liquidation on suppliers and customers and is used to induce relationship-specific investment.[1] We re-examine this hypothesis and formulate it as follows:

H1: A firm that operates in a relationship industry will have a lower debt ratio.

As discussed above, contracts between suppliers and buyers in long-term bilateral relationships are inherently incomplete and firms mostly rely on implicit guarantees or projections of financial stability to persuade their contracting parties to undertake relationship-specific investments. However, explicit contracts, when enforced, remain an effective mechanism to prevent *ex post* opportunistic behaviour and reduce the risks of having specific assets tied to a customer (or supplier) firm. Bergman & Nicolaievsky (2007) assert that each legal system is characterized by its set of enforceable contracts. Therefore, contracting parties take the ability of the government in contract enforcement into account when they write explicit contracts. Put differently, contracting parties would rely more on implicit safeguards, such as a lower debt ratio, when the legal system is inept at enforcing explicit contracts. That is, lower debt ratios and strong enforcement become substitutes, as either could encourage suppliers to make relationship-specific investments. Accordingly, we formulate our second and main hypothesis as follows:

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[1] In contrast, Graham & Harvey (2001) find no evidence that high-tech firms, which are assumed to produce unique products and therefore, have dependent suppliers or customers, are less likely to limit their leverage. However, their findings are based on a survey of 392 CFOs and there is no strong reason to believe that the high-tech firms included in their sample are representative of firms with relationship-specific assets.

H2: A firm that both operates in a relationship industry and resides in a country with strong contract enforcement will have a higher debt ratio.

Bessler, Drobetz, Haller, & Meier (2013) examine the global zero-leverage phenomenon. They find that the healthcare, information technology, and energy industries have the highest concentration of zero-leverage firms around the world. This is, particularly for healthcare and information technology sectors, consistent with the notion that industries with non-redeployable specialized assets are more likely to adopt 'debt conservatism'. Accordingly, we expect that the probability of a firm to maintaining positive leverage to be affected by relationship-specificity and contract enforcement in a manner that is consistent with our primary hypotheses. That is, in the absence of strong contract enforcement, firms in relationship industries would be more likely to have zero leverage in order to signal lower probability of default to their suppliers. We test this supplementary hypothesis, stated as follows:

H3a: A firm that both operates in a relationship industry and resides in a country with strong contract enforcement will have a higher probability of maintaining positive leverage.

Williamson (1988) argues that the value of specialized assets, which debtholders are expected to partially recover in the event that the firm is liquidated, declines as the degree of relationship-specificity increases. He introduces a model in the context of a firm seeking financing for investment in different types of assets. Williamson's model predicts that debt is mainly used to finance redeployable assets while equity is issued to finance non-redeployable relationship-specific assets. In other words, if debt is used to finance relationship-specific assets, it would be on adverse terms. However, stronger contract enforcement could increase creditors' willingness to take risk and extend credit even to finance specialized assets.[2] Therefore, while the degree of

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[2] For example, Bae & Goyal (2009) find that better contract enforcement results in bank loans with larger size, longer maturity and lower spread.

relationship-specificity could be positively associated with the cost of debt (or the terms of debt financing), the interaction between relationship-specificity and the quality of contract enforcement could reduce the cost of debt.

In contrast, if firms with specialized assets reduce their leverage to signal lower probability of default, the cost of debt would subsequently decrease. Moreover, the joint effect of the degree of relationship-specificity and the quality of contract enforcement on the cost of debt would be positive, since, for reasons discussed above, firms with specialized assets (i.e., firms in relationship industries) borrow more and increase their debt ratios when governmental contract enforcement is strong. Higher debt ratios, in turn, increase the cost of debt. In order to determine the net effect of the interaction between relationship-specificity and contract enforcement on the cost of debt, we test our second supplementary hypothesis, stated as follows:

H3b: A firm that both operates in a relationship industry and resides in a country with strong contract enforcement will have a higher cost of debt.

The role of institutional environment and country-specific factors in capital structure policy is extensively studied in the corporate finance literature. In an important paper, Rajan & Zingales (1995) find that firms in countries in which bankruptcy laws are strongly enforced have the least leverage. They argue that strong creditor protection could discourage borrowing since it enables creditors to penalize managers if the firm enters financial distress. This is in line with recent findings of Vig (2013), who shows that a reform in India, which improved creditor protection, led to a reduction in the size and maturity of corporate debt. Similarly, Bessler, Drobetz, Haller, & Meier (2013) and Cho, Ghoul, Guedhami, & Suh (2014) report that stronger creditor rights are associated with a higher percentage of zero-leverage firms and lower debt ratios, respectively.

In contrast, La Porta, Lopez-de-Silanes, Shleifer, & Vishny (1997) assert that the quality of the legal system positively affect the ability of firms to use external finance. They find some evidence that stronger creditor rights are associated with higher aggregate debt. Several other studies provide evidence in support of this argument. That is, stronger creditor rights promote greater risk

taking by the banks (Houston, Lin, Lin, & Ma, 2010) and results in longer debt maturities and lower spreads (Qian & Strahan, 2007), while better enforcement of creditor rights also increases the size of bank loans to firms (Bae & Goyal, 2009). These findings raise the concern that what we are capturing in our regressions is the association between better contract enforcement and more bank risk taking and greater availability of debt financing, [3] particularly to firms with specialized assets. Although we do not formally hypothesize the expected effect of creditor protection on leverage, we examine whether creditor rights could explain the reported relationship between debt ratios and the quality of contract enforcement as well as its interaction with relationship-specificity.

3. Data and Methodology

Our main sample consists of all firms in the Compustat Global and Compustat North America databases with available accounting information from 1996 to 2013[4] that belong to one of the 222 four-digit U.S. Department of Commerce, Bureau of Economic Analysis' (BEA) I-O industries from Nunn (2007). We match the NAICS industry codes from Compustat with the 1997 I-O Industry Classification codes using the BEA's concordance table. The list of I-O industries and the relationship-specificity data are generously provided on Nathan Nunn's website.[5] In Tables 1 and 2, we present country and industry distributions of our sample. The full sample consists of

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[3] It is worth highlighting that the correlation between our primary measure of contract enforcement, rule of law, and the creditor rights index is only 2.86%.

[4] Our main measures of legal quality are available from 1996-2013.

[5] Each 6-digit NAICS industry code may correspond to more than one 6-digit I-O industry code and the Compustat NAICS code entries (for each firm) range from two to six digits; therefore, to reduce the ambiguity resulting from associating one firm with too many I-O industries, we have excluded 2-digit NAICS industries (NAICS codes 11, 21, and 51) and then calculated the ratio of the average 'value of inputs neither sold on organized exchanges nor referenced priced' to the average 'total value of inputs used' across the I-O industries that correspond to each 3-, 4-, 5-, or 6-digit NAICS industry to compute the 'relationship-specificity' values.

17,364 unique firms across 57 countries and 30 three-digit NAICS industries. Tables 3 and 4 report the mean values of our main country and industry variables, respectively.

Following Nunn (2007), we use the Worldwide Governance Indicators' Rule of Law (the 2014 update) as our primary measure of legal quality (Kaufmann, Kraay, & Mastruzzi, 2009; 2011).[6] The original index ranges from -2.5 to 2.5. We normalize this measure to obtain a value between 0 and 1. Bergman & Nicolaievsky (2007) suggest that legal systems are characterized by their ability to enforce particular sets of contracts, which determines the types of contracts that would be employed by firms under each system. Therefore, we believe that rule of law, which particularly focuses on the quality of contract enforcement and the availability of the court, is a suitable proxy for how well the supplier-buyer contracts are carried out at the country level. In all of our panel regressions without country fixed effects, we include the growth in real GDP and the rate of inflation as country-level control variables (Cho, Ghoul, Guedhami, & Suh, 2014). The GDP and inflation data are from the World Bank.[7]

We chiefly use Nunn's data to capture the level of relationship-specificity (i.e., the intensity of supplier-buyer contractual relationship) in any given industry. Nunn uses the 1997 U.S. industry Input-Output Use tables and the data on internationally traded goods from Rauch (1999) to create a relationship-specificity variable which measures the proportion of intermediate inputs, for every industry, that are neither priced in trade publications nor traded on an organized exchange. To the extent that the production technology in the U.S., which determines the proportion of intermediate trade between industries, is a good proxy for the production technology internationally, it is reasonable to use U.S. I-O tables for cross-country analysis. Moreover, combining the U.S. I-O

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[6] According to the definition provided by the World Bank's Worldwide Governance Indicators, the rule of law reflects "perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence." (Kaufmann, Kraay, & Mastruzzi, 2009, p. 6)

[7] Data are retrieved from the World Bank's World Development Indicators website: data.worldbank.org/data-catalog/world-development-indicators.

tables with the international trade data provides a better exogenous measure of the equilibrium industry-level demand for relationship-specific investment across different countries (Rajan & Zingales, 1998; Francis, Khurana, & Pereira, 2005; Dou, Hope, & Thomas, 2013). In summary, relationship-specificity, the measure of contract intensity at the industry level, rule of law, the measure of contract enforcement at the country level, and the interaction between the two variables at the firm level comprise our main explanatory variables. The use of the interaction variable enables us to identify a direct channel through which relationship-specific investment influences capital structure policy (Rajan & Zingales, 1998). That is, when contract enforcement is weak at the country level, firms in relationship industries choose a more conservative capital structure policy to signal lower probability of default and encourage their suppliers to invest in specialized assets.

The accounting information is obtained from the Compustat Fundamental Annual tables separately for Global and North American firms. To be included in our sample, we require every firm to have positive values for total assets, sales, market equity, and book equity. All values are converted to U.S. dollars. For global firms (i.e., outside North America), market values at the end of December of each year are retrieved from the Global Security Daily table, since end-of-December prices and numbers of outstanding shares are not available in the Compustat Global Fundamental Annual table.

In Table 5 and Panel A of Table 6, we report the average values for our dependent variables and the set of primary control variables, at the country and industry levels, respectively.[8] We follow the capital structure literature and use three different variables to measure leverage, namely, market, book, and total leverage. Market leverage is long-term (book) debt divided by the total market value of the firm. Total market value is calculated as market value of equity (market equity) plus total assets minus book value of equity (book equity). Market equity is closing price

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[8] We winsorize financial ratios at the bottom and top 1% levels of their sample distributions each year.

multiplied by the number of shares outstanding at the end of December of each year. Book equity is common equity (stockholders' equity minus the book value of preferred stock) plus deferred taxes and investment tax credits. Book leverage is long-term (book) debt divided by total assets. Total leverage is the sum of long-term debt and debt in current liabilities scaled by total assets.

We employ a large set of firm-specific control variables to mitigate the concern that these characteristics vary significantly based on the intensity of contracts or the level of contract enforcement, which, in turn, affects capital structure at the firm level. Return on assets (ROA), our proxy for profitability, is calculated as operating income before depreciation divided by total assets. Market-to-book, our growth measure, is the ratio of market equity to book equity. Size is measured as the log of total sales. Tangibility is the ratio of property, plant and equipment to total assets. Research and development (R&D) expenses are scaled by total assets. Additionally, missing R&D values are set equal to zero and a dummy variable is created to specify observations with missing R&D values. Tax is calculated as the ratio of income taxes to pre-tax income. Moreover, negative tax rates are treated as missing values. Finally, liquidity is calculated as the ratio of current assets to current liabilities.

Panel B of Table 6 compares the average values of the main variables between relationship industries (industries with above-median relationship-specificity values) and other industries. The panel also reports the difference between the average values and the corresponding Cochran *t*-statistics. Firms with higher contract intensity – firms in relationship industries – have significantly lower debt in their capital structure. They also have higher growth, higher liquidity and considerably higher R&D expenditures. On the other hand, they have lower ROA and lower tangibility compared to firms in other industries. We also present the full sample pair-wise Pearson (above the diagonal)/Spearman (below the diagonal) correlations between the main firm-level variables in Table 7.

