

Trust and the cost of debt financing

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Trust and the Cost of Debt Financing[☆]

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JEL Classification: F22, G34, G38

Keywords: Societal Trust, Social Capital, Bond Yield Spreads, Informal Institutions

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Trust and the Cost of Debt Financing**Abstract**

This paper examines the relation between the level of trust in a country and the cost of debt. Using data on firms located in 22 countries over a 20-year period, we quantify the country trust level and find strong evidence that firms in countries with a higher level of societal trust have lower bond yield spreads. We also find that the impact of trust on the cost of debt is more pronounced in countries with a poor governance environment and during a time of financial crisis. Overall, our results highlight the role of social capital in shaping corporate financial behavior.

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1. Introduction

Capital is the resource that companies can use to generate profit and provide products to society. Both classical economics and the finance literature stress the importance of tangible assets and human capital. There is a large strand of studies that has looked at the process and efficiency of physical asset investment as well as the influence of human capital on productivity (Biddle et al., 2009; Ghaly et al., 2015; García Lara et al., 2016). A recent literature has also emerged that studies a firm's intellectual capital – their investment in research and development (R&D). These studies not only look at firms' decision in R&D investment input (Hall, 1993; Bushee, 1998; Aghion et al., 2013), but also look at the output of innovation obtained as the result of such investment (He and Tian, 2013; Hsu et al., 2014; Tian and Wang 2014). However, compared to the extensive studies on tangible, human, and intellectual capital, another type of capital – social capital, which is equally important as a source of production – has received much less attention (Servaes and Tamayo, 2017).

Social capital contains different dimensions such as cooperative behavior, civic norms, and networking in the group, but trust is at its core (Hilary and Huang, 2015). The importance of such a notion has been expressed by different studies in different ways. For example, Arrow (1972) states that "virtually every commercial transaction has within itself an element of trust, certainly any transaction conducted over a period of time", and this view is also supported by Williamson (1993). Fukuyama (1996) states that trust could enhance all institutions in a society, including business development and transactions. The central role of trust in social capital has attracted the attention of academics. Previous studies find that a higher level of trust is associated with higher economic growth (Knack and Keefer, 1997; Zak and Knack, 2001), better financial development (Guiso et al., 2004), and a higher level of stock market

participation (Guiso et al., 2008) from a macroeconomic perspectives. However, the effect of trust on corporate financing has still been largely unexplored.

This study intends to fill such a gap by looking at the effect of trust on the cost of debt issuance. We consider three related questions to clarify the role of trust on debt financing. The first question is: how, and to what extent, could trust be a factor that influences debt cost? Based on four reasons, we propose that trust could significantly reduce the financing cost of a firm. First, trust could reduce transactions cost in a society, which could increase the efficiency of business activities and therefore build a stronger economic foundation for debt repayment (Knack and Keefer, 1997; Zak and Knack, 2001). Second, trust could encourage market participation and funding availability. The increase in funding supply would lead to lower funding costs (Guiso et al, 2008a, 2008b; Duarte et al., 2012; Bottazzi et al., 2016). Third, trust among people improves the information flow of the market and therefore reduces the monitoring cost of creditors (Pevzner et al., 2015). Fourth, trust could serve as a way to mitigate the agency problem which could also lower the cost of debt (Chami and Fullenkamp, 2002; Dudley and Zhang, 2016).

We look at the issuance yield of Yankee Bonds as our proxy for debt financing cost. Following earlier studies (Dudley and Zhang, 2016; Guiso et al., 2008a, 2008b, etc.), we measure trust at a country level based on the citizens' average response to the question in the World Values Survey (WVS) and the European Value Survey (EVS): "Generally speaking, would you say that most people can be trusted or you need to be very careful in dealing with people?"¹ By examining 6,098 issues from 24 countries from 1996 to 2015, we find firms with a higher level of societal trust have a lower cost for borrowing debt. One standard

¹ The data of the World Value Survey (WVS) is from the official WVS website: <http://www.worldvaluessurvey.org/wvs.jsp>; and the data from the European Value Survey (EVS) is from <http://www.europeanvaluesstudy.eu/>.

deviation increase in trust would lead to a 0.77% lower yield when firms are issuing bonds. This number is both statistically and economically significant, and confirms our hypothesis that the level of societal trust among people has a real impact on firms' financing cost.

The second question to be answered is: how does trust interact with other country governance mechanisms in reducing agency cost? Both formal and informal institutions play important roles in economic growth. However, the relative importance and interaction of both mechanisms in determining financing cost is unknown. On the one hand, formal institution could provide a channel for trust to be maintained and distrust to be punished. As a result, when formal institution is stronger, the effect of trust on cost of debt could be more salient. On the other hand, if trust as an informal institutional has independent value and could manifest itself through other channels, it could be a substitute to the formal institution. As a result, we could observe weaker effect of trust on cost of debt when the formal institution is stronger. Our analysis confirms the second argument. Moreover, we find that among six dimensions of country governance, the effect of trust in reducing the cost of debt is related to government effectiveness, control of corruption, political stability, and voice and accountability, but less correlated with regulatory quality and the rule of law index.

The last question to be looked at concerns the effect of trust on financing cost during the financial crisis. At a time when credit becomes scarce, and resources and collateral become increasingly important in obtaining funding, will trust between people be helpful in alleviating panic, smooth credit transactions and therefore have an impact on the real economy? We find that a higher level of trust among people could significantly lower the impact of a financial crisis in increasing financing cost. These findings provide additional evidence on the effect of trust on the real economy.

We conduct a battery of methodologies to examine above questions, including ordinary least squares (OLS) regression, Tobit regression, and higher order fixed effects. Additionally, we also employ different methods to rule out the possibilities of reverse causality, multicollinearity issues, and so on, by performing a variety of robustness checks. Our results are robust and valid after conducting these robustness checks.

Our paper contributes to the literature in several ways. First, by investigating the relationship between trust and the cost of debt, we can quantify the valuation of market participants on social capital and show that social capital will be an important resource of the firm, as is not only being acknowledged by academics, but also by market participants. Second, we contribute to the governance literature by providing evidence that trust can serve as a supplement to the traditional channel of corporate monitoring. We also contribute to the literature investigating the financing of the firm during a financial crisis by providing the evidence that social capital in stabilizing the shock created by the crisis.

The structure of the paper is as follows. Section 2 introduces background and formulates hypotheses. Section 3 introduces the sample construction, describes the variables, exhibits the model specification, and presents summary statistics. Section 4 reports the regression results. Section 5 presents a variety of robustness checks. Section 6 provides further discussions. Section 7 offers some concluding remarks.

