SOCIAL RESPONSIBILITY AND THE PRICE OF FINANCIAL CAPITAL*

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Abstract

Matching of lenders *and* borrowers along their social responsibility domain, brings about familiarity, facilitating signal interpretation thereby contributing to lower screening and monitoring costs and resulting lower loan spreads. Data composed of 12,545 syndicated loan facilities from 19 countries for the period 2003-2007, indicate a 25.9% reduction in the mean spread associated with an increase of one standard deviation in borrowers' social responsibility from its mean value. Such reduction is enhanced to 34.3% when lenders are also socially responsible institutions. Results withstand a battery of robustness tests as well as parametric and nonparametric estimation procedures.

Keywords: Financial contracts; corporate social responsibility; banks; interest rates.

JEL Codes: G30, G32

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1. Introduction

Reliance on external finance depends largely on factors ameliorating frictions generated by information problems that have important implications for a firm's financing cost, capital structure and investment. This paper explores the effect of corporate social responsibility (CSR) on the *cost* of financial capital.[3] Specifically, it emphasizes, empirically explores, and measures the importance of similarity in the values and beliefs held by transacting agents (both lenders *and* borrowers) as manifested in their investments in social responsibility on the reduction of the cost of external finance. While the literature documents the prevalence of various informal characteristics and organizations in many financial markets, the question of whether social responsibility is priced by capital markets remains open, and the resulting (price) performance consequences of such organizational structures remain largely unknown.

The inclusion of the social responsibility dimension of borrowers as well as of lenders aims at providing insight into to the intriguing question of why loan rates for similar borrowers often exhibit substantial differences. In a recent study, Cerqueiro, Degryse, and Steven Ongena (2011, p. 503) suggest that "little is known about the procedures and processes through which banks price credit. In particular, even after one takes into account the differences in borrowers, lenders, and markets, loan rates still often exhibit substantial dispersion". In explaining this dispersion, they point to the banks' discretion when pricing loans and show that this discretion is contingent on the degree of market frictions. In the presence of these frictions, loan rates do not reflect verifiable information only, but also the bank officer's judgment of nonverifiable attributes of the borrower. Given that these attributes are only observable and valued by the bank officer in question, loan rates become increasingly difficult to predict. According to Morrison (2010, p. 2), the lack of predictability of loan rates is due to the fact that "information that underpins all of finance is still largely tacit: that is, it is hard to codify or to transmit at arm's-length" and thus many financial agreements are made outside the formal law, using informal institutions to provide a basis to achieve a commitment and govern the transaction. One of these informal institutions is the trust among contracting parties. If bank officers trust borrowers, lenders become more certain that the promised principal and interests will be paid and the contracting terms will consequently be facilitated. Therefore, part of the dispersion in loan rates may be attributed to the extent to which a bank trusts a borrower.

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[3] Corporate social responsibility has gained much attention in the past several years. More than half of the Fortune 1000 companies in the US regularly issue CSR reports, and nearly 10% of US investments are screened to ensure that they meet CSR-related criteria (Galema, Plantinga, and Scholtens, 2008).

In this study, we introduce CSR as an important trust element in loan contracts. The concept of CSR refers to actions of a firm (e.g., a borrower or a lender) that "appear to further some social good, beyond which is required by law" (McWilliams and Siegel 2001, p. 117), and describes a business philosophy under which firms do not lie, cheat, or steal, honor their commitments and behave honestly with their various stakeholders, including customers, suppliers, workers, local communities, the natural environment, and shareholders (Jones, 1995). Thus, CSR can be conceptualized as a signal of trustworthiness thereby reducing the cost of financial capital.

We empirically explore whether the *interaction among transacting agents* characterized by similar and shared attitudes toward CSR, and thus by a high degree of familiarity results in lower loan spreads. Similarity among transacting agents and thus familiarity with their convictions regarding social norms and responsibility (Huberman, 2001), "shared understanding" in Putnam's (1993) terminology, facilitates the interpretation of signals thereby contributing to trustworthiness in financial markets and reducing frictions inherent among contracting parties in debt financing (Aghion and Bolton, 1992). We therefore argue that superior matching between borrowers' CSR and lenders' CSR enhances familiarity and the set of mutual beliefs and values that reduces information asymmetries and facilitates cooperation and the formation of trust between borrowers and lenders. The result is an amelioration of frictions in financial markets that leads to a reduction in the cost of financial capital.