In this study, we are mainly interested in the association between capital structure and relationship-specificity in different contracting environments. We estimate univariate and multivariate linear panel regressions of leverage on the interaction between relationship-specificity

and the quality of contract enforcement. We use long-term market leverage as our primary measure of capital structure for a firm. We also test the robustness of our results by considering the two other measures of capital structure explained above.[9] In order to provide further support for our findings, we test the effect of our explanatory variables on the probability of maintaining positive debt (the probability of borrowing) and the cost of debt. The effects of the explanatory variables on the probability of borrowing are estimated using logistic regressions with specifications similar to the debt ratio regressions. The linear panel regressions of the cost of debt include long-term book leverage, market capitalization (market equity), tangibility, growth, and cash flow control variables as well as a dummy variable which is set to one if the firm pays dividend and zero otherwise. The realized cost of debt is total interest expenses divided by total debt. The cost of debt for each year t is the average of the costs for year t and $t - 1$. Cash flow is calculated as income before extraordinary items plus depreciation, scaled by total assets. Moreover, a dummy variable is included to specify firms with negative or missing cash flows.

We employ different methods to allow for the cross-correlations and the serial correlation in the error terms in our firm-level panel regressions (Petersen, 2009). First, we include year fixed effects in all of our panel regressions. Some of our regressions also include country fixed effects; however, we exclude from our regression specifications the country-level contract enforcement variable (as well as the country-level control variables) when country fixed effects are present. Finally, in our regressions, we allow for clustering of error terms at the firm or industry level. The regression results are presented in the next section of the paper.

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[9] It has been argued that the long-term debt ratio is better able to capture a firm's capital structure policy, since short-term debt is largely used to finance current assets (Cho, Ghoul, Guedhami, & Suh, 2014).

4. Results and Discussion

4.1. Main Evidence

In order to investigate the implications of relationship-specific investment and the legal environment for capital structure policy, we first look at the mean values of firm-specific leverage variables at different levels of industry-level relationship-specificity and country-level legal quality. Table 8 presents the comparisons of mean leverage values between quartile portfolios. Firms are grouped together into four portfolios based on the relationship-specificity of their industries and, separately, on the legal quality (i.e., rule of law) of their countries at the end of each year.

Panel A of Table 8 reports the mean values and their comparisons across extreme (the highest minus the lowest) quartiles for long-term market leverage. The leverage ratio falls substantially as the degree of relationship-specificity increases. The difference between the mean values of the highest and the lowest quartile portfolios is -5.15 percentage points and is statistically significant at the 1% level. The mean leverage values for the portfolios sorted based on the quality of legal system also decrease between the lowest and the highest quartile portfolios; the difference is -1.87 percentage points and is significant at the 1% level. The results of the mean value comparisons support our first hypothesis; that is, a firm's leverage is decreasing in the degree of relationship-specificity. The cross-section of long-term market leverage between the 16 double-sorted portfolios provides support for our second hypothesis. For firms with significant relationship-specific assets – that is, firms that operate in industries with the highest degree of relationship-specificity (the 'High' quartile) – the mean leverage value increases from 3.70% to 8.15%. The difference of 4.45 percentage points is both economically significant compared to the sample mean of 12.55% and statistically significant at the 1% level.

Panel B of Table 8 presents the mean values and comparisons for long-term book leverage. It shows a pattern comparable to, and even stronger than, the results reported in Panel A. Once more, leverage ratios are negatively associated with relationship-specificity and the decrease in debt

ratios are monotonic. More importantly, the long-term book ratio increases significantly for firms with relationship-specific assets as contract enforcement, measured by rule of law, improves. The difference of 5.32 percentage points is again statistically significant at the 1% level and economically significant compared to the sample mean long-term book ratio of 14.44%.

Next, we turn to linear panel regressions. Panel A of Table 9 shows the results from the simple linear regressions of our main dependent variable, the long-term market debt ratio, on our explanatory variables. Control variables are not included in the simple regressions. In columns (1) and (2), the coefficient estimates from the univariate regressions of market leverage on relationship-specificity and rule of law variables support the results from quartile-portfolio comparison tests. Both coefficients are negative and statistically significant at the 1% level. However, when we include both variables in the same specification in column (3), rule of law becomes positive, while the coefficient of relationship-specificity remains virtually unchanged. This explains, to some extent, the mixed empirical evidence on the association between contract enforcement and firm-level leverage. That is, the effect of contract enforcement on the availability of debt financing could be contingent on the type of investment which is financed with external funds. The results presented in column (4) support our view of capital structure policy for firms with relationship-specific investment: when the interaction between the two main independent variables is included in the regression model, the coefficient of relationship-specificity remains negative and statistically significant. Moreover, the coefficient of the interaction variable is positive and statistically significant, as predicted by our second hypothesis. The coefficient of rule of law also becomes negative once again.

Panel B of Table 9 reports the results from linear regressions of market leverage when several control variables are included in the specifications. We follow the capital structure literature and include control variables that measure firm-specific profitability, growth opportunities, size, asset tangibility, R&D expenditure, tax, and liquidity. It has been shown in the literature that these variables are important determinants of capital structure for firms both in the U.S. and globally (De Jong, Kabir, & Nguyen, 2008; Fan, Titman, & Twite, 2012; Cho, Ghoul, Guedhami, & Suh,

2014). We also include OECD membership, inflation, and GDP growth as the country-specific control variables. In our multivariate linear regressions with control variables, the direction of the relationship-specificity and interaction variables remain unchanged. However, the coefficient estimate of rule of law becomes positive and significant in all specifications. This suggests that 1) the effect of legal quality on capital structure is correlated with other firm- or country-specific characteristics; and 2) the effect varies in relation to the type of asset financed by external funds. In the last column, we include country fixed effects and drop the country-level variables to examine whether our results are driven by omitted country-specific factors which are not captured by our country characteristic variables. Additionally, we allow for clustering of error terms at the industry level. Our findings are robust to this alternative specification, although the significance of the interaction variable drops below the 5% level.

The coefficient estimates of the firm characteristic control variables are largely consistent with the literature. The pecking-order theory suggests that more profitable firms and firms with more liquidity use lower debt ratios, since they have more internal funds available for new investments. Size is expected to be positively related to leverage, since larger firms have less information asymmetry. Tangibility can be viewed as a proxy for the availability of collateral, which is expected to affect leverage positively. On the one hand, firms with more growth opportunities and higher R&D intensity experience higher costs of financial distress; therefore, we expect these firms to have lower debt ratios to maintain future financial flexibility and avoid debt overhang. On the other hand, firms with more growth opportunities face lower borrowing costs to the extent that they have more potential profitability and debt capacity (Chen & Zhao, 2006). Finally, taxation is expected to influence leverage positively. In our primary regressions, we find that ROA, R&D, and liquidity have a negative effect on leverage, while growth opportunities, size, tangibility, and tax positively affect leverage. Most of the coefficient estimates of firm-level control variables are statistically significant at the 1% level or above. Additionally, OECD membership and inflation have positive coefficients while GDP growth has a negative coefficient. The coefficients of the country-level control variables are also statistically significant at the 1% level.

4.2. Robustness Tests

In this subsection, we examine the sensitivity of our results for the association between leverage and the cross-section of relationship-specificity and contract enforcement, to alternative specifications and different regression methods. In Table 10 we replace our dependent variable with two other measures of leverage; that is, the ratio of long-term debt to the book value of assets and the ratio of total (long-term plus short-term) debt to the book value of assets. Our regression specifications are similar to Table 9, Panel B. The coefficients of relationship-specificity are consistently negative in all specifications while the coefficients of the interaction variable remains positive and mostly significant. This supports our primary hypotheses, even when alternative measures of leverage are used.

In Panel A of Table 10 in which book leverage is substituted for market leverage, the coefficient of rule of law is positive and statistically significant at the 1% level. But, unlike market leverage regressions, book leverage regressions yield positive coefficient estimates for growth which is consistent with the agency conflicts between shareholders and creditors and the asset-substitution hypothesis (De Jong, Kabir, & Nguyen, 2008). This could also suggest that in regressions in which market debt ratio is used as the dependent variable, the effect of growth opportunities on debt is dominated by the positive association between growth opportunities and firm value.[10]

Substituting total book debt ratio for our leverage measure in Panel B of Table 10 does not change the direction or significance of the effect of the relationship-specificity or interaction variable. On the other hand, the coefficients of rule of law become negative. This finding may indicate that the demand for short-term debt financing falls significantly in countries where contracts are strongly enforced. Moreover, similar to the long-term book leverage regressions, the

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[10] If growth opportunities are considered as real options on cash flows from a firm's assets in place, then the firm with more valuable growth opportunities (and thus, more volatile cash flows) should have a higher market value (Shin & Stulz, 2000).

coefficients for growth opportunities are positive. Finally, the coefficient of the OECD variable is negative across all total leverage regression specifications, but not statistically significant. This could suggest that the use of debt financing, especially short-term debt, declines in more developed countries.

Next, we examine whether our findings are sensitive to the country-specific measure of legal quality. In Table 11, Panel A, we present results from linear panel regressions of long-term market debt ratio with alternative measures of legal quality. In the first column, we follow Dou, Hope, & Thomas (2013) and calculate the average country scores across the World Governance Indicators' Regulatory Quality, Rule of Law, and Control of Corruption variables (1996-2013) as the proxy for the quality of the legal system. The scores are normalized to have a value between zero and one. The average score measures the quality of broader aspects of a country's legal system which encompass the quality of legal enforcement. In the second column, legal quality is measured by the Economic Freedom of the World's index of legal structure and security of property rights from 1996 to 2012 (Gwartney, Lawson, & Hall, 2014).[11] The original variable is scaled by 10 in our regressions. In the next three columns, we include measures incorporated in the enforcing contracts index from the World Bank's Doing Business reports between 2004 and 2013 (World Bank, 2013). The three variables measure the time, cost and number of procedures for dispute resolution in contracts. We follow Nunn (2007) and normalize these variables.[12] Our results are robust to these alternative measures of legal quality; that is, the regressions yield positive and significant coefficients for the interaction variable and negative and significant coefficients for the relationship-specificity variable. The coefficients of the legal quality variables are also negative. All of the coefficients are statistically significant at the 1% level.

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[11] Data are retrieved from the Economic Freedom of the World website: www.freetheworld.com.

[12] DBECTime = $(1850-\text{Time})/1850$, DBECCost = $(3-\ln[\text{Cost}])/4$, and DBECProc = $(60-\text{Procedure})/60$.

In Panel B of Table 11, we present results from linear panel regressions of the long-term market debt ratio with alternative measures of relationship-specificity. The first three columns show the regression coefficients with the three alternative relationship-specificity variables from Nunn (2007). First, we use an alternative calculation of the relationship-specificity variable based on Rauch (1999)'s more conservative estimates of the value of inputs to each industry which are traded on an exchange or referenced in trade publications. Next, we include the inputs that are reference-priced as relationship-specific inputs. In other words, only inputs to a given industry that are traded on organized exchanges are treated as common, non-specific inputs.[13] Next, a relationship-specificity dummy variable is created, and set equal to 1 when the industry-level relationship-specificity is above its sample median, and 0 otherwise. In the last specification, a dummy variable is created which is set equal to 1 when an industry belongs to one of the Cremers, Nair, & Peyer (2008)'s relationship industries, and 0 otherwise.[14] The coefficients for the relationship-specificity variable remain negative and the coefficients for the interaction variable remain positive. The coefficients are also highly significant for all five alternative measures of relationship-specificity.[15]

In Panel C of Table 11, we employ the Fama & MacBeth (1973) regression approach to address a possible fixed time effect in our panel data (i.e., as an alternative to including year fixed effects). In the first column, we include all three explanatory variables along with the country-level and

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[13] Once more, two separate relationship-specificity variables are calculated based on liberal and conservative estimates from Rauch (1999), respectively.

