# DOES TRUST MATTER FOR THE COST OF BANK LOANS?

Celia Álvarez-Botas
Víctor M. González
Department of Business Administration
University of Oviedo

**Abstract**

This paper extends the literature related to the role of trust on economic activity, focusing on the influence of trust on lender-borrower relationships and analysing its effect on the interest rate spread for a sample of 20,699 loans from 47 countries over the period 2003-2018. We consider not just the role of trust, but also how its effect is moderated by the country's legal enforcement and degree of economic development. The results show that trust has no effect on loan spreads. However, trust is found to reduce loan spreads when a country's formal institutions are weak, in line with the existence of a substitutive effect between formal and informal institutions in reducing interest rates. As regards the degree of economic development, our results show that both trust and legal enforcement have a greater influence on the interest rate spread of bank loans in countries with a lower level of economic development.

## 1. Introduction

Debt is the major source of external capital for firms, and bank loans constitute the main form of debt for firms in many countries (Demirgüç-Kunt and Levine, 2001; and Drucker and Puri, 2006), as only few have well-developed bond markets. For instance, Ehrmann *et al*. (2003) report that bank loans to the corporate sector in 2001 amounted to 42.6 percent of GDP in the euro area, and to 18.8 percent in the US. For this reason, it is important to understand the determinants of the terms of bank loans. In recent decades, the focus has moved from firm determinants of the terms of bank loans to country determinants, in pursuit of designs that allow more efficient transactions.

The law and finance view hypothesizes that legal protection of investors facilitates access to credit. Laws and institutions act as determinants of debt conditions, based on the premise that access to external financing partly depends on each country's legal and institutional system, as this provides the mechanism for monitoring and safeguarding financial contracts. Country laws and regulations allow the alignment of counterparty ex ante incentives. On the one hand, moral hazard and asymmetric information problems decrease with strong investor protection and legal enforcement, as creditors will have greater guarantees that the borrower will meet the conditions set out in the financial contract (La Porta *et al*., 1998). On the other hand, stronger protection of creditors' rights gives lenders greater power in bankruptcy and hence the risk they assume will be lower. Furthermore, such protection increases the incentives of borrowers to repay loans and avoid bankruptcy situations. In this context, Qian and Strahan (2007) and Bae and Goyal (2009) examine the influence of institutional quality in explaining the different terms of bank loans. Their

results paint a clearer picture of the importance of the legal and institutional quality of countries in improving debt conditions, particularly in reducing the cost of debt, suggesting that borrowers obtain better debt conditions in countries with strong protection of investors' rights.

Another strand in the literature has focussed on the effect of trust on social relationships[1]. Trust is crucial in the functioning of markets, organizations and societies where social relationships are established, as it may overcome the threat of opportunism. Focusing on the influence of trust on economic transactions, Knack and Keefer (1997) consider trust-sensitive activities to be those in which goods and services are provided in exchange for future payment, employment contracts in which managers rely on employees to accomplish tasks that are difficult to monitor, and investments and savings decisions that rely on assurances by governments or banks that they will not expropriate these assets. Taking this idea into account, several papers have shown the impact of trust on different economic aspects. In general, this literature has shown that higher levels of trust promote cooperation (La Porta *et al.,* 1997), are associated with stronger economic performance (Knack and Keefer, 1997), increase the rate of investment (Zak and Knack, 2001; Botazzi *et al.,* 2016) and firm performance (Goergen *et al.,* 2013), have a positive effect on corporate cash holdings (Dudley and Zhang, 2016), and enhance corporate valuation (Fernández and González, 2017). Hence, it is clear that high trust environments reduce the cost of economic activities that require some participants to rely on the future actions of others. Financial contracts are the best example of trust-intensive contracts, depending not only on the regulation and enforceability of such contracts, but also on the extent of the lenders' trust in the borrowers (Guiso *et al.*, 2004). Trust helps to improve credibility between lenders and borrowers and hence to reduce the expenses assumed by lenders to protect themselves from counterparty risk. Therefore, we may expect favourable terms to be granted by banks in high trust societies. However, not only trust may help to reduce contracting costs between lenders and borrowers. When the country's legal enforcement is efficient, investors consider the country to be safer to invest in, leaving less room for opportunistic behaviour. In this context, as formal institutions provide lenders with sufficient protection, trust could play a limited role on debt conditions.

Our paper builds on these arguments, analysing the influence of trust on the interest rate spread for a sample of 20,699 loans[2] from 47 countries over the period 2003-2018. We are interested in the effect of trust on lender-borrower relationships and its interaction with law and regulations.

---

[1] Several authors have recognized the multi-faceted character of trust in relation to the social context. For instance, Lewis and Weigert (1985) differentiate several types of trust from a social point of view. The strength and importance of the cognitive, emotional and behavioural dimensions of trust vary depending on the type of social relationship or situation analysed, evolving from simple to large and structurally complex societies. These authors recognize that trust is of crucial importance across a variety of social relationships.

[2] Most of the sample is made up of syndicated loans that are typically issued to large firms (Ivashina, 2009).

Specifically, our paper addresses various research questions: (1) Do borrowers obtain bank loans at lower interest rates in high trust societies?; (2) Is this reduction in interest rates of bank loans higher in countries with weak formal institutions?; and (3) Is the influence of trust on the interest rate spread of bank loans higher in less economically developed countries? We focus on the idea of interpersonal trust, which is a key issue in financial relationships, measuring trust as in the World Value Survey (WVS) and European Value Survey (EVS) while considering that the influence of trust may not be shown in countries with stronger formal institutions such as the protection of investors' rights and legal enforcement. Specifically, we study the joint effect between law and regulations and trust in order to analyse whether formal and informal institutions are complementary or substitutive mechanisms in reducing loan spreads. Moreover, we also analyse whether the effect of formal and informal institutions on loan spreads differs depending on the degree of economic development of each country.

We contribute to the literature in several ways. First, we analyse the effect of interpersonal trust on loan spreads in an international context. Qian et al. (2018) analyse the effect of trust on the loan characteristics of loan size, loan source, collateral requirement, and value of collateral for a sample of 25 developing countries. However, their paper does not consider the cost of debt as a dependent variable, nor does it take into account developed countries, focusing solely on how formal and informal institutions affect bank loan characteristics in developing countries. Several papers have shown the effects on the cost of debt of protection of investors' rights (Bae and Goyal, 2009; Qian and Strahan, 2007), different cultural dimensions (Chui et al., 2016; Giannetti and Yafeh, 2012), and religion or religiosity (Chen et al., 2016; He and Hu, 2016). Within this context, our paper contributes to the literature on cross-country differences in corporate debt conditions, considering whether high trust societies foster a reduction in the agency costs of debt. Second, we contribute to the law and finance literature by considering the joint effect of formal and informal institutions in reducing loan spreads, as both may potentially affect access to credit. The financial literature has focused on the separate impacts of formal and informal institutions. To the best of our knowledge, this is the first paper in the bank loan literature to analyse the joint effect of formal and informal institutions on loan spreads bearing in mind that strong formal institutions may leave less room for trust. Finally, we examine whether the effect of trust on loan spreads differs depending on the degree of economic development, as differences in the quality of institutions and in the level of information asymmetries vary depending on economic development.

In general, our results show that trust has no effect on loan spreads. However, it does reduce loan spreads when the country's formal institutions are weak. Our findings specifically show that there is a substitutive effect between formal and informal institutions in reducing interest rates.

Furthermore, our results show that the effect of trust on the cost of bank loans is greater in countries where there is a lower degree of economic development. Our results are robust when cultural dimensions and religion are taken into consideration, when we consider the loan instead of each tranche as a unit of analysis, and also when we control for potential problems of endogeneity.

The rest of the paper is organized as follows. Section 2 reviews the related literature and develops testable hypotheses on trust as a determinant of loan spreads. Section 3 describes our data and presents the descriptive statistics of our variables. Section 4 reports the empirical results. Section 5 offers robustness analyses of our results. Section 6 provides our conclusions.

## 2. Conceptual framework

### 2.1. *Trust and the finance literature*

The influence of trust on economic activity has generated special academic attention since Putnam published the book entitled *Making Democracy Work (1993),* in which he showed its effect in explaining the differences in the economic and government performance of northern and southern Italy. Based on this idea, La Porta *et al.* (1997) defined trust as "a propensity of people in a society to cooperate to produce socially efficient outcomes and to avoid inefficient noncooperative traps such as that in the prisoner's dilemma". These authors reveal that trust promotes cooperation, especially, in large organizations. Several studies subsequently focused on the effect of trust on economic performance. Some examples are the following: Knack and Keefer (1997) show that trust has a significant impact on aggregate economic activity; Zak and Knack (2001) offer evidence revealing that low trust environments reduce the rate of investment; Goergen *et al.* (2013) find that country trust increases firm performance; Dudley and Zhang (2016) show that trust is positively related to corporate cash holdings; and, more recently, Fernández and González (2017) show that trust enhances corporate valuation. In general, this literature reveals that more trustworthy environments reduce the costs of economic activities that require some participants to rely on the future actions of others.

According to North (1994), "Institutions are the humanly devised constraints that structure human interaction. They are made up of formal constraints (e.g. rules, laws, constitutions), informal constraints (e.g. norms of behaviour, conventions, self-imposed codes of conduct), and their enforcement characteristics. Together they define the incentive structure of societies and specifically economies." In line with North (1994), we classify institutions as formal or informal and analyse their effect on the cost of debt. Along these same lines, a number of studies have focused on the effect of formal institutions (laws and legal enforcement) on debt conditions, such as those by Demirgüç-Kunt and Maksimovic (1999), Qian and Strahan (2007), Bae and Goyal

(2009), Fan *et al*. (2012), and González (2017). Other studies, such as those by Chui *et al*. (2002), Li *et al*. (2011), Giannetti and Yafeh (2012), Zheng *et al*. (2012), Chui *et al*. (2016), He and Hu (2016), and Qian *et al*. (2018), have focused on the effect of informal institutions (different dimensions of culture, such as collectivism, masculinity, uncertainty avoidance, and power distance, among others, and religion) on debt conditions, although they do not directly consider the influence of trust on the cost of debt.

We extend this literature, analysing the effect of both formal and informal institutions on debt conditions. We consider trust as an informal institution, as collected from the World Value Surveys (WVS) and European Value Surveys (EVS), which captures how trustworthy an individual perceives those whom they meet for the first time, and legal enforcement and the protection of creditors' rights as formal institutions.

2.2. *Hypotheses development*

In financial contracts, formal institutions are important when establishing the conditions of debt. The existence of effective formal institutions, such as an efficient judicial system or laws that guarantee the protection of investors' rights, leads to an improved financial environment that will allow better conditions to be established in financial contracts. However, high trust societies also bring benefits for lenders, as they involve less expenses associated with protecting individuals from being exploited in economic transactions or less covenants in written contracts to specify potential contingencies, among others. Hence, when lending to a firm, the lender must assess not only the borrower's credit quality, but also the risk resulting from weak laws or institutions and the risk associated with low trust societies.

The relationship between a lender and a borrower should be considered partly as a trust-sensitive transaction, given that when a lender lends money to a firm, it has to trust that the firm will meet the requirements of the contract. Knack and Keefer (1997) argue that trust reduces the cost incurred by the principal when dealing with an agent required to carry out certain activities at a future date, and thus trust has economic benefits. As stated above, studies have shown that trust enhances investment, trade, economic growth, and financial development, as well as facilitating corporate financing (Zak and Knack, 2001; Guiso *et al.*, 2004; Durante 2010; Wu *et al.*, 2014). These studies suggest that trust helps establish credibility between contracting counterparties and thus reduces associated costs, such as financing costs. Therefore, in countries with high levels of trust, lenders may be expected to spend less to protect themselves from counterparty risk and could hence be more willing to provide credit on favourable terms.

In line with these arguments, our first hypothesis is as follows:

*H1: We expect lower loan spreads in countries with higher levels of trust.*

As far as formal institutions are concerned, the higher the efficiency of the country's legal system, the safer the country will be with regard to investing in it and hence lenders will be willing to offer credit on better terms. If a country's legal enforcement is efficient, this indicates that the justice system works properly and that the country is safer in terms of investing in it. Likewise, greater protection of creditors' rights gives lenders greater power in the case of bankruptcy and hence the risk they assume will be lower. Moreover, strong protection of creditors' rights increases the incentives of borrowers to repay loans and avoid bankruptcy situations. Therefore, in a country with strong creditor rights, lenders will be willing to provide credit under better conditions. In fact, the financial literature has shown that firms in countries with effective legal systems and greater protection of creditor rights have more long-term debt relative to assets, lower interest rates, higher volumes of lending, longer loan maturities, more concentrated loan ownership, and a lower probability of being credit constrained (Demirgüç-Kunt and Maksimovic, 1999; Japelli *et al.,* 2005; Laeven and Majnoni*.,* 2005; Qian and Strahan, 2007; Bae and Goyal, 2009; Fan *et al.*, 2012; González, 2017; Moro *et al.,* 2018; Álvarez-Botas and González, 2020). Hence, from a law and finance viewpoint, the legal system and the protection of creditor rights would seem to enhance loan conditions.