2. Theoretical Background and Hypotheses Design

Governance institutions can be divided into formal and informal ones, depending on their nature and enforcement. Helmke and Levitsky (2004) define informal institution as “socially

shared rules, usually unwritten that are created, communicated and enforced outside of officially sanctioned channels". Informal institutions can shape the way that people look at the world (Chui et al., 2002), determine the reaction of people to the events occurring in the world (Witt and Redding, 2009), and influence the way people interact with each other (Zilber, 2006). They are also the underlying base that the formal institutions of a society are based on (Holmes et al., 2011). There is a large strand of literature confirming the crucial role of informal institutions in the economy.²

As a crucial type of social capital, societal trust is an informal institution in a country. The level of trust could be an important factor that influences the financing cost of firms. There are two types of trust in the discussion of the cost of capital. The first one is personal trust, which is the set of beliefs of a certain firm or individual. The second notion is societal trust, which could be viewed as a set of beliefs of a group of firms or individuals (Dudley and Zhang, 2016). While both types of trust are important in the financial market, this paper mainly focuses on societal trust. The main reason for this choice is that personal trust can only be established after repeated interaction. It relies on the long-term relationship between two parties. When a firm is seeking international debt financing, the investors and firms are likely to be separated both geographically and culturally, therefore their beliefs about each other would be more likely to be based on societal instead of personal trust. Therefore, compared to personal trust, societal trust is more relevant in our study.

² For example: Fukuyama, (1995), Guiso et al. (2009), Guiso et al., (2004), Duarte et al. (2012) Bottazzi et al. (2016b), Ahern et al. (2015).

The asymmetry of information (Myers and Majluf, 1984) makes debt holders concerned about managers' expropriation. Specifically, responding to managers' opportunistic behavior and potential wealth expropriation, debt holders will require a higher payback of debt from firms if they anticipate that managers are less trustworthy. On the contrary, in a more trustworthy society, debt holders face lower market uncertainty and require a lower price for their debt investment in the firm. In addition, trust changes the level of risk aversion. For instance, in a more trustworthy country, investors are willing to bear higher risk and demand lower premiums. Trust also changes transaction and monitoring costs. With a higher level of trust, investors may not need to spend a significant amount of resources to investigate the firm before debt issuance and/or monitor the firm's daily operations after investment, which could lead to a lower cost of debt. Finally, trust reduces business cost and increases operational efficiency. Overall, trust in a society may lead to a reduction of business cost. For example, in a highly mutual-trust country, supermarkets may not need to use many anti-theft devices, which could reduce their operational cost and lead to lower financing cost. These agreements imply that trust should have a negative direct effect on the cost of debt. On this basis, we develop the following hypothesis:

H1: Firms in a more trustworthy society have a lower cost of debt financing: bond spreads.

The informal institution is important to a country. However, the effect of it on the society is neither independent nor static. To get a comprehensive understanding on how trust could

influence financing cost, we have to fit our discussion to the general background of a country's governance and link it to the economic condition. For this purpose, this paper also looks at how trust interacts with the formal institution to determine the cost of debt and how this effect varies with the condition of the financial market.

Existing studies find interactions between formal and informal institution in determining the economic outcome (Holmes et al., 2011; Pevzner et al., 2015). However, the interaction of trust and formal institutions in influencing the cost of debt is still unknown. Previous studies find that formal institutions in a country are ultimately the outcome of informal institutions (Reed, 1996; Redding, 2005; Jackson and Deeg, 2008). If the level of societal trust has been incorporated into the design and enforcement of formal institutions, such institutions would be the main channel through which trust could effectively influence the cost of debt. This argument implies a complementary relation between trust and formal institutions. In other words, when the formal institution is more effective, the impact of trust on the cost of debt is more prominent. On the other hand, formal and informal institutions have different values, as formal institutions are not perfect (Helmke and Levitsky, 2004). If the effect of trust on debt financing cost could manifest itself through different channels, informal institutions could be more important in business activity when the formal institution was weak. If so, we could therefore observe a substitution effect of trust on the cost of debt (Guiso et al., 2004). These opposing arguments imply that the contingent effect of trust on the cost of debt is unknown; therefore, we propose the following hypotheses:

H2a: The effect of trust on the cost of debt is more pronounced in countries with weaker governance quality.

H2b: The effect of trust on the cost of debt is more pronounced in countries with stronger governance quality.

Institutively, the financial crisis brings instability to current financial developments. Stiglitz (2008) argues that “The present financial crisis springs from a catastrophic collapse in confidence. Financial markets hinge on trust, and that trust has eroded.”³ Lins et al. (2017) also argue that trust is an important “asset” of a society, and investment on it would pay off when trustworthiness is more valuable, such as in a period of financial crisis. These studies stress the important role of trust during financial instability. During a financial crisis, investors demand higher risk premiums on debt to provide financing. In this case, a higher level of trust in a society could perform a more important role in reducing financing cost. Hence, the following hypothesis is proposed:

H3: The effect of trust on the cost of debt is more pronounced during a financial crisis.

3. Methodology and Descriptive Statistics

³ We don't think that this statement implies that a financial crisis would weaken the trust at a societal level. First of all, our data did not support this argument as we do not find a significant change in the level of trust after the financial crisis. Second, trust is widely connected to the culture, history, and formal institutions of a society. Compared to the broad context in which the trust is embedded, financial markets play only a very small part in the determinants and are unlikely to play major role in the variation of societal trust.

3.1. Construction of the Sample

Following Boubakri and Ghouma (2010) and Qi et al. (2011), we start our sample with all bonds issued in the US market by foreign investors (Yankee Bonds) in the DataStream database from 1996 to 2015. We concentrate our analysis on the Yankee market to make sure that the variations in the financing cost of the firm originates from differences in the firms instead of differences in the investors.⁴

We then merge our sample with Compustat database to obtain the firm-level accounting variables. We consider all firms that have complete information on both bond- and firm-level information. Finally, we merge the data with country-level variables such as trust, governance environment, and country-level controls, which are GDP growth, inflation rate, and domestic bond market size. We obtain a final sample with 6,098 bond issues. Table 1 reports the distribution and the description of our sample. Most bonds were issued after 2006, especially during 2008–2012, weighting about 67% of total issues. Table 1 also shows that most issues of Yankee Bonds come from the UK, and then Germany.

3.2. Variables and Data Source

Cost of Debt Measures

⁴ A detailed discussion on the Yankee market can be found in Miller and Puthenpurackal (2002).

Following the literature, we use the bond issuance yield as our proxy for the cost of debt financing (Boubakri and Ghouma, 2010; Oikonomou et al., 2014). We define the bond spread (*Spread*) as the yield to maturity of a bond at issuance minus the yield to maturity of a US Treasury Bond of a similar maturity. We obtain the yield to maturity data from the Thomson Reuters DataStream.