[14] Cremers, Nair, & Peyer (2008) define "relationship industries as durable goods industries plus long-term services", which include two-digit Standard Industry Classification (SIC) codes 15-17, 34-39, 42, 47, 50, 51, 55, 60-65, 67, 75, 76, and 87.

[15] In untabulated analyses we limit our regressions to the durable and non-durable goods industries following Cremers, Nair, & Peyer (2008) and Banerjee, Dasgupta, & Kim (2008). We create and use dummy variables, as proxies for the level relationship-specificity, which are set equal to 1 for durable industries, and 0 otherwise. We find similar, but weaker, results using these alternative specifications. However, we believe that the measure of relationship-specificity used in this study is better able to capture the intensity of contracts between a firm and its suppliers and customers in a given industry.

firm-level control variables. In the second column, we drop the country-specific variables and include country fixed-effects instead. Our findings are robust to this alternative regression method.

4.3. Additional Analysis

Thus far, our results consistently suggest that firms which require their suppliers to make specialized investments limit their borrowing to induce such relationship-specific investments; however, this effect is significantly mitigated in countries with high quality legal environment and strong contract enforcement. In this subsection, we attempt to provide more conclusive evidence in support of this notion and rule out alternative explanations.

In Table 12 we examine whether the interaction between relationship-specificity and contract enforcement influences the probability for a firm to maintain positive leverage in a manner consistent with its effect on debt ratios (H3a). Panel A and Panel B report the results from logistic panel regressions of a long-term leverage dummy and a total leverage dummy on the main explanatory variables and the set of control variables, respectively. The long-term (total) leverage dummy takes the value of one when the firm has positive long-term (total) debt, and is set to zero otherwise. The coefficient estimates presented in Table 12 closely follow the estimates from the OLS panel regressions with the market debt ratio as the dependent variable (Table 9, Panel B).

The probability of maintaining positive leverage is negatively associated with relationship-specificity and positively associated with the interaction variable. This indicates that firms which both operate in relationship industries and reside in countries with weak contract enforcement are highly likely to adopt debt conservatism (Bessler, Drobetz, Haller, & Meier, 2013). Once again, the direction of the effect of the rule of law variable changes according to the dependent variable used in the regression. That is, its coefficient estimates are positive for the long-term leverage dummy and negative for the total leverage dummy. This suggests a negative association between the quality of governmental contract enforcement and the ability of firms to raise short-term debt.

Next, we investigate whether there is an association between relationship-specificity and the cost of debt and how it is influenced by the quality of contract enforcement. We estimate linear panel regressions of the cost of debt on the main explanatory variables and a set of control variables employed in the capital structure literature (van Binsbergen, Graham, & Yang, 2010). The results are provided in Table 13. The coefficient estimates are consistent with the leverage regressions. In column (4) of the table, the coefficient of the relationship-specificity is negative and the coefficient of the interaction variable is positive. Both coefficients are statistically significant at the 5% level. This supports the hypothesis that firms in relationship industries generally have a lower realized cost of debt since they limit their borrowing and adopt debt conservatism. However, as these firms increase their leverage ratios in countries with better quality contract enforcement, their cost of debt rises accordingly (H3b).

The coefficients for other firm- and country-level variables also have the expected signs and are significant, with the exception of cash flow. Rule of law and GDP growth negatively affect the realized cost of debt. This is consistent with the notion that countries with strong law enforcement and more developed countries provide better access to external financing, including debt financing (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1997). On the other hand, OECD membership has a positive, but smaller, effect on the cost of debt. Moreover, larger firms, firms with more tangible assets and dividend-paying firms have a lower cost of debt. In contrast, growth firms and firms with negative cash flows have a higher cost of debt. Lastly, the effect of book debt ratio on the cost of debt is negative, which indicates that firms with higher debt capacity tend to have a lower cost of debt.

Finally, in Table 14 we test an alternative explanation for our findings. That is, firms in countries with stronger contract enforcement have access to more developed equity and debt markets, which, in turn, could reduce their cost of debt financing. Moreover, compared to firms with non-specialized assets, firms in relationship industries could be more affected by the availability of improved debt markets. In column (1) of the table, we substitute creditor rights for our legal quality variable, as it specifically measures the protection provided to creditors in a given

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country. Our creditor rights data are from Djankov, McLiesh, & Shleifer (2007) and Cho, Ghoul, Guedhami, & Suh (2014). Consistent with the findings of Cho, Ghoul, Guedhami, & Suh, we find that leverage is negatively associated with creditor protection. However, the coefficient of the interaction between the creditor protection variable and relationship-specificity is positive and statistically significant. The results indicate that although better credit protection could be generally associated with less borrowing at the firm level, the relationship is reversed for firms with specific assets.

In the next three columns of the table, we include creditor rights and its interaction with relationship-specificity as additional variables in our main regressions. Although the coefficients on creditor rights remain virtually unchanged, they have no effect on the direction or significance of the coefficient of the interaction between relationship-specificity and rule of law. This could indicate that our contract enforcement variable measures aspects of a country's contracting environment which are not captured by the creditor protection variable, and these aspects are essential for the decision by a firm with relationship-specific assets to raise debt. Taken together with the cost of debt regressions, these findings suggest that firms in relationship industries attempt to increase their suppliers' willingness to invest in relationship-specific assets through limiting their leverage and reducing their probability of default, in so far as the suppliers perceive that their specialized investments are not protected by explicit contracts.

5. Conclusion

This study examines the implications of supplier-buyer relationships and the contracting environment for capital structure policy. The study shows how the quality of country-specific governmental contract enforcement interacts with relationship-specific investment at the industry level to impact the variation in firm leverage. We show that firms in relationship industries commit to lower debt levels in order to induce investment from their stakeholders (i.e., suppliers and customers). However, better governmental contract enforcement can reduce the stakeholders' perceived costs of financial distress or default. Accordingly, firms in relationship industries are

inclined to increase their leverage in the presence of strong contract enforcement, without threatening the relationships with their stakeholders. This is also consistent with the trade-off theory of capital structure (Kraus & Litzenberger, 1973) which states that firms consider the costs and benefits of raising debt to determine the optimal level of leverage.

The current study expands the empirical capital structure literature in a few important ways. First, it provides new evidence to support the transaction-cost view of capital structure. Second, it highlights the importance of incorporating the effect of the contracting environment in studies that examine the association between relationship-specificity and corporate strategy. Third, it employs a proxy for relationship-specificity, introduced by Nunn (2007), which measures the degree of contract intensity in a given industry. The results of the study are subjected to numerous controls, empirical specifications, and analysis methods; however, the reported statistical associations do not necessarily establish causal relations.

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7. Appendix: Tables

Table 1: Country distribution of the sample

This table reports the number of unique firms and firm-year observations for each of the 57 countries in the sample and the number of 6-digit industries (based on the North American Industry Classification System) in each country. The table also reports the legal origin of each country and whether the country joined the Organisation for Economic Co-operation and Development (OECD) by the 1990s (Nunn, 2007).

Country Code	Country Name	Legal Origin[*]	OECD	# of Firms	% of Total Firms	# of Firm-Year Obs.	# of 6-digit NAICS Industries
ARE	United Arab Emirates	Br.	N	15	0.09%	114	9
ARG	Argentina	Fr.	N	37	0.21%	425	26
AUS	Australia	Br.	Y	1,208	6.96%	8,668	134
AUT	Austria	Ge.	Y	41	0.24%	422	34
BEL	Belgium	Fr.	Y	55	0.32%	607	38
BGD	Bangladesh	Br.	N	35	0.20%	165	11
BRA	Brazil	Fr.	N	106	0.61%	847	62
CAN	Canada	Br.	Y	1,172	6.75%	6,686	123
CHE	Switzerland	Ge.	Y	99	0.57%	1,166	65
CHL	Chile	Fr.	N	53	0.31%	540	37
CHN	China	So.	N	1,326	7.64%	10,638	216
COL	Colombia	Fr.	N	11	0.06%	117	10
DEU	Germany	Ge.	Y	338	1.95%	3,221	138
DNK	Denmark	Sc.	Y	77	0.44%	826	44
EGY	Egypt	Fr.	N	52	0.30%	382	25
ESP	Spain	Fr.	Y	61	0.35%	679	37
FIN	Finland	Sc.	Y	59	0.34%	747	41
FRA	France	Fr.	Y	349	2.01%	3,211	147
GBR	United Kingdom	Br.	Y	722	4.16%	5,657	187
GRC	Greece	Fr.	Y	94	0.54%	1,009	50
HKG	Hong Kong	Br.	N	36	0.21%	509	26
HUN	Hungary	So.	N	14	0.08%	163	12
IDN	Indonesia	Fr.	N	161	0.93%	1,545	73
IND	India	Br.	N	1,437	8.28%	8,955	200
IRL	Ireland	Br.	Y	21	0.12%	220	16
ISR	Israel	Br.	N	90	0.52%	511	40
ITA	Italy	Fr.	Y	135	0.78%	1,398	73

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Country Code	Country Name	Legal Origin*	OECD	# of Firms	% of Total Firms	# of Firm-Year Obs.	# of 6-digit NAICS Industries
JOR	Jordan	Fr.	N	57	0.33%	483	32
JPN	Japan	Ge.	Y	1,358	7.82%	17,688	268
KEN	Kenya	Br.	N	15	0.09%	134	10
KOR	South Korea	Ge.	N	869	5.00%	5,864	145
KWT	Kuwait	Fr.	N	17	0.10%	131	15
LKA	Sri Lanka	Br.	N	81	0.47%	652	42
MAR	Morocco	Fr.	N	27	0.16%	286	19
MEX	Mexico	Fr.	N	49	0.28%	501	24
MYS	Malaysia	Br.	N	410	2.36%	4,610	155
NGA	Nigeria	Br.	N	36	0.21%	295	17
NLD	Netherlands	Fr.	Y	55	0.32%	660	41
NOR	Norway	Sc.	Y	77	0.44%	635	38
NZL	New Zealand	Br.	Y	47	0.27%	425	34
OMN	Oman	Fr.	N	15	0.09%	135	12
PAK	Pakistan	Br.	N	172	0.99%	1,474	40
PER	Peru	Fr.	N	38	0.22%	336	21
PHL	Philippines	Fr.	N	63	0.36%	585	30
POL	Poland	So.	N	170	0.98%	1,311	87
PRT	Portugal	Fr.	Y	22	0.13%	244	19
RUS	Russia	So.	N	49	0.28%	160	14
SAU	Saudi Arabia	Br.	N	48	0.28%	404	22
SGP	Singapore	Br.	N	158	0.91%	1,631	81
SWE	Sweden	Sc.	Y	201	1.16%	1,703	80
THA	Thailand	Br.	N	185	1.07%	2,051	93
TUN	Tunisia	Fr.	N	14	0.08%	117	12
TUR	Turkey	Fr.	Y	139	0.80%	1,378	59
TWN	Taiwan	Ge.	N	891	5.13%	7,789	145
USA	United States of America	Br.	Y	4,041	23.27%	30,292	316
VNM	Vietnam	So.	N	132	0.76%	650	49
ZAF	South Africa	Br.	N	124	0.71%	1,226	54
	Total			17,364		143,278	

* The existing legal origins of the company law or commercial code are British Common Law (Br.), French Civil Law (Fr.), German Civil Law (Ge.), Scandinavian Civil Law (Sc.), and Socialist System (So.).