Since formal institutions as well as trust seem to be important factors in improving debt conditions, we consider it relevant to analyse the joint effect between them. This will allow us to investigate whether formal institutions and trust have a substitutive or complementary effect on the cost of bank loans. We argue that trust may affect financial activities by acting as a substitute for formal regulations or by complementing norms. If trust complements formal institutions, we would expect a positive association between trust and formal institutions, or, in other words, an indirect effect between trust and legal enforcement, a relationship supported by financial theory. As defined by North (1990), both formal and informal institutions are "the game rules" that govern actions through incentives. If both formal and informal institutions function properly, transaction costs will be lower, thus leading to additional economic benefits. Along these lines, the theoretical model proposed by Aghion *et al.* (2010) shows that trust and regulation coevolve, while Carlin *et al.* (2009) suggest that formal norms and trust act as complements if the introduction of formal rules facilitates the development of trust. Thus, trust contributes to financial development by reducing transaction costs and facilitating exchanges that cannot be fully specified in the contract (Cline and Williamson, 2016). Trust might, on the other hand, act as a substitute for formal rules; in which case, we would expect a negative association between trust and legal enforcement. The substitutive effect may occur when formal financial regulation is not provided (Knack and Keefer, 1997). In this respect, Allen *et al.* (2005) report substantial

growth in the private sector in China despite the fact that neither its legal nor financial system is well developed, and suggest that business culture and social norms enable this growth. Likewise, Allen *et al.* (2012) show that, despite weak investor protection and poor institutions, India experienced high growth, mainly due to reliance on informal mechanisms.

Several studies have previously analysed the relationship between trust and formal institutions, focusing on their economic effects. Goergen *et al.* (2013) finds that both employee rights and investor rights are negatively correlated with country trust. Hence, country trust seems to act as a substitute for strong institutions. Cline and Williamson (2016) find that trust is inversely related to formal self-dealing regulation, and positively related to financial market development. These authors view these combined results as suggesting that trust can act as a substitute for formal regulations, providing an alternative mechanism for shareholder protection. More recently, Qian *et al.* (2018) consider a sample of twenty-five developing countries, analysing the interactive relationship between formal and informal institutions in affecting bank loans. They explore whether the effect of informal institutions on bank loans remains the same under different levels of formal institutions, performing split-sample regressions based on the protection of creditors rights and the efficiency of the legal system. They consider loan size, loan source, and collateral requirement as the dependent variables. They find no evidence of a relationship between trust and formal institutions, neither from the perspective of loan source nor loan size. In the case of collateral requirements, they find that trust only reduces collateral requirements for the sample with poor legal protection and poor legal enforcement, arguing that informal institutions can act as an alternative to formal institutions in reducing collateral requirements when formal institutions are weak.

Consequently, we may expect that the effect of trust will be higher when country institutions are weak. In countries where legal enforcement and legal protection are less efficient, informal institutions may play a more relevant role in improving debt conditions because of the lack of efficient formal institutions. Our second hypothesis is thus as follows:

> **H2.** *We expect trust to have a higher impact on loan spread in those countries where institutions are weaker.*

Levine *et al.* (2000) and Claessens and Laeven (2003) show that developing countries are characterized by poorer formal institutions and less information disclosure, which could increase the intensity of information asymmetries. La Porta *et al.* (1998) argue that laws and their enforcement vary depending on GDP per capita, creditor rights being stronger in poorer countries, whereas law enforcement quality is higher in richer countries. Higher levels of asymmetric

information in developing countries and differences in protection of rights could lead to trust playing a different role according to the country's level of economic development.

In line with the different roles of trust depending on the level of economic development, Knack and Keefer (1997) argue that the effect of trust on growth should be greater in poorer countries if trust is more crucial in situations where contracts are not reliably enforced by the legal system, and where access to formal sources of credit is more limited due to an underdeveloped financial sector. However, they also suggest that if greater specialization increases the number of transactions between strangers, trust should reduce transaction costs more in richer than in poorer countries. Finally, they show that the impact of trust on growth is greater in developing countries, as access to credit is more limited in these countries due to an underdeveloped financial sector.

We may thus expect a greater effect of trust on the cost of bank loans in developing countries as a consequence of the lack of an efficient legal system. We consider Gross National Income per capita as an indicator of economic development and analyse whether formal and informal institutions affect debt conditions differently depending on the country's level of development. The third hypothesis is thus as follows:

> *H3: We expect trust to have a greater influence on loan spreads in countries with a lower level of economic development.*

## 3. Data

### 3.1. Sample and variables

The data used in this paper fall into three main categories: data on bank loans, on formal and informal institutions, and on firm-specific variables. We begin with a sample of bank loans made to large borrowers from 87 countries from 2003 to 2018. The information on bank loans was collected from the Dealscan database. The Dealscan database provided by Thomson Reuters contains historical information on the terms and conditions of over 200,000 loan transactions in the global commercial loan market. For most countries other than the USA, this database starts in 1994. Informal institutions were obtained from the World Value Survey (WVS) and European Value Survey (EVS), and formal institutions from the World Bank Doing Business database and the International Country Risk Guide (ICRG). Firm level data were obtained from Compustat.

In order to build the final study sample, the observations of the Dealscan and Compustat databases were linked using tables provided by Chava and Roberts (2008). This resulted in a sample of 20,699 loan facilities to 4,693 borrowers from 47 countries over the period 2003-2018. Borrowers occasionally enter into more than one loan facility on the same date. In this case, in line with

previous papers (Qian and Strahan, 2007; Bae and Goyal, 2009; Bui *et al.* 2018; Beyhaghi *et al.,* 2019; Deli *et al.* 2019; Delis *et al.*, 2020), our unit of analysis is each loan facility[3]. Recent papers such as Cumming *et al.* (2020) have opted for a different approach, aggregating multiple facilities into a single loan deal, so we check the robustness of our results according to the unit of analysis. The dependent variable is the interest rate spread of the loan (LN_SPREAD), measured as the natural logarithm of the basis points spread of the loan interest over the London Interbank Offered Rate (LIBOR) or LIBOR equivalent. To test our predictions, we estimate the following regression of loan spreads:

$$LN\_SPREAD_{i,t} = \alpha_0 + \beta_1 LO_{c,t-1} + \beta_2 CR_{c,t-1} + \beta_3 TRUST_{c,t-1} + \beta_4 TRUST * LO_{c,t-1} +$$

$$\sum_k FirmControls_{i,t-1}^k + \sum_L LoanControls_{i,t}^L + \sum_t Y_t + \sum_c C_c + \sum_j I_j + \varepsilon_{i,t} \qquad [1]$$

To study the influence of formal institutions and trust on loan spreads, we considered as formal institutions the quality of the institutional environment measured by law and order (LO) and the protection of creditors' rights (CR) measured by the time for creditors to recover their credit. The trust variable (TRUST) captures how trustworthy an individual perceives those whom they meet for the first time.

Firm-level controls consist of size, profitability, leverage, tangibility, and growth. Finally, loan-level controls consist of syndicated size, rating, maturity, loan purpose, and loan type. We also include time, country, and industry effects in all the estimations to control for unobservable time, country, and industry heterogeneity. The model is estimated with ordinary least squares (OLS) clustered by borrower firms. If there are unobservable common borrower components, loans in a given country cannot be treated as independent observations. The residuals are correlated and OLS standard errors may be biased. Thus, the standard errors are clustered by firm, as Petersen (2009) shows that standard errors clustered by firm are unbiased and produce correctly sized confidence intervals regardless of whether the firm effect is permanent or temporary. To mitigate endogeneity problems ex-ante, we lag all the variables by one year (Gropp and Heider, 2010). An in-depth description of all these variables is given in the following paragraphs.

### 3.1.1. Trust

---

[3] The difference between the loan facility and the loan package is that the loan facility refers to each individual portion of a deal, whereas the deal itself possibly (but not usually) comprises more than one loan facilities and covers the full amount of credit granted to the firm on that occasion. Our sample comprises 20,699 facilities and 14,291 packages; hence, the average number of facilities per package is 1.45. A loan-facility analysis is appropriate for the reason that loan facilities may differ in terms of starting dates, maturity, amount, number of lenders, number of lead arrangers, purpose or loan type. Hence, even when in the same loan deal, multiple loan facilities are not fully dependent observations (e.g. simply adding facilities and ignoring their differences may therefore introduce bias in the estimates).

To measure the level of cooperation among people to obtain efficient results and avoid individuals being exploited in economic transactions in a country, we have considered the level of trust. This measure is sourced from the World Values Survey (WVS) and the European Values Survey (EVS). These surveys are conducted by a global network of social scientists interested in examining social values and their social, political, and economic impact. From 1981 to 2014, WVS/EVS conducted several surveys in 97 societies, which represent almost 90 percent of the total population. These surveys provide valuable information on a crucial component of social change: the values, beliefs, and motivations of ordinary citizens. Many researchers now employ the data from these surveys in their studies to analyse the impact of aspects such as social capital and religion.

We used three "waves" of WVS (1999-2004, 2005-2007, and 2010-2014) and two "waves" of EVS (1999-2004 and 2008-2010). The question used to assess the level of trust in a society was: "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?" Our trust variable (TRUST) is the percentage of respondents in each country who agreed that "most people can be trusted" (after deleting the "don't know" responses) versus the alternative that "you can't be too careful in dealing with people". Most of these countries were included in at least two survey waves; we considered the data on trust that is immediately prior to each bank loan.

Although Inglehart (1994) cites a wide range of potential problems in the aforementioned surveys (WVS and EVS), the values reported by these surveys have been widely used in academic research and seem to be consistent with information from other sources. For example, *Reader's Digest* performed a global social experiment entitled "Most Honest Cities: The Reader's Digest 'Lost Wallet' test", that provides sufficient evidence for the validity of the surveys. The aim of the experiment was to answer the question "What are the most (and least) honest cities in the world?" The study was conducted in sixteen cities around the world and consists in the following. Twelve wallets were 'dropped' in each of the sixteen selected cities. In each wallet, the researchers placed a name with a cellphone number, a family photo, coupons, and business cards, plus the equivalent of $50. The wallets were left in parks, near shopping malls, and on sidewalks. The researchers then watched to see what would happen. The percentage of wallets returned in each country closely tracks the WVS/EVS measure: it is correlated with TRUST at 0.67. This means that statistic problems related to non-random samples, problems deriving from translation, or discrepancies between professed attitudes and actual behaviours should not exist in our measure of trust (Knack and Keefer, 1997). In the aforementioned experiment, Lisbon was found to be the least honest city, with only one out of the twelve wallets being returned (by a non-resident visiting the city). In contrast, the highest values of trust were reported for the Nordic

countries, evidence that is consistent with popular impressions. In Table 1, we report the descriptive statistics for trust by country. The mean value of TRUST for Portugal in our sample is 19.31, which is far below the mean value of the Nordic countries (the mean value is 69.44 for Norway; 70.53 for Denmark; 62.85 for Sweden; and 60.58 in the case of Finland).

[INSERT TABLE 1 ABOUT HERE]

### 3.1.2. Formal institutions

We have considered as formal institutions the quality of the institutional environment measured by law and order (LO) and the protection of creditor rights (CR) measured by the time for creditors to recover their credit after a default.

The law and order variable (LO) measures the strength and impartiality of the legal system, as well as widespread observance of the law. The source from which we extracted the data is the International Country Risk Guide (ICRG). The values of this indicator range between 0 and 6, with lower values reflecting poor legal enforcement[4].

The time for creditors to recover their credit (CR) is recorded in calendar years, reporting an ex-post and effective measure of the protection of creditors' rights. The period of time measured by the Resolving Insolvency indicator runs from the company's default until the payment of some or all of the money owed to the bank. Potential delay tactics by the parties, such as the filing of dilatory appeals or requests for extension, are taken into consideration. Data are collected from the World Bank Doing Business Database. Lower values of CR mean a higher protection of creditors' rights, as creditors recover their money earlier[5].

### 3.1.3. Firm controls

In line with previous research analysing debt conditions (Qian and Strahan, 2007; Bae and Goyal, 2009), we also include different firm-level variables to assess the effect of formal and informal institutions on bank loan spreads. To ascertain whether heterogeneity in borrower risk will affect bank loan spreads, we consider the following explicative variables: firm size (SIZE); profitability

---

[4] The law and order (LO) variable has been commonly used in the literature as a proxy for the quality and enforcement of laws across countries (Demirgüç-Kunt and Maksimovic, 1998; Demirgüç-Kunt and Detragiade, 2002; Laeven, 2002; González, 2005; Busse and Hefeker, 2007; among others). A further alternative proxying legal enforcement is the rule of law from The World Government Indicators (World Bank). The correlation between our measure of legal enforcement and the rule of law variable is 0.77.

