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Abstract

We contend that economic preferences over risk-taking in different subnational regions worldwide affect fundamental aspects of firms' corporate financing, namely financing costs and capital structure. We study this hypothesis, by hand-matching firms' regions worldwide with the corresponding regional economic risk-taking preferences. Our baseline results show that credit and bond pricing increase with higher risk-taking preferences, whereas such preferences yield lower ratios of book leverage and short-term debt. We backup our baseline results with an instrumental variables approach, which is based on the premise that high-yield agricultural societies in the pre-industrial era exhibit low risk-taking preferences.

Keywords: Economic preferences; Risk-taking; Financing costs; Loan spreads; Bond spreads; Capital structure
JEL classification: G21; G32; G41; Z13

1. Introduction

Studying risk-taking by economic agents (individuals, firms, banks, etc.) is the cornerstone of the finance academic discipline. This literature, established by Markowitz (1952) but having its seeds in earlier work by classical and Keynesian economists, originates in the examination of risk-taking behavior to achieve higher returns. Recent studies highlight that the general economic environment within which economic preferences shape is considerably different between countries and even in different regions within countries (Falk et al., 2018; Falk et al. 2016). In this research, we hypothesize and empirically establish that the aggregate (regional) variation in economic preferences over risk-taking (henceforth risk-taking preferences) affects key corporate finance aspects of firms in these regions, especially financing costs and capital structure.

In economic environments with lax attitudes toward risk-taking, there can be significantly higher uncertainty about the realization of firms' investment projects. The mechanism is that firms in regions with higher risk-taking preferences invest in riskier projects and seek higher returns, so that they would be willing to pay higher financing costs. Moreover, this local attitude toward risk-taking creates an embedded perception that investments in this region are inherently risky. Markets that price risk would adopt this perception and might increase financing costs. Given the above, the first part of our testable hypothesis is that higher preferences for risk-taking in the firms' regions imply a premium in lending and/or bond rates. Differently phrased, firms in regions with higher risk-taking preferences might be subject to a "risk endowment," which leads to higher financing costs. In turn, the firms' goal is that higher expected returns from the financed investment projects potentially compensate for the higher financing costs.

In turn, different regional economic preferences naturally have implications for firms' capital structure decisions. There are two potentially competing effects. On the one hand, in regions

with more lax attitudes toward risk-taking, firms might have an optimal capital structure that includes more leverage. However, that would be a first-order effect disregarding the potentially positive relation between higher risk-taking preferences and financing costs. According the trade-off theory of capital structure, higher capital costs change the optimal debt to equity ratio by changing the optimal point at which adding new debt increases default risk (see e.g., Rajan and Zingales, 1995; Fama and French, 2002). Thus, showing that regional risk-taking preferences affect financing costs potentially suggests that firms in the higher-risk regions have lower debt ratios to avoid a bad spiral of excessive default risk. This outcome is also consistent with the pecking order theory of capital structure (Myers, 1984; Myers, 2001) where firms' managers in higher-risk regions perceive that firms' shares are underpriced by the markets (or, equivalently, their risk is overpriced), thus favoring the heavier use of internal funds for investments and leading to lower debt ratios. In line with these capital structure theories, the second part of our hypothesis states that higher regional risk-taking preferences negatively affect firms' key leverage ratios.

We put our hypothesis to test, using the measure of economic preferences over risk taking in the Global Preferences Survey, conducted by Falk et al. (2018). This is the only study measuring an array of economic preferences across several countries, explicitly distinguishing between economic preferences and relevant cultural attitudes. Importantly, Falk et al. provide all the underlying data at the individual-level, mapping individuals to specific subnational regions. This allows us to create an index of regional risk-taking preferences in many regions worldwide, as well as creating additional indices of other economic preferences, such as economic preferences over trust, altruism, patience, etc. Apart from being observed at the regional (as opposed at the country level), these economic preferences indices markedly differ from previously used measures reflecting *societal* characteristics, most notably cultural measures from Hofstede (2001) or Schwartz (2012).

Subsequently, we hand-match firms in the Compustat database to these regions and further merge the resulting sample with corporate (syndicated) loans and bonds data from 1996 to 2018. We use the loans dataset (firms from 192 regions in 35 countries) and the bonds dataset (U.S. firms only) to examine the effect of risk-taking preferences on financing costs (measured with loan and bond spreads). Next, we use Compustat data from 509 regions and 58 countries to examine whether regional risk-taking preferences affect debt to asset ratios (total debt to total assets, as well as equivalent ratios of short-term debt and long-term debt).

Our identification strategy exploits the different dimensions of our sample: risk-taking preferences observed at the regional level and our outcome variables observed at the loan-level, bond-level or firm-year level. This implies using several control variables and fixed effects, the latter accounting for a significant part of unobserved heterogeneity. Further, our analysis is robust to the inclusion of controls for other economic preferences (estimated at the regional level), culture (obtained from Hofstede and Schwartz), and several (literally dozens of) country-year controls (reflecting macroeconomic, institutional, constitutional, societal, and geographic dimensions).

We recognize, however, that there still might be unobserved region-specific heterogeneity that correlates with both regional risk-taking preferences and our outcome variables. As remedy against such endogeneity issues, we estimate an instrumental variables (IV) model. As exogenous instruments we use the "potential" regional crop yield and regional crop growth cycle in the pre-industrial era (before 1500 CE) (Galor and Özak, 2016). The potential measures, as opposed to the actual ones, entail information on agroclimatic constraints that are orthogonal to human intervention. Along with the fact that the measures are for the pre-industrial era, the exclusion restriction is satisfied: conditional on controls (especially controls for economic preferences other than risk-taking), the regional crop yield and crop growth cycle should affect contemporary financial conditions through risk-taking preferences. We posit and show that agricultural efficiency

(high crop yield and smaller crop growth cycle) in the pre-industrial era is negatively correlated with economic preferences over risk-taking.

Our empirical findings from both the OLS and the IV models show that higher regional risk-taking preferences increase loan and bond spreads. Economically, the OLS results show that a one standard deviation higher regional risk-taking implies a higher loan spread by approximately 3 basis points, which is equivalent to additional interest expenses of 0.33 million USD for the loan with the average size and maturity. We also find additional loan costs in the form of higher loan fees. The equivalent results on bond spreads are even stronger, indicating a 5.5 basis points increase for a one standard deviation higher risk-taking preferences, and considerable increases in bond interest expenses (also given the longer bond maturity compared to syndicated loan maturity). Moreover, the OLS results are conservative compared to the IV results. Overall, our findings are consistent with our hypothesis on the positive "risk endowment" effect on financing costs.

Subsequently, consistent with the second part of our hypothesis, we identify a negative effect of risk-taking preferences on leverage ratios. Our baseline results show that a one standard deviation increase in our measure of risk-taking preferences yields an approximately 1.6% decline for the firms with the mean ratios of either total debt to total assets or short-term debt to total assets. The IV results confirm the statistical significance of the OLS results, albeit they show that the effect of risk-taking preferences also lowers the ratio of long-term debt to total assets. Last, we find that in higher risk-taking regions the speed of adjustment of firms' target debt ratio significantly increases, thus providing support to the trade-off theory argument.

Placement in the literature. Our findings on the effect of risk-taking preferences on financing costs are consistent with the premise that collective economic risk-taking preferences formulate an

economic environment of higher financial risk that is priced in credit and bond markets. This finding is aligned with previous studies of corporate loan markets showing that country-specific characteristics (e.g., institutions, regulations, local demand and supply factors, etc.) affect credit costs (e.g., Collin-Dufresne et al., 2001; Qian and Strahan, 2007; Chui et al., 2016; Jiang et al., 2018; Delis et al., 2020; Álvarez-Botas and González, 2020). However, our analysis points to a significantly different determinant of credit cost that relates to the cross-section of economic preferences over risk-taking that changes very slowly over time. This creates a tradeoff: firms in societies willing to take more risk might receive higher returns on their investment, in line with studies on societal determinants of corporate risk-taking (e.g., Li et al., 2013); however, these firms also face higher financing costs for these investments, potentially decreasing their investment opportunities.

Moreover, our findings on the effect of risk-taking preferences on firms' leverage ratios are in line with theoretical models of capital structure, suggesting that higher risk-taking preferences relate to higher capital costs (observed in our paper as increases in borrowing costs) and lower levels of debt that firms hold (e.g., Fama and French, 2002; Graham and Leary, 2011; Graham et al., 2015 and references therein). Our analysis on capital structure is further motivated from earlier work by Rajan and Zingales (1995), who suggest that country-specific institutional differences significantly affect capital structure and call for more research on what really determines capital structure in different parts of the world. Our analysis pinpoints that risk-taking preferences, working as a local endowment, affect the optimal levels of leverage.

Our paper also naturally relates to a voluminous literature that links a society's culture to corporate finance (Aggarwal et al., 2015; Karolyi, 2016). This literature empirically links cultural measures, either as differences between countries, i.e., cultural proximity, cultural distance, or in levels, with finance-related elements such as loan contract terms (Giannetti and Yafeh, 2012;

Fishman et al., 2017); corporate debt maturity (Zheng et al., 2012); domestic bank-risk (Mourouzidou-Damtsa et al., 2019); firms' capital structure (Chui et al., 2002); stock prices (e.g., Grinblatt and Keloharju, 2001; Guiso et al., 2008); firms' dividend policy (Shao et al., 2010); international M&As (Ahern et al., 2015), firms' hedging decisions (Lievenbrück and Schmid, 2014); and firms' external financing (Boubakri and Saffar, 2016). A common component of these studies is that they use cultural/societal measures of uncertainty and not measures of *economic* risk-taking preferences. Our analysis shows that economic preferences over risk-taking are a key determinant of financing costs and capital structure, over and above any effect of societal culture.

Paper's structure. We structure the rest of our paper along the following lines. The next section highlights the importance of measuring regional economic preferences over risk-taking, especially comparing these preferences with previously used measures of culture. Section 3 analyzes the empirical model and data used to study the effect of risk-taking preferences on financing costs, and discusses the empirical results. Section 4 provides the equivalent analysis and results on the effect of risk-taking preferences on firms' capital structure. Section 5 concludes the paper and analyzes the implications of our findings.

2. Risk-taking preferences: Theoretical background and measurement

Firms in different regions in the world face considerably different financing costs. Recent explanations of these differences include the roles of country-specific macroeconomic risk and institutional quality (Qian and Strahan, 2007; Delis et al., 2020). This paper shows that there is another equally important explanation of these differences: regional risk-taking preferences. An important distinguishing element of our analysis is that risk-taking explicitly refers to an agent's

willingness to take *economic* risk, as this arises from the quantifiable uncertainty about economic outcomes (gains and losses).

Aggregate measures of economic risk-taking preferences across several countries/regions are difficult to find. In this study, we use the database of Falk et al. (2018), namely the Global Preferences Survey (GPS).[1] This database is probably the only one that specifically measures economic preferences over risk-taking across several nations and subnational regions.

The GPS entails a global survey experiment, asking individuals the following: "Please imagine the following situation. You can choose between a sure payment of a particular amount of money, or a draw, where you would have an equal chance of getting amount x or getting nothing." Choosing the lottery resulted in an increase in the expected value of the amount being offered, thereby examining the individual's propensity to take economic risk.

Previous measures in the World Values Survey (WVS) or Hofstede (2001) are rather distant from economics and reflect cultural/societal elements of risk-taking, and not economic risk-taking. Specifically, the WVS asks whether "Adventure and taking risks are important to this person; to have an exciting life." This WVS question was derived from Schwartz (2012) and designed to capture a universal "value of stimulation." Hofstede (2001) measures "uncertainty avoidance" with the following questions: i) "How often do you feel nervous or tense?"; (ii) "All in all, how would you describe your health these days?"; (iii) agreement with "One can be a good manager without having a precise answer to every question that a subordinate may raise about his or her work;" (iv) agreement with "a company's or organization's rules should not be broken—not even when the employee thinks breaking the rule would be in the organization's best interest."