Table 2: Industry distribution of the sample

This table reports the number of unique firms and firm-year observations for each of the 30 three-digit North American Industry Classification System (NAICS) industries in the sample. The table also reports the number of 6-digit industries and the number of countries with at least one firm in each 3-digit industry.

NAICS 3-digit Code	Industry Description	# of Firms	% of Total Firms	# of Firm-Year Obs.	# of 6-digit NAICS Industries	# of Countries
111	Crop Production	156	0.90%	1,450	30	28
112	Animal Production	49	0.28%	475	14	18
113	Forestry and Logging	45	0.26%	457	4	16
114	Fishing, Hunting and Trapping	15	0.09%	186	5	9
211	Oil and Gas Extraction	1,129	6.50%	6,962	3	28
212	Mining (except Oil and Gas)	1,520	8.75%	9,545	30	40
221	Utilities	4	0.02%	49	4	4
311	Food Manufacturing	998	5.75%	9,369	50	53
312	Beverage and Tobacco Product Manufacturing	393	2.26%	3,787	12	52
313	Textile Mills	565	3.25%	4,393	13	39
314	Textile Product Mills	56	0.32%	564	9	21
315	Apparel Manufacturing	365	2.10%	3,051	20	37
316	Leather and Allied Product Manufacturing	90	0.52%	759	12	21
321	Wood Product Manufacturing	178	1.03%	1,722	11	31
322	Paper Manufacturing	377	2.17%	3,520	17	46
323	Printing and Related Support Activities	138	0.79%	1,316	7	26
324	Petroleum and Coal Products Manufacturing	166	0.96%	1,612	1	36
325	Chemical Manufacturing	3,116	17.95%	25,499	40	56
326	Plastics and Rubber Products Manufacturing	549	3.16%	4,883	15	40
327	Nonmetallic Mineral Product Manufacturing	542	3.12%	5,182	21	52
331	Primary Metal Manufacturing	469	2.70%	3,547	19	44
332	Fabricated Metal Product Manufacturing	428	2.46%	3,964	26	38
333	Machinery Manufacturing	914	5.26%	7,994	42	40
334	Computer and Electronic Product Manufacturing	2,589	14.91%	21,407	27	36
335	Electrical Eqpt., Appliance, and Component Mfg.	654	3.77%	6,026	21	48
336	Transportation Equipment Manufacturing	692	3.99%	6,318	28	44
337	Furniture and Related Product Manufacturing	58	0.33%	497	4	21
339	Miscellaneous Manufacturing	440	2.53%	3,663	20	32
511	Publishing Industries (except Internet)	214	1.23%	1,999	4	42
519	Other Information Services	455	2.62%	3,082	2	28

Table 3: Country-level variables

This table summarizes the main country-specific variables for each of the 57 countries in the sample. Rule of law is the measure of the quality of a country's legal system from The World Bank's Worldwide Governance indicators. The original measure ranges from -2.5 to 2.5. We normalize this measure to have a value between 0 and 1 by adding to it 2.5 and dividing the result by 5. The creditor rights index is the country-level measure of creditor protection from Djankov, McLiesh, & Shleifer (2007); the 2002 values are used following Cho, Ghoul, Guedhami, & Suh (2014). The annual inflation rate, the growth rate in Gross Domestic Product (GDP), and the log of GDP per capita are from the World Bank. The average country values from 1996-2013 are reported in the table. The average relationship-specificity value for each country is calculated as $\sum_{i=1}^{I_c} {x_{ci}}/{x_c} \cdot z_i$; where x_{ci} is the exports in industry i by country c to all other countries, x_c is the total exports by country c to all other countries, z_i is the proportion of industry i's intermediate inputs that are relationship-specific, and I_c is the total number of industries in country c. The export and relationship-specificity data are obtained from Nunn (2007). Countries are sorted in descending order based on the value of the rule of law variable.

Country Name	Rule of Law	Creditor Rights	Inflation	GDP Growth	ln(GDP Per Capita)	Average Relationship-Specificity
Finland	0.888	0.25	0.017	0.024	10.485	0.530
Norway	0.882	0.50	0.020	0.021	10.980	0.309
Denmark	0.878	0.75	0.021	0.012	10.709	0.532
Switzerland	0.872	0.25	0.007	0.019	10.918	0.546
Sweden	0.872	0.25	0.012	0.024	10.615	0.587
Austria	0.869	0.75	0.019	0.019	10.495	0.554
New Zealand	0.869	1.00	0.022	0.027	10.063	0.433
Netherlands	0.850	0.75	0.021	0.019	10.548	0.519
Australia	0.849	0.75	0.026	0.033	10.404	0.418
Canada	0.845	0.25	0.019	0.025	10.403	0.561
United Kingdom	0.834	1.00	0.022	0.021	10.430	0.601
Germany	0.827	0.75	0.015	0.013	10.430	0.604
Ireland	0.824	0.25	0.024	0.042	10.571	0.586
United States of America	0.809	0.25	0.024	0.025	10.635	0.616
Singapore	0.808	0.75	0.018	0.056	10.365	0.679
France	0.780	0.00	0.016	0.016	10.387	0.576
Belgium	0.761	0.50	0.020	0.018	10.439	0.511
Hong Kong	0.760	1.00	0.014	0.036	10.256	0.599
Japan	0.758	0.50	-0.001	0.008	10.511	0.690
Chile	0.749	0.50	0.024	0.042	8.944	0.361
Spain	0.741	0.50	0.027	0.022	10.038	0.582
Portugal	0.727	0.25	0.025	0.012	9.733	0.609
Israel	0.690	0.75	0.034	0.039	10.055	0.566
South Korea	0.677	0.75	0.033	0.045	9.695	0.591

Country Name	Rule of Law	Creditor Rights	Inflation	GDP Growth	ln(GDP Per Capita)	Average Relationship-Specificity
Taiwan	0.675	0.50				0.614
Hungary	0.663	0.25	0.080	0.021	9.062	0.588
Greece	0.647	0.25	0.034	0.010	9.865	0.432
Poland	0.621		0.056	0.041	8.921	0.501
Italy	0.616	0.50	0.023	0.005	10.272	0.568
Oman	0.613		0.029	0.035	9.585	0.287
Kuwait	0.612		0.037	0.056	10.478	0.153
Malaysia	0.596	0.75	0.025	0.048	8.660	0.607
United Arab Emirates	0.595		0.029	0.042	10.614	0.249
Jordan	0.568	0.25	0.039	0.051	7.926	0.343
Saudi Arabia	0.533		0.030	0.056	9.633	0.190
Thailand	0.529	0.50	0.031	0.031	8.015	0.565
India	0.520	0.50	0.073	0.068	6.613	0.466
South Africa	0.518	0.75	0.061	0.032	8.414	0.378
Sri Lanka	0.518	0.50	0.097	0.055	7.208	0.596
Turkey	0.503	0.50	0.324	0.042	8.710	0.498
Tunisia	0.501		0.036	0.041	8.106	0.529
Morocco	0.490	0.25	0.018	0.046	7.578	0.401
Egypt	0.478	0.50	0.073	0.045	7.466	0.265
Brazil	0.443	0.25	0.068	0.029	8.648	0.430
Philippines	0.421	0.25	0.050	0.046	7.259	0.579
China	0.415	0.50	0.023	0.096	7.548	0.564
Vietnam	0.406		0.117	0.059	7.223	0.494
Argentina	0.398	0.25		0.037	8.959	0.377
Mexico	0.395	0.00	0.086	0.029	8.893	0.616
Colombia	0.372	0.00	0.079	0.035	8.213	0.326
Peru	0.370	0.00	0.038	0.049	8.031	0.353
Indonesia	0.361	0.50	0.110	0.042	7.267	0.406
Russia	0.335	0.50	0.115	0.008	9.123	0.316
Pakistan	0.334	1.00	0.086	0.038	6.566	0.437
Bangladesh	0.327		0.072	0.059	6.356	0.678
Kenya	0.310	1.00	0.097	0.039	6.434	0.322
Nigeria	0.253	1.00	0.131	0.078	6.849	0.187

Table 4: Industry-level relationship-specificity

This table reports the relationship-specificity variable for each of the 30 three-digit NAICS industries in the sample. Relationship-specificity is the proportion of an industry's intermediate inputs that is neither sold on an organized exchange nor reference-priced. It is a proxy for the degree of contract-intensity of an industry. The 1997 values are obtained from Nunn (2007). The industry mean values are reported in the table. Industries are sorted in descending order based on the value of the relationship-specificity variable.

Industry Description	Relationship-Specificity	Industry Description	Relationship-Specificity
Computer and Electronic Product Manufacturing	0.838	Forestry and Logging	0.483
Transportation Equipment Manufacturing	0.801	Fabricated Metal Product Manufacturing	0.467
Apparel Manufacturing	0.743	Plastics and Rubber Products Manufacturing	0.413
Machinery Manufacturing	0.707	Mining (except Oil and Gas)	0.400
Publishing Industries (except Internet)	0.682	Nonmetallic Mineral Product Manufacturing	0.394
Leather and Allied Product Manufacturing	0.655	Crop Production	0.363
Other Information Services	0.644	Paper Manufacturing	0.354
Printing and Related Support Activities	0.609	Chemical Manufacturing	0.328
Miscellaneous Manufacturing	0.594	Food Manufacturing	0.293
Textile Product Mills	0.560	Textile Mills	0.292
Furniture and Related Product Manufacturing	0.558	Utilities	0.285
Wood Product Manufacturing	0.550	Animal Production	0.271
Beverage and Tobacco Product Manufacturing	0.540	Primary Metal Manufacturing	0.191
Electrical Eqpt., Appliance, and Component Mfg.	0.539	Oil and Gas Extraction	0.171
Fishing, Hunting and Trapping	0.517	Petroleum and Coal Products Manufacturing	0.036

Table 5: Variable means by country

This table reports the simple average of the main firm-specific variables for firms in each of the 57 countries in the sample. The sample includes all firms in the Compustat Global and Compustat North America databases with available market value, book value and net sales data between 1996 and 2013 that belong to one of the 222 industries (based on the I-O Industry Classification codes of the Bureau of Economic Analysis, U.S. Department of Commerce) from Nunn (2007). Market leverage is book value of long-term debt divided by market value of the firm. Book leverage is book value of long-term debt divided by total assets. Total debt is the sum of long-term debt and debt in current liabilities scaled by total assets. Market value of the firm is calculated as the sum of the market value of equity (market equity) and book liabilities. Market equity is closing price in U.S. dollars multiplied by the number of shares outstanding at the end of December each year. Book liabilities are measured as the book value of total assets minus the book value of equity (book equity). Book equity is common equity (stockholders' equity minus the book value of preferred stock) plus deferred taxes and investment tax credit. Return on assets is measured as operating income before depreciation divided by total assets. Growth is measured using the market-to-book ratio or the ratio of market equity to book equity. Size is the log of net sales in U.S. dollars. Tangibility is the ratio of fixed assets (property, plant & equipment) to total assets. R&D is research and development expense scaled by total assets. Tax is income taxes divided by pre-tax income. Liquidity is the ratio of current assets to current liabilities. Financial ratios are winsorized at the lower and upper 1% levels of their sample distributions each year. Firms with non-positive long-term debt, non-positive total debt, and negative or missing R&D values are omitted from the average calculations of the respective variables. The full sample means are also provided at the bottom of the table.