[5] Two common proxies for creditor protection are the strength of legal rights index from the World Bank Database and creditor rights from Djankov *et al*. (2007). The former has been recently updated: before 2014, it ranges from 0 to 10; while from 2014, it ranges from 0 to 12. Regarding the creditor rights variable from Djankov, data are only available until 2003. Hence, we have not been able to consider either of these variables.

(PROFIT); leverage (LEV); tangibility (TANG); growth (GROWTH); and the borrower's credit rating (VRATING and DRATING).

Firm size (SIZE) is measured as the natural logarithm of total assets. Small firms suffer greater informational asymmetries, while large firms have easier access to both internal and external financing, longer tracks records, and lower default risk, as they are normally more diversified. This suggests that larger firms should obtain better bank loan terms. Profitability (PROFIT) is measured as the ratio between earnings before interest and taxes and total assets. Banks face lower probabilities of default when borrowers are more profitable firms. In this context, firms with higher levels of current profits will be able to borrow from banks on relatively good terms. Leverage (LEV) is measured as the ratio between the book value of financial debt (short- and long-term debt) and the book value of total assets. Given that firms with high leverage face a greater likelihood of future insolvency, moral hazard problems are greater in these firms. We may thus expect the terms of bank loans to worsen with leverage. However, higher leverage could also be a proxy for the good reputation of firms in the debt markets, which reduces contracting problems, forecasting, in this case, a positive relationship between leverage and loan spreads. Tangibility (TANG) is measured as the ratio between property, plant, and equipment and total assets. Intangible assets are more difficult to collateralize and suffer higher losses in value when firms experience distress. Moreover, the low level of information asymmetry associated with tangible assets makes it easier for lenders to monitor borrowers. Consequently, higher tangibility suggests better bank loan conditions. Growth (GROWTH) is proxied by the ratio of the market value of equity to the book value of equity. Growth firms face greater problems of information asymmetries, thus leading to higher contracting costs. However, such firms are less likely to engage in risky activities to expropriate creditors. We also include the borrower's credit rating (VRATING and DRATING), given that firms with high credit ratings may obtain more favourable loan terms. We obtain information on Moody's and S&P senior debt ratings at the year of the loan from Dealscan, which we use to control for borrower risk. We focus first on Moody's rating, unless it is missing, in which case we rely on the S&P rating. We construct a firm risk index (VRATING) ranging from one to six using Moody's and S&P ratings. Specifically, we assign a value of one to an Aaa rating, a value of two to an Aa rating, a value of three to an A rating, a value of four to a Baa rating, a value of five to a Ba rating, and a value of six to a B rating or worse. A higher number thus reflects a lower rating. We also assign a value of zero to firms without a rating. Additionally, we include a dummy variable (DRATING) that takes the value of one if the firm rating is missing and zero otherwise.

*3.1.4. Loan controls*

Along with firm-specific variables, we include several loan-specific characteristics in our estimations. We consider the number of banks in the loan (SYND_SIZE), as banks have incentives to syndicate higher risk loans in order to spread the risk across a large number of lenders. This variable is measured as the natural logarithm of the number of banks participating in the loan. Maturity (MAT) is the natural logarithm of maturity (in months), there being mixed evidence on how the maturity of the loan impacts the spread. The "trade-off" hypothesis suggests that banks will charge higher spreads on loans with longer maturities to cover the risk of lending over longer periods. The "credit quality" hypothesis predicts a negative relationship, because high-risk lenders are crowded out of the long-term debt market. As a result, riskier borrowers can only obtain shorter-maturity loans at higher yields (Dennis et *al.*, 2000; Gottesman and Roberts, 2004). The size of the loan (LOAN_SIZE) is the natural logarithm of the loan. As greater loan size is associated with better borrowers, we expect that the greater the size of the loan, the lower the loan spread will be. We also include loan type and loan purpose fixed effects to saturate our model from differences in bank loan conditions due to loan type or purpose. Finally, we include a dummy variable that identifies whether the loan is senior or not (DSENIOR). This variable takes the value of 1 if the loan is senior and zero otherwise (subordinated, senior subordinated, junior, or mezzanine). Appendix A provides the definitions of the variables used in the empirical analysis.

### 3.2. Descriptive statistics

Table 1 provides the descriptive statistics of trust by country. Almost 64% of these loan facilities are to US firms. A wide variation in the trust variable can be observed; the mean of TRUST for the total sample being 36.76%. However, there are countries like Brazil, Colombia, Cyprus, Peru, and the Philippines whose mean value of trust is below 10%. Nordic countries such as Denmark, Finland, Norway, and Sweden present values of trust above 60%. Table 2 provides descriptive statistics on the variables used in this paper. The mean (median) of the SPREAD variable is 194.04 (160) basis points. The mean values of LO and CR are 4.96 and 1.53, respectively. Most of the loans are credit lines (54%), senior (99%), and for general corporate purposes (45%)[6]. The mean bank loan has a Moody's rating of A.

[INSERT TABLE 2 ABOUT HERE]

Table 3 presents the correlation matrix[7]. The correlation between LN_SPREAD and TRUST is positive, a finding not in line with trust reducing the cost of debt. LN_SPREAD correlates negatively with LO and CR. The correlation of LN_SPREAD with LO is as expected, considering

---

[6] The descriptive statistics of loan type and loan purpose are not shown in order to save space.
[7] The variables incorporated in the Robustness section are not included in order to save space.

that higher law and order values are associated with lower spreads. However, the correlation of LN_SPREAD with CR is not as expected, given that a longer time for creditors to recover their credit should be associated with higher spreads. Bank loan spread (LN_SPREAD) correlates negatively with firm size, profitability, tangibility, loan size, the size of the syndicate, and the dummy of senior loan, while the correlation is positive with respect to leverage, maturity, borrower credit rating, and the dummy of credit rating.

[INSERT TABLE 3 ABOUT HERE]

## 4. Results

### 4.1. Formal and informal institutions

Table 4 presents the results of the OLS estimation, the standard errors being clustered at the borrower firm-level. The dependent variable is the interest rate spread of the loan (LN_SPREAD). Column (1) shows the results when considering trust, firm-specific variables, loan-specific characteristics, law and order, and protection of creditors' rights (CR). The LO variable has a negative coefficient, indicating that firms in countries with strong legal enforcement have a lower loan spread, a finding consistent with the evidence provided by Bae and Goyal (2009). The level of protection of creditors' rights (CR) has a positive coefficient, showing that firms in countries where it takes more time for creditors to recover their credit after a default have a higher loan spread, a result consistent with the evidence provided by Qian and Strahan (2007). Fabbri (2010) also show that bank financing is more costly when civil lawsuits are longer.

[INSERT TABLE 4 ABOUT HERE]

Our results are hence in line with those reported in the finance literature, which shows that firms in countries with an efficient judicial system and strong protection of investors' rights will obtain debt under better conditions. As regards trust, the results show that trust has no influence on loan spreads when considered individually. Thus, we do not obtain favourable evidence for our first hypothesis.

Column (2) includes the interaction term between trust and LO. The coefficient of the interaction term LO*TRUST measures the effect of TRUST on interest rate spread when LO increases. The results show that trust is seen to have a negative influence on loan spreads. This result suggests that an increase in country trust improves loan conditions. Increased country trust may mean that lenders need to spend less to protect themselves from counterparty risk. As a result of assuming less risk of default, lenders will be able to offer better credit conditions; in this case, a lower cost of debt. However, the joint presence of trust and law and order lowers this reduction, indicating

that when country institutions are strong, the effect of reduction on spread associated with trust is smaller[8]. In column (3) in Table 4, we include a dummy variable of law and order (dLO) that takes the value of one if the law and order variable (LO) is equal to or lower than three, and zero otherwise, and we interact this dummy variable with trust. The coefficient of TRUST in column (3) thus represents the effect of this variable in countries where the value of LO is higher than 3. The sum of the coefficients of TRUST and dLO*TRUST shows the effect of TRUST in countries where LO takes values lower than 3. When we include this interaction term, the trust variable has no effect on loan spread. However, the interaction term is negative and statistically significant, meaning that trust reduces the loan spread in those countries where the legal system is less efficient[9]. This result suggests that, due to the imperfection of formal institutions, trust seems to become more important in countries with an inefficient legal system. For instance, in countries where laws and the legal system are efficient, banks will not have to worry about institutional risk when lending to a firm, as formal institutions provide sufficient protection to banks. Informal institutions thus seem to play a limited role in those countries where legal enforcement works properly.

In terms of economic significance, the coefficients reported in column (2) suggest that a one-standard-deviation increase in TRUST is associated with an increase in the mean value of the loan spread of 0.59%, a value that is close to zero. When we take into account the quality of legal enforcement, in those countries where the legal enforcement is weak (e.g. Brazil, with a law and order score of 2), a one standard-deviation increase in TRUST is associated with a reduction in the mean value of the loan spread of 2.19%. However, in countries where legal enforcement is higher (e.g. Belgium, with a law and order score of 5), a one standard-deviation increase in TRUST is associated with an increase in the mean value of the loan spread of 0.63%. We can hence conclude that trust reduces the loan spread when formal institutions are weak; otherwise, its effect is not significantly different from zero[10].

---

[8] We have studied other non-price terms of loans such as collateral requirement, maturity and loan size. The results show that companies in countries with higher levels of trust are subject to less collateral requirements. However, the joint presence of trust and law and order lowers this reduction, indicating that when country institutions are strong, the effect of trust on collateral requirement is smaller. As for maturity, the coefficient of trust is negative and significant, suggesting that firms face less liquidity risk in more trusted societies. The results also show that companies in countries with higher levels of trust obtain loans that are larger in size. For the sake of simplicity, we do not report these results.

[9] We test whether the sum of coefficients is equal to zero ($H_0$: TRUST+dLO*TRUST=0). The p value is 0.0067, meaning that the sum of coefficients is not equal to zero. We also considered a dummy variable of law and order (dLO) that takes the value of one if the law and order variable (LO) is equal to or lower than four, and zero otherwise. However, the results show that the coefficient of the interaction term is not statistically significant. Hence, trust only reduces the cost of bank loans in those countries where the efficiency of the legal system is very low.

[10] These results are maintained when we take into account the level of asymmetric information, as trust reduces the cost of bank loans in countries with weak legal enforcement. Considering different proxies of asymmetric information problems such as whether there is a rating or not (Kashyap et al., 1994; Gilchrist

The signs of the coefficients obtained for borrower-level variables are as expected. Larger or more profitable firms borrow at lower interest rates. High leverage is associated with higher interest rates, which means that firms with high leverage face a greater likelihood of future insolvency, leading to higher interest rates. The market-to-book ratio is negatively related to loan spreads, reflecting that growth firms are less likely to engage in risky activities to expropriate creditors. Safer borrowers (firms with a lower value of the VRATING variable) obtain loans at lower interest rates, while firms without a rating (DRATING) face higher costs.

In addition to firm-specific variables, we also include several loan-specific characteristics in our estimations. Loans from larger syndicates or loans that are larger in size have lower loan spreads, probably as a result of the diversification of risk across a larger number of lenders. Loans with longer maturity have lower loan spread, reflecting that banks charge higher spreads on loans with longer maturities, which is in line with the "credit quality" hypothesis. Finally, senior loans have lower spread compared to the remaining categories (subordinated, senior subordinated, junior, or mezzanine).

*4.2. Degree of economic development*

Table 5 presents the results showing the effect that formal and informal institutions have on loan spreads, considering, in this case, the degree of economic development. We use the natural logarithm of the Gross National Income per capita variable (GNI_PC) in 2002 from the World Bank Database to measure the economic development of each country and interact this variable with the main variables of our analysis (law and order and trust). As our sample starts in 2003, we measure the degree of economic development one year before in order to minimize endogeneity problems.

[INSERT TABLE 5 ABOUT HERE]

In column (1), we interact the degree of economic development (GNI_PC) with the law and order variable (LO), while in column (2), we interact the degree of economic development (GNI_PC) with trust (TRUST). We include both interaction terms in column (3). It can be seen that both trust and law and order reduce loan spreads when the degree of economic development is not taken into account. However, this reduction is lower when the degree of economic development of a country increases, the coefficients of the interaction terms between GNI_PC and LO and TRUST being positive and significant in all estimations. Hence, the third hypothesis, which posits

and Himmerlberg, 1995), the existence of previous lending relationships (Dahiya et al., 2003; Bharath *et al.* 2011), or higher cash flows and lower investment opportunities (Lang *et al.,* 1991), we test whether trust reduces the cost of bank loans more in firms with higher levels of asymmetric information. However, we do not obtain evidence in favour of the hypothesis that trust has a different effect on loan spread depending on the degree of asymmetric information.

that trust has a greater influence on loan spreads in countries with a lower degree of economic development, is confirmed.