The relation between borrowers' CSR, lenders' CSR and cost of capital is investigated here using data from syndicated loans around the world. We match the data, obtained from the DealScan database, with data on CSR of *both* lenders and borrowers obtained from the Sustainalytics Platform database. These data are compiled by the Sustainalytics Responsible Investment Services – one of the world's largest companies specializing in the analysis of socially responsible investment. The final data set covers 12,545 loan facilities corresponding to 513 firms in 19 different countries for the period 2003-2007. All tests performed consistently indicate that loan spreads are affected by borrowers' CSR and in particular so by their proximity to lenders' CSR. We show that higher scores of borrowers' CSR are associated with lower loan spread. Specifically, our results indicate that there is a reduction of 20.4 basis points in spreads (25.9% reduction from the mean loan spread of 78.6 basis points) when there is an increase of one standard deviation in borrowers' CSR from its mean value. Moreover, and perhaps more importantly, we find that the aforementioned reduction in spreads is further enhanced when both lenders and borrowers belong to a group of agents with larger values of the social responsibility score distribution. Specifically, the aforementioned reduction in spreads is further enhanced to 27 basis points in the event that he

lender is a socially responsible institution as well (34.3% reduction in average spread). Thus, our results suggest that matching social responsibility positions of both lenders and borrowers provides superior debt financing conditions.

Our results give support to recent findings pertaining to corporate governance (Chhaochharia and Laeven, 2009) providing a link between corporate governance and firm valuation (Tobin's Q) to show that firm-specific corporate governance practices that are set above the minimum legal requirements enable access to external funds on better terms, thus contributing to firm valuation despite the associated costs. Also, our paper is related to several recent studies that have examined how different components of trust affect contractual provisions in loan finance. Some papers have found that agents are less likely to fund entrepreneurs in countries in which their citizens have lower trust levels among themselves (Bottazzi, Da Rin, and Hellmann, 2011), or where lending is plagued with discrimination for reasons unrelated to project risk (Alesina, Lotti, and Mistrulli, 2008). In examining the origins of trust some authors suggest that trust is motivated by religious beliefs (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1997), while other authors suggest that it may result from cultural, ethnic, racial or social similarities between contracting parties (Alesina and La Ferrara, 2002; Giannetti and Yafeh, 2011; Glaeser, Laibson, Scheinkman, and Soutter, 2000; Guiso, Sapienza, and Zingales, 2009; Hwang and Kim, 2009; Karlan Mobius, Rosenblat, and Szeidl, 2009). Cohen, Frazzini, and Malloy (2010) focus on shared education networks that facilitate information dissemination through financial markets thus affecting security prices. Karlan (2002), using Peruvian data, finds a positive relation between proxies for social capital (such as geographic proximity and cultural similarity) and repayment performance (see also Akerlof and Kranton, 2000). Engelberg, Gao, and Parsons (2012) have recently documented the reduction in syndicated loan spreads due to friendship (a measure of familiarity) between borrowers' and lenders' CEOs.

The present research contributes to the literature in several important ways. First and foremost, our study is, to the best of our knowledge, the first to use the concept of CSR for *both* partners to the financial contract and examines peer effects. The inclusion of both sides to the financial contract allows examining the complementary effect on loan spreads of matching both socially responsible borrowers and lenders. Group homogeneity along the social norm domain is the mechanism that facilitates the role of transforming soft information into hard information thereby facilitating and lowering the cost of trade, a theoretical notion that Caillaud and Tirole (2007) emphasize and elaborate on. Second, this study is one of the few to explore the relation between trust at organizational level and the cost of debt financing using an international sample of firms operating in a number of different industries, thereby complementing the findings pertaining to participation in financial markets. Lastly, we employ standardized codifiable data reflecting actual behavior rather than

survey data or data generated by experimental work, which may be biased and sometimes vague due to poor incentives to reveal true values.[4]

The results reported in the present paper withstand a battery of robustness tests including the control for cultural distance, potential endogeneity and sample selection biases and different estimation methods, parametric as well as nonparametric. Furthermore, a robustness test indicates that our results stem from a reduction in the severity of asymmetric information rather than from a strategic behavior of banks trying to gain market share through loan rate reduction.