[1] Available at https://www.briq-institute.org/global-preferences/downloads.

Evidently, all the above questions are mostly relevant to firms' financing decisions with respect to cultural/societal reflections of uncertainty. In contrast, measures in the GPS speak to the heart of how the economic environment in the firm's location might affect financing choices. Moreover, the GPS constructs other economic preferences measures, namely patience, altruism, trust, and reciprocity also offering the possibility to identify such preferences at the subnational regional level. As Becker et al. (2020) show, this variation in population-level preferences is rooted to the migration patterns of our early ancestors and can play an important role in determining contemporary economic outcomes.

The GPS includes two files, one with country-level information for 76 countries covering about 90% of world's population; and one with individual-level information for the 80,337 respondents in the interviews. We rely on the individual-level information because this allows a subnational regional analysis based on the location of the firms in our sample. Specifically, the weights included in this file allow the calculation of regional-level economic preferences, by multiplying the weight with the individual's score for each measure, and then averaging this product at the regional level for each variable.[2]

In our analysis, the outcome variables reflect financing costs and capital structure decisions of firms. We conduct our empirical analysis on three datasets. The first is a loan-level dataset from DealScan (enriched with firm-year information from Compustat) to examine the effect of regional economic risk-taking preferences on the cost of credit. The second is a bond-level dataset (also enriched with Compustat information) to examine the equivalent effect on bond pricing. The third is a firm-year dataset to examine the equivalent effect on capital structure.

[2] We verify the correctness of this procedure by calculating the product of weight times individual's score for each economic preference variable and then averaging this product at the country level. The resulting calculated country-level variables are the same with that provided at the country-level file (for details, see the Online Appendix AD.3 in Falk et al., 2018).

Matching data for firms and regions is a labor-intensive hand-matching process. For most countries, the GPS regions are the administrative regions of each country, whereas for the U.S. the GPS regions are the states. For the U.S., we simply match the state names between the two files. For the rest of the countries, we rely on internet sources, searching for the city and country name and using the word 'region' as keyword search. For the very few cases where there are two or more cities with the same name in a country, located in different regions, or whenever there is a discrepancy between the city name and the country name in which the borrowing firm is incorporated (e.g., Montreal, France) we drop the relevant observation from the sample. Our regional risk-taking economic preference measure, denoted as *Regional risk-taking*, is the variable of interest in our analysis. We also construct controls for *Regional patience*, *Regional altruism* and *Regional trust*. These controls are important to saturate our model from the effect of different types of economic preferences.[3] Table 1 includes thorough definitions for these variables and Table 2 reports summary statistics.

[Insert Tables 1 & 2 here]

3. Economic risk-taking and firms' financing costs

3.1. Empirical models

According to our key hypothesis, the financial sector incorporates risk-taking preferences in the pricing of financial products. Two key corporate finance products are loans and bonds. We examine the effect of *Regional risk-taking* on the cost of loans using the following model:

[3] The GPS dataset also includes measures for positive and negative reciprocity; however, we find that these measures do not correlate with loan spreads or affect the relation between loan spreads and economic risk-taking. Including them simply generates multicollinearity issues.

$$Loan\ spread_{lbfrt} = a_0 + a_1 Regional\ risk\text{-}taking_r +$$

$$EP_r + L_{lt} + F_{ft} + B_{bt} + C_{ct} + u_{lbfrt}. \quad (1)$$

In equation (1), *Loan spread* is the spread over the LIBOR (plus any facility fee) of a syndicated loan *l* given by bank *b* to firm *f* that is established in region *r* in year *t*. The control variables include other economic preferences variables (*EP*), along with vectors of loan (*L*), firm-year (*F*), bank-year (*B*), and country-year (*C*) variables. Equation (1) also includes several fixed effects, which help with empirical identification (thoroughly discussed in the next section). Finally, *u* is the stochastic disturbance.

Syndicated loans data are from DealScan, which is the most comprehensive loan-level dataset that covers loans in several countries. Our sample covers 1990-2018 and includes information for loan pricing and several loan characteristics (e.g., loan amount, maturity, the existence or not of collateral, covenants, etc.). We match borrowing firms to listed firms in the Compustat North America and Compustat Global databases using the DealScan-Compustat linking tool (Chava and Roberts, 2008). Similarly, we use the DealScan lender linking tool (Schwert, 2018) to import lender-identifying information from Compustat.[4] In this way, we enrich our dataset with financial characteristics for borrowers and lenders from the two Compustat databases, as well as borrowers' location (address, zip code, state for US firms, country, etc.).

We consider syndicated loans where the borrower and the lender are in the same country, to avoid spillovers of economic preferences between two different countries. We find that there is only a handful of firms that change locations (move to a different region). Furthermore, we limit

[4] Because the DealScan lender linking tool covers the period up to 2015, we fill-in the missing information up to 2018 using the lender's name.

the baseline analysis only to banks acting as lead arrangers, since these orchestrate the syndication and negotiate the loan terms with the borrowing firm.[5]

The *Loan spread* is a key loan characteristic reflecting its riskiness, while also incorporating institutional and macroeconomic risk (Delis et al., 2020). Thus, the *Loan spread* should incorporate any region-specific economic preferences related to risk-taking. In further tests, we also use the all-in-spread-undrawn (AISU), which includes the facility fee and the commitment fee on the unused amount of loan commitment.

Apart from controlling for economic preferences other than risk-taking (at the regional level), we include four groups of control variables (Table 1): loan-level variables, firm-year variables, bank-year variables, and country or country-year variables. Most importantly, we control for noneconomic cultural measures, such as the Hofstede's and Schwartz's scores. Following our theoretical considerations, these measures should capture cultural/societal effects, purifying the effect of economic risk-taking on the cost of credit from such alternative explanations. At the country-year level, important controls are the level of economic development (GDP per capita), the GDP growth rate, and the mean loan spread across the syndicated loans originated in a country each year. In robustness tests, we also control for dozens of additional country or country-year variables (see Appendix Table A1). Several of these controls reflect institutional quality; we do not use relevant variables in our baseline specifications because they are highly correlated with GDP per capita.

The number of loan facilities using the syndicated loans sample in our baseline specification is 61,677, granted to 8,359 unique listed borrowers in 192 GPS regions in 35 countries. Thus, the regional data on economic preferences substantially increase heterogeneity and, potentially,

[5] Our baseline results remain unchanged when we relax this restriction.

estimation precision. Table 2, panel A, reports summary statistics for the variables used in the loan-level analysis. In the Appendix Table A2, we report country-specific details on our sample.

In turn, we examine the effect of *Regional risk-taking* on bond pricing. Most of the literature on bond prices or yields uses U.S. bond data (e.g., Elton et al., 2001; Collin-Dufresne et al., 2001; Ortiz-Molina, 2006; Braun, 2016), given data quality and availability issues.[6] For the choice of bond-level and firm-level variables, we follow closely Ortiz-Molina (2006) and estimate the following model:

$$Bond\ spread_{bfrt} = a_0 + a_1 Regional\ risk\text{-}taking_r + EP_r + B_{bt} + F_{ft} + u_{bfrt}. \qquad (2)$$

In equation (2), *Bond spread* is the spread of a bond *b* issued by a firm *f* that is established in region *r* in year *t*. The control variables include the same regional controls as in equation (1) for the United States. We also control for vectors of bond (*B*) and firm (*F*) variables. Moreover, we include industry fixed effects and interstate division[7] fixed effects to control for relevant time-invariant unobserved heterogeneity in bonds' pricing. We also include year fixed effects. Table 2, panel B, reports summary statistics for the U.S. bonds sample.

3.2. Empirical identification and estimation results

We begin by estimating equation (1) with fixed effects OLS. We include loan type fixed effects, which are important because loan facilities include credit lines and term loans that have

[6] Studies using bond data by firms from other countries are rare (e.g., Gabbi and Sironi, 2005). Other studies investigate the risk factors affecting the cross-section of bond returns (e.g., Bai et al., 2019), or explore the bond spreads' predicting ability for economic fluctuations (e.g., Gilchrist and Zakrajšek, 2012).

[7] For the delineation of US interstate divisions, see here: https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf

fundamental differences in their contractual arrangements and pricing (Berg et al., 2016). We also include loan purpose fixed effects, given the considerable differences in pricing loans with different objectives (e.g., loans for M&As have different risks compared to loans for working capital or other corporate purposes). Moreover, we include industry, continent, and year fixed effects to control for relevant common effects on loan pricing. We cluster standard errors by country (which is more conservative compared to clustering by region as there might be within-country correlation of standard errors), but we show that our results are robust to different choices.

Using loan-level data, several important control variables, and several fixed effects already largely reduce omitted-variable bias.[8] The only possible such bias may emerge from unobserved regional characteristics that are not controlled for by our regional and country-year variables. As our empirical analysis shows, our OLS results compare very well with those from an IV model.

Table 3 reports the OLS results. In columns (1) to (5), we sequentially add control variables: we begin with only the regional variables reflecting economic preferences, and add loan-level controls, firm-level controls, bank-level controls, and macroeconomic controls. Sequentially adding controls shows the robustness of our findings to controls used in the literature and that our main results are not subject to a bad controls problem. The effect of the control variables is fully in line with the respective in the literature (e.g., Delis et al., 2020; Focarelli et al., 2008). The most important control capturing differences in the firms' macroeconomic environment is *Borrower's country-year loan spread*, which has a positive and highly significant coefficient.

[8] Moreover, using loan-level data rules out other types of endogeneity stemming from simultaneity or reverse causality, as we do not expect that individual loan pricing to systematically affect regional preferences over economic risk-taking. Further, it is unlikely that firms select regions based on risk-taking preferences: risk-taking preferences are long-lasting and predetermined, while we have almost zero relocation of firms in our sample (identifying relocations would have been an interesting identification strategy).

Even though we are not interested in establishing causal effects between the regional control variables and the loan spread, the results reflect some interesting correlations. The negative coefficient on *Regional patience* shows that banks charge lower spreads to firms in regions in which individuals have long-term orientation. This finding is consistent with the neoclassical view of the time-preference theory on interest rates, in which firms that are more willing to borrow in the future (e.g., because their need for liquidity is not urgent) are given better terms today. Moreover, the coefficient on regional trust is positive and significant, showing that higher trust implies originating (instead of denying) loans to riskier borrowers to which lending rates are higher.[9] *Regional altruism* loses its statistical significance once we add the macroeconomic controls.

The coefficient a_1 in column (1) is positive and statistically significant at the 1% level. Economically, a one standard deviation higher *Regional risk-taking* implies a higher *Loan spread* by 14.077 x 0.21 ≈ 3 basis points. According to the summary statistics in Table 2, the average loan facility amounts to 255.8 million USD (the inverse log of 19.36) and has an average maturity of 4.24 years (50.88 / 12 months), which implies that the 3 basis points translate to higher cost of loan of a considerable 0.33 million USD for the loan with the average size and maturity (0.0003 × 4.24 × 255.8 million USD).

In columns (2) to (5), the coefficient a_1 has even higher economic significance. According to column (5) that includes all controls, a one standard deviation higher *Regional risk-taking* implies a higher *Loan spread* by approximately 3.6 basis points, implying 0.39 million USD higher borrower cost.

[Insert Table 3 about here]

[9] A negative coefficient would also be intuitive, as higher trust by banks might imply lower spreads. This comes down to identifying causal effects on the effect of trust, which we leave for future research.

The first potential criticism of our findings is that a_1 captures the effect of other cultural traits that are unrelated to economic preferences. In Table 4, we complement the array of control variables in equation (1) with Hofstede's (Panel A) and Schwartz's (Panel B) measures. *Hofstede's power distance* load negatively in column 1; however, *Regional risk-taking* retains its positive and significant coefficient. Moreover, *Schwartz's mastery* loads positively in Panel B, consistent with the idea that societies with individuals seeking success through personal action (possibly at the expense of others) tend to take more financial risk. Overall, our findings show that certain cultural elements that do not necessarily reflect economic preferences correlate significantly with loan spreads; however, the role of economic preferences over risk-taking is still highly relevant in explaining financing costs.