In terms of economic significance, the coefficients reported in column (3) suggest that, in those countries where the degree of economic development is low (e.g. India, with a value of GNI_PC of 6.11), a one-standard-deviation increase in TRUST is associated with a reduction in the mean value of the loan spread of 3.13%. However, this effect disappears for countries with a high degree of economic development (e.g. New Zealand, with a value of GNI_PC of 9.56), as one-standard-deviation increase in TRUST is associated with a reduction in the mean value of the loan spread of 0.03%.

## 5. Robustness

In this section, we present additional robustness tests for our results considering a number of aspects: (1) the treatment of facilities as a deal (or package), (2) including additional variables in our baseline model, and (3) addressing the potential problem of endogeneity for the trust variable.

The first concern that may be raised is that our unit of analysis is the loan facility and not the loan package (or deal). As stated previously, the difference between the two is that the loan facility refers to each individual portion of a deal, whereas the deal itself possibly (but not usually) comprises more than one loan facility and covers the full amount of credit granted to the firm on that occasion. In this section, we consider the package (or deal) as our unit of analysis and we do so in two different ways. First, following Ivashina (2009) and Hertzel and Officer (2012), we choose the largest tranche in each deal (columns (1) to (4) in Table 6). Second, following Sufi (2007) and Demerjiian and Owens (2016), the loan variables are calculated at the deal level through weighted averages according to the amount of each tranche (columns (5) to (8) in Table 6).

In general, the results are found to be robust. Trust has no effect on loans spreads, except for those countries where institutions are weak, as the interaction term between dLO and TRUST always remains negative and significant and for those countries with a lower level of economic development, as the coefficient of TRUST is negative and significant and the interaction term between GNI_PC and TRUST has a positive and significant coefficient.

[INSERT TABLE 6 ABOUT HERE]

Another concern that may be raised is that our baseline model excludes some key variables that are correlated to trust and the cost of debt. Seeing as cultural values and religion might play an important role in the level of trust and the cost of debt (La Porta *et al*. 1997; Chui et al., 2016;

Giannetti and Yafeh, 2012; He and Hu, 2016), we also include variables controlling for these aspects in our estimation. As for cultural values, we consider the cultural dimensions developed by Hofstede (2001). Hofstede's cultural framework, which is the most well-known framework of its kind, characterises the different cultural traits of a nation into six dimensions (power distance, uncertainty avoidance, individualism, masculinity, long-term orientation, and indulgence) based on a worldwide survey of employees' values at IBM[11]. As proxies for national culture, we use the four most widely-used cultural dimensions (individualism, uncertainty avoidance, masculinity, and power distance) from the studies by Hofstede (2001). We use the updated measures from Tang and Koveos (2008).

Regarding the power distance index (PDI), the fundamental issue is how a society deals with inequalities among people. In societies with a low degree of power distance, people strive to balance out the distribution of power and demand justification for power inequalities. Individualism (IND) can be defined as a preference for a loosely knit social framework in which individuals are expected to solely take care of themselves and their immediate families. The uncertainty avoidance index (UAI) expresses the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity. Countries exhibiting a strong UAI maintain rigid codes of belief and behaviour, and are intolerant of unorthodox behaviour and ideas. Weak UAI societies maintain a more relaxed attitude in which practice counts more than principles. Masculinity (MAS) represents a preference in society for achievement, heroism, assertiveness, and material rewards for success, society at large being more competitive. Columns (1) to (2) in Table 7 show the results of the main regressions including these cultural dimensions. Our results for cultural variables are in line with those obtained in previous research, as Chui *et al*. (2016) find that countries with high mastery and lower embeddedness tend to have a lower cost of debt[12].

[INSERT TABLE 7 ABOUT HERE]

Additionally, following Cumming *et al.* (2020) we also consider the willingness to delegate (DELEG_IND), an index of the willingness to delegate authority (Chong *et al*., 2014), as a cultural variable. This index is constructed from the answers to the question: "In your country, how do you assess the willingness to delegate authority to subordinates?" The values range from

---

[11] The importance of Hofstede's cultural dimensions is highlighted by Kirkman *et al*. (2006), who document 180 empirical studies that rely on Hofstede's cultural framework published in leading journals between 1980 and 2002.

[12] Chui *et al.* (2016) use Schwartz's cultural dimensions as their main variables. Schwartz (2004) suggests that embeddedness and Hofstede's individualism index (IND) overlap conceptually to some extent, in that both dimensions contrast an autonomous self-concept with an interdependent self-concept. Furthermore, Schwartz (2004) states that mastery has some conceptual overlap with Hofstede's masculinity index (MAS), in that both dimensions emphasize values related to personal accomplishment, such as assertiveness and ambition.

1, in situations where top management controls important decisions, through to 7, where authority is delegated mainly to business unit heads and other lower-level management. The expected result for this variable is similar to that expected for the power distance variable, which is related to deference for authority. Columns (3) to (4) in Table 7 show the results when this variable is also included.

We also consider religion as a control variable, identifying the percentage of the population of each country belonging to the three most widely spread religions in the world (La Porta *et al.*, 1998): CATHO is the percentage of the population of each country belonging to the Catholic religion; MUSLIM is the percentage of the population of each country belonging to the Muslim religion; and PROT is the percentage of the population of each country belonging to the Protestant religion. Columns (5) and (6) in Table 7 shows the results when these variables are included.

Our results are once again found to be robust, insofar as law and order, trust, and the interaction term between these two variables maintain the signs shown in Table 4 regardless of the inclusion of cultural dimensions or religion.

Finally, a potential problem when considering trust is that this variable may itself be affected by social phenomena, including economic and political influences, thereby leading to endogeneity concerns (Bowles, 1998). As such, trust may be endogenous. We address this potential concern in Table 8 by estimating two-stage least squares regressions. We consider several variables as instruments of trust. The existing literature has focused on historical determinants of trust such as prior per capita income, past education, ethnic fractionalization, religious affiliation, past political constraints, and legal origin (Knack and Keefer, 1997; Alesina and La Ferrara, 2002; Zak and Knack, 2001; Guiso *et al.,* 2003). Cline and Williamson (2016) argue that one potential concern with most of these factors is that they are likely to be endogenous and present models including exogenous historical determinants of trust. Accordingly, we consider the following variables as proxies of trust: pronoun drop, rainfall variation, distance from the equator, numbers of lawyers, and legal origin (Knack and Keefer, 1997; Goergen, 2013; Cline and Williamson, 2016)[13]. The explained percentage of trust in the first stage is 88.54%. Subsequently, we perform an endogeneity test of overidentifying restrictions for each of the regressions. This test, which verifies the null hypothesis that the specified endogenous regressors can actually be treated as exogenous, is distributed as chi-squared with the degrees of freedom being equal to the number of tested regressors. When the p-value of the F-test is below 10 percent, the null hypothesis is rejected and hence the instrumental variables estimations are reported. Otherwise, the estimations with the observed values of trust variable are provided. Additionally, in order to test the validity

---

[13] Appendix A provides the definitions of these variables.

of our instruments, we consider the Cragg-Donald statistic, comparing it with the critical values computed by Stock and Yogo (2005). Those cases in which the Cragg-Donald statistic is higher than the Stock and Yogo critical values would indicate the absence of the weak instruments problem. The first and second stage results are presented in Table 8.

[INSERT TABLE 8 ABOUT HERE]

In this case, our results are also found to be robust, given that law and order has a negative and significant effect on loan spreads. Furthermore, the coefficients of the interaction terms between trust and LO and dLO respectively have positive and negative signs, as in Table 4, highlighting that trust have a negative effect on loan spreads in those countries where institutions are weaker (columns (3) and (4) in Table 8). Moreover, in column (2), trust has a negative and significant coefficient, showing that companies in countries with a higher level of trust obtain lower loan spreads. However, we must be cautious when interpreting this result, given that it is significant only in this estimation.

## 6. Conclusions

This paper analyses the effect of trust and the institutional environment on bank loan spreads for a sample of 20,699 loans from 47 countries over the period 2003-2018, bearing in mind that, when a bank lends to a firm, it has to assess not only the borrower's credit quality, but also the risk due to weak laws or institutions and the risk associated with low trust societies. Our results reveal that trust does not influence the cost of bank loans in countries with higher levels of efficiency of the legal system or in more economically developed countries. High trust environments, however, tend to reduce loan spreads when the efficiency of the legal system is weak and the level of economic development is low. These results reveal that the benefits of high trust societies associated with protecting individuals and firms from being exploited in economic transactions only appear in countries with weaker formal institutions.

Our results suggest that trust has a limited influence on the spread of bank loans, as the effect of trust is contingent upon the efficiency of the legal system and the degree of economic development. This finding is likewise consistent with weaker efficiency of the legal system and lower economic development providing more room for opportunistic behaviour, trust being more necessary to guide the contracting process between lenders and borrowers. This result has implications for policymakers, as it suggests that institutional reforms generating strong legal enforcement of contracts are crucial to access to credit in low trust societies and less developed economies.

**References**

Alesina, A., La Ferrara, E., 2002. Who trust others? *Journal of Public Economics, 85*, 207–234.

Allen, F., Qian, J., Qian, M., 2005. Law, finance, and economic growth in China. *Journal of Financial Economics 77*, 57–116.

Allen, F., Chakrabarti, R., Qian, J., Qian, M., 2012. Financing firms in India. *Journal of Financial Intermediation 21*, 409–445.

Aghion, P., Algan, Y., Cahuc, P., Shleifer, A., 2010. Regulation and distrust. *Quarterly Journal of Economics 125,* 1015–1049.

Álvarez-Botas, C., González, V.M., 2020, Institutions, banking structure and the cost of debt: new international evidence. *Accounting and Finance.* doi:10.1111/acfi.12567

Bae, K., Goyal, V. K., 2009. Creditor rights, enforcement, and bank loans. *The Journal of Finance*, *64*(2), 823–860.

Beyhaghi, M., Nguyen, C., Wald J. K., 2019. Institutional investors and loan dynamics: Evidence from loan renegotiations. *Journal of Corporate Finance, 56,* 482-505.

Bharath, S.T., Dahiya, S., Saunders, A., Srinivasan, A., 2011. Lending Relationships and Loan Contract Terms. *The Review of Financial Studies, 24,* 1141–1203

Botazzi, L., Rin, M. D., Hellman, T., 2016. The importance of trust for investment: Evidence from Venture Capital. *The Review of Financial Studies, 29*(9), 2283-2318.

Bowles, S., 1998. Endogenous preferences: the cultural consequences of markets and other economic institutions. *Journal of Economic Literature*, *36,* 75–111.

Bui, D. G., Chen, Y., Hasan, I., Lin, C., 2018. Can lenders discern managerial ability from luck? Evidence from bank loan contracts. *Journal of Banking and Finance, 87,* 187-201.

Busse, M., Hefeker, C., 2007. Political risk, institutions and foreign direct investment. *European Journal of Political Economy 23 (2),* 397-415.

Carlin, B., Dorobantu, F., Viswanathan, S., 2009. Public trust, the law, and financial investment. *Journal of Financial Economics 92,* 321–341.

Chava, S., Roberts, M. R., 2008. How does financing impact investment? The role of debt covenants. *The Journal of Finance, 63*, 2085-2121.

Chen, H., Huang, H. H., Lobo, G. J., Wang, C., 2016. Religiosity and the cost of debt. *Journal of Banking and Finance, 70,* 70-85.

Chong, A., La Porta, R., Lopez-de-Silanes, F., Shleifer, A., 2014. Letter grading government efficiency. *Journal of the European Economic Association, 12*(2), 277-299.

Chui, A. C. W., Lloyd, A. E., Kwok, C. C. Y., 2002. The Determination of Capital Structure: Is National Culture a Missing Piece to the Puzzle? *Journal of International Business Studies*, *33*(1), 99–127.

Chui, A. C. W., Kwok, C. C. Y., Zhou, G., 2016. National culture and the cost of debt. *Journal of Banking & Finance*, *69*, 1–19.

Claessens, S., Laeven, L., 2003. Financial Development, property rights, and growth. *The Journal of Finance, 58*(6), 2401-2436.

Cline, B.N., Williamson, C.R., 2016. Trust and the regulation of corporate self-dealing. *Journal of Corporate Finance, 41,* 572-590.

Cumming, D., Lopez-de-Silanes, F., McCahery, J.A., Schwienbacher, A., 2020. Tranching in the syndicated loan market around the world. *Journal of International Business Studies, 51*, 95-120.

Dahiya, S., A. Saunders, and A. Srinivasan. 2003. Financial Distress and Bank Lending Relationships. *Journal of Finance* 58, 375–399.