Country Name	Market Leverage	Book Leverage	Total Book Leverage	Return-On-Assets	Growth (M/B)	Size (log of Sales)	Tangibility	R&D	Tax	Liquidity
Argentina	0.130	0.135	0.237	0.120	2.486	5.078	0.413	0.004	0.307	1.736
Australia	0.110	0.136	0.175	-0.153	3.513	0.771	0.400	0.115	0.120	6.814
Austria	0.127	0.131	0.238	0.093	1.566	5.397	0.315	0.034	0.279	2.397
Bangladesh	0.071	0.112	0.310	0.141	4.846	3.900	0.404	0.001	0.222	1.729
Belgium	0.111	0.128	0.219	0.099	2.172	5.120	0.299	0.087	0.288	2.210
Brazil	0.135	0.170	0.294	0.104	8.156	6.194	0.356	0.015	0.325	2.020
Canada	0.129	0.180	0.216	0.001	2.497	3.210	0.528	0.140	0.264	3.306
Chile	0.139	0.142	0.214	0.117	1.518	4.983	0.463	0.002	0.194	2.212
China	0.056	0.088	0.233	0.070	3.950	5.102	0.352	0.012	0.194	2.383
Colombia	0.123	0.110	0.136	0.092	1.093	5.919	0.458		0.233	2.086
Denmark	0.118	0.138	0.241	0.076	2.735	4.985	0.290	0.115	0.285	2.345
Egypt	0.081	0.098	0.193	0.130	1.994	4.738	0.414	0.017	0.171	1.881
Finland	0.153	0.173	0.260	0.120	2.088	6.133	0.291	0.041	0.280	1.777
France	0.114	0.131	0.219	0.083	2.253	5.487	0.198	0.068	0.335	2.107

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Country Name	Market Leverage	Book Leverage	Total Book Leverage	Return-On-Assets	Growth (M/B)	Size (log of Sales)	Tangibility	R&D	Tax	Liquidity
Germany	0.112	0.127	0.209	0.074	2.530	5.518	0.250	0.065	0.361	2.860
Greece	0.172	0.169	0.341	0.063	1.556	4.531	0.397	0.006	0.373	1.663
Hong Kong	0.103	0.090	0.187	0.045	1.303	4.682	0.288	0.014	0.179	2.701
Hungary	0.084	0.087	0.150	0.116	1.423	5.486	0.428	0.050	0.197	2.837
India	0.198	0.193	0.327	0.112	1.909	4.196	0.371	0.010	0.286	1.990
Indonesia	0.174	0.183	0.331	0.126	2.179	4.370	0.419	0.004	0.318	2.479
Ireland	0.193	0.256	0.298	0.092	3.389	6.046	0.393	0.015	0.200	1.577
Israel	0.139	0.164	0.277	0.025	2.613	4.205	0.230	0.124	0.246	2.316
Italy	0.119	0.131	0.259	0.081	1.816	6.002	0.240	0.030	0.457	1.689
Japan	0.112	0.110	0.237	0.076	1.282	6.108	0.312	0.026	0.457	2.072
Jordan	0.109	0.111	0.226	0.045	1.559	2.611	0.375	0.004	0.080	2.956
Kenya	0.081	0.100	0.150	0.177	2.450	4.141	0.471	0.003	0.320	2.239
Kuwait	0.110	0.133	0.209	0.050	1.552	3.694	0.199	0.001	0.009	4.762
Malaysia	0.100	0.092	0.236	0.078	1.402	3.784	0.402	0.011	0.247	2.912
Mexico	0.210	0.200	0.265	0.134	1.258	6.527	0.534	0.002	0.360	2.290
Morocco	0.073	0.109	0.183	0.151	3.088	5.036	0.342	0.012	0.297	2.062
Netherlands	0.128	0.163	0.255	0.109	2.411	6.481	0.279	0.065	0.292	1.775
New Zealand	0.178	0.198	0.241	0.008	2.957	3.736	0.358	0.080	0.247	2.874
Nigeria	0.078	0.112	0.204	0.178	4.586	4.778	0.468	0.064	0.307	1.457
Norway	0.172	0.198	0.259	0.011	2.676	4.679	0.248	0.070	0.294	2.364
Oman	0.080	0.090	0.200	0.118	1.587	3.742	0.436	0.008	0.118	3.160
Pakistan	0.168	0.161	0.319	0.156	1.751	4.195	0.444	0.005	0.330	1.521
Peru	0.152	0.130	0.232	0.161	1.405	4.781	0.457	0.017	0.301	1.995
Philippines	0.154	0.154	0.235	0.073	1.920	3.416	0.376	0.006	0.242	3.016
Poland	0.087	0.094	0.201	0.084	1.850	4.195	0.376	0.009	0.227	2.181
Portugal	0.214	0.228	0.358	0.103	1.551	5.825	0.398	0.002	0.269	1.305
Russia	0.175	0.167	0.243	0.091	1.276	6.939	0.397	0.021	0.254	3.143
Saudi Arabia	0.145	0.204	0.273	0.121	2.959	5.320	0.505	0.003	0.095	2.881

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Country Name	Market Leverage	Book Leverage	Total Book Leverage	Return-On-Assets	Growth (M/B)	Size (log of Sales)	Tangibility	R&D	Tax	Liquidity
Singapore	0.071	0.073	0.183	0.077	1.569	4.365	0.309	0.015	0.243	2.266
South Africa	0.091	0.102	0.172	0.119	2.028	4.918	0.390	0.005	0.274	2.175
South Korea	0.122	0.115	0.303	0.075	1.215	5.389	0.365	0.023	0.281	1.764
Spain	0.126	0.143	0.238	0.103	1.924	5.891	0.354	0.023	0.259	1.675
Sri Lanka	0.111	0.121	0.236	0.108	2.050	2.882	0.454	0.001	0.255	1.937
Sweden	0.135	0.169	0.238	0.010	3.030	4.409	0.216	0.097	0.238	2.527
Switzerland	0.137	0.157	0.222	0.090	1.999	5.899	0.301	0.069	0.246	2.960
Taiwan	0.104	0.113	0.230	0.076	1.621	4.734	0.323	0.027	0.219	2.410
Thailand	0.130	0.135	0.300	0.115	1.456	4.414	0.423	0.014	0.178	2.265
Tunisia	0.081	0.104	0.232	0.118	2.044	3.742	0.316	0.001	0.137	2.359
Turkey	0.092	0.106	0.208	0.101	2.383	5.020	0.354	0.008	0.244	2.388
United Arab Emirates	0.083	0.097	0.118	0.070	1.464	4.451	0.330	0.006	0.000	4.262
United Kingdom	0.106	0.132	0.189	0.025	3.058	4.041	0.264	0.087	0.258	2.673
United States of America	0.144	0.194	0.230	-0.005	3.937	4.479	0.255	0.125	0.248	3.627
Vietnam	0.113	0.111	0.300	0.136	1.236	3.664	0.286	0.007	0.184	2.011
Full Sample	0.126	0.144	0.241	0.046	2.609	4.552	0.331	0.069	0.271	2.868

Table 6: Variable means by industry

This table reports the simple average of the main firm-specific variables for firms in each of the 30 industry classes in the sample. The sample includes all firms in the Compustat Global and Compustat North America databases with available market value, book value and net sales data between 1996 and 2013 that belong to one of the 222 I-O industries from Nunn (2007). The variables are explained in Table 5. Panel A presents the variable means for each of the 3-digit NAICS industries in the sample. Panel B presents the variable means separately for relationship industries and other industries. Relationship industries are defined as industries with above median relationship-specificity. The last two rows of the table report the difference in average values between the two types of industries and the *t*-statistics for the Cochran mean difference *t* tests, respectively.

Panel A: Industry means										
Industry Description	Market Leverage	Book Leverage	Total Book Debt	Return -On- Assets	Growth (M/B)	Size (log of Sales)	Tangibility	R&D	Tax	Liquidity
Crop Production	0.129	0.134	0.221	0.077	2.073	4.133	0.443	0.026	0.270	3.136
Animal Production	0.173	0.175	0.315	0.071	2.282	4.343	0.463	0.011	0.215	2.412
Forestry and Logging	0.164	0.178	0.272	0.049	2.154	3.141	0.482	0.009	0.208	4.157
Fishing, Hunting and Trapping	0.153	0.147	0.306	0.098	1.542	5.292	0.350	0.003	0.321	2.208
Oil and Gas Extraction	0.183	0.241	0.254	0.026	2.638	3.010	0.661	0.033	0.255	3.229
Mining (except Oil and Gas)	0.109	0.135	0.185	-0.078	3.212	1.609	0.483	0.034	0.151	5.959
Utilities	0.187	0.196	0.246	0.074	2.140	8.232	0.440	0.002	0.270	1.660
Food Manufacturing	0.130	0.144	0.272	0.098	2.005	5.418	0.377	0.011	0.310	1.920
Beverage and Tobacco Product Manufacturing	0.135	0.170	0.251	0.118	2.933	5.381	0.381	0.006	0.312	1.930
Textile Mills	0.189	0.174	0.340	0.076	1.392	4.448	0.414	0.009	0.298	2.030
Textile Product Mills	0.145	0.148	0.292	0.084	1.401	4.800	0.347	0.012	0.303	2.407
Apparel Manufacturing	0.127	0.132	0.255	0.083	1.989	4.962	0.240	0.011	0.313	2.367
Leather and Allied Product Manufacturing	0.085	0.092	0.241	0.106	2.415	5.103	0.213	0.014	0.288	2.509
Wood Product Manufacturing	0.173	0.175	0.306	0.073	1.433	4.786	0.456	0.006	0.309	2.028
Paper Manufacturing	0.209	0.208	0.324	0.090	1.499	5.536	0.494	0.007	0.305	1.776
Printing and Related Support Activities	0.146	0.156	0.240	0.108	1.869	4.972	0.365	0.015	0.379	1.890

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	Panel A: Industry means									
Industry Description	Market Leverage	Book Leverage	Total Book Debt	Return -On- Assets	Growth (M/B)	Size (log of Sales)	Tangibility	R&D	Tax	Liquidity
Petroleum and Coal Products Manufacturing	0.154	0.178	0.258	0.110	2.232	8.101	0.471	0.006	0.302	1.473
Chemical Manufacturing	0.104	0.137	0.223	-0.013	3.651	4.241	0.267	0.134	0.238	3.551
Plastics and Rubber Products Manufacturing	0.138	0.146	0.277	0.099	1.723	4.897	0.392	0.020	0.294	1.900
Nonmetallic Mineral Product Manufacturing	0.167	0.175	0.275	0.104	1.976	5.087	0.474	0.014	0.278	2.006
Primary Metal Manufacturing	0.162	0.158	0.317	0.078	1.818	5.398	0.398	0.010	0.296	1.926
Fabricated Metal Product Manufacturing	0.125	0.137	0.242	0.100	1.816	5.113	0.304	0.014	0.321	2.395
Machinery Manufacturing	0.108	0.123	0.219	0.078	2.174	5.198	0.243	0.033	0.320	2.279
Computer and Electronic Product Manufacturing	0.093	0.113	0.198	0.030	2.753	4.567	0.204	0.086	0.257	3.108
Electrical Eqpt., Appliance, and Component Mfg.	0.094	0.105	0.223	0.070	2.243	4.988	0.254	0.033	0.290	2.410
Transportation Equipment Manufacturing	0.129	0.142	0.252	0.088	2.156	5.990	0.322	0.028	0.309	1.778
Furniture and Related Product Manufacturing	0.109	0.116	0.231	0.096	1.808	4.670	0.317	0.007	0.304	2.086
Miscellaneous Manufacturing	0.112	0.146	0.235	0.060	3.009	4.547	0.217	0.054	0.298	3.165
Publishing Industries (except Internet)	0.131	0.165	0.230	0.097	2.608	5.222	0.253	0.020	0.324	1.894
Other Information Services	0.067	0.099	0.140	-0.004	4.793	3.491	0.088	0.086	0.250	3.458
Panel B: Comparisons of mean variables across relationship-specificity median split industries										
Relationship industries	0.105	0.129	0.217	0.036	2.985	4.630	0.246	0.089	0.272	2.961
Other industries	0.150	0.163	0.269	0.058	2.145	4.455	0.436	0.020	0.270	2.753
Difference	-0.044	-0.034	-0.052	-0.022	0.840	0.175	-0.190	0.070	0.002	0.208
Mean-difference t-statistics	(-56.85)	(-41.10)	(-53.19)	(-20.65)	(38.93)	(12.55)	(-174.91)	(93.67)	(1.17)	(10.11)

Table 7: Firm characteristic variables' full sample pair-wise correlations

This table presents the pair-wise Spearman and Pearson correlations between the firm characteristic variables for the full sample. Pearson correlations are presented above the main diagonal and Spearman (rank) correlations are presented below it. The variables are defined according to Table 5.