Trust Measure

Our measure of societal trust comes from the official websites of WVS and EVS. These two surveys, which began in 1981 and are updated every 4–5 years, provide rigorous and high-quality research designs to global networks of social scientists studying changing values and their impact on social and political life. The WVS consists of nationally representative surveys conducted in almost 100 countries which contain almost 90% of the world's population, and the EVS covers 47 European countries. Moreover the WVS and EVS are the major academic studies covering the full range of global variation, from poor to rich countries, in all of the world's major cultural zones, and hence are appropriate and reliable sources to quantify societal trust. The key variable *Trust* is measured as the standardized score capturing the level of societal trust following the survey question from WVS and EVS:

“Generally speaking, would you say that most people can be trusted or you need to be very carefully in dealing with people?”

The value of *Trust* is defined as the ratio of people who responded to the survey with the answer “most people can be trusted” over the total people who carried out the survey. We fill the missing values following the most recent surveys for years between two adjacent surveys.

Country Governance Indicator

Following Kaufmann et al. (2009), our *Country* governance indicator is taken from the Worldwide Governance Indicator available from the World Bank, that captures the level of investor protection. It consists of six components: government effectiveness (GE), regulatory quality (RQ), control of corruption (CC), political stability (PS), rule of law (RL), and voice and accountability (VA). More details of these six dimensions are presented in Appendix A. We calculate the aggregate value of these six dimensions as our *Country* governance indicator (*CGIndicator*).

Control Variables

For control variables, following earlier studies such as Boubakri and Ghoum (2010) and Oikonomou et al. (2014), we include country-, firm-, and bond-level characteristics. For country-level controls, we include GDP growth (*GDPgrowth*), *Inflation* rate to reflect the country's macroeconomic conditions, and the ratio of total debt issued over GDP (*DebtMkt*)

to reflect each country's debt market size. The country-level variables can be found in World Bank public data. For firm-level controls, we have firm size *Asset* (the natural logarithm of the firm's total assets), return on investments (*ROI*) that indicates firm performance, *Leverage* that captures the ratio of total debt to total assets, and firms' operational risk that is measured as the standard deviation of return on assets (ROA) for year-4 to year; more information will be provided in Appendix A. The firm-level variables are from Compustat. For bond-level controls, we employ the natural logarithm of years to maturity (*Maturity*), the natural logarithm of the total amount of bond issue as bond issue size (*Lisize*). The bond-level controls are available from DataStream.

3.3. Model Specification

As discussed in detail in Section 3.1, the whole sample covers 1996–2015, which collects 6,098 different Yankee Bond issuances issued by different firms during this period. Hence, we will recognize each issuance as an observation to obtain a cross-sectional dataset and conduct the OLS regression. In order to control for any endogeneity issues arising from the omitted variables that are correlated with the included variables, fixed effects will be used. The fixed effects formulation implies that differences across groups can be captured in differences in the constant term. In sample period, some firms may only issue bonds once, industry fixed effects rather firm fixed effects may therefore be more appropriate in baseline models as the bond spread and firm fixed effect will be perfectly correlated for these firms.

However, we will also present a firm fixed effects model and higher order fixed effects as robustness checks. In short, we will estimate the following models:

$$Cost_{ijt} = \beta_0 + \beta_1 Trust_{j,t} + \gamma Country\ Control_{i,t} + \delta firm\ control_{i,j,t} + \theta Bond\ Control_{i,j,t} + Fixed\ Effects + \epsilon_{ijt} \quad (1)$$

$$Cost_{ijt} = \beta_0 + \beta_1 Trust_{j,t} + \beta_2 CG\ indicator + \beta_3 Trust \times CG\ Indicator + \gamma Country\ Control_{i,t} + \delta firm\ control_{i,j,t} + \theta Bond\ Control_{i,j,t} + Fixed\ Effects + \epsilon_{ijt} \quad (2)$$

$$Cost_{ijt} = \beta_0 + \beta_1 Trust_{j,t} + \beta_2 Financial\ Crisis + \beta_3 Trust \times Financial\ Crisis + \gamma Country\ Control_{i,t} + \delta firm\ control_{i,j,t} + \theta Bond\ Control_{i,j,t} + Fixed\ Effects + \epsilon_{ijt} \quad (3)$$

where i indexes a firm, j indexes a country, and t indexes a year; *Cost of Debt* denotes bond spread; $Trust_{jt}$ is the response to WVS for country j in year t ; and $CGIndicator_{jt}$ is the aggregate World Bank Worldwide Governance Indicator. *Financial Crisis* is a dummy variable equal to one if the world has suffered a financial crisis (2007–2009), and zero otherwise. Each of these three models tests hypotheses H1–H3, respectively.

3.4. Descriptive Statistics

Panel A of Table 2 reports the average value of trust and the six dimensions of country governance by each country from 1996 to 2015. Panel B shows the average of other country-level variables, including the aggregate level of *CGindicator*, the mean value of country-level controls in the same period. We also report both mean and median bond spread for 6,098 bond issues across different countries in Panel B.

As shown in Panel A, the trust level varies across different countries. Brazil (0.07) and Malaysia (0.09) are among the countries with the lowest trust level, while the Scandinavian countries, such as Denmark, Norway, and Sweden have the highest level of trust, approximately 0.7. There is also a variation in the level of country governance environment. Argentina, Brazil, India, Malaysia, and Mexico show one or more negative values of the country governance sub-components, and the Scandinavian countries still exhibit the highest score of governance indicator.

Looking at Panel B, the first column is the sum of the six governance dimensions reported in Panel A. We can find on average that the less developed countries have a weaker governance environment compared to the more developed countries. For instance, India has the lowest governance score (-1.51) and Finland has the highest (11.24).

For the country-level controls, India has the highest ratio (6.89%) of GDP growth on average; Japan and Singapore have quite high levels of inflation, reaching 2.68% and 4.37%, respectively. Belgium, Japan, and Greece are highly leveraged countries, with a ratio of total debt to GDP higher than 100%.

Turning to the bond spread, we find that the variation of spread also exists in different

countries. Canada, the UK, Norway, and Switzerland have the highest bond yields, with the spread around 10%, while the countries with the lowest spread, such as India and Singapore, only issue bonds at a yield of 1% higher than the benchmark Treasury Bill.

Table 3 reports the descriptive statistics of each variable (Panel A) and Pearson Correlation (Panel B). To mitigate the extreme outliers, we winsorize firm- and bond-level variables (including the bond spread) by 1% level at both tails. Panel A shows that the mean value of *Spread* is 9.08%, with the standard deviation as 5.1%, and it varies from 0 to 19.83%. Panel B reveals an important finding, that trust is negatively (-0.079) and significantly (at the 1% significance level) correlated to bond spread, which is consistent with H1. The correlations between trust and country governance indicators as well as GDP growth are significantly positive, and those correlations with the inflation rate and domestic debt market size are significantly negative. Panel B also reports that the correlation between *Trust* and *CGindicator* is just around 0.5, more accurately 0.544, and this figure reduces our concerns about multicollinearity between these two variables.