The paper is organized as follows. Section 2 reviews the related literature on CSR. Section 3 describes our sample, data, and research design. Sections 4 and 5 present the empirical results. Section 6 conducts the robustness analysis, and Section 7 concludes.

2. Social responsibility and the cost of debt financing

Despite lack of studies examining the relation between social responsibility and bank lending and the mixed results available, various arguments have been proposed in the CSR literature to hypothesize that improvements in CSR should lead to lower costs of capital.[5] First, according to the extant research on CSR, "the survival and continuing profitability of the corporation depends upon its ability to fulfill its economic and social purpose, which is to create and distribute wealth or value sufficient to ensure that each primary stakeholder group continues as part of the corporation's stakeholder system" (Clarkson, 1995, p. 107). Thus, effective stakeholder management ensures the continued participation of stakeholders in the firm and, importantly, generates intangibles such as trust and long-term relationships with suppliers and customers (Hillman and Keim, 2001). In a context of incomplete contracting, where different parties may behave opportunistically, trusting and cooperative relationships will give firms a competitive advantage (Jones, 1995), for at least two reasons: (i) a trusting and cooperative relationship reduces agency costs as it prevents opportunistic behavior; and (ii) the development of long-term relationships with primary stakeholders such as customers, suppliers, communities, and employees, allows firms to expand the set of value-creating exchanges beyond those made through regulated markets (Pfeffer, 1998; Prahalad, 1994). In case of financial suppliers, the level of mutual trust and cooperation between the borrowing firm and such

[4] See Guiso, Sapienza, and Zingales (2010) for a thorough discussion of value measurement problems in general and in surveys in particular.

[5] See Griffin and Mahon (1997); Orlitzky, Schmidt, and Rynes (2003); Margolis and Walsh (2003); Renneboog, Ter Horst, and Zhang (2008); El Ghoul, Guedhami, Kwok, and Mishra (2008).

stakeholder can affect the firm's financing cost significantly, especially if borrowers have few suppliers for establishing long-term relationships (Jones, 1995).

Under conditions of asymmetric information, such as those prevailing in bank lending, firms that are rated as more socially responsible may use CSR disclosures as one of the signals upon which stakeholders base their assessments of corporate reputation. The credibility of this signal is progressively more important for financial institutions, since they often consider qualitative attributes of a firm as proxies for its commitment to repay its debt, and select firms and projects based on these non-financial characteristics (Denis, 2004). Then, firms may engage in visible socially responsible initiatives so as to enhance their reputation and signal to debtholders their quality and ability to repay their debts. The outcome is an improvement in the financing conditions of the new loans negotiated with banks (Fombrun, 1996). This theoretical prediction confirms the finding that socially responsible firms provide more detailed accounting information than less socially responsible ones (Gelb and Strawser, 2001).