[Insert Table 4 about here]

Our key remedy against omitted-variable bias from unobserved regional characteristics that correlate with both *Regional risk-taking* and financing costs is an IV model. Our idea for the IVs comes from a recent macroeconomics literature on the determinants of economic preferences (Galor and Özak, 2016). Our premise is that economic risk preferences have begun to shape hundreds of years ago in the preindustrial era based on the regional agricultural conditions. Specifically, we use as instruments a region's potential crop yield in calories per hectare per day (*Regional crop yield*) and a region's potential crop growth cycle in days elapsed from planting to full maturity (*Regional crop growth cycle*).[10] We expect that regions with lower crop yield and more extensive crop growth cycle will tend to have higher preferences for risk-taking in search for alternative (other than agriculture) yield. We focus on the potential (as opposed to actual) crop yield and crop growth cycle because these measures are based on agroclimatic constraints in the

[10] Galor and Ozak (2016) provide the agricultural data at the regional level, based on WVS regions. Thus, we first match the WVS regions to the GPS regions.

preindustrial era that, further to being observed in the preindustrial era (and thus being predetermined), are largely orthogonal to human intervention, further mitigating endogeneity concerns. To this end, our exclusion restriction suggests that *Regional crop yield* and *Regional crop growth cycle* affect the contemporary financial conditions only via economic preferences. Controlling for all economic preferences in both stages of an IV model, we must obtain exogenous identification of the impact of economic preferences over risk-taking.

Table 5 replicates the specifications of Table 3 using two-stage least squares (2SLS). The first stage results are consistent with our expectations. We find that *Regional crop yield* is negatively correlated with *Regional risk-taking* consistent with the hypothesis that higher return to agricultural investment is negatively associated with a society's propensity to take economic risk. The opposite holds for *Regional crop growth cycle*, because a larger crop growth cycle associates with more intensive search for alternative sources of yield. Both variables load with strongly statistically significant coefficients.

[Insert Table 5 about here]

In turn, the fitted values in the second stage regression are highly statistically significant with a somewhat inflated coefficient of 41 basis points according to our preferred specification (5). To be conservative, and given that the OLS and 2SLS results almost coincide in terms of statistical significance, we base our inferences on the OLS results. In unreported regressions, we also control for the Hofstede/ Schwartz variables in the 2SLS model and maintain our inferences.

We conduct several additional robustness tests on equation 1, using specification (5) of Table 3 as benchmark. In the first three columns of Appendix Table A3, we cluster our standard errors by region, by region × year, and by country × year. In the last two columns, we additionally include country fixed effects, country × year fixed effects, and industry × year fixed effects. Especially the country × year fixed effects capture a significant part of potential omitted-variable

bias, including general unobserved cultural, societal, and macroeconomic country-year variables. Our key results remain largely unaffected.

In column (1) Table A4, we first drop the financial, utilities, and real estate firms and find that our estimates become larger, indicating stronger effects for sectors with larger shares of tangible assets. Moreover, dropping the United States from the sample (thus dropping 81% of the baseline sample), almost doubles our baseline estimate (column 2 of Table A4). In columns 3 and 4 of Table A4, we split our sample to terms loans and credit lines (previously we controlled for differences via fixed effects). We find statistically significant results in both specifications, but the economic significance is much larger on term loans. This is consistent with the premise that credit lines provide unique value in solving information problems in lending and thus bear lower credit risk (e.g., Berger et al., 2020). Last, our results show that AISU also responds positively to regional risk-taking, implying that loan fees further add to the positive effect of *Regional risk-taking* on the total cost of credit.[11]

As suggested within the framework of equation (2), an important test to show that regional risk-taking affects the terms of borrowing outside the credit market is to also look at the bond market. We report the results in Table 6. Consistent with the results in Table 3, we find that higher regional risk-taking increases bond spreads. Economically, according to specification 2, a one standard deviation higher *Regional risk-taking* implies a higher *Loan spread* by 27.464 x 0.20 ≈ 5.5 basis points. According to the summary statistics in Table 2, the average bond amounts to 361.4 million USD (the inverse log of 5.89) and has an average maturity of 10.8 years (129.14 / 12 months), which implies that the 5.5 basis points translate to higher cost of loan of a considerable 2.15 million USD for the loan with the average size and maturity (0.00055 × 10.8 × 361.4 million

[11] All these sensitivity tests are robust to the use of our IV model.

USD). Thus, in the bonds market, the economic effect of regional risk-taking on the overall cost of financing is even larger.[12]

[Insert Table 6 about here]

4. Economic risk-taking and firms' capital structure

4.1. Empirical model and data

According to the traditional theory of capital structure, higher capital costs (including financing costs) can lower a firm's capacity or willingness to take debt. In this section, we thus examine the second part of our hypothesis on the effect of regional risk-taking on firms' capital structure. We use the following models:

$$Book\ leverage_{frt} = a_0 + a_1 Regional\ risk\text{-}taking_r + EP_r + F_{ft} + C_t + u_{frt}. \quad (3)$$

$$Long\text{-}term\ debt_{frt} = a_0 + a_1 Regional\ risk\text{-}taking_r + EP_r + F_{ft} + C_t + u_{frt}. \quad (4)$$

$$Short\text{-}term\ debt_{frt} = a_0 + a_1 Regional\ risk\text{-}taking_r + EP_r + F_{ft} + C_t + u_{frt}. \quad (5)$$

In equation (3), *Book* l*everage* is the ratio of the book value of debt to the book value of total assets of a firm *f* in region *r* in year *t*. In equations (4) and (5), we use the shares of long-term and short-term debt to total assets to examine the effect of *Regional risk-taking* on the time horizon of firms' debt structure. As in equations (1) and (2), the control variables include the rest of the regional

[12] Symmetrically with the analysis on syndicated loans, in Table A5 we report the results from several robustness tests on equation 2. The results are consistent with those in Table 6.

economic preferences variables (*EP*), along with vectors of firm (*F*) and country or country-year variables. Equation (3) also includes year, industry, and continent fixed effects. Finally, *u* is the stochastic disturbance.

We estimate equations (3) to (5) using the Compustat (North America and Global) sample of firms, for which we report summary statistics on the right-hand side panel of Table 2. Our most restrictive specification includes 238,226 observations from 58 countries and 509 regions. Appendix Table A2 reports the numbers of observations, firms, and regions by country.

For the vector of firm controls we directly follow the extant literature (see e.g., Baker and Wurgler, 2002; Graham and Leary, 2011). This literature points to the use of eight key variables, including the four variables from Rajan and Zingales (1995) and the four variables from Fama and French (2002) that do not overlap. From the eight variables, we exclude the ratio of dividends to market value of equity due to the small number of observations, especially for non-US countries. We complement this vector with firms' earnings volatility as in Graham et al. (2015), which we find to be a statistically significant control.[13]

4.2. Empirical identification and results

The essence of our identification strategy is as in section 4. We begin with OLS results; next we show that our results are robust to the inclusion of several macro controls (including culture); subsequently, we show IV results; and last we provide many other robustness tests (including results with country × year fixed effects).

Table 7 reports the OLS results. Sequentially adding controls shows the robustness of our results to these additions and that our results are not driven by a bad controls problem. All three

[13] Adding more firm-year variables, such as asset growth or the z-score does not affect our inferences.

specifications show that *Regional risk-taking* enters with a negative and statistically significant (at the 1% level) coefficient. Economically, according to column 4, a one standard deviation higher *Regional risk-taking* (equal to 0.31 in the Compustat sample) yields a 0.0074 (= 0.024 × 0.31) decrease in book leverage. This is equivalent to a 1.6% decrease in book leverage for the firm with the mean book leverage.

[Insert Table 7 about here]

In Table 8, we report results from the estimation of equations 4 and 5 (in Panels A and B, respectively). The results in Panel A show that as we add control variables, the effect of *Regional risk-taking* on *Long-term debt* becomes less potent. In contrast, the results in Panel B show that *Regional risk-taking* significantly lowers firms' *Short-term debt*. Specifically, a one standard deviation increase in *Regional risk-taking* yields an approximately 0.006 (= 0.019 × 0.31) decrease in *Short-term debt*, which is equivalent to a 1.6% decline for the firm with the mean *Short-term debt*.

[Insert Table 8 about here]

Next, in Table 9, we replicate the results of Tables 7 and 8 using the IV model. We use the same instruments with the analysis on financing costs, the results of which we report in the lower part of Table 9. Again, we find that *Regional crop yield* is a more significant determinant of *Regional risk-taking* compared to *Regional crop growth cycle*. We keep both variables as exogenous instruments in the first stage for reasons related to our previous theoretical intuition (also following Galor and Özak, 2016) and symmetry with our previous analysis.

[Insert Table 9 about here]

The second-stage results support the OLS findings. Column 1 reports a significantly lower book leverage in regions with higher risk-taking (consistent with the results in Table 7). Column 2 shows a negative effect of *Regional risk-taking* on *Long-term debt*, reflecting more significant

results compared to the OLS equivalent (in Panel A of Table 8). Last, column 3 shows a negative effect of *Regional risk-taking* on *Short-term debt*, consistent with the OLS equivalent (in Panel B of Table 8). As in the analysis on financing costs, the IV estimates are larger than the respective from the OLS model; to be more conservative, we base our inferences on the OLS estimates.

We conduct several additional robustness tests, the results of which we report in Appendix Tables A6 to A9. In Tables A6 and A7, we control for the cultural measures by Hofstede and Schwartz; we find quantitatively similar results with those in Tables 7 and 8. In Table A8, we use additional fixed effects (such as industry × year and continent fixed effects) and/or cluster standard errors by region, country × year, or region × year. Again, our results are in line with our baseline. Finally, in Table A9, we report results from further robustness tests, where we exclude specific sectors (financial, utilities, and real estate firms) or drop the U.S. firms.

Last, we examine the impact of risk-taking preferences on the speed of adjustment of the firm's target debt ratio, closely following the approach in Flannery and Rangan (2006). To this end, we calculate the firm's market debt ratio as the ratio of the book value of a firm's total (short and long-term) debt to the sum of the book value of total debt plus firm's market capitalization. We employ this variable in year t+1, t+2 or t+3 as dependent variable. To capture the effect of risk-taking economic preferences on the speed of firm's target debt ratio adjustment we also include the (regional) risk-taking preference measure and its interaction term with the target debt ratio at t. The coefficient of this interaction term captures the impact of risk-taking preferences on the speed of adjustment. The model is estimated with fixed effects OLS (firm and year) and robust standard errors clustered by firm.

The results are reported in Table 10. The coefficient of the firm's target debt ratio ranges from 0.399 for the 1-year horizon to 0.077 for the 3-year horizon, thus pointing to a speed of adjustment of 60.1% towards the target debt ratio in a year, which soars to 92.3% for the 3-year

horizon. These results are in line with findings of Flannery and Rangan (2006). More importantly though, the coefficients of the interaction term are positive and statistically significant, ranging from 0.418 to 0.135 as we move from 1- to 3-year horizons. This implies that in higher risk-taking regions the speed of adjustment of target debt ratio significantly increases. This finding, regarding the impact of risk-taking preference on capital structure, provides support to the trade-off theory explanation.

[Insert Table 10 about here]

5. Conclusions and implications

Our study advances and empirically establishes the hypothesis that regional preferences over economic risk-taking work as an endowment that affects firms' financing costs and capital structure. Using different samples on syndicated loans and bonds, we first find that in regions with higher risk-taking preferences, both loan spreads and bond spreads are significantly higher. This implies that in such regions firms pay higher interest rates on debt. Consistent with this finding and key capital structure theories, we next show that firms in regions with high risk-taking preferences have lower leverage ratios. Thus, our findings unveil a mechanism through which established regional norms and behaviors regarding economic risk-taking affect the pricing of corporate debt and by extension capital structure decisions.