Variable	Market Leverage	Book Leverage	Total Book Debt	ROA	Growth	Size	Tangibility	R&D	Tax	Liquidity
Book Leverage	-	0.8718	0.6658	0.0446	-0.1779	0.11	0.2774	-0.2095	0.0661	-0.1303
Market Leverage	0.9178	-	0.7181	0.0391	0.0757	0.126	0.2403	-0.0823	0.0267	-0.0989
Total Book Debt	0.7022	0.7222	-	0.0232	0.0286	0.1249	0.2279	-0.1878	0.0521	-0.3306
Return-On-Assets	-0.0112	0.0626	-0.0516	-	-0.2535	0.5409	0.1578	-0.6894	0.2451	-0.2002
Growth (M/B)	-0.3173	0.0077	-0.0846	0.115	-	-0.1665	-0.128	0.3681	-0.1289	0.0366
Size (log of Sales)	0.1724	0.1854	0.1386	0.4409	-0.0321	-	0.0301	-0.4512	0.276	-0.3933
Tangibility	0.2894	0.2472	0.2542	0.1597	-0.2005	0.0969	-	-0.3329	0.0229	-0.238
R&D	-0.2963	-0.1699	-0.2869	-0.2652	0.3725	-0.2961	-0.4684	-	-0.2653	0.22
Tax	0.1094	0.062	0.0506	0.3646	-0.1719	0.424	0.055	-0.2755	-	-0.1437
Liquidity	-0.2058	-0.1664	-0.5099	-0.0359	0.0949	-0.2401	-0.3848	0.3833	-0.1144	-

Table 8: Mean comparisons of the average leverage across different quartile portfolios

This table presents the average leverage values for different relationship-specificity- and rule of law-quartile portfolios. Panels A and B present the long-term market debt ratio and long-term book debt ratio, respectively. All firms in the sample are sorted into four quartile portfolios based on the relationship-specificity of the industry in which they operate, and separately sorted each year into four quartile portfolios based on the value of rule of law in their country of origin. The difference in mean values and the *t*-statistics for the Cochran mean difference tests are also reported. *, **, and *** denote the statistical significance of the mean difference tests at the 10%, 5%, and 1% levels, respectively.

		Panel A: Long-Term Market Leverage					
		Relationship-Specificity					
		Low	2	3	High	High-Low	t-stat
		0.1288	0.0968	0.0743	0.0773	-0.0515***	(-55.39)
		Rule of Law					
		Low	2	3	High	High-Low	t-stat
		0.0637	0.1198	0.0980	0.0824	0.0187***	(18.31)
		Relationship-Specificity					
		Low	2	3	High	High-Low	t-stat
Rule of Law	Low	0.1001	0.0707	0.0290	0.0370	-0.0631***	(-29.14)
	2	0.1507	0.1129	0.1023	0.0893	-0.0614***	(-24.22)
	3	0.1423	0.1213	0.0771	0.0802	-0.0621***	(-44.56)
	High	0.1049	0.0738	0.0732	0.0815	-0.0234***	(-12.36)
	High-Low	0.0048**	0.0031	0.0442***	0.0445***		
	t-stat	(2.10)	(1.53)	(28.88)	(25.77)		
		Panel B: Long-Term Book Leverage					
		Relationship-Specificity					
		Low	2	3	High	High-Low	t-stat
		0.1388	0.1078	0.0948	0.0915	-0.0473***	(-48.64)
		Rule of Law					
		Low	2	3	High	High-Low	t-stat
		0.0764	0.1201	0.1142	0.1024	0.0260***	(23.70)
		Relationship-Specificity					
		Low	2	3	High	High-Low	t-stat
Rule of Law	Low	0.1131	0.0826	0.0420	0.0497	-0.0634***	(-27.92)
	2	0.1442	0.1125	0.1089	0.0959	-0.0484***	(-19.84)
	3	0.1552	0.1337	0.1015	0.0936	-0.0616***	(-40.76)
	High	0.1254	0.0888	0.0975	0.1028	-0.0226***	(-10.71)
	High-Low	0.0123***	0.0062***	0.0555***	0.0532***		
	t-stat	(5.15)	(2.89)	(29.94)	(26.88)		

Table 9: OLS regressions of long-term market leverage

This table reports the results from firm-level Ordinary-Least Square (OLS) linear panel regressions of the long-term market debt ratio on the main explanatory variables (relationship-specificity, rule of law, and the interaction between them) and several firm- and country-level control variables. The specifications are similar to the leverage regressions of Cho, Ghoul, Guedhami, & Suh (2014). Country-, industry-, and firm-specific variables are defined according to Tables 3, 4 and 5, respectively. In Panel A, only the explanatory variables are included. All of the specifications in Panel B include the set of control variables and year dummies. In columns (1)-(4), we allow for clustering of error terms at the firm-level (Petersen, 2009). In column (5), we include country fixed effects and drop the country level variables; we also allow for clustering at the industry-level (Dou, Hope, & Thomas, 2013). The regression coefficients and *t*-statistics (appearing below in parentheses) are reported. *, **, and *** denote the statistical significance of the coefficients at the 10%, 5%, and 1% levels, respectively.

Variable	Panel A - Simple Regressions				Panel B - Regressions with Control Variables				
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(5)
Relationship-Specificity	-0.0814***		-0.0816***	-0.1631***	-0.0313***		-0.0313***	-0.1426***	-0.0929**
	(-59.95)		(-60.26)	(-25.76)	(-8.49)		(-8.58)	(-9.80)	(-2.69)
Rule of Law		-0.0121***	0.0032	-0.0510***		0.1006***	0.1007***	0.0249*	
		(-5.51)	(1.49)	(-9.89)		(10.43)	(10.46)	(1.74)	
RSI × RoL				0.1160***				0.1616***	0.0997*
				(13.15)				(7.84)	(2.04)
ROA					-0.0743***	-0.0781***	-0.0747***	-0.0763***	-0.0968***
					(-23.05)	(-23.98)	(-23.05)	(-23.47)	(-5.68)
Growth					-0.0033***	-0.0033***	-0.0033***	-0.0033***	-0.0034***
					(-27.60)	(-27.73)	(-27.76)	(-27.51)	(-6.92)
Size					0.0109***	0.0116***	0.0115***	0.0115***	0.0120***
					(30.16)	(31.40)	(31.19)	(31.25)	(9.93)
Tangibility					0.1153***	0.1282***	0.1147***	0.1185***	0.1320***
					(28.11)	(32.71)	(28.06)	(28.70)	(7.43)
R&D					-0.0805***	-0.0852***	-0.0819***	-0.0869***	-0.1270***
					(-14.42)	(-15.00)	(-14.61)	(-15.42)	(-5.37)
R&D Missing					-0.0001	0.0024	0.0010	0.0020	0.0115***
					(-0.07)	(1.36)	(0.55)	(1.14)	(4.86)

	Panel A - Simple Regressions				Panel B - Regressions with Control Variables				
Variable	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(5)
Tax					0.0134***	0.0154***	0.0152***	0.0153***	0.0130***
					(7.77)	(8.94)	(8.87)	(8.90)	(4.81)
Liquidity					-0.0024***	-0.0023***	-0.0025***	-0.0024***	-0.0019***
					(-18.18)	(-17.57)	(-18.82)	(-18.24)	(-3.36)
OECD					0.0058**	-0.0202***	-0.0190***	-0.0178***	
					(2.25)	(-5.63)	(-5.30)	(-5.02)	
Inflation					0.2179***	0.2932***	0.2841***	0.2753***	
					(7.15)	(8.98)	(8.83)	(8.77)	
GDP Growth					-0.1995***	-0.1494***	-0.1349***	-0.1162***	
					(-8.03)	(-5.78)	(-5.23)	(-4.52)	
Clustering	-	-	-	-	Firm	Firm	Firm	Firm	Industry
Industry Fixed Effects	No	No	No	No	No	No	No	No	No
Country Fixed Effects	No	No	No	No	No	No	No	No	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	4.06%	1.65%	4.06%	4.17%	17.99%	18.13%	18.41%	18.64%	25.51%
N	143,277	143,277	143,277	143,277	115,626	115,626	115,626	115,626	122,702

Table 10: OLS regressions of alternative leverage variables

This table reports the results from firm-level OLS linear panel regressions of the alternative debt ratios on the main explanatory variables and the set of firm- and country-level control variables. The specifications are similar to Panel B of Table 9. Variables are as defined previously. Panel A reports the coefficient estimates and *t*-statistics (appearing below in parentheses) for the long-term book debt ratio. Panel B reports the coefficient estimates and *t*-statistics for the total book debt ratio. *, **, and *** denote the statistical significance of the coefficients at the 10%, 5%, and 1% levels, respectively.

| Variable | Panel A - Long-Term Book Leverage | | | | |
	(1)	(2)	(3)	(4)	(5)
Relationship-Specificity	-0.0341***		-0.0342***	-0.1297***	-0.0764**
	(-8.40)		(-8.56)	(-8.49)	(-2.05)
Rule of Law		0.1610***	0.1611***	0.0960***	
		(15.66)	(15.70)	(6.31)	
RSI × RoL				0.1387***	0.0747
				(6.27)	(1.35)
ROA	-0.0445***	-0.0489***	-0.0452***	-0.0465***	-0.0708***
	(-11.70)	(-12.80)	(-11.84)	(-12.16)	(-4.73)
Growth	0.0021***	0.0020***	0.0021***	0.0021***	0.0017***
	(10.33)	(10.38)	(10.50)	(10.56)	(4.66)
Size	0.0137***	0.0149***	0.0147***	0.0147***	0.0156***
	(33.94)	(35.76)	(35.54)	(35.60)	(12.05)
Tangibility	0.1292***	0.1429***	0.1283***	0.1315***	0.1433***
	(28.63)	(33.30)	(28.61)	(29.04)	(8.51)
R&D	-0.0492***	-0.0550***	-0.0514***	-0.0557***	-0.1187***
	(-6.31)	(-7.03)	(-6.60)	(-7.13)	(-4.28)
R&D Missing	-0.0012	0.0021	0.0006	0.0015	0.0077**
	(-0.61)	(1.09)	(0.29)	(0.74)	(2.46)
Tax	0.0032*	0.0063***	0.0062***	0.0062***	0.0075***
	(1.79)	(3.53)	(3.46)	(3.47)	(2.97)
Liquidity	-0.0022***	-0.0021***	-0.0023***	-0.0022***	-0.0019***
	(-14.35)	(-14.16)	(-15.36)	(-14.91)	(-3.21)
OECD	0.0236***	-0.0174***	-0.0160***	-0.0151***	
	(8.89)	(-4.75)	(-4.39)	(-4.14)	
Inflation	0.2089***	0.3247***	0.3147***	0.3072***	
	(6.60)	(9.39)	(9.23)	(9.18)	
GDP Growth	-0.0679***	0.0196	0.0355	0.0515*	
	(-2.59)	(0.73)	(1.32)	(1.92)	