A final set of arguments associating borrowers' CSR and financing costs is related to risk management and value generation. The CSR literature documents that better social performance improves resource efficiency allocation, which in turn causes an increase in a firm's revenues and/or a decrease in its costs (Orlitzky, Schmidt, and Rynes, 2003; Margolis and Walsh, 2003). In addition to this direct effect on cash flows, Sharfman and Fernando (2008) have recently suggested that CSR influences financial performance indirectly through the perceived riskiness of a firm's cash flows. Improving CSR can reduce the likelihood that a firm will suffer negative social and environmental disasters that usually give rise to huge compensation and cleanup costs, which make a firm more vulnerable to bankruptcy. Citizenship activities also alleviate other forms of risk for lenders such as changes in legislation or in consumer preferences. A socially responsible borrower will have to attend to such changes to avoid negative media publicity, protests and consumer boycotts, which erode a firm's legitimacy and reputation and, ultimately, its profitability (Baron, 2001; Feddersen and Gilligan, 2001; John and Klein, 2003). Furthermore, pursuing a sustainable development strategy implies the implementation of a long-term strategy that requires a credible long-term commitment by management not to engage in risky behavior (Hart, 1995). These characteristics may convey a positive signal to banks and other financial institutions about the creditworthiness of the borrowing firm. Therefore, if CSR reduces a borrower's default risk profile, it is expected that banks should reward this borrower with lower spreads. The aforementioned discussion implies that *the higher the level of a borrower's CSR, the lower its cost of debt financing*.

We contribute to the literature by allowing for and incorporating lenders' ability to interpret borrowers' signals. Proper interpretation of signals enhances trust and facilitates the development of trustworthiness. Thus, trust will emerge in relationships where the borrower's CSR constitutes a valuable signal to the lender, which in turn requires that the lender should exhibit trustworthiness (has a high CSR rating itself). Lenders' CSR, and specifically its interaction with borrowers' CSR, allows addressing issues of complementarity (inherent in the concept of trust and trustworthiness) and assessing their impact on the cost of financial capital. We follow Tabellini's (2008) work on the limited morality group to show that contracting agents (borrowers *and* lenders) within the same limited morality group (those characterized by higher socially responsible behavior) are more likely to be connected through contracts with less stringent financing conditions. This is so because such a group of borrowers and lenders exhibits a higher level of familiarity which facilitates the interpretation of signals and thus trust among these agents whereby reducing monitoring and financing costs (Huberman, 2001). Additionally, such lenders have acquired the expertise to disentangle good social practices from those related to managerial entrenchment or wasteful expenses (Cespa and Cestone, 2007; Surroca and Tribó, 2009).[6] This ability makes the signals that lenders receive from borrowers more accurately interpreted. Thus, *increases in borrowers' CSR when lenders are also socially responsible will induce further reduction in loan rates, ceteris paribus*.

3. Data description

3.1. Data sources

To test our hypotheses, we developed a unique data set of 513 borrower firms for the period 2003-2007 for whom we have information on social responsibility activities, as well as a complete characterization of the syndicated loans in which each borrower participates. Additionally, we have accounting and social responsibility information for the banks that lend to these borrowers through syndicated loan arrangements. We collected this information from four different sources.

First, for the information on social responsibility, we use the Sustainalytics Global Platform (SGP) database. These data are compiled by the Sustainalytics (which operates under the name of Jantzi-Sustainalytics in North America), one of

[6] According to this view, managers set on entrenchment have incentives to collude with employees, communities, customers, and suppliers to protect themselves from disciplining mechanisms, causing a subsequent reduction in shareholders' wealth. With the implementation of a socially responsible policy, managers set on entrenchment retain the confidence of stakeholders, who may acquire certain powers to promote or penalize top executives (DeAngelo and DeAngelo, 1998; Hellwig, 2000; Rowley and Berman, 2000). Thus, it will be difficult for displeased shareholders to remove such managers because they would have to face pressure from the non-shareholder stakeholders. Additionally, by colluding with stakeholders, managers reduce firms' attractiveness to potential raiders (Pagano and Volpin 2005).

the largest companies specializing in sustainability research and analysis, serving investors and financial institutions around the world.[7] For each company, a detailed, 20-to-30 page profile exists, based on common methodology. The profile contains 199 items on the leading international corporations. Items are extracted from multiple sources such as financial accounts, company documentation, databases, media reports, NGO data, sectorial studies, and data on public institutions. Sustainalytics translates this information into a comprehensive format -a rating- by implementing Likert-type scales.[8] For each stakeholder (community, customers, employees, corporate governance, suppliers, and environment), the database addresses firms' attributes such as the level of transparency and disclosure; the existence of corporate policies and principles related to stakeholders; the importance of management procedures; and the level of stakeholder disputes. In each of these areas, the information on the various items is translated into a Likert-type scale score. Importantly, each item is sector and time-specific weighted. For example, "environment" is weighted more heavily for energy companies than it is for companies in other industries. The final score provided by Sustainalytics is the sum of each of the scores assigned to the 199 items, averaged by corresponding weight and rated on a scale from 0 (worst) to 100 (best).