We contend that our findings have important interrelated implications. First, we show that regional economic preferences significantly matter for the determination of loan spreads and this has implications for the firms' capital structure decisions. This naturally opens a discussion of whether a relocation decision would be pareto improving for certain firms to benefit from lower

lending costs. Surprisingly, in the global sample of firms we use in our analysis, relocation happens for only an extremely small number of firms.

Second, we uncover a new tradeoff in the literature between risk-taking preferences and debt. On the one hand, under e.g. the real options theory, a general environment of risk-taking preferences is consistent with higher investment and returns in these regions. On the other hand, firms in regions with higher risk-taking face higher financing costs and take lower overall leverage, which are consistent with lower investment and returns.

Third, our analysis is in line with previous studies (e.g., Rajan and Zingales, 1995; Graham and Leary, 2011; Delis et al., 2020), which suggest that credit costs and capital structure decisions are interrelated while their determinants cannot be solely explained by firm-specific characteristics. External characteristics matter significantly and explain a big part of the underlying variation in credit cost and capital structure. We show that the emergence of novel datasets characterizing economic preferences (as opposed to using variables measuring societal culture) is key to understanding this variation. On this line, a fruitful avenue for future research should more formally consider the potential causal effects of economic patience (long-term orientation) and trust on firms' corporate finance decisions.

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Table 1. Variable definitions and sources

Variable	Source	Definition
Panel A. Economic preferences variables		
Regional risk-taking	Global Preferences Survey (GPS) and authors' calculations	Economic risk-taking preferences, calculated at the regional level.
Regional patience		Economic preferences over patience, calculated at the regional level.
Regional altruism		Economic preferences over altruism calculated at the regional level.
Regional trust		Economic preferences over trust calculated at the regional level.
Panel B. Cultural variables		
Hofstede's power distance		Lower in hierarchy members of organizations (institutions) accept that power is unevenly distributed. Thus, higher values of this measure are related to established and accepted hierarchy in society, whereas lower values indicate that people question hierarchy and try to distribute power.
Hofstede's individualism		Peoples' degree of integration into groups. Higher values points to individualism providing emphasis to "I" vs. "we", whereas lower values indicate the opposite, i.e., collectivism.
Hofstede's masculinity		Societal preferences for values such as, achievement, heroism, material reward etc. Higher values indicate a more 'masculine' society, whereas lower values point to more 'feminine' societies where modest and caring views are more prevalent.
Hofstede's uncertainty avoidance		Tolerance for uncertainty. Higher values indicate societies that rely more on guidelines, laws, codes, and the 'absolute truth', whereas lower values point to societies with easier acceptance of differing views and ideas, and less regulations.
Hofstede's long-term orientation		Higher values points to more long-term oriented societies in which problem solving is viewed as a necessity, whereas lower values relate to societies in which traditional values are more prevalent, usually lacking behind in terms of economic development.
Hofstede's indulgence		Freedom of society members to fulfil their human desires. Higher values indicate more freedom, whereas lower values point to more strict social norms.
Schwartz's harmony		The degree of harmony in societies. Higher values are related to societies where people put greater emphasis on the group rather than on the individual.
Schwartz's embeddedness		The degree of embeddedness in societies. Higher values are to cultural values such as tradition, security, obedience.
Schwartz's hierarchy		The degree of hierarchy in societies. Higher values are related to societies where their members accept more their position in hierarchy, are more modest and have higher self-control.
Schwartz's mastery		The degree of mastery in societies. Higher values are related to societies where success through personal action is more valued.
Schwartz's affective autonomy		The degree of affective autonomy in societies. Higher values point to societies where their members have more freedom on their choices seeking enjoyment by any means without censure.
Schwartz's intellectual autonomy		The degree of intellectual autonomy in societies. Higher values point to societies where their members have more freedom on their independent pursuits of ideas and thought.
Schwartz's egalitarianism		The degree of egalitarianism in societies. Higher values are related to societies where their members are valuing more equality and show more concerns for others.
Panel C. Loan-level variables		
Loan spread	DealScan	All-in-spread-drawn (in basis points), defined as the sum of the spread over LIBOR plus any facility fee.

All-in-spread undrawn (AISU)		Natural logarithm of the all-in-spread-undrawn, defined as the facility fee and the commitment fee on the unused amount of loan commitment.
Loan amount		Natural logarithm of the syndicated loan facility amount (in USD).
Maturity		Loan maturity in months.
Collateral		Dummy equal to 1 for collateralized loans and 0 otherwise.
Number of lenders		Number of banks in a syndicated loan.
Performance dummy		Dummy equal to 1 if the loan has performance pricing provisions and 0 otherwise.
Number of general covenants		Number of general covenants in a syndicated loan.
Loan purpose		A series of dummy variables indicating loan purpose (e.g., corporate purpose, debt repay, etc.).
Loan type		A series of dummy variables indicating loan type (e.g., bridge loan, revolver/line >= 1 Yr., term loan, etc.).
Panel D. Bond variables		
Bond spread	SDC Platinum	Bond at-issue yield spread is calculated by subtracting the at-issue bond yield from the risk-free rate (Treasury yield) issued with comparable maturity at each given date. Treasury yields are the monthly Treasury benchmark yields with two, three, five, seven, ten, and thirty-year coupon bonds.
Bond amount		Natural logarithm of the issue size of the bond (in million USD).
Maturity		Number of months for bond is issued.
Coupon		The coupon rate (in %) of the bond.
Bond rating		Bond's credit rating by Moody's, transformed into a numerical scale of 1 (Aaa) to 21 (C). Authors' calculations.
Callability dummy		Dummy variable equal to 1 if the bond is callable before the maturity date and 0 otherwise.
Subordinated dummy		Dummy variable equal to 1 if the bond is subordinated, unsecured or without collateral and 0 otherwise.
Private market dummy		Dummy variable equal to 1 if the bond is issued in private market and 0 otherwise.
Panel E. Firm-year variables		
Firm book leverage	Compustat	Firm's book value of debt to total assets.
Firm long-term debt		Firm's long-term debt to total assets.
Firm short-term debt		Firm's short-term debt to total assets.
Firm market to book		Firm's market to book ratio.
Firm EBIT		Firm's earnings before interest and taxes (EBIT) to total assets.
Firm long-term debt share		Firm's long-term debt to total liabilities.
Firm asset tangibility		Firm's property, plant and equipment to total assets.
Firm EBIT volatility		Firm's EBIT volatility, calculated as a rolling 4-year standard deviation estimate. Authors' calculations.
Firm interest rate coverage		Firm's earnings before interest and taxes (EBIT) to total interest and related expenses.
Firm capex to sales		Firm's capital expenditures to sales. Capital expenditures are calculated as the change in property, plant and equipment from previous year plus depreciation and amortization.
Firm depreciation		Firm's depreciation and amortization to total assets.
Firm dividend to equity		Firm's common dividends to book value of equity.

Firm dividend payout ratio		Firm's common dividends to earnings before interest and taxes (EBIT).
Firm no research dummy		Dummy that takes the value of 1 if the firm does not report research expenses or these are zero, and 0 otherwise.
Firm size		Natural logarithm of the firm's total assets.
Panel F. Lender-year variables		
Lender book leverage	Compustat	Lender's book value of debt to total assets.
Lender EBIT		Lender's earnings before interest and taxes (EBIT) to total assets.
Lender liquidity		Lender's cash to total assets.
Lender deposits		Lender's total deposits to total assets.
Lender interest expenses		Lender's total interest and related expenses to total assets.
Panel G. Country-year variables		
Country-year GDP per capita	World Development Indicators	Natural logarithm of borrower's country GDP per capita, PPP, in constant 2011 international $. Source WDI.
Country-year GPD growth		Country-year real GPD growth rate (annual %). Source WDI.
Country-year crises	Laeven and Valencia (2020)	Dummy equal to 1 for the years the country experiences a systemic banking crisis and 0 otherwise.
Country-year loan spread	DealSacn	Country-year mean of all-in-spread-drawn. Authors' calculations.
Panel H. Exogenous variables		
Regional crop yield	Galor and Özak (2016)	Regional potential crop yield in the pre-industrial era (before 1500), measured in calories per hectare per day, divided by 1,000.
Regional crop growth cycle		Regional potential crop growth cycle in the pre-industrial era (before 1500), divided by 1,000. Growth cycle for each crop captures the days elapsed from the planting to full maturity. See Galor and Özak (2016) for more details.

Table 2. Summary statistics

The table reports basic summary statistics for the three samples employed in the analysis. Definitions for all variables are provided in Table 1. The sample period is 1996-2018.

	Syndicated loans sample					USA Bonds sample					Compustat sample				
	Obs.	Mean	St. Dev.	Min.	Max.	Obs.	Mean	St. Dev.	Min.	Max.	Obs.	Mean	St. Dev.	Min.	Max.
Dependent variables															
Loan spread	60,430	189.57	126.15	-200	1,400										
Bond spread						13,275	182.03	175.71	-559	7,300					
Book leverage											238,226	0.47	0.22	0	1
Firm long-term debt											238,112	0.12	0.14	0	0.97
Firm short-term debt											238,112	0.37	0.19	0	1
Explanatory variables															
Regional risk-taking	60,430	0.12	0.21	-1.24	1.45	13,275	0.15	0.20	-1.01	1.45	238,226	0.01	0.31	-1.54	1.98
Regional patience	60,430	0.80	0.36	-1.78	2.56	13,275	0.85	0.35	-1.78	2.56	238,226	0.50	0.45	-1.78	2.56
Regional altruism	60,430	0.35	0.30	-1.23	2.03	13,275	0.46	0.28	-0.38	1.99	238,226	0.17	0.42	-1.94	2.03
Regional trust	60,430	0.11	0.26	-2.31	0.99	13,275	0.10	0.25	-2.31	0.99	238,226	0.02	0.41	-2.40	1.96
Hofstede's power distance	60,356	40.84	5.99	11	94						234,265	51.12	15.87	11	94
Hofstede's individualism	60,356	87.70	10.23	14	91						234,265	62.48	27.74	12	91
Hofstede's masculinity	60,356	61.47	7.61	5	95						234,265	64.92	18.35	5	95
Hofstede's uncertainty avoidance	60,356	48.32	10.33	29	112						234,265	57.01	22.47	29	112
Hofstede's long-term orientation	60,430	31.87	15.13	13	100						236,783	55.36	28.17	4	100
Hofstede's indulgence	60,429	65.91	7.69	20	97						235,803	51.55	18.53	0	100
Schwartz's harmony	60,399	3.58	0.27	3.28	4.62						235,400	3.83	0.33	3.28	4.62
Schwartz's embeddedness	60,399	3.61	0.15	3.03	4.41						235,400	3.60	0.20	3.03	4.45
Schwartz's hierarchy	60,399	2.35	0.14	1.60	3.49						235,400	2.57	0.44	1.60	3.49
Schwartz's mastery	60,399	4.07	0.08	3.66	4.41						235,400	4.11	0.15	3.66	4.41
Schwartz's affective autonomy	60,399	3.91	0.14	2.54	4.39						235,400	3.76	0.28	2.49	4.39
Schwartz's intellectual autonomy	60,399	4.29	0.23	3.66	5.13						235,400	4.40	0.31	3.66	5.13
Schwartz's egalitarianism	60,399	4.72	0.12	4.23	5.27						235,400	4.59	0.24	4.23	5.27
Facility amount	60,430	19.36	1.72	3.72	24.62										
Amount						13,275	5.89	1.61	0.22	10.80					
Maturity	60,430	50.88	24.32	1	725	13,275	129.14	111.65	0.10	1,217.7					
Collateral	60,430	0.43	0.49	0	1										
Number of lenders	60,430	10.70	8.93	1	290										
Performance dummy	60,430	0.35	0.48	0	1										
Number of general covenants	60,430	2.60	2.31	0	10										
Coupon rate						13,275	5.56	2.13	0.05	15					
Bond rating						13,275	7.89	3.82	1	19					
Callability dummy						13,275	0.10	0.30	0	1					
Subordinated dummy						13,275	0.16	0.37	0	1					
Private market dummy						13,275	0.10	0.30	0	1					