4. Econometric Estimation

4.1. Trust and the Cost of Debt

This section investigates the relation between trust and the cost of debt financing by using panel regressions that control for a variety of fixed effects. One possible concern is that trust may be highly correlated to the country governance indicators, though as reported in Panel B of Table 3 this is not a major concern. In order to largely free us from this issue, we conduct a multivariate regression clustered at a firm level and include the above variables as controls in addition to the primary measure of trust. We also control for unobserved industry variations

by adding industry fixed effects at the 2 digit SIC level and control for unobserved time-invariant effects by employing year fixed effects. Table 4 reports our baseline results, with the odd columns controlling for the country fixed effects and Columns the even columns without country effects.

Columns (1) and (2) examine the full sample. Looking at Column (1), that controls for country effects, trust is significantly and negatively related to bond spread, which confirms H1. With a one standard deviation increase in trust, the firm could issue debt at a 0.77% low yield (-9.835×0.078). This effect is both statistically and economically significant. Column (2) reports a similar finding in a regression without country effects.

To avoid the concern that our result is mainly driven by certain issuers which dominate Yankee Bond issuance, we exclude bond issuance by the most frequent issuers as a robustness check and only include firms with fewer than 50 (Columns (3)–(4)) and fewer than 20 (Columns (5)–(6)) issues per year in the analysis. Both sub-samples are also examined with and without country fixed effects, and all of them report similar results to those reported in Columns (1) and (2), implying that the findings obtained by the baseline model are robust and solid.

The results reported in Table 4 confirm our first hypothesis that, as representing social capital, a country's societal trust does lower firms' cost to borrow debt, and that this impact is both statistically and economically significant.

4.2. Country Governance, Trust, and the Cost of Debt

In this section, we test H2 and explore how the effect of trust varies between firms with

different country governance environments by interacting the country governance indicator (*CGIndicator*) with *Trust*, and including both *CGIndicator* and the interaction term of *Trust*CGIndicator* into the model. As shown in Column (1) of Table 5, the effect of trust is significantly different in countries with a better and a poor governance environment. The interaction term is positive and significant at the 1% level, which implies that trust has a more pronounced effect on the cost of debt in poor governance countries, and hence the results confirm H2a that the effect of trust on the cost of debt is more pronounced in countries with weak governance quality.

We next explore if the country governance indicator is driven by one particular dimension of governance indicator by adding each sub-component in the model, and report the results in Columns (2)–(7) of Table 5. To avoid any multicollinearity issue, we exclude the variable *CGIndicator* and only include each of six dimensions along with its interaction with trust in each regression. As shown in Columns (2)–(7), *Trust* still stays significantly negative (5% significance level and higher) for four dimensions except for *Regulatory Quality* and *Rule of Law*. In addition, the interaction effect seems not to be driven by an individual effect of a sub-component of governance indicators. In sum, these findings confirm H2 that the country governance environment moderates trust's impact on corporate debt financing – that is, the negative effect of trust on bond spread is stronger in weak governance countries. These results imply that as a core notion of informal institution, trust has a substitution effect with country governance environment, which is generally known as the formal institution. When the formation institutions are weak, the informal institutions could be more important in influencing business activities.

4.3. The Cost of Debt during a Financial Crisis

In this section, we test H3 and investigate whether trust will influence corporate financing cost during a financial crisis. Intuitively, firms have to offer higher yields to attract investors during a financial crisis, and the firms located in low-trust countries may have to provide more returns to debt holders. Based on this basis, we create a dummy variable *FCrisis* that is equal to one if firms were suffering the most recent financial crisis. Specifically, *FCrisis* is defined as one if the year is between 2007 and 2009, and zero otherwise. We interact it with *Trust* and add *FCrisis* and the interaction term into the model. Table 6 presents the results with and without country effects in Columns (1) and (2), respectively, and they show similar findings except that the interaction term in Column (2) loses significance. The only difference between two columns is whether the regression model adds country fixed effects; as this is a cross-country study, estimating results with country effects reported in Column (1) might be more meaningful. From Table 6, we can find that the coefficient of *FCrisis* is statistically significant and positive, suggesting that firms have to pay higher returns on debt borrowing during a financial crisis. The negative correlation of the interaction term implies that trust plays a more pivotal role during a financial crisis. All in all, these results confirm H3 that during a financial crisis, the effect of trust on debt cost is more pronounced, whereas trust plays a role to alleviate panics arising from financial distress among investors.

5. Robustness Checks

In this section, we conduct several robustness checks to see if the results obtained above still hold, and present the results in Table 7. To conserve space, we do not report control variables in Table 7 though we have included all controls when running regressions.

5.1 Tobit Model

First, as all the values of corporate bond spread are larger than zero, we adopt the Tobit regression which was proposed by James Tobin (Tobin, 1958). Unlike OLS, the Tobit regression describes the relationship between independent variables and a non-negative dependent variable, and hence may provide more robust and solid results compared to OLS in this study. Panel A of Table 7 reports the results by re-estimating H1–H3, for all three regressions; we control for year, industry, and country fixed effects and cluster the standard deviation at the firm level. Column (1) re-examines H1, and reports that with a one unit increase in trust, the bond spread yield can be lowered by 10.417%, and this finding is significant at the 5% level. Column (2) re-examines H2, which confirms that trust's impact on a lower bond spread is more pronounced in countries with a weak governance environment, and all coefficients are significant at the 5% level and higher. Column (3) re-examines H3; though the direct impact of trust on bond spread loses significance here, the interaction term of trust and financial crisis is still significant, suggesting that during a financial crisis, trust could alleviate investors' panic and smooth the financial market.

5.2 Reverse Causality

Second, one common endogeneity concern arising is reverse causality – that the independent variable is actually the cause of change in the dependent variable. Though we believe that this concern does not apply to our study, more specifically, as it is highly unlikely the trust between people in a country is the result of financing cost, we will still re-examine H1–H3 by employing the lagged value of trust and country governance indicator in order to rule out the possibility of reverse causality.

Panel B of Table 7 reports the regression results estimated from H1–H3, respectively. As shown, we find that the results are consistent with those reported in Tables 4–6, that the lagged value of trust has a significantly negative impact on the cost of debt financing, and that this impact is more pronounced in countries with weak governance quality and during a financial crisis.

5.3 A Variety of Fixed Effects

Panel C of Table 7 reports the estimations of another four robustness checks. Another potential endogeneity, which could raise concerns about our argument, is omitted variable bias. The bond spread depends on various factors so that it is practically impossible to fully control for all of them in an empirical study. Our main analysis already includes the year, country, and industry fixed effects; therefore, time-invariant and cross-sectional-invariant factors are less likely to cause a problem. To further alleviate such concern, we employ firm fixed effects to remove firm specific characteristics. To conserve space, we only report the results by re-estimating H1, which are presented in Column (1) of Panel C. We find that both the signs and significance of coefficients are consistent with those reported in Table 4.