The second database, OSIRIS, provides data on financial and ownership structure for borrowers. This is a database compiled by Bureau van Dijk and provides information on finance, ownership and earnings for 38,000 companies from over 130 countries.

Third, the LPC Reuters DealScan database provides detailed data on loans made around the world by banks to large firms. Such information on loans includes various characteristics of the loan contracts such as lender and borrower identities, dates of origination, purpose of loan, deal amounts, number of lenders, lender deal share, spread margins, loan maturity, covenants, collateral requirements and borrowers' ratings.

Lastly, bank-level characteristics are collected from the Bankscope database, which is compiled by Bureau van Dijk and is a comprehensive global database of banks' financial statements that covers 30,000 banks at international level.

[7] Prior to 2009, Sustainalytics was known as Sustainable Investment Research International Company (SiRi), and the SGP database was called SiRi Pro. In our description of the database, we refer to the characteristics of SiRi Pro. Visit http://www.sustainalytics.com for further information on the SGP database.

[8] The database is structured into eight sections, with an additional section containing general information about the company (location, number of employees, total turnover, and so on). The first research section provides a description of ethical and unethical corporate activities such as political donations, corruption and bribery, and the existence of business ethics programs addressing these issues. The last section measures the degree of involvement in controversial business activities such as gambling, alcohol, pornography, animal testing, and tobacco. Participation in any one of these controversial activities is a reason for exclusion from the Sustainalytics sustainability index. The remaining six sections analyze different stakeholders (community, customers, employees, corporate governance, suppliers, and environment).

Raw data from DealScan were filtered to exclude loans made to firms in the financial and public sectors (first digit of SIC code equal to six or nine). These loans are dropped because the risks of firms in these sectors are argued to be very different from other firms, as they are likely to be government owned and government protected monopolies (Qian and Strahan, 2007). For comparability with related studies we take the 15 largest commercial banks or banking holding companies in terms of total assets, in 38 countries (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1998).

We merged DealScan with OSIRIS and Bankscope using the ticker symbol and, when necessary, the name of the bank. The resulting database has been merged with SGP using the ISIN code and the SEDOL code. Once we have assembled these four databases, we are left with an international sample composed of 19 different countries for borrowers and 18 for lenders.[9] Also, among the 12,545 different facilities for which we have information on the CSR of lenders and of borrowers, for 3,778 (30.12%) there is a coincidence between the lenders' country of origin and that of the borrower. These figures suggest that there is enough variability between borrowers' country and lenders' countries, facilitating home bias contamination treatment of the results. We explore such cross-country variability when we analyze whether cultural distance between the country of the borrower and that of the lender plays a role in the connection between CSR and the cost of capital (see section 6.6).

To give a panel structure to the data and conduct a panel data analysis, we aggregate all the facilities involving each firm, on a yearly basis. We conduct such aggregation by weighting the values of the different loan characteristics variables (i.e., loan rates, maturity, deal amount, collateral, and number of lenders) in each facility by a weight that is equal to the funds granted to each facility deflated by the total financing received by the firm in this year.[10] For the variable of lenders' characteristics (Lender CSR, Lender Size, Lender Profitability, and Lender Intangibility) we aggregate the values for the different participating banks taking into consideration their stake in the facility and weighting this stake value by the facility amount deflated by the overall amount raised by the borrower in the year.[11] The result of implementing such

[9] The borrower countries are (number of facilities in parenthesis): Australia (315), Belgium (6), Bermudas (63), Brazil (10), Canada (164), Switzerland (78), Germany (422), Denmark (10), Spain (68), Finland (57), France (395), UK (695), Greece (62), Hong Kong (6), Netherlands (134), Norway (70), Portugal (32), Sweden (25), US (9933). The lender countries are: Austria (29), Australia (436), Canada (1142), Switzerland (593), Germany (1528), Denmark (228), Spain (405), France (2093), UK (133), Greece (21), Italy (402), Japan (35), Netherlands (1408), Norway (191), Portugal (45), Sweden (188), Singapore (76), US (3592).