Variable	Panel A - Long-Term Book Leverage				
	(1)	(2)	(3)	(4)	(5)
Clustering	Firm	Firm	Firm	Firm	Industry
Industry Fixed Effects	No	No	No	No	No
Country Fixed Effects	No	No	No	No	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	16.45%	17.08%	17.37%	17.51%	24.36%
N	115,626	115,626	115,626	115,626	122,702

Table 10 - Continued

Variable	Panel B - Total Book Leverage				
	(1)	(2)	(3)	(4)	(5)
Relationship-Specificity	-0.0565***		-0.0564***	-0.2505***	-0.2194***
	(-9.85)		(-9.83)	(-10.63)	(-3.82)
Rule of Law		-0.0645***	-0.0643***	-0.1965***	
		(-4.49)	(-4.49)	(-9.18)	
RSI × RoL				0.2818***	0.2363***
				(8.66)	(3.12)
ROA	-0.1129***	-0.1188***	-0.1126***	-0.1154***	-0.1379***
	(-19.42)	(-20.47)	(-19.41)	(-19.86)	(-4.91)
Growth	0.0016***	0.0016***	0.0016***	0.0016***	0.0020***
	(6.30)	(6.14)	(6.27)	(6.39)	(5.02)
Size	0.0140***	0.0138***	0.0136***	0.0136***	0.0136***
	(26.32)	(25.73)	(25.26)	(25.38)	(7.79)
Tangibility	0.1104***	0.1350***	0.1108***	0.1173***	0.1339***
	(19.15)	(25.29)	(19.23)	(20.28)	(6.22)
R&D	-0.2110***	-0.2160***	-0.2101***	-0.2188***	-0.2500***
	(-19.36)	(-19.68)	(-19.32)	(-20.01)	(-5.30)
R&D Missing	-0.0012	0.0006	-0.0020	-0.0001	0.0065**
	(-0.48)	(0.25)	(-0.75)	(-0.05)	(2.16)
Tax	0.0162***	0.0152***	0.0150***	0.0150***	0.0124***
	(6.67)	(6.33)	(6.26)	(6.28)	(3.06)
Liquidity	-0.0117***	-0.0114***	-0.0117***	-0.0116***	-0.0107***
	(-44.43)	(-43.03)	(-44.15)	(-43.62)	(-4.22)
OECD	-0.0213***	-0.0077	-0.0055	-0.0035	
	(-5.64)	(-1.45)	(-1.03)	(-0.65)	
Inflation	0.2504***	0.2246***	0.2082***	0.1929***	
	(6.65)	(5.89)	(5.55)	(5.27)	
GDP Growth	-0.0066	-0.0740*	-0.0478	-0.0153	
	(-0.17)	(-1.80)	(-1.17)	(-0.38)	
Clustering	Firm	Firm	Firm	Firm	Industry
Industry Fixed Effects	No	No	No	No	No
Country Fixed Effects	No	No	No	No	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	21.65%	21.31%	21.73%	22.06%	26.14%
N	115,626	115,626	115,626	115,626	122,702

Table 11: Robustness regressions

This table presents the results for various robustness tests. The regression specifications are similar to the specification in column (4) of Table 9, Panel B; the dependent variable is long-term market leverage. In Panel A, the alternative country-level measures of legal quality are used. The World Governance Indicators' average of Regulatory Quality, Rule of Law and Control of Corruption, the Economic Freedom of the World's index of legal structure and the index of the time, cost and number of procedures required for dispute resolution in contracts from the World Bank's Doing Business index (available from 2004) are used as the alternative measures of the quality of the legal system. All legal quality measures are normalized to obtain a value between zero and one. In Panel B, the industry-level measure of relationship-specificity is substituted. In the first column, relationship-specificity is calculated based on Rauch (1999)'s conservative estimate of the value of inputs to each industry that are traded on an exchange or referenced in trade publications. In the next two columns, the inputs that are reference-priced are instead included as relationship-specific inputs, in which the liberal or conservative estimate is used, respectively. In column four, a relationship-specificity dummy variable is created which is set equal to 1 when the industry-level relationship-specificity is above its sample median, and 0 otherwise. In the last column, a dummy variable is created, which is set equal to 1 when an industry belongs to one of the Cremers, Nair, & Peyer (2008)'s relationship industries, and 0 otherwise. In Panel C, firm-level annual Fama & MacBeth (1973) regressions are estimated. In columns (1) and (2), the results with country-level control variables and country fixed-effects are reported, respectively. The regression coefficients and t-statistics (appearing below in parentheses) are reported. *, **, and *** denote the statistical significance of the coefficients at the 10%, 5%, and 1% levels, respectively.

Variable	Panel A - Alternative Measures of Legal Quality				
	WGI Legal	EFW Legal	DBEC Time	DBEC Cost	DBEC Procedure
RSI × Legal	0.1773***	0.1498***	0.1503***	0.2196***	0.3220***
	(8.51)	(5.58)	(6.02)	(3.05)	(6.99)
Relationship-Specificity	-0.1528***	-0.1406***	-0.1260***	-0.1140***	-0.1575***
	(-10.36)	(-7.05)	(-6.59)	(-3.61)	(-7.68)
Legal Quality	-0.0430***	-0.0498***	-0.1903***	-0.2123***	-0.3018***
	(-3.10)	(-2.96)	(-13.36)	(-5.01)	(-11.48)
ROA	-0.0762***	-0.0763***	-0.0829***	-0.0792***	-0.0822***
	(-23.50)	(-22.98)	(-22.47)	(-21.57)	(-22.33)
Growth	-0.0033***	-0.0034***	-0.0029***	-0.0030***	-0.0031***
	(-27.56)	(-27.17)	(-19.60)	(-20.32)	(-20.78)
Size	0.0111***	0.0110***	0.0122***	0.0116***	0.0109***
	(30.18)	(29.37)	(31.91)	(30.44)	(28.96)
Tangibility	0.1193***	0.1181***	0.1076***	0.1084***	0.1079***
	(28.78)	(27.60)	(25.03)	(24.94)	(24.96)
R&D	-0.0874***	-0.0862***	-0.0602***	-0.0632***	-0.0794***
	(-15.50)	(-15.02)	(-9.12)	(-9.35)	(-11.87)
R&D Missing	0.0013	0.0009	0.0038*	0.0002	-0.0016
	(0.73)	(0.50)	(1.91)	(0.10)	(-0.82)
Tax	0.0146***	0.0125***	0.0135***	0.0169***	0.0166***
	(8.49)	(6.94)	(6.63)	(8.24)	(8.12)

Variable	Panel A - Alternative Measures of Legal Quality				
	WGI Legal	EFW Legal	DBEC Time	DBEC Cost	DBEC Procedure
Liquidity	-0.0023***	-0.0023***	-0.0017***	-0.0020***	-0.0018***
	(-17.87)	(-17.20)	(-13.67)	(-15.64)	(-14.12)
OECD	-0.0028	0.0024	0.0203***	0.0091***	0.0138***
	(-0.89)	(0.85)	(8.26)	(3.74)	(5.64)
Inflation	0.2358***	0.2048***	0.2645***	0.5914***	0.4073***
	(7.68)	(6.84)	(8.45)	(19.01)	(12.86)
GDP Growth	-0.1559***	-0.1807***	-0.3661***	-0.3819***	-0.4522***
	(-6.14)	(-7.30)	(-13.81)	(-12.95)	(-17.12)
Clustering	Firm	Firm	Firm	Firm	Firm
Industry Fixed Effects	No	No	No	No	No
Country Fixed Effects	No	No	No	No	No
Year Dummies	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	18.38%	18.02%	21.34%	19.24%	20.12%
N	115,626	107,105	74,215	74,215	74,215

Table 11 – Continued

Variable	Panel B - Alternative Measures of Relationship-Specificity				
	Cons. R-S	Exg. R-S	Exg. Cons. R-S	High R-S	R-S_CNP08
R-S × RoL	0.1626***	0.1489***	0.1574***	0.0912***	0.0569***
	(8.18)	(4.03)	(3.10)	(9.53)	(6.21)
R-S Measure	-0.1430***	-0.1115***	-0.1107***	-0.0731***	-0.0500***
	(-10.11)	(-4.42)	(-3.19)	(-11.00)	(-7.65)
Rule of Law	0.0174	-0.0297	-0.0436	0.0577***	0.0869***
	(1.18)	(-0.86)	(-0.90)	(5.29)	(8.55)
ROA	-0.0763***	-0.0783***	-0.0783***	-0.0776***	-0.0784***
	(-23.49)	(-23.91)	(-23.92)	(-23.76)	(-24.02)
Growth	-0.0033***	-0.0033***	-0.0033***	-0.0033***	-0.0033***
	(-27.58)	(-27.68)	(-27.67)	(-27.27)	(-27.91)
Size	0.0115***	0.0116***	0.0116***	0.0115***	0.0116***
	(31.26)	(31.37)	(31.37)	(31.39)	(31.56)
Tangibility	0.1179***	0.1283***	0.1290***	0.1235***	0.1228***
	(28.64)	(31.69)	(32.19)	(29.59)	(30.63)
R&D	-0.0873***	-0.0879***	-0.0872***	-0.0902***	-0.0891***
	(-15.49)	(-15.12)	(-15.15)	(-15.32)	(-15.60)
R&D Missing	0.0019	0.0025	0.0025	0.0024	0.0017
	(1.08)	(1.39)	(1.42)	(1.35)	(0.92)
Tax	0.0152***	0.0154***	0.0155***	0.0155***	0.0152***
	(8.88)	(8.96)	(9.00)	(9.00)	(8.85)
Liquidity	-0.0024***	-0.0023***	-0.0023***	-0.0023***	-0.0024***
	(-18.30)	(-17.40)	(-17.53)	(-17.30)	(-17.94)
OECD	-0.0177***	-0.0195***	-0.0200***	-0.0182***	-0.0193***
	(-4.98)	(-5.42)	(-5.57)	(-5.10)	(-5.39)
Inflation	0.2743***	0.2895***	0.2898***	0.2744***	0.2817***
	(8.78)	(9.01)	(8.96)	(8.71)	(8.85)
GDP Growth	-0.1117***	-0.1341***	-0.1404***	-0.1090***	-0.1236***
	(-4.35)	(-5.21)	(-5.45)	(-4.23)	(-4.77)
Clustering	Firm	Firm	Firm	Firm	Firm
Industry Fixed Effects	No	No	No	No	No
Country Fixed Effects	No	No	No	No	No
Year Dummies	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	18.68%	18.23%	18.18%	18.63%	18.36%
N	115,626	115,626	115,626	115,626	115,626

Table 11 – Continued

Variable	Panel C - Fama-MacBeth Regressions	
	(1)	(2)
RSI × RoL	0.1646***	0.1080***
	(10.40)	(8.10)
Relationship-Specificity	-0.1419***	-0.0995***
	(-10.26)	(-9.97)
Rule of Law	0.0040	
	(0.31)	
ROA	-0.0885***	-0.1011***
	(-20.83)	(-23.63)
Growth	-0.0035***	-0.0034***
	(-12.60)	(-14.22)
Size	0.0124***	0.0124***
	(45.60)	(37.44)
Tangibility	0.1230***	0.1345***
	(20.11)	(24.08)
R&D	-0.0955***	-0.1294***
	(-10.34)	(-11.95)
R&D Missing	0.0055***	0.0128***
	(3.71)	(11.21)
Tax	0.0146***	0.0155***
	(5.34)	(7.61)
Liquidity	-0.0023***	-0.0021***
	(-13.28)	(-9.12)
OECD	-0.0123*	
	(-1.88)	
Inflation	0.4574***	
	(5.63)	
GDP Growth	-0.1266	
	(-0.89)	
Industry Fixed Effects	No	No
Country Fixed Effects	No	Yes
Adjusted R^2	19.61%	26.67%
N	115,626	122,702