Davis, L., 2016. Individual responsibility and economic development: evidence from rainfall data. *Kyklos, 69,* 426–470.

Deli, Y. D., Delis, M. D., Hasan, I., Liu, L. 2019. Enforcement of banking regulation and the cost of borrowing. *Journal of Banking and Finance, 101,* 147-160.

Delis, M. D., Iosifidi, M., Kokas, S., Xefteris, D., 2020. Enforcement actions on banks and the structure of loan syndicates. *Journal of Corporate Finance, 60,* 101527.

Demerjian, P.R., Owens, E.L., 2016. Measuring the probability of financial covenant violation in private debt contracts. *Journal of Accounting and Economics,61,* 433-447.

Demirgüc-Kunt, E. Detragiache, 2002. Does deposit insurance increase banking system stability? An empirical investigation. *Journal of Monetary Economics*, 49 (2002), pp. 1373-1406A.

Demirgüç-Kunt, A., Levine, R., 2001. Financial structure and economic growth: A cross-country comparison of banks, markets, and development. MIT Press, Cambridge.

Demirgüç-Kunt, A., Maksimovic, V., 1999. Institutions, financial markets, and firm debt maturity. *Journal of Financial Economics*, *54*, 295–336.

Dennis, S., Nandy, D., Sharpe, I., 2000. The determinants of contract terms in bank revolving credit agreements. *The Journal of Financial and Quantitative Analysis 35 (1),* 87–110.

Djankov, S., La Porta, R., Lopez-de-Silanes, F., Shleifer, A., 2003. Courts. *The Quarterly Journal of Economics, 118*(2), 453-517.

Drucker, S., Puri, M., 2006. Banks in capital markets: A survey in Empirical Corporate Finance (E. Eckbo, ed.), Handbooks in Finance, North-Holland, Amsterdam.

Dudley, E., Zhang, N., 2016. Trust and corporate cash holdings. *Journal of Corporate Finance, 41,* 363-387.

Durante, R., 2010. Risk cooperation and the economic origin of social trust: an empirical investigation. Economic Department, Sciences-Po. Working Paper.

Ehrmann, M., Gambacorta, L., Martinez-Pages, J., Sevestre, P., Worms A., 2003. Financial Systems and the Role of Banks in Monetary Policy Transmission in the Euro Area, published in: Angeloni I., A. Kashyap, B. Mojon (Eds.) 2003. Monetary policy transmission in the euro area. A study by the Eurosystem Monetary Transmission Network. Cambridge: Cambridge University Press.

Fabbri, D., 2010. Law Enforcement and Firm Financing: Theory and Evidence. *Journal of the European Accounting Association 8,* 776-816.

Fan, J. P. H., Titman, S., Twite, G., 2012. An international comparison of capital structure and debt maturity choices. *Journal of Financial and Quantitative Analysis*, *47*(1), 23–56.

Fernández, I., González, V.M., 2017. Corporate valuation and social capital: a cross-country analysis. *Applied Economics, 49(37),* 3770-3781.

Giannetti, M., Yafeh, Y., 2012. Do cultural differences between contracting parties matter? Evidence from syndicated bank loans. *Management Science*, *58*(2), 365–383.

Gilchrist, S., Himmelberg, C.P., 1995. Evidence on the role of cash flow for investment. *Journal of Monetary Economics, 36,* 541-572

Goergen, M., 2013. Corporate stakeholders and trust. *Spanish Review of Financial Economics*, *11*, 47–56.

Goergen, M., Chahine, S., Brewster, C., Wood, G., 2013. Trust, owner rights, employee rights and firm performance. *Journal of Business Finance and Accounting, 40*, 589–619.

González, V.M., 2017. Firm and country determinants of debt maturity. New international evidence. *International Finance, 20*, 3, 256-270.

Gottesman, A.A., Roberts, G.S., 2004. Maturity and corporate loan pricing. *Financial Review 38,* 55–77.

Gropp, R., Heider, F., 2010. The Determinants of Bank Capital Structure. *Review of Finance, 14*, 587-622.

Guiso, L., Sapienza, P., Zingales, L., 2003. People's opium? Religion and economic attitudes. *Journal of Monetary Economics, 50,* 225–282.

Guiso, L., Sapienza, P., Zingales, L., 2004. The role of social capital in financial development. *American Economic Review, 94,* 526-556.

González, F., 2005. Bank regulation and risk-taking incentives: An international comparison of bank risk. *Journal of Banking and Finance, 29 (5),* 1153-1184.

He, W., Hu, M. R., 2016. Religion and bank loan terms. *Journal of Banking and Finance*, *64*, 205–215.

Hertzel, M.G., Officer, M.S., 2012. Industry contagion in loan spreads. *Journal of Financial Economics, 103,* 493-506.

Hofstede, G., 2001. Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations. Second ed. Sage, Thousand Oaks, California.

Inglehart, R., 1994. Codebook for World Values Surveys. *Ann Arbor, MI: Institute for Social Research.*

Ivashina, V., 2009. Asymmetric information effects on loan spreads. *Journal of Financial Economics, 92,* 300-319.

Japelli, T., Pagano, M., Bianco, M., 2005. Courts and Banks: Effects of Judicial Enforcement on Credit Markets. *Journal of Money, Credit and Banking 37,* 223-244.

Kashyap, A.K., Lamont, O., Stein, J.C. 1994. Credit conditions and the cyclical behavior of inventories. *Quarterly Journal of Economics, 109,* 565-592.

Knack, S., Keefer, P., 1997. Does social capital have an economic payoff? A cross-country investigation. *The Quarterly Journal of Economics*, 1251–1288.

Kirkman, B., Lowe, K., Gibson, C., 2006. A quarter century of Culture's consequences: A review of empirical research incorporating Hofstede's cultural values framework. *Journal of International Business Studies, 37*(3) 285–320.

Laeven, L. 2002. Bank risk and deposit insurance. *The World Bank Economic Review*, *16,* 109-137.

Laeven, L., Majnoni G., 2005. Does Judicial Efficiency Lower the Cost of Credit? *Journal of Banking and Finance 29*, 1791-1812

Lang, L.H.P., Stulz, R.M., Walkling, R.A., 1991. A test of the free cash flow hypothesis, the case of bidder returns. *Journal of Financial Economics 29,* 315-335.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R. W., 1997. Trust in large organizations. *American Economic Review, 87*, 333–338.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R. W., 1998. Law and Finance. *Journal of Political Economy,* 106 (6), 1113-1155.

Levine, R., Loayza, N., Beck, T., 2000. Financial intermediation and growth: Causality and causes. *Journal of Monetary Economics, 46,* 31-77.

Lewis, J. D., & Weigert, A., 1985. Trust as a social reality. *Social forces 63(4),* 967-985.

Li, K., Griffin, D., Yue, H., Zhao, L., 2011. National culture and capital structure decisions: Evidence from foreign joint ventures in China. *Journal of International Business Studies*, *42*(4), 477–503.

Litch, A., Goldschmidt, C., Schwartz, S., 2007. Culture rules: the foundations of the rule of law and other norms of governance. *Journal of Comparative Economics 35,* 659-688.

Moro, A., Maresch, D., Ferrando, A., 2018. Creditor protection, judicial enforcement and credit access. *The European Journal of Finance, 24*(3), 250-281

North, D., 1990. Institutions, Institutional Change and Economic Performance. *Cambridge University Press New York,* New York.

North, D. C., 1994. Economic performance through time. *The American Economic Review*, *84*(3), 359–368.

Petersen, M. A., 2009. Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches. *The Review of Financial Studies, 22*(1), 435-480.

Putnam, R. D., 1993. Making democracy work. Civic traditions in Modern Italy. *Princeton: Princeton University Press.*

Qian, J., Strahan, P. E., 2007. How law and institutions shape financial contracts: the case of bank loans. *The Journal of Finance*, *62*(6), 2803–2834.

Qian, X., Cao, T., Cao, C., 2018. Institutional environment and bank loans: Evidence from 25 developing countries. *Corporate Governance: An International Review*, *26*, 84-96.

Schwartz, S.H., 2004. Mapping and interpreting cultural differences around the world. In: Vinken, H., Soeters, J., Esters, P. (Eds.), Comparing Cultures: Dimensions of Cultures in a Comparative Perspective. Brill Leiden, Boston.

Stock, J. H., Yogo, M., 2005. Testing for weak instruments in linear IV regressions. *Harvard University: Department of Economics.*

Sufi, A., 2007. Information Asymmetry and Financing Arrangements: Evidence from Syndicated Loans. *The Journal of Finance, 62(2),* 629-668.

Tang, L., Koveos, P.E., 2008. A framework to update Hofstede's cultural value indices: economic dynamics and institutional stability. *Journal of International Business Studies, 39*, 1045–1063.

Wu, W.F., Firth, M., Rui, O.M., 2014. Trust and the provision of trade credit. *Journal of Banking and Finance 39*, 146–169.

Zak, P. J., Knack, S., 2001. Trust and growth. *The Economic Journal*, *111*, 295–321.

Zheng, X., El Ghoul, S., Guedhami, O., Kwok, C. C. Y., 2012. National culture and corporate debt maturity. *Journal of Banking and Finance*, *36*(2), 468–488.

## Table 1. Trust descriptive statistic by country

The table reports the descriptive statistics of the trust variable, which is the percentage of individuals in a country who respond that most people can be trusted. This variable was obtained by combining different waves of the World Values Survey and European Values Survey.

| Country | OBS | Mean | Standard deviation | Min. | Max. |
|---|---|---|---|---|---|
| Argentina | 5 | 20.67 | 3.45 | 16.89 | 23.19 |
| Australia | 318 | 47.85 | 4.26 | 40.05 | 54.43 |
| Austria | 21 | 35.50 | 1.67 | 33.43 | 36.78 |
| Belgium | 48 | 31.26 | 2.66 | 29.22 | 34.65 |
| Brazil | 69 | 7.98 | 1.36 | 6.46 | 9.20 |
| Canada | 631 | 40.60 | 2.37 | 36.96 | 42.15 |
| Chile | 33 | 18.28 | 5.27 | 12.40 | 23.01 |
| China | 236 | 60.42 | 5.54 | 52.41 | 64.44 |
| Colombia | 6 | 6.49 | 3.66 | 4.13 | 11.22 |
| Croatia | 5 | 20.05 | 0.44 | 19.73 | 20.54 |
| Cyprus | 7 | 9.13 | 0.04 | 9.10 | 9.19 |
| Czech Republic | 5 | 24.55 | 0.00 | 24.55 | 24.55 |
| Denmark | 19 | 70.53 | 4.82 | 66.53 | 76.04 |
| Finland | 61 | 60.58 | 3.37 | 57.44 | 64.68 |
| France | 507 | 23.28 | 3.54 | 18.67 | 27.25 |
| Germany | 417 | 37.98 | 2.33 | 34.09 | 42.49 |
| Greece | 55 | 23.08 | 1.07 | 21.34 | 23.73 |
| Hong Kong | 227 | 42.76 | 3.09 | 41.06 | 48.34 |
| Iceland | 7 | 51.41 | 0.00 | 51.41 | 51.41 |
| India | 343 | 26.27 | 8.08 | 17.63 | 40.99 |
| Indonesia | 79 | 43.23 | 2.43 | 42.54 | 51.64 |
| Ireland | 81 | 41.32 | 3.83 | 38.92 | 47.37 |
| Italy | 176 | 30.74 | 1.32 | 29.17 | 32.63 |
| Japan | 258 | 40.24 | 1.91 | 38.76 | 43.06 |
| Korea (South) | 128 | 31.00 | 1.77 | 29.67 | 34.17 |
| Luxembourg | 39 | 29.61 | 2.69 | 24.76 | 31.07 |
| Mexico | 104 | 16.63 | 3.42 | 12.42 | 21.87 |
| Netherlands | 189 | 60.86 | 6.21 | 44.48 | 67.42 |
| New Zealand | 21 | 51.09 | 2.12 | 49.05 | 56.78 |
| Norway | 54 | 69.44 | 4.85 | 65.30 | 75.09 |
| Pakistan | 11 | 30.83 | 0.00 | 30.83 | 30.83 |
| Peru | 3 | 9.87 | 1.38 | 8.28 | 10.67 |
| Philippines | 31 | 7.87 | 1.97 | 2.84 | 8.61 |
| Poland | 24 | 20.65 | 3.80 | 17.91 | 27.60 |
| Portugal | 21 | 19.31 | 2.30 | 17.17 | 21.67 |
| Qatar | 3 | 21.44 | 0.00 | 21.44 | 21.44 |
| Romania | 5 | 18.69 | 1.45 | 17.62 | 20.30 |
| Russia | 129 | 27.54 | 2.22 | 23.98 | 29.86 |
| Singapore | 107 | 18.71 | 8.95 | 14.71 | 38.52 |
| Spain | 241 | 28.10 | 7.21 | 19.51 | 34.33 |
| Sweden | 84 | 62.85 | 4.24 | 59.67 | 70.69 |
| Switzerland | 147 | 49.09 | 8.65 | 36.96 | 55.43 |
| Taiwan | 1,617 | 28.18 | 4.82 | 24.24 | 38.20 |
| Thailand | 14 | 38.96 | 4.19 | 32.57 | 41.51 |
| Turkey | 56 | 10.42 | 2.81 | 4.78 | 12.43 |
| United Kingdom | 803 | 35.44 | 5.35 | 28.85 | 40.32 |
| USA | 13,254 | 37.85 | 1.41 | 36.28 | 39.56 |
| Total | 20,699 | 36.76 | 7.79 | 2.84 | 76.04 |