[10] For example, if firm *i* receives 1 million in year *t* through three facilities of amounts 0.1, 0.3 and 0.6 million and loan rates of 3%, 4% and 6% respectively; then, we compute the mean rate for firm *i* in year *t* as $0.1\times 3+0.3\times 4+0.6\times 6$.

[11] Taking into consideration that the conditions of the loan are set between the leader of the lending syndicate and the borrower, we have considered an alternative aggregating scheme based just on the characteristics of the leading bank. The results found for this alternative weighting scheme are consistent with the one that considers the available information of all participating banks. In case of

aggregation is a panel composed of 513 firms for the period 2003-2007 with 2,535 aggregated loans composed of an average of almost five facilities per loan (12,545 facilities). The final number of observations for which we have information on all variables of the specification is 1,568 firm-year observations that correspond to 7,436 facilities.

3.2. Regression variables

3.2.1. Measuring CSR of borrowers and lenders, and the cost of debt financing

SGP rating is used to measure lenders' and borrowers' CSR. Such a score is the weighted sum of the scores of six stakeholder groups (community, customers, employees, corporate governance, suppliers, and environment) using the corresponding Sustainalytics weights. The outcome is an index that takes values between 0 and 100.

The cost of debt financing is measured using the loan spread in basis points over LIBOR (*Cost of Capital*) in a log scale. This variable is the weighted average of all loan spreads borne by a borrower in one year, weighted by the corresponding facility amount as a percentage of the total funds raised by the corresponding borrower in that year.

3.2.2. Control Variables

We introduce various controls to account for syndicated loan characteristics (deal amount, maturity, collateral, and number of lenders), borrowers' characteristics (rating, size, age, profitability, leverage, growth opportunities –market to book, and ownership structure –blockholder stake), and lenders' characteristics (size, profitability, and intangibility). All variables are defined in the Appendix.

3.3. Descriptive statistics

Table 1 displays descriptive statistics. Entries indicate that, on average, the loan spread in the syndicated loan market is 78.63 basis points (bp) over the mean value of the LIBOR (12 months) which for the period 2003-2007 was 3.63%. The average deal amount is $1,290 million, collateral requirements affect 11.2% of the borrowers, the average maturity of the loans is 16.2 months, and the average number of lenders is 14.5. Borrowers' CSR has a lower mean value than lenders' (52 versus 60.4 respectively). The average borrower has slightly more than $14 billion in assets, has been listed on the stock market for 14.5 years, has a return on equity (ROE) of 13.2%, its leverage is 0.63, its market to book

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two leaders, we take the one of largest size. For discrete variables such as lender's country, we have taken that of the largest leading bank of the largest facility in the corresponding year.

ratio is larger than 4, and the combined stake of its 10 largest block holders is 51.5%. Summarizing, borrowers in the syndicated loan market are large and financially sound. Hence, the potential benefits of CSR as an informative signal for reducing financing costs is conservative compared to that which may be found for small unlisted opaque firms. Finally, lenders' characteristics reveal that banks are much larger than the borrower firms (total assets are $863 billion), they are more profitable (ROE of 17.9%) and their proportion of intangible assets is quite low (0.5%), reflecting their relative specialization in monitoring technology of hard rather than soft information.

Insert Table 1 about here

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4. Preliminary evidence

Table 2 presents results from t-tests on the differences in contract, borrower and lender characteristics once we compare socially responsible borrowers with non-socially responsible ones (columns 1 and 2), and socially responsible lenders with non-socially responsible ones (columns 3 and 4). In both cases we take the mean of the distribution for the corresponding sector and year as the threshold defining whether an organization is socially responsible or not.