Additionally, we also adopt the identification from Gormley and Matsa (2014) by employing a high order fixed effects' specification in our tests. The results of re-estimating H1 are reported in Column (2) of Table Panel C, which includes country-level fixed effects and the double fixed effects of Year \times SIC Industry Code. Industry is a time-invariant effect, so when we multiply it with *Year* then the interaction term varies with time and could eliminate unobserved firm and industry-specific characteristics which vary across time. The results are also consistent with those reported in Table 4.

5.4 Multicollinearity Issue

As reported in Table 3, the correlation between *Trust* and *CGindicator* is 0.544, which it may not exist multicollinearity problem between these two variables. Additionally, we also separate all 6,098 observations into four groups and comparing the value of *CGindicator* and *Trust* to the sample median. We find that there are 3,541 observations in group of high trust weak formal institution (58% of all observations) and 1,300 observations in group of low trust and strong institution (21% of all observations). As there are enough observations in these two groups, multicollinearity problem is not a significant issue.⁵ However, to further rule out this possibility, we re-run H1 by only including the variable *Trust* and find that the results reported in Column (3) of Table Panel C are similar to those obtained by having both *Trust* and *CGindicator*, which implies that multicollinearity seems not to be a significant issue.

5.5 More Control Variables

For the bond-level control variables, we have included the bond issue size and maturity followed earlier studies (Boubakri and Ghouma, 2010; Oikonomou et al., 2014). Bond credit rating and covenants are associated with bond risks, investor confidence, etc., and hence may be correlated to the cost of debt. Due to data limitation, only debt ratings can be examined. Following Boubakri and Ghouma (2010), we convert Standard & Poor's bond ratings to a seven-grade rating scale, with a higher figure reflecting a higher rating of corporate bond. We present the credit rating transformations in Appendix B. Column (4) of Panel C reports the results by adding credit ratings as a control variable to re-examine H1. As shown, credit

⁵ We thank an anonymous referee to suggest us to do this test to mitigate the multicollinearity issue.

ratings have a significantly negative impact on the cost of debt, more specifically; a higher rating of bond rating may improve investors' confidence and hence reduce the cost of debt issuance. Moreover, the coefficient of *Trust* is in line with that without credit ratings.

In short, this section conducts a variety of robustness checks and confirms that our results obtained from baseline models are solid and robust.

6. Further discussions

6.1. Why specific country governance dimensions are useful

In Table 5, we report the results by estimating six country governance indexes, and find that the effect of trust in reducing the cost of debt is related to government effectiveness, control of corruption, political stability, and voice and accountability, but less correlated with regulatory quality and the rule of law.

Bris and Cabolis (2008), Dudley and Zhang (2016) and Martynova and Renneboog (2008) propose that formal institution can lower transaction costs, and hence in our study four dimensions of country governance quality are observed to lower the cost of debt. However, Gilardi (2010) points out it has proven very difficult to differentiate between possible causal mechanisms given the existing state of theory and available econometric techniques in practice.

According to Kaufmann et al. (2009), regulatory quality captures the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. However, Kaufmann and Kraay (2008) and Kaufmann

et al. (2009) also point out there are often gaps between *de jure* rules and their *de facto* implementation in the real world, and the correlation between the two is weak in some countries. A higher index of regulatory quality may imply both high levels of rule formulation and implementation, but it also can be a combination of a high level of rule formulation but a low level of rule implementation, which are difficult to differentiate. Therefore, this index may not have a significant impact on reducing cost of debt. Another index rule of law captures perceptions of the extent to which individuals and agents have confidence in and abide by the society. A higher index is expected to lower the cost of debt; however, we do not observe significant findings. Kaufmann and Kraay (2008) do admit that governance indicators may also contain unobserved broad dimensions of governance, and hence it is possible that some unobserved factors may explain the insignificant findings, which can be explored in future. Empirically, Dudley and Zhang (2016) also find that higher levels of government effectiveness, as well as voice and accountability, will lower agency problems and reduce the corporate cost to capital markets, though they also find that regulatory quality matters in their study. These questions also can be explored further in future studies.

6.2. Limitation of the study and suggestions for future research

This paper is by no means perfect. We admit that some limitations in this study and there are still some related questions left unanswered. First, this paper only considers debt as a financing tool, while the cost of equity and associated overall cost of capital are not investigated. A related question is that the change of debt financing cost could lead to a change in the capital structure of the firm. How does trust influence this process? Second, for consistency and comparison purpose, we only look at the Yankee Bond market in this study. Although the Yankee Bond market is a large and liquid bond issuance market, it is not the

only market for firms seeking international financing. In addition, a considerable amount of debt financing is conducted in the domestic market. These questions as to how the cost of debt and firm decisions are influenced by trust in such markets remain unexplored.

7. Conclusion

This paper examines the role of societal trust in affecting corporate debt financing. We document three important findings. First, firms in the country with higher level of societal trust are facing lower cost of debt. Higher trust could mitigate agency cost, lower monitoring and transaction cost. Therefore, investors are more willing to provide capital to the firm. Second, we find that trust and the associated informal governance institutions could largely substitute the effect of formal institutions in the process of debt financing. As a result, trust is more valuable for the country with weaker formal institutions. Lastly, we find that the financing cost of firms in a high trust country would experience a lower increase in the financial crisis compared to their peers in a low trust country, showing that societal trust is an important buffer for the firm when facing financial instability.

This paper reveals the unique value of trust to a firm. Default or distrust behavior may look profitable for some firms or even countries at a first glance. However, the breach of trust would lead to increased financing cost in the debt market. On the other hand, keeping the promise may be costly in the short run, but the associated lower financing cost would mitigate the loss in the long run. Our research also stresses the unique value of informal institutions in business activity. In a society where individuals are expected to fulfill their promises, strict regulation may not be needed and policy makers can utilize the flexibility of informal institutions to encourage economic growth.

Overall, to our best knowledge, our paper is the first piece of research that links trust to corporate debt cost, which extends earlier studies examining the association between trust and other economic and financial activities and contributes to the finance literature by showing that trust may be economically and significantly related to corporate debt policy.