Firm book leverage	60,430	0.59	0.18	0	1	13,275	0.68	0.18	0.06	1					
Firm market to book	60,430	2.94	4.63	0	94.19						238,226	2.35	3.85	0	81.97
Firm EBIT	60,430	0.07	0.09	-5.89	1.70	13,275	0.08	0.04	-0.07	0.20	238,226	0.03	0.21	-7.96	4.31
Firm long-term debt share	60,430	0.46	0.24	0	0.99										
Firm asset tangibility						13,275	0.32	0.29	0	0.97	238,226	0.30	0.24	0	1
Firm EBIT volatility						13,275	0.02	0.03	0	0.72	238,226	0.05	0.12	0	3.68
Firm interest rate coverage						13,275	5.91	9.52	-15.24	179.12					
Firm capex to sales						13,275	0.23	2.38	-4.52	191.33					
Firm depreciation											238,226	0.04	0.03	-0.18	0.51
Firm dividend to equity											238,226	0.03	0.09	-0.59	2.50
Firm dividend payout ratio						13,275	0.20	0.54	-16.03	13.30					
Firm no research dummy						13,275	0.71	0.46	0	1	238,226	0.55	0.50	0	1
Firm size	60,430	8.15	1.87	0.09	23.43	13,275	9.90	1.84	2.07	13.93	238,226	5.84	2.01	0.02	23.45
Lender book leverage	60,430	0.92	0.03	0.34	1										
Lender EBIT	60,430	0.07	0.03	-0.54	0.21										
Lender liquidity	60,430	0.03	0.03	0	0.29										
Lender deposits	60,430	0.53	0.18	0	0.92										
Lender interest expenses	60,430	0.02	0.01	0	0.12										
Country-year GDP per capita	60,430	10.76	0.22	7.96	10.99						238,226	10.27	0.73	6.99	11.50
Country-year GPD growth	60,430	2.40	1.41	-8.07	12.72						238,226	3.20	3.03	-17.04	19.68
Country-year crises	60,430	0.15	0.36	0	1						238,226	0.12	0.32	0	1
Country-year loan spread	60,430	225.07	50.14	20.68	543.05										
Regional crop yield	60,322	10.87	3.98	0	17.57										
Regional crop growth cycle	60,322	0.14	0.02	0	0.18										

Table 3. Risk-taking preferences and loan spreads: Baseline results

The table reports coefficient estimates and t-statistics (in parentheses) from estimations using the syndicated loans sample. The dependent variable is *Loan spread*. In all specifications the sample includes syndicated loan facilities where the borrower's country is the same with the lender's country, whereas as lenders only lead arranger banks are being considered. Definitions for all variables are in Table 1. Estimation method is OLS with the fixed effects reported in the lower part of the table and robust standard errors clustered by country. The sample period is 1996-2018. The lower part of the table also reports the number of observations, number of clusters, and the adjusted R-squared. The ***, **, and * marks denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
Regional risk-taking	14.077***	17.573***	17.716***	21.657***	17.032***
	(3.10)	(3.65)	(3.24)	(3.69)	(5.77)
Regional patience	-13.217***	-13.964***	-13.855***	-11.407***	-8.040***
	(-5.03)	(-3.85)	(-3.32)	(-3.80)	(-7.95)
Regional altruism	10.631***	10.529*	9.123*	4.218*	2.372
	(2.94)	(1.78)	(1.87)	(1.99)	(1.63)
Regional trust	22.915***	23.317**	22.100**	17.947***	14.719***
	(3.83)	(2.66)	(2.55)	(3.42)	(4.50)
Facility amount		-18.375***	-11.120**	-11.762***	-13.408***
		(-5.42)	(-2.27)	(-3.54)	(-5.69)
Maturity		-0.116	-0.068	-0.008	-0.003
		(-1.31)	(-0.81)	(-0.14)	(-0.04)
Collateral		70.485***	50.315***	45.417***	45.259***
		(31.84)	(22.83)	(32.97)	(29.71)
Number of lenders		-0.600***	-0.226	-0.317***	-0.191*
		(-3.50)	(-0.97)	(-3.29)	(-1.77)
Performance dummy		-35.134***	-27.723***	-26.295***	-26.177***
		(-7.09)	(-4.86)	(-8.27)	(-8.41)
Number of general covenants		2.825***	2.908***	2.687***	2.699***
		(9.77)	(9.12)	(13.72)	(16.25)
Firm book leverage			93.934***	89.376***	85.295***
			(16.61)	(16.92)	(12.66)
Firm M/B			-0.881***	-1.281***	-1.176***
			(-5.31)	(-11.98)	(-6.73)
Firm EBIT			-157.808***	-145.392***	-146.329***
			(-10.87)	(-14.12)	(-13.05)
Firm long-term debt			26.406***	31.025***	30.013***
			(6.42)	(10.68)	(13.36)
Firm size			-12.610***	-11.349***	-10.167***
			(-3.73)	(-5.19)	(-7.23)
Lender book leverage				-321.963***	-302.137***
				(-6.95)	(-6.27)
Lender EBIT				-13.136	-50.231**
				(-0.28)	(-2.69)
Lender liquidity				138.051***	137.883***
				(2.97)	(3.17)
Lender deposits				-42.000***	-48.703***

				(-4.62)	(-7.29)
Lender interest expenses				855.516**	530.401***
				(2.65)	(3.84)
Country-year GDP per capita					-33.742***
					(-3.75)
Country-year GPD growth					0.960
					(0.75)
Country-year loan spread					0.561***
					(9.18)
Country-year crises					13.296
					(1.51)
Constant	203.077***	541.061***	445.310***	747.128***	994.655***
	(89.11)	(7.63)	(5.90)	(10.15)	(7.34)
Observations	100,670	98,527	71,795	60,430	60,430
No of clusters	44	44	44	34	34
Industry, Loan purpose, Loan type, Continent, Year FE	Yes	Yes	Yes	Yes	Yes
Clustering	Country	Country	Country	Country	Country
Adj-R^2	0.36	0.48	0.51	0.53	0.55

Table 4. Risk-taking preferences and loan spreads: Controlling for culture

The table reports coefficient estimates and t-statistics (in parentheses) from estimations using the syndicated loans sample. The dependent variable is *Loan spread*. In all specifications the sample includes syndicated loan facilities where the borrower's country is the same with the lender's country, whereas as lenders only lead arranger banks are being considered. Definitions for all variables are in Table 1. Estimation method is OLS with the fixed effects reported in the lower part of the table and robust standard errors clustered by country. The sample period is 1996-2018. The lower part of the table also reports the number of observations, number of clusters, and the adjusted R-squared. The ***, **, and * marks denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Hofstede's cultural dimension measures

	(1)	(2)	(3)	(4)	(5)	(6)
Regional risk-taking	15.978***	16.710***	16.323***	15.827***	17.426***	16.342***
	(6.41)	(5.85)	(6.14)	(6.50)	(5.48)	(6.54)
Regional patience	-8.207***	-7.835***	-7.906***	-8.016***	-8.424***	-7.921***
	(-8.87)	(-7.32)	(-7.49)	(-8.78)	(-8.05)	(-7.73)
Regional altruism	2.045	2.665*	2.738*	2.027	2.524*	2.480*
	(1.46)	(1.86)	(2.02)	(1.47)	(1.85)	(1.77)
Regional trust	13.460***	14.607***	14.260***	13.551***	15.256***	13.946***
	(5.73)	(4.47)	(4.50)	(5.32)	(4.23)	(5.25)
Hofstede's power distance	-0.455**					
	(-2.64)					
Hofstede's individualism		-0.187				
		(-0.84)				
Hofstede's masculinity			-0.111			
			(-0.65)			
Hofstede's uncertainty avoidance				-0.223		
				(-1.62)		
Hofstede's long-term orientation					0.305	
					(1.29)	
Hofstede's indulgence						0.246
						(1.50)
Observations	60,356	60,356	60,356	60,356	60,430	60,429
No of clusters	31	31	31	31	34	33
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Loan purpose, Loan type, Continent, Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustering	Country	Country	Country	Country	Country	Country
Adj-R^2	0.55	0.55	0.55	0.55	0.55	0.55

Panel B. Schwartz's cultural value orientation scores

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Regional risk-taking	16.504***	16.594***	16.581***	15.291***	16.508***	16.337***	16.692***
	(5.87)	(5.89)	(5.89)	(6.97)	(6.10)	(5.89)	(5.84)
Regional patience	-7.866***	-8.022***	-7.908***	-7.780***	-7.830***	-7.823***	-7.852***
	(-7.63)	(-7.52)	(-7.70)	(-8.30)	(-7.52)	(-7.67)	(-7.52)
Regional altruism	2.478*	2.700**	2.598*	1.681	2.402*	2.172**	2.480*
	(1.93)	(2.21)	(1.97)	(1.23)	(1.73)	(2.13)	(1.72)
Regional trust	14.523***	14.655***	14.488***	12.644***	14.468***	14.286***	14.511***
	(4.32)	(4.42)	(4.62)	(6.67)	(4.59)	(4.44)	(4.57)
Schwartz's harmony	0.669						
	(0.06)						
Schwartz's embeddedness		-13.054					
		(-0.53)					
Schwartz's hierarchy			-6.400				
			(-0.42)				
Schwartz's mastery				64.118***			
				(2.88)			
Schwartz's affective autonomy					-3.651		
					(-0.24)		
Schwartz's intellectual autonomy						-6.736	

						(-0.34)	
Schwartz's egalitarianism							23.858 (0.88)
Observations	60,399	60,399	60,399	60,399	60,399	60,399	60,399
No of clusters	33	33	33	33	33	33	33
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Loan purpose, Loan type, Continent, Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clustering	Country	Country	Country	Country	Country	Country	Country
Adj-R^2	0.55	0.55	0.55	0.55	0.55	0.55	0.55

Table 5. Risk-taking preferences and loan spreads: IV results

The table reports coefficient estimates and t-statistics (in parentheses) from IV estimations using the syndicated loans sample. The five specifications replicate those in Table 3. The dependent variable in second stage regression is *Loan spread*. Definitions for all variables are in Table 1. Estimation method is IV with the fixed effects reported in the lower part of the table and robust standard errors clustered by country. In all specifications the sample includes syndicated loan facilities where the borrower's country is the same with the lender's country, whereas only lead arrangers are being considered. The bottom part of the table also reports the number of observations and number of clusters. The sample period is 1996-2018. The ***, **, and * marks denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
Regional risk-taking	74.293***	41.885**	59.329**	58.480**	41.389***
	(3.432)	(2.562)	(1.966)	(2.332)	(3.185)
Regional patience	-27.939***	-19.237***	-23.333**	-20.641***	-14.130***
	(-4.089)	(-3.159)	(-2.458)	(-2.722)	(-5.112)
Regional altruism	2.755	6.227	2.430	-1.231	-1.213
	(0.975)	(1.570)	(0.804)	(-0.558)	(-0.545)
Regional trust	21.561***	20.342***	19.151***	18.330***	14.977***
	(3.994)	(2.954)	(2.748)	(4.258)	(5.528)
First stage					
Regional crop yield	-0.003***	-0.003***	-0.003***	-0.003***	-0.003***
	(-6.057)	(-6.171)	(-4.755)	(-10.703)	(-10.973)
Regional crop growth cycle	0.003**	0.003**	0.002*	0.003***	0.003***
	(1.998)	(1.999)	(1.741)	(3.662)	(3.704)
Observations	100,308	98,166	71,487	60,325	60,325
No of clusters	43	43	43	33	33
Controls as in Table 3	Yes	Yes	Yes	Yes	Yes
Industry, Loan purpose, Loan type, Continent, Year FE	Yes	Yes	Yes	Yes	Yes
Clustering	Country	Country	Country	Country	Country