## Table 2. Descriptive statistics

The table reports the descriptive statistics of the variables for the total sample. LN_SPREAD is the natural logarithm of interest rate spread on a loan (over the LIBOR) plus associated fees in originating the loan; SPREAD is the interest rate spread on a loan (over the LIBOR) plus any associated fees in originating the loan; TRUST is the percentage of individuals in a country who respond that most people can be trusted; LO is the law and order variable; dLO is a dummy variable that takes the value of one if the law and order variable is equal to or lower than three, and zero otherwise; CR captures the time for creditors to recover their credit and is recorded in calendar years; GNI_PC is the natural logarithm of Gross Income per capita in 2002; SIZE is the natural logarithm of the firm's total assets; PROFIT is the ratio between earnings before interest and taxes and total assets; LEV is the ratio between the book value of debt and the book value of total assets; TANG is the ratio between property, plant, and equipment and total assets; GROWTH is the ratio of the market value of equity to the book value of equity; VRATING is a firm risk index using Moody's and S&P ratings that ranges from one to six, a value of one being assigned to an Aaa rating, a value of two indicating an Aa rating, …, and six indicating a B rating or worse – we assign a zero to borrowers without a rating; DRATING is a dummy variable that takes the value of one if the rating of the firm is missing and zero otherwise; SYND_SIZE is the number of banks participating in the loan; MAT is the natural logarithm of maturity (in months); LOAN_SIZE is the natural logarithm of the loan; DSENIOR is a dummy variable that takes the value of 1 if the loan is senior and zero otherwise; PDI is Hofstede's power distance; IND is Hofstede's individualism; UAI is Hofstede's uncertainty avoidance; MAS is Hofstede's masculinity; DELEG_IND is an index of the willingness to delegate authority; CATHO is the percentage of the population of each country belonging to the Catholic religion; MUSLIM is the percentage of the population of each country belonging to the Muslim religion; and PROT is the percentage of the population of each country belonging to the Protestant religion.

| | Number of observations | Mean | Median | Standard Deviation | First quartile | Third quartile |
|---|---|---|---|---|---|---|
| LN_SPREAD | 20,699 | 4.97 | 5.07 | 0.83 | 4.50 | 5.52 |
| SPREAD | 20,699 | 194.04 | 160.00 | 153.25 | 90.00 | 250.00 |
| TRUST | 20,699 | 36.76 | 38.17 | 7.79 | 36.28 | 39.56 |
| LO | 20,699 | 4.96 | 5.00 | 0.49 | 5.00 | 5.00 |
| dLO | 20,699 | 0.02 | 0.00 | 0.13 | 0.00 | 0.00 |
| CR | 20,699 | 1.53 | 1.50 | 0.66 | 1.50 | 1.50 |
| GNI_PC | 19,082 | 10.22 | 10.53 | 0.84 | 10.27 | 10.53 |
| SIZE | 20,699 | 13.19 | 13.70 | 3.01 | 11.61 | 15.30 |
| PROFIT | 20,699 | 0.04 | 0.04 | 0.12 | 0.01 | 0.08 |
| LEV | 20,699 | 0.29 | 0.28 | 0.21 | 0.16 | 0.40 |
| TANG | 20,699 | 0.34 | 0.28 | 0.25 | 0.13 | 0.51 |
| GROWTH | 20,699 | 8.73 | 1.78 | 541.03 | 1.09 | 2.95 |
| VRATING | 20,699 | 2.06 | 0.00 | 2.40 | 0.00 | 4.00 |
| DRATING | 20,699 | 0.55 | 1.00 | 0.50 | 0.00 | 1.00 |
| SYND_SIZE | 20,699 | 1.87 | 1.95 | 0.94 | 1.39 | 2.56 |
| MAT | 20,699 | 3.78 | 4.09 | 0.62 | 3.58 | 4.09 |
| LOAN_SIZE | 20,699 | 19.09 | 19.19 | 1.63 | 18.09 | 20.21 |
| DSENIOR | 20,699 | 0.99 | 1.00 | 0.06 | 1.00 | 1.00 |
| PDI | 18,553 | 19.44 | 12.00 | 14.35 | 12.00 | 24.00 |
| IND | 18,553 | 95.89 | 105.00 | 18.96 | 93.00 | 105.00 |
| UAI | 18,553 | 40.52 | 34.00 | 13.56 | 34.00 | 35.00 |
| DELEG_IND | 20,699 | 5.06 | 5.21 | 0.52 | 5.01 | 5.32 |
| MAS | 18,553 | 56.31 | 57.00 | 7.43 | 57.00 | 57.00 |
| CATHO | 19,079 | 31.61 | 30.00 | 18.35 | 30.00 | 30.00 |
| MUSLIM | 19,079 | 1.70 | 0.80 | 6.72 | 0.80 | 0.80 |
| PROT | 19,079 | 35.51 | 43.60 | 16.72 | 29.60 | 43.60 |

# Table 3. Correlations

The table presents the correlation matrix. LN_SPREAD is the natural logarithm of interest rate spread on a loan (over the LIBOR) plus any associated fees in originating the loan; TRUST is the percentage of individuals in a country who respond that most people can be trusted; LO is the law and order variable; dLO is a dummy variable that takes the value of one if the law and order variable is equal to or lower than three, and zero otherwise; CR captures the time for creditors to recover their credit and is recorded in calendar years; GNI_PC is the natural logarithm of Gross National Income per capita in 2002; SIZE is the natural logarithm of the firm's total assets; PROFIT is the ratio between earnings before interest and taxes and total assets; LEV is the ratio between the book value of debt and the book value of total assets; TANG is the ratio between property, plant, and equipment and total assets; GROWTH is the ratio of the market value of equity to the book value of equity; VRATING is a firm risk index using Moody's and S&P ratings that ranges from one to six, a value of one being assigned to an Aaa rating, a value of two indicating an Aa rating, …, and six indicating a B rating or worse – we assign a zero to borrowers without a rating; SYND_SIZE is the number of banks participating in the loan; MAT is the natural logarithm of maturity (in months); LOAN_SIZE is the natural logarithm of the loan; DSENIOR is a dummy variable that takes the value of 1 if the loan is senior and zero otherwise.

| | LN_SPREAD | TRUST | LO | dLO | CR | GNI_PC | SIZE | PROFIT | LEV | TANG | GROWTH | VRATING | DRATING | SYND_SIZE | MAT | LOAN_SIZE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TRUST | 0.10*** | | | | | | | | | | | | | | | |
| LO | -0.04*** | 0.34*** | | | | | | | | | | | | | | |
| dLO | 0.03*** | -0.26*** | -0.68*** | | | | | | | | | | | | | |
| CR | -0.02*** | -0.40*** | -0.54*** | 0.34*** | | | | | | | | | | | | |
| GNI_PC | -0.03*** | 0.19*** | 0.59*** | -0.39*** | -0.60*** | | | | | | | | | | | |
| SIZE | -0.27*** | -0.03*** | -0.03*** | -0.02*** | 0.09*** | 0.01 | | | | | | | | | | |
| PROFIT | -0.23*** | 0.00 | -0.04*** | 0.05*** | 0.01 | -0.08*** | -0.04*** | | | | | | | | | |
| LEV | 0.17*** | -0.06*** | -0.03*** | 0.01 | 0.04*** | -0.05*** | 0.03*** | -0.17*** | | | | | | | | |
| TANG | -0.02*** | -0.07*** | -0.05*** | 0.08*** | 0.09*** | -0.14*** | 0.08*** | -0.04*** | 0.18*** | | | | | | | |
| GROWTH | 0.00 | 0.00 | 0.00 | -0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.02*** | 0.02*** | | | | | | |
| VRATING | 0.06*** | 0.08*** | 0.03*** | -0.03*** | -0.07*** | 0.19*** | 0.38*** | -0.05*** | 0.22*** | 0.07*** | 0.01* | | | | | |
| DRATING | 0.11*** | -0.08*** | -0.04*** | 0.03*** | 0.08*** | -0.19*** | -0.45*** | 0.00 | -0.15*** | -0.08*** | -0.01* | -0.95*** | | | | |
| SYND_SIZE | -0.33*** | -0.06*** | -0.02** | 0.02*** | 0.03*** | -0.05*** | 0.27*** | 0.15*** | 0.04*** | 0.06*** | 0.01 | 0.19*** | -0.26*** | | | |
| MAT | 0.07*** | -0.06*** | -0.03*** | 0.02*** | 0.07*** | -0.06*** | -0.07*** | 0.08*** | 0.06*** | -0.01 | -0.01 | 0.03*** | 0.02*** | 0.13*** | | |
| LOAN_SIZE | -0.31*** | 0.11*** | 0.03*** | 0.00 | -0.09*** | 0.02*** | 0.38*** | 0.16*** | 0.04*** | 0.06*** | 0.01 | 0.33*** | -0.43*** | 0.53*** | 0.03*** | |
| DSENIOR | -0.08*** | -0.01 | -0.02*** | 0.00 | 0.02** | 0.01* | 0.02*** | -0.00 | 0.00 | -0.00 | 0.00 | 0.01* | -0.02*** | 0.03*** | -0.06*** | 0.01* |

## Table 4. Loan spread, formal and informal institutions.

Regressions are estimated using OLS clustered by borrower firm. The dependent variable (LN_SPREAD) is the natural logarithm of interest rate spread on a loan (over the LIBOR) plus any associated fees in originating the loan; TRUST is the percentage of individuals in a country who respond that most people can be trusted; LO is the law and order variable; CR captures the time for creditors to recover their credit and is recorded in calendar years; dLO is a dummy variable that takes the value of one if the law and order variable is equal to or lower than three, and zero otherwise. SIZE is the natural logarithm of the firm's total assets; PROFIT is the ratio between earnings before interest and taxes and total assets; LEV is the ratio between the book value of debt and the book value of total assets; TANG is the ratio between property, plant, and equipment and total assets; GROWTH is the ratio of the market value of equity to the book value of equity; VRATING is a firm risk index using Moody's and S&P ratings that ranges from one to six, a value of one being assigned to an Aaa rating, a value of two indicating an Aa rating, …, and six indicating a B rating or worse – we assign a zero to borrowers without a rating; DRATING is a dummy variable that takes the value of one if the rating of the firm is missing and zero otherwise; SYND_SIZE is the number of banks participating in the loan; MAT is the natural logarithm of maturity (in months); LOAN_SIZE is the natural logarithm of the loan; DSENIOR is a dummy variable that takes the value of one if the loan is senior and zero otherwise. Country, industry, and time effects are included in all the estimations, although we do not report their coefficients. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively.

|  | (1) | (2) | (3) |
|---|---|---|---|
| TRUST | 0.00 | -0.03* | 0.00 |
|  | (0.92) | (-1.69) | (0.81) |
| LO | -0.22*** | -0.41*** | -0.27*** |
|  | (-3.74) | (-3.32) | (-4.54) |
| CR | 0.06** | 0.05** | 0.06** |
|  | (2.16) | (2.05) | (2.16) |
| LO*TRUST |  | 0.01* |  |
|  |  | (1.95) |  |
| dLO*TRUST |  |  | -0.02*** |
|  |  |  | (-3.87) |
| SIZE | -0.03*** | -0.03*** | -0.03*** |
|  | (-8.30) | (-8.42) | (-8.45) |
| PROFIT | -0.72*** | -0.72*** | -0.72*** |
|  | (-7.78) | (-7.77) | (-7.77) |
| LEV | 0.32*** | 0.32*** | 0.32*** |
|  | (9.78) | (9.76) | (9.76) |
| TANG | -0.01 | -0.01 | -0.01 |
|  | (-0.51) | (-0.50) | (-0.45) |
| GROWTH | -0.00*** | -0.00*** | -0.00*** |
|  | (-4.47) | (-4.46) | (-4.42) |
| VRATING | 0.39*** | 0.39*** | 0.39*** |
|  | (33.82) | (33.84) | (33.82) |
| DRATING | 1.84*** | 1.84*** | 1.84*** |
|  | (30.06) | (30.08) | (30.06) |
| SYND_SIZE | -0.05*** | -0.05*** | -0.05*** |
|  | (-6.40) | (-6.37) | (-6.41) |
| MAT | -0.03** | -0.03** | -0.03** |
|  | (-2.32) | (-2.36) | (-2.29) |
| LOAN_SIZE | -0.09*** | -0.09*** | -0.09*** |
|  | (-14.00) | (-14.00) | (-13.96) |
| DSENIOR | -1.06*** | -1.06*** | -1.06*** |
|  | (-10.88) | (-10.88) | (-10.84) |
| Constant | 7.90*** | 8.65*** | 8.35*** |
|  | (22.30) | (15.76) | (20.99) |
| Loan purpose effects | Yes | Yes | Yes |
| Loan type effects | Yes | Yes | Yes |
| Country effects | Yes | Yes | Yes |
| Time effects | Yes | Yes | Yes |
| Industry effects | Yes | Yes | Yes |
| # observations | 20,699 | 20,699 | 20,699 |
| #firms | 4,693 | 4,693 | 4,693 |
| Adjusted R2 | 62.38 | 62.41 | 62.44 |
| F | 140.60*** | 139.92*** | 140.00*** |