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Appendix A: Variables Description and Data Source

Variable	Description	Data Source
<i>Country-Level Variables:</i>		
Trust	This captures trust level, calculated based on responses to the WVS and EVS question: “Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?” The value of trust is defined as the ratio of people who responded that most people can be trusted. We fill in the missing values following the most recent surveys for the years between the two adjacent surveys.	World Value Survey and European Value Survey
Country Governance Indicator (CGIndicator)	This captures country specific level of investor protection. It is the sum of government effectiveness, regulatory quality, control of corruption, political stability, rule of law, and voice and accountability as described in Kaufmann et al. (2009) at http://data.worldbank.org/data-catalog/worldwide-governance-indicators .	World Bank Worldwide Governance Indicator
Government Effectiveness (GE)	This captures perceptions of the quality of public services, the quality of the civil service and the degree of its dependence from political pressures, the quality of policy formulation and implementation, and the credibility of the government’s commitment to such policies.	World Bank Worldwide Governance Indicator
Regulatory Quality (RE)	This captures perceptions of the ability of the government to formulate and implement sound policies and regulation that permit and promote private sector development.	World Bank Worldwide Governance Indicator
Control of Corruption (CC)	This captures perceptions of the extent to which public power is exercised for private gain.	World Bank Worldwide Governance Indicator

Political Stability (PS)	This captures the level of political stability and absence of violence or terrorism.	World Bank Worldwide Governance Indicator
Rule of Law (RL)	This captures perceptions of the extent to which individuals and agents have confidence in and abide by the society, and in particular the quality of contract enforcement.	World Bank Worldwide Governance Indicator
Voice and Accountability (VA)	This captures perceptions of the extent to which a country's citizens are able to voice their opinions and participate in selecting their government.	World Bank Worldwide Governance Indicator
GDP Growth (GDPgrowth)	Average annual growth of GDP.	World Bank
Inflation	Annual percentage changes of each country's Consumer Price Index (CPI).	World Bank
Debt Market Size (DebtMkt)	The ratio of total debts per year over this country's GDP.	World Bank
<i>Bond-Level Variables:</i>		
Spread	The difference between the yield to maturity on the bond issue and the yield to maturity on a US Treasury Bond of similar maturity.	DataStream
Issue Size (Lisize)	The natural logarithm of the size (offering amount) of the issue in million US \$.	DataStream
Maturity	The natural logarithm of the years to maturity.	DataStream
<i>Firm-Level Variables:</i>		
Firm Size (Asset)	The natural logarithm of the annual total assets of the firm in million US \$.	Compustat
Performance (ROI)	The return on investment of each firm.	Compustat
Leverage	The ratio of total debts to total assets of each firm.	Compustat
Risk	The firm's operational risk measured by the standard deviation of return on assets (ROA) for the year-4 to year, more specifically, Risk is the standard deviation of ROA for year-4, year-3, year-2, year-1 and year.	Compustat
FCrisis	A dummy variable indicating the recent financial crisis. FCrisis is equal to one if the year is between 2007 and 2009, and zero otherwise.	

Appendix B: S&P Credit Ratings Transformations

S&P initial ratings	Transformation
AAA	7
AA+, AA, AA-	6
A+, A, A-	5
BBB+, BBB, BBB-	4
BB+, BB, BB-	3
B+, B, B-	2
CCC+, CCC, CCC-, CC, C, D	1

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Table 1
Data Distribution

This table provides a description of the distribution of bond issues by year (reported in Panel A) and by country (reported in Panel B).

<i>Panel A: Issues by Year</i>			
Year	Number	Ratio %	Cumulative %
1996	7	0.11	0.11
1997	5	0.08	0.20
1998	3	0.05	0.25
1999	14	0.23	0.48
2000	18	0.30	0.77
2001	7	0.11	0.89
2002	13	0.21	1.10
2003	18	0.30	1.39
2004	14	0.23	1.62
2005	30	0.49	2.12
2006	98	1.61	3.72
2007	102	1.67	5.40
2008	1,049	17.20	22.60
2009	981	16.09	38.68
2010	1,740	28.53	67.22
2011	764	12.53	79.75
2012	605	9.92	89.67
2013	308	5.05	94.72
2014	186	3.05	97.77
2015	136	2.23	100.00
Total	6,098		
<i>Panel B: Issues by Country</i>			
Country	Number	Ratio %	Cumulative %
Argentina	5	0.08	0.08
Australia	84	1.38	1.46
Belgium	2	0.03	1.49
Brazil	2	0.03	1.53
Canada	20	0.33	1.85
Denmark	3	0.05	1.90
Finland	3	0.05	1.95
France	13	0.21	2.16
Germany	358	5.87	8.04
UK	4,975	81.58	89.62
Greece	4	0.07	89.69
India	1	0.02	89.70
Ireland	10	0.16	89.87
Japan	13	0.21	90.08
Luxembourg	18	0.30	90.37
Malaysia	1	0.02	90.39
Mexico	28	0.46	90.85
Netherlands	137	2.25	93.10
Norway	124	2.03	95.13
Singapore	4	0.07	95.20
Sweden	39	0.64	95.83
Switzerland	254	4.17	100.00
Total	6,098		

Table 2
Summary Statistics

This table reports the summary statistics of trust, country governance indicators, country-level controls, and bond spreads from 1996 to 2015.

Panel A: Trust and Country Governance Level

This panel reports the average level of trust and six dimensions of the country-level governance indicator across the world.

Country	Trust	Government Effectiveness	Regulatory Quality	Control of Corruption	Political Stability	Rule of Law	Voice and Accountability
Argentina	0.18	-0.02	-0.38	-0.39	-0.11	-0.51	0.28
Australia	0.46	1.72	1.62	1.94	1.02	1.75	1.45
Belgium	0.32	1.72	1.24	1.41	0.90	1.32	1.39
Brazil	0.07	-0.07	0.19	-0.05	-0.12	-0.27	0.35
Canada	0.41	1.87	1.60	2.05	1.02	1.73	1.51
Denmark	0.69	2.09	1.80	2.43	1.16	1.90	1.61
Finland	0.57	2.11	1.75	2.38	1.46	1.95	1.58
France	0.23	1.55	1.09	1.37	0.57	1.41	1.24
Germany	0.36	1.68	1.49	1.87	0.97	1.65	1.37
UK	0.32	1.73	1.80	1.91	0.55	1.68	1.33
Greece	0.20	0.64	0.74	0.31	0.33	0.72	0.92
India	0.32	-0.08	-0.35	-0.42	-1.14	0.10	0.38
Ireland	0.38	1.59	1.69	1.59	1.20	1.63	1.39
Japan	0.38	1.33	0.96	1.28	1.02	1.31	1.00
Luxembourg	0.27	1.83	1.73	2.00	1.40	1.79	1.53
Malaysia	0.09	1.02	0.56	0.31	0.18	0.49	-0.35
Mexico	0.18	0.21	0.36	-0.34	-0.57	-0.54	0.11
Netherlands	0.57	1.91	1.81	2.16	1.17	1.76	1.59
Norway	0.70	1.92	1.41	2.16	1.30	1.92	1.61
Singapore	0.21	2.15	1.98	2.23	1.11	1.56	-0.03
Sweden	0.63	1.97	1.57	2.27	1.25	1.87	1.60
Switzerland	0.44	1.98	1.66	2.14	1.32	1.87	1.54

Panel B: CGindicator, Country-Level Controls, and Bond Spread

This panel reports the average level of the CGindicator (the aggregate of the six governance dimensions in Panel A), country-level controls, both mean and median values of bond spread across the world.