Table 6. Risk-taking preferences and bond spreads: Baseline results

The table reports coefficient estimates and t-statistics (in parentheses) from estimations using the USA bonds sample. The dependent variable is *Bond spread*. Definitions for all variables are in Table 1. Bond rating residuals is the residuals from a first stage regression where bond's credit rating is regressed on regional risk-taking (for more information, see the main text). Estimation method is OLS with the fixed effects reported in the lower part of the table and robust standard errors clustered by state. The sample period is 1996-2018. The lower part of the table also reports the number of observations, number of clusters, and the adjusted R-squared. The ***, **, and * marks denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
Regional risk-taking	21.764***	27.464***
	(4.33)	(3.27)
Regional patience	-1.274	-5.135
	(-0.41)	(-1.14)
Regional altruism	3.759	-2.240
	(0.86)	(-0.47)
Regional trust	-12.002**	-7.290
	(-2.08)	(-0.91)
Amount	1.549**	1.756**
	(2.33)	(2.03)
Maturity	-0.213***	-0.176***
	(-13.23)	(-9.20)
Coupon	68.114***	61.848***
	(16.90)	(16.68)
Bond rating residuals	8.772***	8.018***
	(8.14)	(9.99)
Callability dummy	30.543***	33.591***
	(4.27)	(4.35)
Subordinated dummy	2.194	8.888***
	(0.89)	(2.77)
Private market dummy	10.926***	11.638***
	(5.30)	(4.76)
Firm book leverage		50.557***
		(4.96)
Firm EBIT		-230.446***
		(-7.84)
Firm asset tangibility		7.827
		(1.17)
Firm EBIT volatility		108.055***
		(2.99)
Firm interest coverage ratio		0.312*
		(1.84)
Firm capex ratio		-0.346***
		(-3.42)
Firm dividend payout ratio		0.639
		(0.69)
Firm no research dummy		0.849
		(0.29)
Firm size		-2.201
		(-1.65)
Constant	-191.274***	-163.149***
	(-10.64)	(-7.49)
Observations	22,438	13,275
No of clusters	51	49
Industry, US interstate division, Year FE	Yes	Yes
Clustering	State	State
Adj-R^2	0.84	0.77

Table 7. Risk-taking preferences and Firm book leverage

The table reports coefficient estimates and t-statistics (in parentheses) from estimations using the Compustat sample. The dependent variable is *Firm book leverage*. Definitions for all variables are in Table 1. Estimation method is OLS with the fixed effects reported in the lower part of the table and robust standard errors clustered by country. The sample period is 1996-2018. The lower part of the table also reports the number of observations, number of clusters, and the adjusted R-squared. The ***, **, and * marks denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)
Regional risk-taking	-0.035***	-0.021***	-0.024***
	(-4.38)	(-3.00)	(-3.71)
Regional patience	0.018**	0.008	0.017**
	(2.05)	(1.06)	(2.52)
Regional altruism	0.013	0.007	0.009
	(1.30)	(0.69)	(0.92)
Regional trust	-0.037***	-0.036***	-0.039***
	(-4.50)	(-5.29)	(-3.13)
Firm M/B		0.006***	0.006***
		(4.56)	(4.37)
Firm EBIT		-0.153***	-0.157***
		(-4.49)	(-4.49)
Firm asset tangibility		0.010	0.010
		(0.41)	(0.41)
Firm EBIT volatility		-0.136**	-0.137**
		(-2.48)	(-2.49)
Firm depreciation		0.536***	0.541***
		(4.67)	(4.80)
Firm dividend to equity		0.168***	0.164***
		(4.83)	(4.93)
Firm no research dummy		0.027***	0.025***
		(7.72)	(4.25)
Firm size		0.029***	0.030***
		(9.98)	(11.15)
Country-year GDP per capita			-0.027
			(-1.57)
Country-year GPD growth			-0.004**
			(-2.03)
Country-year crises			0.011
			(1.14)
Constant	0.469***	0.254***	0.532***
	(76.47)	(10.27)	(2.90)
Observations	560,742	238,248	238,226
No of clusters	58	58	58
Industry, Continent, Year FE	Yes	Yes	Yes
Clustering	Country	Country	Country
Adj-R^2	0.17	0.30	0.30

Table 8. Risk-taking preferences and Firm long-term debt and Firm short-term debt

The table reports coefficient estimates and t-statistics (in parentheses) from estimations using the Compustat sample. The dependent variable is *Firm long-term debt* in Panel A and *Firm short-term debt* in Panel B. Definitions for all variables are in Table 1. Estimation method is OLS with the fixed effects reported in the lower part of the table and robust standard errors clustered by country. The sample period is 1996-2018. The lower part of the table also reports the number of observations, number of clusters, and the adjusted R-squared. The ***, **, and * marks denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)
Panel A. Dependent variable is Firm long-term debt			
Regional risk-taking	-0.014**	-0.005	-0.007
	(-2.07)	(-1.01)	(-1.30)
Regional patience	0.012*	0.004	0.011
	(1.93)	(0.77)	(1.39)
Regional altruism	-0.010	-0.005	-0.003
	(-1.30)	(-0.81)	(-0.55)
Regional trust	-0.023***	-0.020***	-0.020***
	(-3.53)	(-3.68)	(-2.72)
Observations	579,187	238,134	238,112
No of clusters	58	58	58
Control variables	No	+Firm-year	+Counrtry-year
Industry, Continent, Year FE	Yes	Yes	Yes
Clustering	Country	Country	Country
Adj-R^2	0.17	0.30	0.30
Panel B. Dependent variable is Firm short term-debt			
Regional risk-taking	-0.023***	-0.017***	-0.019***
	(-2.95)	(-3.17)	(-3.09)
Regional patience	0.009	0.007	0.010
	(1.16)	(1.10)	(1.55)
Regional altruism	0.019**	0.010	0.010
	(2.39)	(1.16)	(1.14)
Regional trust	-0.017	-0.021***	-0.023***
	(-1.61)	(-2.99)	(-2.73)
Observations	219,764	219,764	219,764
No of clusters	498	498	498
Control variables	No	+Firm-year	+Counrtry-year
Industry, Year FE	Yes	Yes	Yes
Clustering	Region	Region	Region
Adj-R^2	0.28	0.33	0.33

Table 9. Risk-taking preferences and capital structure: IV results

The table reports coefficient estimates and t-statistics (in parentheses) from IV estimations using the Compustat sample. The dependent variable of the second stage regression is Firm book leverage, *Firm long-term debt*, and *Firm short-term debt* in columns 1 to 3, respectively. Definitions for all variables are in Table 1. The lower part of the table reports the first stage results on the exogenous instruments, the number of observations, the number of clusters and the included fixed effects. For brevity, only the coefficients of interest are reported from second stage regressions. The sample period is 1996-2018. The ***, **, and * marks denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)
Regional risk-taking	-0.222**	-0.101*	-0.139**
	(-2.111)	(-1.845)	(-1.990)
Regional patience	0.064**	0.027	0.042**
	(2.149)	(1.499)	(2.477)
Regional altruism	-0.015	-0.003	-0.016
	(-0.505)	(-0.222)	(-0.811)
Regional trust	-0.017	-0.011*	-0.009
	(-1.269)	(-1.754)	(-0.823)
First stage			
Regional crop yield	-0.002**	-0.002**	-0.002**
	(-2.293)	(-2.254)	(-2.315)
Regional crop growth cycle	0.002*	0.002*	0.002*
	(1.829)	(1.742)	(1.866)
Observations	202,312	202,312	202,312
No of clusters	58	58	58
Industry, Continent, Year FE	Yes	Yes	Yes
Clustering	Country	Country	Country

Table 10. Risk-taking preferences and speed of firm's target leverage adjustment

The table reports coefficient estimates and t-statistics (in parentheses) from estimations using the Compustat sample. The dependent variable is *Firm market debt ratio* at *t*+1, *t*+2 and *t*+3 in columns (1), (2) and (3), respectively, defined as the ratio of book value of firm's total (short and long-term) debt to the sum of the book value of total debt plus firm's market capitalization. Definitions for the control variables are in Table 1. Estimation method is OLS with the fixed effects reported in the lower part of the table and robust standard errors clustered by firm. The sample period is 1996-2018. The lower part of the table also reports the number of observations, number of clusters, and the adjusted R-squared. The ***, **, and * marks denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)
Firm market debt ratio	0.399***	0.189***	0.077***
	(54.74)	(25.60)	(12.40)
Firm market debt ratio x Regional risk-taking	0.418***	0.221***	0.135***
	(15.74)	(7.84)	(6.15)
Firm M/B	-0.0003***	-0.0004***	-0.0001**
	(-6.43)	(-6.93)	(-2.46)
Firm EBIT	-0.007***	-0.005***	-0.003**
	(-6.73)	(-3.99)	(-1.98)
Firm depreciation	0.036***	-0.004	-0.012
	(4.01)	(-0.38)	(-1.06)
Firm asset tangibility	0.017***	0.013***	0.007***
	(9.18)	(5.66)	(2.98)
Firm research expenses to assets	-0.001	-0.006	-0.003
	(-0.98)	(-1.54)	(-1.11)
Firm no research dummy	0.001**	0.001**	0.001
	(2.55)	(2.08)	(1.05)
Firm size	0.007***	0.009***	0.009***
	(17.00)	(16.29)	(15.40)
Industry-year median of market debt ratio	0.010	-0.011	-0.027*
	(1.04)	(-0.85)	(-1.95)
Country-year GDP per capita	-0.012***	-0.016***	-0.015***
	(-11.82)	(-12.25)	(-10.11)
Country-year GPD growth	0.0003***	-0.0002**	0.0005***
	(4.97)	(-2.45)	(6.17)
Country-year crises	0.011***	0.002**	0.001
	(15.27)	(2.37)	(0.95)
Constant	0.127***	0.188***	0.183***
	(13.50)	(15.24)	(13.31)
Observations	350,238	310,194	274,944
No of clusters	36,744	33,502	30,545
Firm, Year FE	Yes	Yes	Yes
Clustering	Firm	Firm	Firm
Adj-R^2	0.89	0.88	0.88

Online appendix

This appendix, intended for online use only, provides details for the samples used in our empirical analysis, and additional robustness tests.

Table A1. List of additional country-year control variables

The table provides a list of more than 100 control variables, which we use in additional regressions. We do not report the results from these regressions, but the effect of *Regional risk-taking* is similar or higher compared to that in our baseline regressions. In many respects, we use more than one variable (i.e. from a different source) for the same country-year characteristic (e.g., corruption). Abbreviation of sources: ICRG: International Country Risk Guide; FH: Freedom House; WB: World Bank (either World Development Indicators or Quality of Governance indices); HF: Heritage Foundation; SWIID: Standardized World Income Inequality Database; GFDD: Global Financial Development Database. Many of the variables below are % of GDP.