Insert Table 2 about here

Entries in Table 2 indicate that the cost of capital (spread) is lower when borrowers' and lenders' CSR is above their respective group means (70.2 bp versus 97.8 b p for borrowers, and 68 bp versus 84.6 bp for lenders). The difference in loan spreads between responsible and non-responsible agents is statistically significant at the 1% level (two-tailed test). Regarding the relationship between borrowers and lenders in terms of the social responsibility dimension, there is evidence of matching between them given the superior CSR scores of those firms that borrow capital from lenders whose CSR scores are higher than the sample mean (52.2 versus 51.7). Conversely, there is also evidence of the higher values of lenders' CSR when borrowers are also socially responsible institutions (60.8 versus 60).

Analysis of the other contractual dimensions of debt financing reveals that loan maturity is longer when lenders and particularly borrowers are socially responsible, which corroborates the interpretation of CSR as a signal of borrowers' trustworthiness, and lenders who see them as such and are willing to offer loans with longer maturity. Concerning collateral, consistently with the interpretation of CSR as a positive signal, socially responsible borrowers are required to

pledge lower collateral in comparison to non-socially responsible ones (8.6% of socially responsible borrower loans have at least one facility that requires collateral versus 17.1% in the case of non-socially responsible borrowers). Regarding syndicate size, socially responsible borrowers are associated with a smaller number of members in the syndicate, reflecting their lower risk and thus reduced need to share their risks with a large number of syndicate members (14.4 versus 14.7). Socially responsible borrowers also exhibit better ratings, are significantly larger, older, and more profitable, with a more diluted ownership structure. Such characteristics indicate that socially responsible borrowers are of higher quality than non-socially responsible ones and contribute to the interpretation of socially responsible behavior as a "good" signal. Finally, lenders' characteristics indicate that those with superior CSR ratings are larger, more profitable and with a larger proportion of intangible assets. The overall emerging picture indicates that CSR dimension seems to be associated with higher quality of both borrowers and lenders.

In Table 3, we provide a contingency analysis of the interaction between borrowers' CSR and lenders' CSR and their effect on the cost of capital. The main result presented in Table 3 confirms that increases in borrowers' CSR and lenders' CSR are associated with a reduction of the cost of capital. Note that when lenders' CSR is above the mean and there is an increase in borrowers' CSR from below to above the mean, loan spreads decrease from 79.9 bp to 62.8 (a difference of 17.1 bp). However, when the change is on behalf of lenders' CSR from below to above the mean and borrowers' CSR is above the mean, the loan spreads decrease from 74.5 bp to 62.8 (a difference of 11.7 bp). Hence, the difference is almost 50% larger for increases in borrowers' CSR rather than in lenders'.

Insert Table 3 about here

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5. The cost of debt financing

5.1. Methodology

The baseline model we employ to estimate the association between the cost of debt financing and borrowers' and lenders' CSR is the following specification (see Goss and Roberts, 2011 among others):

$$Cost\ of\ Capital_{it+1} = \alpha_0 + \alpha_B \cdot Borrower\ CSR_{it} + \alpha_L \cdot Lender\ CSR_{it} + \Gamma_{Lo} \cdot Lo_{it} + \Gamma_B \cdot B_{it} + \Gamma_L \cdot L_{it} + Dummies(Temporal, Sectoral, Country) + \eta_i + \varepsilon_{it} \quad (1)$$

where *Lo*, *B* and *L* are the characteristics of the loan, the borrower and the lender, respectively. We also include a firm-specific component of the error term, η_i, and an error term that varies with time and firm, ε_{it}. It is important to bear in mind that in this type of estimation there are two potential endogeneity problems that should be addressed. First, the unobservable heterogeneity that is time invariant (η_i) may be correlated with borrowers' CSR. For example, the quality of a firm's management or that of its technology is a driver of a firm's cost of capital as well as of the social responsibility policy followed by managers. Fixed-effect estimation eliminates this problem. Second, there is a potential problem of reverse causality given that a firm's cost of capital may be a driver of a firm's CSR according to the slack resources hypothesis (Waddock and Graves, 1997).