Country	CGindicator	GDPgrowth	Inflation	DebtMkt	Mean Bond Spread	Median Bond Spread
Argentina	-1.13	2.91	-1.39	58.57	5.45	5.16
Australia	9.51	3.30	0.23	19.70	0.93	0.94
Belgium	7.99	1.80	-2.18	103.7	2.10	2.10
Brazil	0.02	2.99	-0.01	64.26	5.35	5.35
Canada	9.79	2.55	0.29	81.28	9.61	9.71
Denmark	10.98	1.28	0.02	45.58	1.67	1.81
Finland	11.24	2.25	1.04	45.11	1.41	1.24
France	7.23	1.59	0.89	70.33	2.18	1.45
Germany	9.02	1.33	0.19	66.49	7.82	8.46
UK	9.00	2.10	0.02	52.79	9.41	9.78
Greece	3.66	0.91	-0.01	121.30	4.58	4.53
India	-1.51	6.89	0.03	73.49	1.31	1.31
Ireland	9.09	4.62	-0.32	59.43	3.57	2.81
Japan	6.90	0.84	2.68	179.8	0.94	0.64
Luxembourg	10.27	3.77	0.28	12.03	3.93	3.85
Malaysia	2.22	4.90	0.25	42.71	2.31	2.31
Mexico	-0.77	2.92	-0.09	43.01	4.26	4.00
Netherlands	10.40	1.94	0.04	57.29	5.82	5.50
Norway	10.33	2.13	0.39	36.00	12.66	12.53
Singapore	8.99	5.55	4.37	92.11	1.66	1.85
Sweden	10.52	2.40	-0.16	53.31	4.69	6.66
Switzerland	10.51	1.94	2.02	52.74	10.31	9.96

Table 3**Descriptive Statistics of All Variables**

This table presents the descriptive statistics (reported in Panel A) and Pearson correlation (reported in Panel B) of all variables.

Panel A: Descriptive Statistics of Variables

Variable	Obs.	Mean	Std. dev.	Min	0.25	Median	0.75	Max
Spread	6,098	9.083	5.100	0.000	6.640	9.630	11.93	19.83
Trust	6,098	0.393	0.078	0.065	0.392	0.392	0.392	0.750
CGindicator	6,098	8.469	1.007	-3.221	8.283	8.310	8.527	11.80
GDPgrowth	6,098	0.625	2.327	-10.89	-0.627	1.509	1.915	26.28
Inflation	6,098	0.169	0.818	-25.25	-0.371	0.365	0.517	16.37
DebtMkt	6,098	68.84	16.89	7.091	50.27	75.74	81.32	249.10
Maturity	6,098	0.813	0.834	0.000	0.000	0.693	0.693	4.615
Lisize	6,098	7.700	1.796	4.317	6.908	7.601	8.294	14.22
Asset	6,098	14.38	1.061	7.847	14.62	14.66	14.70	14.90
ROI	6,098	1.546	2.432	-10.42	0.623	1.814	1.940	12.71
Leverage	6,098	34.21	11.45	14.38	27.15	34.50	39.23	88.61
Risk	6,098	0.436	1.459	0.046	0.106	0.141	0.148	9.726

Panel B: Pearson Correlation. Note: ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

	Spread	Trust	CGindicator	GDPgrowth	Inflation	DebtMkt	Maturity	Lisize	Asset	ROI	Leverage	Risk
Spread	1											
Trust	-0.079***	1										
CGindicator	-0.002	0.544***	1									
GDPgrowth	-0.372***	0.057***	0.146***	1								
Inflation	0.040***	-0.151***	0.041***	0.264***	1							
DebtMkt	-0.199***	-0.100***	-0.280***	0.270***	-0.101***	1						
Maturity	-0.749***	0.056***	-0.049***	0.246***	-0.048***	0.150***	1					
Lisize	-0.178***	0.020	0.044***	0.023*	-0.032**	-0.247***	0.191***	1				
Asset	0.163***	-0.437***	-0.031**	-0.121***	0.170***	0.225***	-0.221***	-0.488***	1			
ROI	0.048***	-0.450***	-0.302***	-0.118***	0.090***	-0.118***	-0.053***	0.020	0.151***	1		
Leverage	-0.019	0.581***	0.115***	0.091***	-0.027**	-0.061***	0.028**	-0.010	-0.559***	-0.136***	1	
Risk	0.011	0.516***	0.153***	-0.027**	-0.113***	-0.242***	0.067***	0.266***	-0.768***	-0.239***	0.615***	1

Table 4

The Impact of Trust on the Cost of Debt Financing: Baseline Regression Estimates

This table reports the OLS regression of trust on the cost of debt financing from 1996 to 2015. Each column reports estimates from a single regression, with robust standard errors clustered at the firm level in parentheses. Columns (1)–(2) report the full sample. Columns (3)–(4) and (5)–(6) only include the firms with a number of debt issues no more than 50 and 20 each year. All regressions control for both year and industry effects, and Columns (1), (3), and (5) also control for country effects. Note: ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

	Full Sample		Issues<=50		Issues<=20	
	(1)	(2)	(3)	(4)	(5)	(6)
Trust	-9.835** (4.923)	-7.139*** (1.745)	-8.311* (4.265)	-6.798** (2.700)	-9.692** (4.088)	-6.168** (2.938)
CGindicator	-0.403 (0.357)	0.101 (0.086)	-0.169 (0.356)	0.040 (0.101)	-0.017 (0.387)	0.072 (0.107)
GDPgrowth	0.182*** (0.063)	0.150* (0.076)	0.102** (0.049)	0.067 (0.064)	0.129** (0.058)	0.095* (0.051)
Inflation	0.215*** (0.079)	0.176*** (0.056)	0.175** (0.086)	0.155* (0.082)	0.122 (0.084)	0.101 (0.082)
DebtMkt	0.014 (0.018)	0.010 (0.009)	0.043*** (0.016)	0.010 (0.011)	0.046** (0.018)	0.007 (0.010)
Maturity	-4.055*** (0.229)	-4.081*** (0.209)	-1.673*** (0.590)	-2.122*** (0.516)	-0.890** (0.376)	-1.195** (0.469)
Lisize	-0.228*** (0.035)	-0.250*** (0.042)	-0.488*** (0.160)	-0.560*** (0.126)	-0.447** (0.206)	-0.584*** (0.211)
Asset	-0.284 (0.215)	-0.033 (0.246)	-0.279 (0.227)	0.243 (0.286)	-0.292 (0.228)	-0.011 (0.194)
ROI	-0.031 (0.034)	-0.044 (0.034)	-0.109*** (0.025)	-0.057 (0.054)	-0.103*** (0.027)	-0.033 (0.063)
Leverage	-0.012 (0.022)	0.019 (0.012)	0.005 (0.020)	0.029 (0.018)	0.005 (0.020)	0.036 (0.022)
Risk	0.349*** (0.099)	0.252*** (0.080)	0.108 (0.100)	0.303*** (0.089)	0.072 (0.096)	0.232** (0.108)
Constant	17.594*** (2.226)	15.591*** (2.434)	13.684*** (2.573)	12.816*** (3.695)	12.346*** (2.889)	12.841*** (3.837)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Effects	Yes	No	Yes	No	Yes	No
Observations	6,098	6,098	711	711	433	433
R-squared	0.638	0.634	0.709	0.632	0.653	0.506