Variable	Source	Variable	Source
Corruption	ICRG, FH, WB, HF	Bank accounts (per 1,000 people)	GFDD
Rule of law	ICRG, FH, WB, HF	Bank branches (per 1,000 people)	GFDD
Government quality	ICRG, FH, WB	Corporate bonds to total bonds	GFDD
Ethnic fractionalization	Alesina et al. (2003)	Private credit by banks	GFDD
Language fractionalization	Alesina et al. (2003)	Domestic credit to private sector	GFDD
Religion fractionalization	Alesina et al. (2003)	Outstanding public debt to securities	GFDD
Population size	WB	Syndicated loan issuance volume	Own calculations
Population density	WB	Syndicated loan average maturity	Own calculations
Population growth	WB	Bank net interest margin	GFDD
Urban population	WB	Bank lending-deposit spread	GFDD
Political terror	US state department	Bank return on assets	GFDD
Armed forces	WB	Bank cost to income ratio	GFDD
Military expenditure	WB	Foreign bank ownership	Claessens and Van Horen (2014)
Average schooling (years)	Barro and Lee (2013)	Bank Z-score	GFDD
Average schooling (male and female)	Barro and Lee (2013)	Bank non-performing loans ratio	GFDD
Government education expenditure	UNESCO	Banking industry H-statistic	GFDD
Age dependency (% of labor)	WB	Bank Lerner index	Delis et al. (2015), GFDD
Agriculture value added	WB	Boone indicator	Delis et al. (2015), GFDD
Birth rate (per 1,000 people)	WB	Remittance inflows	GFDD
CO2 emissions	WB	Banking crisis dummy	GFDD
Death rate (per 1,00 people)	WB	Consumer price index	GFDD
DEC alternative conversion factor	WB	Capital stringency	Barth et al. (2013)
External balance on goods & services	WB	Bank activity restrictions	Barth et al. (2013)
Electric power consumption	WB	Official bank supervisory powers	Barth et al. (2013)
Various employment ratios	WB, IMF	Bank private monitoring	Barth et al. (2013)
Consumption expenditure	WB	Bank external governance	Barth et al. (2013)
Foreign direct investment inflows	WB	Bank deposit insurance	Barth et al. (2013)
Fertility rate	WB	Bank entry requirements	Barth et al. (2013)
Forest area	WB	Corporate tax rates	WB, OECD, Tax foundation
Gini coefficient	SWIID	Business freedom	HF
Lending interest rate	WB	Labor freedom	HF
Deposit interest rate	WB	Trade freedom	HF
Arable land	WB	Investment freedom	HF
Life expectancy at birth	WB	Financial freedom	HF
Mobile subscriptions	WB	Tax burden	HF
Infant mortality	WB	Government spending	HF, WB
Official exchange rate	WB	Fiscal health	HF
Country size	WB	Fiscal deficit	WB
Longitude	G-Econ project	Fiscal debt	WB
Terrain roughness	G-Econ project	Monetary freedom	HF

Table A2. Samples details

Sample period for all three samples is 1996-2018.

	Syndicated loans sample details						Compustat sample details				USA bonds sample details				
	Country	**Obs.**	**%**	**No. of regions**	**No. of firms**	**No. of lenders**	**Obs.**	**%**	**No. of regions**	**No. of firms**		**State (region)**	**Obs.**	**%**	**No. of firms**
1	Argentina						237	0.1	4	50	1	Alabama	105	0.79	13
2	Australia	1,193	1.97	8	92	26	5,425	2.28	13	810	2	Alaska	1	0.01	1
3	Austria	6	0.01	2	4	1	679	0.29	9	90	3	Arizona	87	0.66	25
4	Bangladesh						367	0.15	2	97	4	Arkansas	108	0.81	12
5	Botswana						43	0.02	1	9	5	California	893	6.73	142
6	Brazil	20	0.03	3	8	2	1,697	0.71	15	251	6	Colorado	188	1.42	55
7	Canada	1,391	2.3	8	241	21	17,579	7.38	8	2,596	7	Connecticut	845	6.37	50
8	Chile						227	0.1	8	94	8	Delaware	70	0.53	10
9	China	13	0.02	5	7	4	27,634	11.6	24	3,357	9	D. of Columbia	253	1.91	10
10	Colombia						80	0.03	6	25	10	Florida	528	3.98	84
11	Czech Republic	5	0.01	2	2	2	28	0.01	4	11	11	Georgia	414	3.12	68
12	Egypt						92	0.04	5	36	12	Hawaii	21	0.16	1
13	Estonia						112	0.05	2	18	13	Idaho	29	0.22	7
14	Finland	51	0.08	1	21	4	1,493	0.63	4	159	14	Illinois	818	6.16	117
15	France	1,397	2.31	12	161	12	2,332	0.98	21	549	15	Indiana	164	1.24	26
16	Germany	1,419	2.35	12	126	18	3,933	1.65	13	572	16	Iowa	78	0.59	9
17	Ghana						42	0.02	3	10	17	Kansas	26	0.2	9
18	Greece	23	0.04	1	9	4	710	0.3	6	158	18	Kentucky	64	0.48	17
19	Hungary	12	0.02	1	3	3	98	0.04	4	19	19	Louisiana	80	0.6	23
20	India	261	0.43	8	66	20	11,849	4.97	20	1,769	20	Maine	3	0.02	2
21	Indonesia	7	0.01	1	3	2	655	0.27	7	186	21	Maryland	96	0.72	25
22	Israel	1	0	1	1	1	980	0.41	6	218	22	Massachusetts	275	2.07	51
23	Italy	131	0.22	4	23	8	1,528	0.64	16	293	23	Michigan	676	5.09	52
24	Japan	980	1.62	6	171	20	46,406	19.48	10	3,599	24	Minnesota	216	1.63	34
25	Jordan						130	0.05	3	41	25	Mississippi	13	0.1	2
26	Kazakhstan						7	0	3	3	26	Missouri	237	1.79	43
27	Kenya						224	0.09	3	32	27	Nebraska	137	1.03	13
28	Lithuania						79	0.03	8	20	28	Nevada	256	1.93	29
29	Malawi						13	0.01	1	2	29	New Hampshire	11	0.08	6
30	Mexico	24	0.04	4	9	4	315	0.13	7	80	30	New Jersey	437	3.29	55

31	Morocco						203	0.09	7	43	31	New Mexico	19	0.14	4
32	Netherlands	436	0.72	8	72	8	1,376	0.58	10	184	32	New York	1,650	12.43	135
33	Nigeria	2	0	1	1	1	379	0.16	11	65	33	North Carolina	293	2.21	55
34	Pakistan						1,468	0.62	4	211	34	North Dakota	4	0.03	1
35	Peru	3	0	1	1	1	119	0.05	4	46	35	Ohio	489	3.68	99
36	Philippines	1	0	1	1	1	721	0.3	2	120	36	Oklahoma	172	1.3	32
37	Poland	32	0.05	2	6	4	373	0.16	15	140	37	Oregon	83	0.63	12
38	Portugal	28	0.05	2	7	3	290	0.12	3	47	38	Pennsylvania	431	3.25	77
39	Romania						136	0.06	27	44	39	Rhode Island	84	0.63	7
40	Russia	14	0.02	3	9	5	243	0.1	15	78	40	South Carolina	16	0.12	5
41	Saudi Arabia	31	0.05	3	8	3	458	0.19	8	85	41	South Dakota	14	0.11	5
42	South Africa	41	0.07	3	11	4	1,316	0.55	7	224	42	Tennessee	362	2.73	36
43	South Korea	288	0.48	5	36	14	11,335	4.76	15	1,494	43	Texas	1,722	12.97	327
44	Spain	275	0.46	7	52	4	1,001	0.42	13	148	44	Utah	40	0.3	10
45	Sri Lanka						954	0.4	4	155	45	Vermont	3	0.02	1
46	Sweden	89	0.15	7	33	2	3,385	1.42	8	430	46	Virginia	439	3.31	59
47	Switzerland	207	0.34	5	32	6	1,420	0.6	6	149	47	Washington	185	1.39	26
48	Tanzania						35	0.01	1	4	48	West Virginia	10	0.08	3
49	Thailand	11	0.02	2	4	2	1,913	0.8	15	419	49	Wisconsin	130	0.98	36
50	Turkey	36	0.06	1	5	6	307	0.13	9	84					
51	Uganda						15	0.01	1	3					
52	Ukraine						6	0	3	4					
53	United Arab Emirates						202	0.08	6	33					
54	United Kingdom	3,157	5.22	12	397	31	11,200	4.7	12	1,480					
55	United States	48,845	80.83	50	6,088	399	74,226	31.16	51	9,676					
56	Venezuela						1	0	1	1					
57	Vietnam						105	0.04	13	74					
58	Zimbabwe						45	0.02	2	14					
	Total	**60,430**	**100**	**192**	**7,710**	**646**	**238,226**	**100**	**509**	**30,609**			**13,275**	**100**	**1,921**

Table A3. Risk-taking preferences and loan spreads: More fixed effects and alternative clustering

The table reports coefficient estimates and t-statistics (in parentheses) when including various fixed effects and employing alternative clustering using the syndicated loans sample. In all specifications the sample includes syndicated loan facilities where the borrower's country is the same with the lender's country, whereas as lenders only lead arranger banks are being considered. Definitions for all variables are in Table 1. Estimation method is OLS. The sample period is 1996-2018. The ***, **, and * marks denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
Regional risk-taking	17.032***	16.899***	17.032***	15.839***	16.306***
	(2.82)	(4.51)	(5.72)	(8.12)	(9.42)
Regional patience	-8.040***	-7.810***	-8.040***	-8.279***	-8.554***
	(-2.70)	(-3.39)	(-3.68)	(-8.98)	(-13.27)
Regional altruism	2.372	2.085	2.372	2.052**	0.553
	(0.56)	(0.76)	(0.81)	(2.65)	(0.98)
Regional trust	14.719***	14.640***	14.719***	10.911***	10.200***
	(3.58)	(4.88)	(5.81)	(8.47)	(15.05)
Observations	60,430	60,427	60,430	60,428	60,313
No of clusters	192	2,033	396	32	31
Control variables	Yes	Yes	Yes	Yes	Yes
FE	Loan type, loan purpose, industry, continent, year	Loan type, loan purpose, industry, continent x year, year	Loan type, loan purpose, industry, continent, year	Loan type, loan purpose, industry, country, year	Loan type, loan purpose, industry x year, country x year
Clustering	Region	Region x year	Country x year	Country	Country

Table A4. Risk-taking preferences and loan spreads: Additional robustness tests

The table reports coefficient estimates and t-statistics (in parentheses) from estimations using the syndicated loans sample. The dependent variable is *Loan spread* unless otherwise specified. In all specifications the sample includes syndicated loan facilities where the borrower's country is the same with the lender's country, whereas as lenders only lead arranger banks are being considered. Definitions for all variables are in Table 1. Estimation method is OL unless otherwise specified with the fixed effects reported in the lower part of the table and robust standard errors clustered by country. The sample period is 1996-2018. The lower part of the table also reports the number of observations, number of clusters, and the adjusted R-squared. The ***, **, and * marks denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
	Dropping financial, utilities and real estate firms	Dropping USA from the sample (~ 81% of sample)	Term loans only	Credit lines only	AISU as dependent
Regional risk-taking	23.469***	33.807**	27.460***	8.108***	2.159***
	(8.28)	(2.56)	(7.18)	(4.53)	(3.35)
Regional patience	-8.818***	-5.639	-10.359***	-6.479***	-1.327*
	(-9.49)	(-0.48)	(-6.12)	(-7.00)	(-2.03)
Regional altruism	1.018	-3.477	1.754	3.463*	0.344
	(0.62)	(-0.33)	(0.87)	(1.98)	(0.43)
Regional trust	16.650***	6.659	15.395***	11.841***	4.164**
	(5.09)	(0.66)	(3.20)	(8.07)	(2.52)
Observations	50,562	11,580	19,608	33,803	26,834
No of clusters	34	33	34	26	25
Contol variables	Yes	Yes	Yes	Yes	Yes
Industry, Loan purpose, Loan type, Continent, Year FE	Yes	Yes	Yes	Yes	Yes
Clustering	Country	Country	Country	Country	Country
Adj-R^2	0.54	0.57	0.48	0.58	0.45

Table A5. Risk-taking preferences and bond spreads: Robustness tests

The table reports coefficient estimates and t-statistics (in parentheses) from robustness tests estimations for Column IV in Table 6 using the USA bonds sample. Definitions for all variables are in Table 1. Estimation method is OLS. The sample period is 1996-2018. The ***, **, and * marks denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Adding fixed effects and employing alternative clustering