Table 12: Logistic regressions of the probability of maintaining positive leverage

This table reports the results from firm-level logistic panel regressions of the leverage dummy variables on the main explanatory variables and the set of firm- and country-level control variables. The specifications are similar to Panel B of Table 9. Variables are as defined previously. Panel A reports the coefficient estimates and *Chi-square* statistics (appearing below in parentheses) for the long-term leverage dummy. Panel B reports the coefficient estimates and *Chi-square* statistics for the total leverage dummy. *, **, and *** denote the statistical significance of the coefficients at the 10%, 5%, and 1% levels, respectively.

| Variable | Panel A - Long-Term Leverage Dummy | | | | |
	(1)	(2)	(3)	(4)	(5)
Relationship-Specificity	-0.3940***		-0.3940***	-1.9405***	-1.4837***
	(104.91)		(104.82)	(180.71)	(107.30)
Rule of Law		1.8758***	1.8765***	0.7359***	
		(357.25)	(357.18)	(26.46)	
RSI × RoL				2.3229***	1.6733***
				(123.55)	(65.46)
ROA	-0.6759***	-0.7228***	-0.6910***	-0.7160***	-1.0375***
	(192.51)	(218.74)	(199.67)	(213.85)	(433.61)
Growth	-0.0237***	-0.0232***	-0.0230***	-0.0228***	-0.0171***
	(179.96)	(171.39)	(168.71)	(164.23)	(83.69)
Size	0.3205***	0.3371***	0.3375***	0.3364***	0.3470***
	(5487.36)	(5717.16)	(5723.78)	(5692.89)	(5325.44)
Tangibility	1.3310***	1.4870***	1.3361***	1.3972***	1.8224***
	(1030.52)	(1458.71)	(1030.94)	(1105.97)	(1747.08)
R&D	-0.4486***	-0.4714***	-0.4590***	-0.5104***	-0.6144***
	(20.95)	(23.02)	(21.84)	(26.98)	(36.77)
R&D Missing	-0.3524***	-0.3045***	-0.3263***	-0.3064***	-0.2493***
	(313.01)	(234.54)	(265.46)	(233.00)	(129.68)
Tax	0.1662***	0.1956***	0.1944***	0.1919***	0.0600**
	(29.03)	(39.57)	(39.11)	(38.07)	(3.94)
Liquidity	-0.1493***	-0.1494***	-0.1509***	-0.1499***	-0.1376***
	(2628.52)	(2619.04)	(2665.92)	(2625.66)	(2182.88)
OECD	0.0519**	-0.4099***	-0.3920***	-0.3818***	
	(4.23)	(139.89)	(127.78)	(121.00)	
Inflation	2.3022***	4.0391***	3.8122***	3.5508***	
	(72.22)	(191.87)	(172.63)	(152.96)	
GDP Growth	-5.1970***	-3.9607***	-3.7324***	-3.4428***	
	(224.58)	(126.89)	(112.40)	(95.03)	

Variable	Panel A - Long-Term Leverage Dummy				
	(1)	(2)	(3)	(4)	(5)
Industry Fixed Effects	No	No	No	No	No
Country Fixed Effects	No	No	No	No	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes
R^2	20.86%	21.03%	21.10%	21.19%	23.73%
N	115,626	115,626	115,626	115,626	122,702

Table 12 – Continued

Variable	Panel B - Total Leverage Dummy				
	(1)	(2)	(3)	(4)	(5)
Relationship-Specificity	-0.5944***		-0.5965***	-1.5183***	-1.9010***
	(140.30)		(141.07)	(52.22)	(88.06)
Rule of Law		-0.6110***	-0.6229***	-1.2963***	
		(20.90)	(21.67)	(41.55)	
RSI × RoL				1.3164***	1.6836***
				(20.39)	(35.72)
ROA	-0.8890***	-0.9299***	-0.8861***	-0.8956***	-1.0634***
	(251.19)	(275.39)	(250.17)	(255.12)	(353.24)
Growth	-0.0218***	-0.0221***	-0.0220***	-0.0219***	-0.0183***
	(114.85)	(118.09)	(116.88)	(115.46)	(75.99)
Size	0.3048***	0.2976***	0.2998***	0.2989***	0.2815***
	(3588.19)	(3312.55)	(3343.34)	(3325.77)	(2628.04)
Tangibility	0.9704***	1.1805***	0.9706***	0.9994***	1.3720***
	(356.97)	(601.44)	(357.67)	(373.30)	(653.49)
R&D	-1.3972***	-1.4001***	-1.3954***	-1.4084***	-1.4672***
	(173.86)	(175.17)	(173.57)	(176.97)	(180.71)
R&D Missing	-0.2662***	-0.2332***	-0.2719***	-0.2611***	-0.2968***
	(107.42)	(84.09)	(111.89)	(102.43)	(112.08)
Tax	0.0062	-0.0046	-0.0030	-0.0047	-0.0996***
	(0.03)	(0.01)	(0.01)	(0.02)	(6.92)
Liquidity	-0.1990***	-0.1966***	-0.1988***	-0.1983***	-0.1923***
	(4381.86)	(4298.11)	(4370.71)	(4341.53)	(4012.70)
OECD	-0.2394***	-0.1169**	-0.0890*	-0.0788*	
	(49.32)	(6.24)	(3.61)	(2.82)	
Inflation	1.5533***	1.3651***	1.0652***	0.9186**	
	(18.67)	(13.21)	(8.33)	(6.34)	
GDP Growth	0.0543	-0.7126	-0.3931	-0.2162	
	(0.01)	(2.13)	(0.65)	(0.19)	
Industry Fixed Effects	No	No	No	No	No
Country Fixed Effects	No	No	No	No	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes
R^2	19.70%	19.62%	19.72%	19.73%	21.23%
N	115,626	115,626	115,626	115,626	122,702

Table 13: Realized cost of debt regressions

This table reports the results from firm-level OLS linear panel regressions of the realized cost of debt on the main explanatory variables and several firm- and country-level control variables. The realized cost of debt is total interest expenses divided by total debt. The cost of debt for each year t is the average of the costs for year t and $t-1$. Cash flow is the sum of income before extraordinary items and depreciation and amortization, scaled by total assets. Dummy variables are included to specify firms with negative or missing cash flows and dividend-paying firms. Additional country-, industry-, and firm-specific variables are defined according to Tables 3, 4 and 5, respectively. We allow for clustering of error terms at the firm-level. The regression coefficients and t-statistics (appearing below in parentheses) are reported. *, **, and *** denote the statistical significance of the coefficients at the 10%, 5%, and 1% levels, respectively.

Variable	(1)	(2)	(3)	(4)
Relationship-Specificity	-0.0087*		-0.0080	-0.0566**
	(-1.76)		(-1.62)	(-2.56)
Rule of Law		-0.0789***	-0.0785***	-0.1105***
		(-5.72)	(-5.70)	(-5.88)
RSI × RoL				0.0704**
				(2.31)
Leverage	-0.1683***	-0.1649***	-0.1655***	-0.1666***
	(-25.64)	(-25.61)	(-25.71)	(-25.62)
Market Cap.	-0.0032***	-0.0033***	-0.0033***	-0.0033***
	(-7.46)	(-7.75)	(-7.76)	(-7.62)
Tangibility	-0.0246***	-0.0221***	-0.0256***	-0.0236***
	(-5.06)	(-4.96)	(-5.28)	(-4.79)
Growth	0.0031***	0.0031***	0.0031***	0.0031***
	(10.88)	(11.00)	(11.02)	(11.02)
Cash Flow	-0.0000	-0.0000*	-0.0000*	-0.0000*
	(-1.53)	(-1.66)	(-1.68)	(-1.69)
Negative C.F.	0.0210***	0.0228***	0.0227***	0.0227***
	(9.09)	(10.01)	(9.98)	(9.99)
Dividend-paying	-0.0232***	-0.0223***	-0.0223***	-0.0223***
	(-12.47)	(-12.08)	(-12.08)	(-12.08)
OECD	-0.0028	0.0170***	0.0174***	0.0177***
	(-0.97)	(3.53)	(3.58)	(3.64)
GDP Growth	-0.0421	-0.0883***	-0.0859***	-0.0771**
	(-1.25)	(-2.67)	(-2.59)	(-2.31)

Variable	(1)	(2)	(3)	(4)
Clustering	Firm	Firm	Firm	Firm
Industry Fixed Effects	No	No	No	No
Country Fixed Effects	No	No	No	No
Year Dummies	Yes	Yes	Yes	Yes
Adjusted R^2	3.60%	3.72%	3.73%	3.74%
N	115,979	115,979	115,979	115,979

Table 14: Creditor rights regressions

This table presents the results of creditor rights regressions. The regression specifications are similar to the specification in column (4) of Table 9, Panel B; the dependent variable is long-term market leverage. The creditor rights index is described in Table 3. In column (1), the creditor rights index is used as the measure of legal quality. In columns (3)-(4), creditor rights and its interaction with relationship-specificity are used as control variables. Column (4) drops the country-level variables and introduces country fixed-effects. The regression coefficients and *t*-statistics (appearing below in parentheses) are reported in all three panels. *, **, and *** denote the statistical significance of the coefficients at the 10%, 5%, and 1% levels, respectively.

Variable	(1)	(2)	(3)	(4)
RSI × RoL		0.1716***	0.1840***	0.1148***
		(8.26)	(8.78)	(3.56)
RSI × Creditor	0.0294**		0.0488***	0.0640***
	(2.09)		(3.45)	(3.29)
Relationship-Specificity	-0.0459***	-0.1501***	-0.1826***	-0.1355***
	(-5.53)	(-10.19)	(-10.45)	(-5.49)
Rule of Law		0.0304**	0.0243*	
		(2.08)	(1.66)	
Creditor Rights	-0.0744***	-0.0773***	-0.0773***	-0.0954***
	(-22.88)	(-23.56)	(-23.59)	(-8.73)
ROA	-0.0035***	-0.0034***	-0.0034***	-0.0034***
	(-28.13)	(-28.05)	(-28.11)	(-9.74)
Growth	0.0103***	0.0110***	0.0110***	0.0120***
	(28.61)	(29.99)	(29.85)	(12.91)
Size	0.1133***	0.1178***	0.1164***	0.1289***
	(27.21)	(28.31)	(27.91)	(11.56)
Tangibility	-0.0948***	-0.1031***	-0.1032***	-0.1254***
	(-16.36)	(-17.54)	(-17.61)	(-6.31)
R&D	0.0012	0.0036**	0.0033*	0.0113***
	(0.67)	(2.01)	(1.81)	(4.87)
R&D Missing	0.0127***	0.0148***	0.0147***	0.0127***
	(7.31)	(8.59)	(8.53)	(6.28)
Tax	-0.0580***	-0.0466***	-0.0712***	
	(-7.00)	(-14.59)	(-8.50)	
Liquidity	-0.0024***	-0.0024***	-0.0024***	-0.0019***
	(-18.41)	(-18.47)	(-18.27)	(-4.70)
OECD	0.0017	-0.0252***	-0.0254***	
	(0.65)	(-6.85)	(-6.89)	
Inflation	0.2261***	0.2863***	0.2875***	
	(7.14)	(8.87)	(8.87)	

Variable	(1)	(2)	(3)	(4)
GDP Growth	-0.2182***	-0.1340***	-0.1318***	
	(-8.52)	(-5.10)	(-5.00)	
Clustering	Firm	Firm	Firm	Industry
Industry Fixed Effects	No	No	No	No
Country Fixed Effects	No	No	No	Yes
Year Dummies	Yes	Yes	Yes	Yes
Adjusted R^2	18.79%	19.52%	19.56%	25.66%
N	112,995	112,995	112,995	120,011