## Table 5. Loan spread, formal and informal institutions, and the degree of economic development

Regressions are estimated using OLS clustered by borrower firm. The dependent variable (LN_SPREAD) is the natural logarithm of interest rate spread on a loan (over the LIBOR) plus any associated fees in originating the loan; TRUST is the percentage of individuals in a country who respond that most people can be trusted; LO is the law and order variable; CR captures the time for creditors to recover their credit and is recorded in calendar years; GNI_PC is the natural logarithm of Gross National Income per capita in 2002; SIZE is the natural logarithm of the firm's total assets; PROFIT is the ratio between earnings before interest and taxes and total assets; LEV is the ratio between the book value of debt and the book value of total assets; TANG is the ratio between property, plant, and equipment and total assets; GROWTH is the ratio of the market value of equity to the book value of equity; VRATING is a firm risk index using Moody's and S&P ratings that ranges from one to six, a value of one being assigned to an Aaa rating, a value of two indicating an Aa rating, …, and six indicating a B rating or worse – we assign a zero to borrowers without a rating; DRATING is a dummy variable that takes the value of one if the rating of the firm is missing and zero otherwise; SYND_SIZE is the number of banks participating in the loan; MAT is the natural logarithm of maturity (in months); LOAN_SIZE is the natural logarithm of the loan; DSENIOR is a dummy variable that takes the value of one if the loan is senior and zero otherwise. Country, industry, and time effects are included in all the estimations, although we do not report their coefficients. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively.

| | (1) | (2) | (3) |
|---|---|---|---|
| TRUST | -0.01 | -0.04** | -0.06*** |
| | (-1.62) | (-2.12) | (-3.13) |
| LO | -1.41*** | -0.27*** | -1.79*** |
| | (-3.37) | (-4.20) | (-3.94) |
| CR | 0.06** | 0.04 | 0.05** |
| | (2.19) | (1.60) | (2.06) |
| GNI_PC*LO | 0.12*** | | 0.17*** |
| | (2.80) | | (3.45) |
| GNI_PC*TRUST | | 0.00* | 0.01*** |
| | | (1.82) | (2.88) |
| GNI_PC | -0.43* | -0.06 | -0.78*** |
| | (-1.90) | (-0.34) | (-2.97) |
| SIZE | -0.03*** | -0.03*** | -0.03*** |
| | (-9.10) | (-9.03) | (-9.21) |
| PROFIT | -0.70*** | -0.69*** | -0.69*** |
| | (-7.56) | (-7.55) | (-7.54) |
| LEV | 0.32*** | 0.32*** | 0.32*** |
| | (9.60) | (9.57) | (9.59) |
| TANG | -0.03 | -0.03 | -0.03 |
| | (-0.90) | (-0.93) | (-0.95) |
| GROWTH | -0.00*** | -0.00*** | -0.00*** |
| | (-5.13) | (-5.03) | (-5.12) |
| VRATING | 0.39*** | 0.39*** | 0.39*** |
| | (32.99) | (32.92) | (32.98) |
| DRATING | 1.82*** | 1.81*** | 1.82*** |
| | (29.20) | (29.14) | (29.20) |
| SYND_SIZE | -0.05*** | -0.05*** | -0.05*** |
| | (-5.84) | (-5.85) | (-5.76) |
| MAT | -0.03** | -0.03** | -0.03** |
| | (-2.09) | (-2.06) | (-2.11) |
| LOAN_SIZE | -0.09*** | -0.09*** | -0.09*** |
| | (-13.18) | (-13.16) | (-13.19) |
| DSENIOR | -1.04*** | -1.05*** | -1.05*** |
| | (-10.84) | (-10.74) | (-10.83) |
| Constant | 12.00*** | 8.84*** | 15.12*** |
| | (5.96) | (5.15) | (6.45) |
| Loan purpose effects | Yes | Yes | Yes |
| Loan type effects | Yes | Yes | Yes |
| Country effects | Yes | Yes | Yes |
| Time effects | Yes | Yes | Yes |
| Industry effects | Yes | Yes | Yes |
| # observations | 19,082 | 19,082 | 19,082 |
| #firms | 4,396 | 4,396 | 4,396 |
| Adjusted R2 | 62.65 | 62.61 | 62.71 |
| F | 133.43*** | 131.04*** | 131.60*** |

## Table 6. Robustness analysis. Deal (or package) as the unit of analysis

Regressions are estimated using OLS clustered by borrower firm. In columns (1) to (4), we consider the largest facility in each deal. In columns (5) to (8), we calculate weighted averages for each loan variable according to the amount of each tranche The dependent variable (LN_SPREAD) is the natural logarithm of interest rate spread on a loan (over the LIBOR) plus any associated fees in originating the loan (in columns (5) to (8) is the facility amount-weighted average LN_SPREAD); TRUST is the percentage of individuals in a country who respond that most people can be trusted; LO is the law and order variable; CR captures the time for creditors to recover their credit and is recorded in calendar years; dLO is a dummy variable that takes the value of one if the law and order variable is equal to or lower than three, and zero otherwise. SIZE is the natural logarithm of the firm's total assets; PROFIT is the ratio between earnings before interest and taxes and total assets; LEV is the ratio between the book value of debt and the book value of total assets; TANG is the ratio between property, plant, and equipment and total assets; GROWTH is the ratio of the market value of equity to the book value of equity; VRATING is a firm risk index using Moody's and S&P ratings that ranges from one to six, a value of one being assigned to an Aaa rating, a value of two indicating an Aa rating, …, and six indicating a B rating or worse – we assign a zero to borrowers without a rating; DRATING is a dummy variable that takes the value of one if the rating of the firm is missing and zero otherwise; SYND_SIZE is the number of banks participating in the loan; MAT is the natural logarithm of maturity (in months) (in columns (5) to (8), it is the facility amount-weighted average loan maturity); LOAN_SIZE is the natural logarithm of the loan; DSENIOR is a dummy variable that takes the value of one if the loan is senior and zero otherwise. Country, industry, and time effects are included in all the estimations, although we do not report their coefficients. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively.

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| TRUST | -0.01 | 0.00 | -0.04** | -0.06*** | -0.01 | 0.00 | -0.03** | -0.06*** |
| | (-0.99) | (1.53) | (-2.19) | (-3.38) | (-0.86) | (1.60) | (-2.04) | (-3.31) |
| LO | -0.35*** | -0.27*** | -0.27*** | -1.80*** | -0.33*** | -0.26*** | -0.26*** | -1.85*** |
| | (-3.16) | (-5.14) | (-4.73) | (-4.45) | (-3.03) | (-5.14) | (-4.60) | (-4.70) |
| CR | 0.02 | 0.03 | 0.01 | 0.02 | 0.03 | 0.04* | 0.02 | 0.03 |
| | (0.89) | (1.02) | (0.52) | (0.96) | (1.55) | (1.68) | (1.05) | (1.59) |
| LO*TRUST | 0.00 | | | | 0.00 | | | |
| | (1.36) | | | | (1.24) | | | |
| dLO*TRUST | | -0.02*** | | | | -0.02*** | | |
| | | (-3.40) | | | | (-3.35) | | |
| GNI_PC*LO | | | | 0.17*** | | | | 0.18*** |
| | | | | (3.88) | | | | (4.17) |
| GNI_PC*TRUST | | | 0.00** | 0.01*** | | | 0.00* | 0.01*** |
| | | | (2.04) | (3.23) | | | (1.90) | (3.18) |
| GNI_PC | | | -0.09 | -0.85*** | | | -0.06 | -0.85*** |
| | | | (-0.48) | (-3.31) | | | (-0.38) | (-3.58) |
| SIZE | -0.03*** | -0.03*** | -0.04*** | -0.04*** | -0.04*** | -0.04*** | -0.04*** | -0.04*** |
| | (-8.44) | (-8.44) | (-9.00) | (-9.11) | (-9.27) | (-9.25) | (-9.92) | (-10.04) |
| PROFIT | -0.68*** | -0.68*** | -0.66*** | -0.66*** | -0.69*** | -0.69*** | -0.67*** | -0.67*** |
| | (-6.69) | (-6.69) | (-6.54) | (-6.53) | (-6.72) | (-6.72) | (-6.56) | (-6.55) |
| LEV | 0.35*** | 0.35*** | 0.35*** | 0.35*** | 0.36*** | 0.36*** | 0.36*** | 0.36*** |
| | (10.43) | (10.45) | (10.27) | (10.29) | (10.39) | (10.41) | (10.23) | (10.24) |
| TANG | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.04 | -0.05 | -0.05 |
| | (-1.32) | (-1.30) | (-1.47) | (-1.48) | (-1.42) | (-1.39) | (-1.58) | (-1.58) |
| GROWTH | -0.00 | -0.00 | -0.00 | -0.00* | -0.00** | -0.00** | -0.00*** | -0.00*** |
| | (-1.11) | (-1.10) | (-1.62) | (-1.68) | (-2.46) | (-2.45) | (-2.91) | (-3.01) |
| VRATING | 0.39*** | 0.39*** | 0.39*** | 0.39*** | 0.39*** | 0.39*** | 0.39*** | 0.39*** |
| | (32.31) | (32.27) | (31.49) | (31.52) | (32.34) | (32.31) | (31.48) | (31.51) |
| DRATING | 1.84*** | 1.84*** | 1.82*** | 1.82*** | 1.85*** | 1.84*** | 1.82*** | 1.82*** |
| | (29.26) | (29.22) | (28.46) | (28.50) | (29.39) | (29.35) | (28.52) | (28.57) |
| SYND_SIZE | -0.02*** | -0.02*** | -0.02** | -0.02** | 0.02*** | 0.02*** | 0.03*** | 0.03*** |
| | (-2.88) | (-2.89) | (-2.33) | (-2.26) | (2.90) | (2.90) | (3.54) | (3.59) |
| MAT | -0.05*** | -0.05*** | -0.06*** | -0.06*** | -0.06*** | -0.06*** | -0.06*** | -0.06*** |
| | (-3.44) | (-3.39) | (-3.35) | (-3.38) | (-3.78) | (-3.74) | (-3.68) | (-3.70) |
| LOAN_SIZE | -0.10*** | -0.10*** | -0.10*** | -0.10*** | -0.12*** | -0.12*** | -0.12*** | -0.12*** |
| | (-12.67) | (-12.65) | (-12.02) | (-12.04) | (-15.76) | (-15.74) | (-15.02) | (-15.02) |
| DSENIOR | -1.10*** | -1.10*** | -1.10*** | -1.11*** | -0.96*** | -0.96*** | -0.97*** | -0.98*** |
| | (-8.45) | (-8.43) | (-8.49) | (-8.71) | (-7.44) | (-7.42) | (-7.47) | (-7.68) |
| Constant | 8.77*** | 8.70*** | 9.36*** | 15.95*** | 8.81*** | 8.80*** | 9.26*** | 16.14*** |
| | (16.44) | (20.97) | (5.52) | (6.99) | (17.44) | (22.84) | (6.18) | (7.65) |
| Loan purpose effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Loan type effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Country effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Time effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry effects | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| # observations | 13,932 | 13,932 | 13,115 | 13,115 | 14,144 | 14,144 | 13,298 | 13,298 |
| #firms | 4,579 | 4,579 | 4,292 | 4,292 | 4,638 | 4,638 | 4,343 | 4,343 |
| Adjusted R2 | 63.45 | 63.48 | 63.89 | 63.98 | 63.31 | 63.34 | 63.71 | 63.81 |
| F | 154.99*** | 155.39*** | 149.26*** | 148.25*** | 156.32*** | 175.09*** | 148.84*** | 147.89*** |

# Table 7. Robustness analysis. Loan spread, culture, delegation index and religion.

Regressions are estimated using OLS clustered by borrower firm. The dependent variable (LN_SPREAD) is the natural logarithm of interest rate spread on a loan (over the LIBOR) plus any associated fees in originating the loan; TRUST is the percentage of individuals in a country who respond that most people can be trusted; LO is the law and order variable; CR captures the time for creditors to recover their credit and is recorded in calendar years; dLO is a dummy variable that takes the value of one if law and order variable is equal or lower than three and zero otherwise. PDI is Hofstede's power distance; IND is Hofstede's individualism; MAS is Hofstede's masculinity; UAI is Hofstede's uncertainty avoidance; DELEG_IND is an index of the willingness to delegate authority; CATHO is the percentage of the population of each country belonging to the Catholic religion; MUSLIM is the percentage of the population of each country belonging to the Muslim religion; and PROT is the percentage of the population of each country belonging to the Protestant religion. Firm and bank loan control variables are included as in Tables 4 and 5. Country, industry, and time effects are included in all the estimations, although we do not report their coefficients. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively.