	(1)	(2)	(3)	(4)	(5)
Regional risk-taking	27.464***	20.262***	24.309**	24.309***	23.427***
	(3.87)	(3.36)	(2.68)	(3.46)	(2.95)
Regional patience	-5.135	-4.552	-3.103	-3.103	-3.593
	(-1.15)	(-1.29)	(-0.71)	(-1.02)	(-1.05)
Regional altruism	-2.240	-0.680	0.854	0.854	1.849
	(-0.40)	(-0.17)	(0.18)	(0.21)	(0.40)
Regional trust	-7.290	-0.075	-5.467	-5.467	-5.382
	(-0.86)	(-0.02)	(-0.67)	(-0.95)	(-0.73)
Observations	13,275	13,284	13,078	13,078	13,078
No of clusters	9	49	48	207	877
FE	Industry, year, US interstate division	Industry, year	Industry x year, US interstate division, year	Industry x year, US interstate division, year	Industry x year, US interstate division x year, year
Clustering	US interstate division	State	State	US interstate division x year	State x year

Other robustness tests

	(1)	(2)
	Excluding obs. for financial, utilities and real estate firms	Weighted least squares, weighting by the share of obs. in each US interstate division
Regional risk-taking	32.606***	55.857**
	(2.81)	(2.61)
Regional patience	-3.038	1.121
	(-0.53)	(0.14)
Regional altruism	-8.309	-4.680
	(-1.20)	(-0.71)
Regional trust	-14.377	-18.189
	(-1.53)	(-1.30)

Table A6. Risk-taking preferences and Firm book leverage: Robustness tests

The table reports coefficient estimates and t-statistics (in parentheses) from estimations using the Compustat sample. The dependent variable is *Firm book leverage*. Definitions for all variables are in Table 1. Estimation method is OLS with the fixed effects reported in the lower part of the table and robust standard errors clustered by country. The sample period is 1996-2018. The lower part of the table also reports the number of observations, number of clusters, and the adjusted R-squared. The ***, **, and * marks denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Hofstede's cultural measures

	(1)	(2)	(3)	(4)	(5)	(6)
Regional risk-taking	-0.023***	-0.017**	-0.026***	-0.018**	-0.025***	-0.025***
	(-3.14)	(-2.17)	(-4.05)	(-2.36)	(-3.22)	(-3.96)
Regional patience	0.010*	0.008	0.015**	0.020**	0.018**	0.017**
	(1.69)	(1.30)	(2.13)	(2.29)	(2.30)	(2.50)
Regional altruism	0.013	0.013	0.008	0.010	0.012	0.008
	(1.38)	(1.43)	(1.03)	(1.09)	(1.34)	(1.09)
Regional trust	-0.037***	-0.030**	-0.041***	-0.034**	-0.040***	-0.040***
	(-2.76)	(-2.31)	(-2.94)	(-2.35)	(-2.93)	(-3.12)
Hofstede's power distance	-0.002*					
	(-1.99)					
Hofstede's individualism		0.001				
		(1.47)				
Hofstede's masculinity			-0.000*			
			(-1.78)			
Hofstede's uncertainty avoidance				0.001		
				(1.13)		
Hofstede's long-term orientation					-0.001	
					(-0.96)	
Hofstede's indulgence						-0.000
						(-0.87)
Observations	234,265	234,265	234,265	234,265	236,783	235,803
No of clusters	42	42	42	42	52	51
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustering	Country	Country	Country	Country	Country	Country
Adj-R^2	0.30	0.30	0.30	0.30	0.30	0.30

Panel B. Schwartz's cultural measures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Regional risk-taking	-0.028***	-0.025***	-0.018**	-0.021**	-0.022***	-0.027***	-0.025***
	(-4.26)	(-3.78)	(-2.14)	(-2.56)	(-2.92)	(-4.15)	(-4.18)
Regional patience	0.015**	0.018**	0.014**	0.017**	0.013**	0.017**	0.017**
	(2.04)	(2.25)	(2.39)	(2.18)	(2.21)	(2.20)	(2.55)
Regional altruism	0.004	0.007	0.015	0.011	0.011	0.004	0.009
	(0.55)	(0.77)	(1.64)	(1.21)	(1.35)	(0.60)	(1.14)
Regional trust	-0.041***	-0.039***	-0.033**	-0.038**	-0.038***	-0.040***	-0.034***
	(-3.00)	(-2.85)	(-2.33)	(-2.52)	(-2.79)	(-2.95)	(-2.73)
Schwartz's harmony	-0.038*						
	(-1.82)						
Schwartz's embeddedness		0.056					
		(1.50)					
Schwartz's hierarchy			-0.063*				
			(-2.01)				
Schwartz's mastery				-0.061			
				(-0.83)			
Schwartz's affective autonomy					0.031		
					(0.83)		
Schwartz's intellectual autonomy						-0.038*	
						(-1.79)	
Schwartz's egalitarianism							0.171***
							(2.97)
Observations	235,400	235,400	235,400	235,400	235,400	235,400	235,400

No of clusters	45	45	45	45	45	45	45
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clustering	Country	Country	Country	Country	Country	Country	Country
Adj-R^2	0.30	0.30	0.30	0.30	0.30	0.30	0.30

Table A7. Risk-taking preferences and Firm short-term debt

The table reports coefficient estimates and t-statistics (in parentheses) from estimations using the Compustat sample. The dependent variable is *Firm short-term debt*. Definitions for all variables are in Table 1. Estimation method is OLS with the fixed effects reported in the lower part of the table and robust standard errors clustered by country. The sample period is 1996-2018. The lower part of the table also reports the number of observations, number of clusters, and the adjusted R-squared. The ***, **, and * marks denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Hofstede's cultural measures

	(1)	(2)	(3)	(4)	(5)	(6)
Regional risk-taking	-0.016**	-0.015**	-0.017***	-0.012*	-0.017***	-0.018***
	(-2.36)	(-2.51)	(-3.37)	(-1.87)	(-2.85)	(-2.74)
Regional patience	0.006	0.009	0.009	0.014	0.008	0.011
	(1.06)	(1.29)	(1.18)	(1.66)	(1.53)	(1.57)
Regional altruism	0.011	0.009	0.009	0.010	0.007	0.006
	(1.32)	(1.24)	(1.16)	(1.35)	(1.01)	(0.95)
Regional trust	-0.021**	-0.022**	-0.023**	-0.017*	-0.023***	-0.022***
	(-2.46)	(-2.32)	(-2.61)	(-1.96)	(-3.13)	(-2.93)
Hofstede's power distance	-0.001					
	(-1.03)					
Hofstede's individualism		-0.000				
		(-0.05)				
Hofstede's masculinity			-0.000			
			(-0.66)			
Hofstede's uncertainty avoidance				0.001**		
				(2.28)		
Hofstede's long-term orientation					0.001*	
					(1.84)	
Hofstede's indulgence						-0.001*
						(-1.83)
Observations	234,151	234,151	234,151	234,151	236,669	235,689
No of clusters	42	42	42	42	52	51
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustering	Country	Country	Country	Country	Country	Country
Adj-R^2	0.34	0.34	0.34	0.34	0.34	0.34

Panel B. Schwartz's cultural measures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Regional risk-taking	-0.016***	-0.015**	-0.013*	-0.016**	-0.016**	-0.016***	-0.018***
	(-2.92)	(-2.45)	(-2.00)	(-2.30)	(-2.43)	(-3.15)	(-3.10)
Regional patience	0.008	0.007	0.007	0.008	0.008	0.008	0.009
	(1.16)	(1.21)	(1.24)	(1.13)	(1.24)	(1.24)	(1.48)
Regional altruism	0.008	0.009	0.012	0.008	0.008	0.008	0.009
	(1.09)	(1.04)	(1.45)	(1.04)	(1.11)	(1.19)	(1.20)
Regional trust	-0.021**	-0.021***	-0.017**	-0.021**	-0.021**	-0.021**	-0.017**
	(-2.59)	(-2.69)	(-2.16)	(-2.43)	(-2.48)	(-2.59)	(-2.50)
Schwartz's harmony	-0.001						
	(-0.05)						
Schwartz's embeddedness		-0.020					
		(-0.64)					
Schwartz's hierarchy			-0.040*				
			(-1.99)				
Schwartz's mastery				-0.002			
				(-0.03)			
Schwartz's affective autonomy					-0.005		
					(-0.20)		
Schwartz's intellectual autonomy						0.004	
						(0.16)	
Schwartz's egalitarianism							0.121***
							(2.99)
Observations	235,286	235,286	235,286	235,286	235,286	235,286	235,286

No of clusters	45	45	45	45	45	45	45
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry, Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clustering	Country	Country	Country	Country	Country	Country	Country
Adj-R^2	0.34	0.34	0.34	0.34	0.34	0.34	0.34

Table A8. Risk-taking preferences and capital structure: More fixed effects and alternative clustering

The table reports coefficient estimates and t-statistics (in parentheses) from robustness tests estimations for Column I in Table 7 and Column I inTable 8, Panel B using the Compustat sample. Definitions for all variables are in Table 1. Estimation method is OLS. The sample period is 1996-2018. The ***, **, and * marks denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
Dependent variable is Firm book leverage				
Regional risk-taking	-0.024**	-0.024***	-0.024***	-0.024***
	(-2.44)	(-3.62)	(-9.98)	(-7.46)
Regional patience	0.017*	0.017**	0.017***	0.017***
	(1.83)	(2.52)	(6.81)	(5.78)
Regional altruism	0.009	0.009	0.009***	0.009***
	(1.12)	(0.96)	(2.88)	(3.55)
Regional trust	-0.039***	-0.038***	-0.039***	-0.038***
	(-4.58)	(-2.97)	(-8.70)	(-13.85)
Dependent variable is Firm short-term debt				
Regional risk-taking	-0.019**	-0.018***	-0.019***	-0.018***
	(-2.31)	(-3.06)	(-9.30)	(-7.16)
Regional patience	0.010*	0.010	0.010***	0.010***
	(1.91)	(1.55)	(4.94)	(5.00)
Regional altruism	0.010*	0.010	0.010***	0.010***
	(1.86)	(1.22)	(3.74)	(5.23)
Regional trust	-0.023***	-0.023**	-0.023***	-0.023***
	(-3.78)	(-2.63)	(-7.41)	(-10.77)
Obs.	238,112	238,103	238,112	238,103
No of clusters	509	58	1,098	7,038
FE	Industry, continent, year	Industry x year, year, continent	Industry, continent, year	Industry x year, year, continent
Clustering	Region	Country	Country x year	Region x year

Table A9. Risk-taking preferences and capital structure: Additional robustness tests

The table reports coefficient estimates and t-statistics (in parentheses) from robustness tests estimations for Column I in Table 7 and Column I in Table 8, Panel B using the Compustat sample. Definitions for all variables are in Table 1. Estimation method is OLS with robust standard errors clustered by country . The sample period is 1996-2018. The ***, **, and * marks denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(3)
	Excluding financial, utilities and real estate firms	Dropping U.S. firms (~31% of the sample)
Dependent variable is Book leverage		
Regional risk-taking	-0.026***	-0.024***
	(-3.62)	(-3.08)
Regional patience	0.015**	0.018***
	(2.03)	(2.84)
Regional altruism	0.011	0.009
	(1.02)	(0.76)
Regional trust	-0.042***	-0.044***
	(-3.34)	(-3.63)
Dependent variable is Short term debt to assets		
Regional risk-taking	-0.025*	-0.019**
	(-1.90)	(-2.64)
Regional patience	0.014	0.015
	(1.43)	(1.54)
Regional altruism	0.035***	0.018
	(3.41)	(1.49)
Regional trust	-0.042**	-0.034***
	(-2.67)	(-3.39)