Table 5

Country Governance and the Effect of Trust on the Cost of Debt Financing

This table reports the OLS regressions in which *Trust* is interacted with *CGIndicator* and its sub-components. In order to avoid any multicollinearity issues, we exclude *CGIndicator* in Columns (2)–(7), and only include each of the six dimensions of country governance and its interaction with *Trust* in those columns. Each column reports estimates from a single regression by including the same controls as reported in previous tables. To conserve space, we do not present controls. All regressions control for year, industry, and country effects. Note: ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

VARIABLES	CGIndicator (1)	Government Effectiveness (GE) (2)	Regulatory Quality (RQ) (3)	Control of Corruption (CC) (4)	Political Stability (PS) (5)	Rule of Law (RL) (6)	Voice and Accountability (VA) (7)
Trust	-33.894*** (8.995)	-31.077*** (10.484)	-19.922** (9.702)	-31.189*** (9.362)	-16.672*** (4.876)	-12.248 (9.167)	-36.215*** (7.390)
CGindicator	-1.624*** (0.585)						
Trust*CGindicator	2.731*** (0.996)						
GE		-6.503** (2.844)					
Trust*GE		12.420** (5.541)					
RQ			-3.765 (3.235)				
Trust*RQ			5.945 (6.777)				
CC				-7.661*** (2.285)			
Trust*CC				12.653*** (4.432)			
PS					-3.643** (1.826)		
Trust*PS					9.281** (3.917)		
RL						-3.206 (2.890)	
Trust*RL						2.240 (5.592)	
VA							-8.434*** (2.777)
Trust*VA							20.799*** (5.595)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,098	6,098	6,098	6,098	6,098	6,098	6,098
R-squared	0.638	0.638	0.638	0.639	0.638	0.638	0.638

Table 6

The Financial Crisis and the Effect of Trust on the Cost of Debt Financing

This table reports the OLS regressions in which *Trust* is interacted with a dummy variable *FCrisis* indicating the period of the recent financial crisis. *FCrisis* is equal to one if the year is between 2007 and 2009, and zero otherwise. Both regressions control year, industry effects, and Column (1) also controls for country effects. The estimate results are clustered at the firm level. Note: ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

VARIABLES	Spread (1)	Spread (2)
Trust	-8.434* (5.029)	-5.987** (2.369)
CGindicator	-0.344 (0.356)	0.080 (0.095)
FCrisis	5.543*** (1.380)	4.168** (1.920)
Trust*FCrisis	-3.118** (1.418)	-2.259 (1.930)
GDPgrowth	0.224*** (0.058)	0.193** (0.082)
Inflation	0.219*** (0.078)	0.179*** (0.055)
DebtMkt	0.019 (0.017)	0.011 (0.009)
Maturity	-4.053*** (0.230)	-4.080*** (0.210)
Lisize	-0.227*** (0.036)	-0.252*** (0.042)
Asset	-0.265 (0.216)	-0.009 (0.248)
ROI	-0.043 (0.034)	-0.054 (0.034)
Leverage	-0.010 (0.022)	0.019 (0.012)
Risk	0.328*** (0.102)	0.275*** (0.077)
Constant	16.928*** (2.244)	14.835*** (2.460)
Year Effects	Yes	Yes
Industry Effects	Yes	Yes
Country Effects	Yes	No
Observations	6,098	6,098
R-squared	0.638	0.634

Table 7
Robustness Checks

This table performs a variety of robustness checks. The estimate results are clustered at the firm level. Note: ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Panel A: Tobit Model. This panel re-runs estimations testing H1–H3 by employing the Tobit model proposed by James Tobin (Tobin, 1958).

VARIABLES	H1 (1)	H2 (2)	H3 (3)
Trust	-10.417** (5.100)	-33.315*** (9.771)	-4.999 (4.468)
CGindicator	-0.410 (0.360)	-1.572*** (0.600)	-0.612* (0.315)
Trust*CGindicator		2.599** (1.066)	
FCrisis			5.181*** (1.771)
Trust*FCrisis			-7.916** (3.425)
Controls	Yes	Yes	Yes
Fixed Effects		Year, Industry, and Country	
Observations	6,098	6,098	6,098

Panel B: Reverse Causality. This panel re-runs estimations testing H1–H3 by employing the lagged value of trust, country governance indicator and the interaction terms.

VARIABLES	H1 (1)	H2 (2)	H3 (3)
LagTrust	-6.283* (3.591)	-26.776*** (7.280)	-6.864** (3.262)
LagCGindicator	-0.077 (0.353)	-1.198** (0.504)	-0.348 (0.299)
LagTrust*LagCGindicator		2.406*** (0.823)	
FCrisis			5.083*** (1.861)
LagTrust*FCrisis			-8.988* (4.535)
Controls	Yes	Yes	Yes
Fixed Effects		Year, Industry, and Country	
Observations	6,098	6,098	6,098
R-squared	0.638	0.638	0.638

Panel C: Additional Robustness Checks. This panel re-runs estimations testing H1 by performing four additional robustness checks.

VARIABLES	Firm Fixed Effects (1)	Higher Order Fixed Effects (2)	Multicollinearity Issue (3)	Credit Ratings (4)
Trust	-3.426*** (1.039)	-15.337*** (4.067)	-9.287* (5.027)	-11.253** (4.348)
CGindicator	-0.801*** (0.233)	-0.893** (0.436)		-1.079*** (0.213)
S&P Ratings				-0.449** (0.219)
Controls	Yes	Yes	Yes	Yes
Fixed Effects	Firm	Higher Order	Year, Industry, and Country	
Observations	6,098	6,098	6,098	1,143
R-squared	0.637	0.642	0.638	0.767

Highlights:

1. We find that the level of societal trust in a country is negatively associated with the cost of debt financing.
2. This effect is stronger in countries where the formal governance institutions are weaker.
3. In addition, trust could mitigate the negative shock of financial crisis on the debt market.
4. Overall, trust is an important social capital that is related to the financing cost.

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