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| TRUST | -0.09*** | -0.01** | -0.09*** | -0.01** | -0.09*** | -0.01** |
| | (-5.21) | (-2.39) | (-5.11) | (-2.44) | (-5.11) | (-2.44) |
| LO | -0.67*** | -0.24*** | -0.66*** | -0.25*** | -0.66*** | -0.25*** |
| | (-5.09) | (-3.48) | (-5.07) | (-3.58) | (-5.07) | (-3.58) |
| CR | 0.14*** | 0.16*** | 0.14*** | 0.15*** | 0.14*** | 0.15*** |
| | (3.27) | (3.75) | (3.26) | (3.73) | (3.26) | (3.73) |
| LO*TRUST | 0.02*** | | 0.02*** | | 0.02*** | |
| | (4.95) | | (4.83) | | (4.83) | |
| dLO*TRUST | | -0.02*** | | -0.02*** | | -0.02*** |
| | | (-4.57) | | (-4.52) | | (-4.52) |
| PDI | 0.00 | 0.01*** | 0.00 | 0.01** | 0.08*** | 0.02*** |
| | (0.62) | (2.78) | (0.34) | (2.35) | (9.54) | (3.22) |
| IND | 0.01*** | 0.02*** | 0.02*** | 0.03*** | 0.05*** | 0.01** |
| | (3.01) | (6.77) | (3.58) | (7.35) | (7.27) | (2.22) |
| MAS | 0.01 | -0.01*** | 0.00 | -0.01*** | 0.01*** | 0.01 |
| | (1.41) | (-3.65) | (0.87) | (-4.24) | (3.39) | (1.56) |
| UAI | -0.02** | 0.01 | -0.01* | 0.01 | -0.00 | -0.01** |
| | (-2.26) | (1.19) | (-1.89) | (1.62) | (-0.39) | (-2.34) |
| DELEG_IND | | | -0.14*** | -0.14*** | -0.14*** | -0.14*** |
| | | | (-4.10) | (-4.27) | (-4.10) | (-4.27) |
| CATHO | | | | | -0.01*** | 0.00 |
| | | | | | (-3.68) | (0.30) |
| MUSLIM | | | | | -0.01* | -0.00 |
| | | | | | (-1.78) | (-1.42) |
| PROT | | | | | 0.00 | 0.01*** |
| | | | | | (0.34) | (4.05) |
| Constant | 9.14*** | 6.08*** | 9.63*** | 6.70*** | 3.71*** | 7.13*** |
| | (7.52) | (6.95) | (7.91) | (7.51) | (4.25) | (8.59) |
| Firm controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Bank loan controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Country effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Time effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry effects | Yes | Yes | Yes | Yes | Yes | Yes |
| #observations | 18,553 | 18,553 | 18,553 | 18,553 | 18,553 | 18,553 |
| #firms | 4,394 | 4,394 | 4,394 | 4,394 | 4,394 | 4,394 |
| Adjusted R2 | 62.78 | 62.68 | 62.88 | 62.79 | 62.88 | 62.79 |
| F | 144.23*** | 143.24*** | 143.36*** | 142.46*** | 143.36*** | 142.46*** |

# Table 8. Robustness analysis. Instrumented trust

This table presents results of instrumental variables estimation using two-stage least squares (2SLS) that corrects for the endogeneity of the trust variable. Regressions are estimated using OLS clustered by borrower firm. Column (1) shows the first stage, where the dependent variable is TRUST. Columns(2), (3) and (4) show the second stages, where the dependent variable (LN_SPREAD) is the natural logarithm of interest rate spread on a loan (over the LIBOR) plus any associated fees in originating the loan; TRUST is the percentage of individuals in a country who respond that most people can be trusted; LO is the law and order variable; CR captures the time for creditors to recover their credit and is recorded in calendar years; PRONOUN_DROP is a dummy variable equal to 1 if the country's population speaks a language in which pronoun-drop is permitted; RAINFAL_VAR is the natural log of the coefficient of intertemporal variation of monthly rainfall from 1900 through 2009; LN_DIST_EQ is the natural logarithm of the absolute value of the latitude of a country's capital city; GERMAN is a dummy variable equal to 1 if the country has German legal traditions; FRENCH is a dummy variable equal to 1 if the country has French legal traditions. Firm and bank loan control variables are included as in Tables 4 and 5. Country, industry, and time effects are included in all the estimations, although we do not report their coefficients. The endogeneity test verifies the null hypothesis that the specified endogenous regressors can be treated as exogenous. We report instrumental variable estimations if the test is significant at the 10 percent level. The weak identification test (Cragg-Donald Wald F statistic) tests the null hypothesis that instruments are weak. We compare the Cragg-Donald statistic to the critical values computed by Stock and Yogo (2005). First-stage regressions (not reported for the sake of conciseness) are available upon request. T-statistics are in parentheses. ***, **, and * represent significance at the 1%, 5%, and 10% level, respectively.

| | (1) 1st stage: TRUST | (2) 2nd stage: LN_SPREAD | (3) 2nd stage: LN_SPREAD | (4) LN_SPREAD |
|---|---|---|---|---|
| ***Formal and informal institutions*** | | | | |
| TRUST | | -0.02** | -0.11** | 0.00 |
| | | (-2.32) | (-2.53) | (0.81) |
| LO | -7.03*** | -0.43*** | -1.03*** | -0.27*** |
| | (-14.00) | (-8.90) | (-3.56) | (-4.54) |
| CR | 1.17*** | -0.00 | -0.04 | 0.06** |
| | (3.92) | (-0.01) | (-1.12) | (2.16) |
| LO*TRUST | | | 0.02** | |
| | | | (2.07) | |
| dLOTRUST | | | | -0.02*** |
| | | | | (-3.87) |
| ***Instruments*** | | | | |
| PRONOUN_DROP | -80.74*** | | | |
| | (-20.25) | | | |
| RAINFALL_VAR | 9.71** | | | |
| | (2.95) | | | |
| LN_DIST_EQ | -4.56*** | | | |
| | (-7.81) | | | |
| LAWYERS | -0.02*** | | | |
| | (-10.75) | | | |
| GERMAN | 0.97 | | | |
| | (0.37) | | | |
| FRENCH | -13.90*** | | | |
| | (-8.91) | | | |
| Constant | 158.81*** | 8.37*** | 11.24*** | 8.35*** |
| | (20.52) | (19.00) | (8.39) | (20.99) |
| Firm controls | Yes | Yes | Yes | Yes |
| Bank loan controls | Yes | Yes | Yes | Yes |
| Time effects | Yes | Yes | Yes | Yes |
| Industry effects | Yes | Yes | Yes | Yes |
| Country effects | Yes | Yes | Yes | Yes |
| # observations | 20,391 | 20,391 | 20,391 | 20,699 |
| #firms | 4,590 | 4,590 | 4,590 | 4,693 |
| Adjusted R2 | 88.54 | 61.69 | 61.68 | 62.44 |
| F | 4,496.88*** | 154.10*** | 152.98*** | 140.00*** |
| Endogeneity test | | 11.11*** | 7.20** | 2.63 |
| Cragg-Donald stat. | | 492.03 | 103.38 | |
| Stock & Yogo critical value (10%) | | 11.12 | 9.48 | |

## Appendix A. Variables

The table provides the definitions of the variables used in the paper and their sources.

| Name | Definition | Source |
|---|---|---|
| | DEPENDENT VARIABLES | |
| LN_SPREAD | The natural logarithm of all-in-spread drawn, which measures the interest rate spread on a loan (over the LIBOR) plus any associated fees in originating the loan. | Dealscan |
| | INFORMAL AND FORMAL INSTITUTIONS | |
| TRUST | The percentage of individuals in a country who respond that most people can be trusted | WVS/EVS |
| LO | This measures the strength and impartiality of the legal system, as well as widespread observance of the law. | ICRG |
| dLO | A dummy variable that takes the value of 1 if LO variable is lower than or equal to three, and zero otherwise. | Own calculation |
| CR | The time for creditors to recover their credit, recorded in calendar years. | The World Bank Doing Business Database |
| | DEGREE OF ECONOMIC DEVELOPMENT | |
| GNI_PC | The natural logarithm of Gross National Income per capita in 2002 | The World Bank Database |
| | CULTURAL VARIABLES | |
| PDI | Hofstede's power distance. | Tang and Koveos (2008) |
| IND | Hofstede's individualism. | Tang and Koveos (2008) |
| UAI | Hofstede's uncertainty avoidance. | Tang and Koveos (2008) |
| MAS | Hofstede's masculinity. | Tang and Koveos (2008) |
| DELEG_IND | An index of the willingness to delegate authority. This index is constructed from the answers to the question: "[I]n your country, how do you assess the willingness to delegate authority to subordinates?" The values range from 1, in situations where top management controls important decisions, to 7, where authority is delegated mainly to business unit heads and other lower-level management. | Chong et al. (2014) |
| CATHO | The percentage of the population of each country belonging to the Catholic religion. | La Porta et al. (1998) |
| MUSLIM | The percentage of the population of each country belonging to the Muslim religion. | La Porta et al. (1998) |
| PROT | The percentage of the population of each country belonging to the Protestant religion. | La Porta et al. (1998) |
| | INSTRUMENTS FOR TRUST | |
| Pronoun drop | A dummy variable equal to 1 if the country's population speaks a language in which pronoun-drop is permitted. | Litch et al. (2007) |
| Rainfall variation | The natural log of the coefficient of intertemporal variation of monthly rainfall from 1900 through 2009. | Davis (2016) |
| Distance from the equator | The natural logarithm of the absolute value of the latitude of a country's capital city. | Davis (2016) |
| Number of lawyers per million of inhabitants | Number of lawyers divided by the population in millions. | Population in millions in 2004 from World Development Indicators – World Bank (2008); number of lawyers is sourced from Council of Bars and Law Societies of Europe (CCBE) for the European countries (incl. Turkey), the American Bar Association for the USA, and various national and international organisations for the other countries. |
| English | A dummy variable equal to 1 if the country has English legal traditions. | Djankov at al. (2003) |
| German | A dummy variable equal to 1 if the country has German legal traditions. | Djankov at al. (2003) |
| French | A dummy variable equal to 1 if the country has French legal traditions. | Djankov at al. (2003) |
| | BORROWER FIRM CONTROL VARIABLES | |
| SIZE | The natural logarithm of total assets. | Compustat |
| PROFIT | The ratio between earnings before interest and taxes and total assets. | Compustat |
| LEV | The ratio between the book value of financial debt (short- and long-term debt) and the book value of total assets. | Compustat |
| TANG | The ratio between property, plant, and equipment and total assets. | Compustat |
| GROWTH | The ratio of the market value of equity to the book value of equity. | Compustat / Osiris |
| VRATING | We construct a firm risk index using Moody's and S&P ratings that ranges from one to six. Specifically, we assign a value of one to an Aaa rating, a value of two to an Aa rating, a value of three to an A rating, a value of four to a Baa rating, a value of five to a Ba rating, and a value of six to a B rating or worse; a higher number thus reflects a lower rating. We assign a value of zero to firms without a rating. | Dealscan |
| DRATING | A dummy variable that takes the value of one if the rating of the firm is missing and zero otherwise. | Dealscan |
| | LOAN CHARACTERISTICS CONTROL VARIABLES | |
| MAT | The natural logarithm of maturity (in months). | Dealscan |
| LOAN_SIZE | The natural logarithm of the amount of the loan (in US dollars). | Dealscan |
| SYND_SIZE | The natural logarithm of the number of banks participating in the loan. | Dealscan |
| Loan purpose | The set of dummy variables describing the loan's primary purpose. | Dealscan |
| Loan type | The set of dummy variables describing loan type. | Dealscan |
| DSENIOR | A dummy variable that takes the value of one if the loan is senior and zero otherwise. | Dealscan |