To address the aforementioned endogeneity issues, we advance the dependent variable by one period, and make use of a System GMM estimation (clustered at a firm level). This technique addresses both issues. First, it incorporates an estimation in differences (fixed-effect approach) in the system of equations to be estimated. Second, this methodology allows for addressing the second endogeneity concern by instrumenting the potential endogenous variables, as we develop further in section 5.1.1.

We study the possible existence of interaction effects between borrowers' CSR and lenders' CSR using the interaction term *Borrower CSR*×*High Lender CSR* that crosses the variable *Borrower CSR* with the dummy variable *High Lender CSR*, which is equal to 1 (0) when lenders' CSR is above (below) the sample mean for the corresponding year.

Finally, as we further develop in section 6, we address additional robustness analysis that complements the endogeneity issue. In particular, we test for a possible sample selectivity bias stemming from the fact that the decision by SGP analysts to track those borrowers and lenders included in the database may be endogenous and related to certain firm characteristics that also may explain the cost of capital. In addition, we use nonparametric techniques to ensure that our results hold once we drop normality assumptions related to the underlying distribution of the error term in specification (1).

5.1.1 Instruments validity

It is important to use a valid instrument to alleviate potential endogeneity problems. We use the number of international NGOs operating in the borrower country, as instrument of *Borrower CSR* and the number of international NGOs operating in the leading lender country, as instrument of *Lender CSR*. We gathered the data from the Yearbook of International Organizations, published by the Union of International Associations. A good instrument should be correlated with the potential endogenous variable (*Borrower CSR* and *Lender CSR*) and uncorrelated with the error term in the

specification potentially subject to endogeneity concerns (the specification explaining the costs of capital). Concerning the first condition, the number of NGOs reflects societal norms of the degree of socially responsible awareness, that is, the more developed this awareness, the more NGOs exist. Moreover, NGOs contribute to creating and institutionalizing the roles companies should play in a society (Doh and Guay, 2006). Hence, pressure from NGOs channel societal demands (those of customers and investors) on the socially responsible behavior of the different agents in the economy (Bénabou and Tirole, 2010), whether borrowers or lenders. The result is an expected positive correlation between the number of NGOs in a country and a firm's CSR. Concerning the second condition, the cost of capital of a borrower or its residual component in specification (1) are expected not to have any country-level effect in the number of NGOs that operate in a borrower's country or in its lenders' ones. Therefore, both theoretical conditions for instrument validity should be satisfied. Furthermore, in all estimations that use instruments for the potential endogenous variables (Tables 5 and 8) we tests for the satisfaction of the previous conditions. The weak identification test contrasts the correlation between the instruments and the potential endogenous variables. The overidentification test contrasts whether there is null correlation between the error term of specification (1) and the proposed instruments. Both tests are fulfilled by the instruments proposed. [12]

For robustness, we consider other (internal) instruments constructed using a two-stage procedure. In the first stage, we estimate a specification of *Borrower CSR* in terms of the sector and country mean values of borrowers' CSR as well as different borrowers' characteristics, including: *Borrower Rating*, *Borrower Size*, *Borrower Age*, *Borrower Profitability*, *Borrower Leverage*, *Borrower Market Book*, *Borrower Blockholder Stake* and investment as well as growth.[13] We also estimate Lender CSR using as regressors the country mean value of lenders' *CSR* as well as *Lender Size*, *Lender Profitability*, *Lender Intangibility* and lenders' investment as well as lenders' growth rate. In the second stage, we use the prediction of the previous specifications as instruments for *Borrower CSR* and *Lender CSR* in specification (1).[14]

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[12] For the interaction variable *Borrower CSR* x *High Lender CSR*, we have taken as an instrument the product of the instrument of *Borrower CSR* and the instrument of *High Lender CSR*, which is constructed estimating a Probit model in terms of the number of NGOs in the country of the leading bank of the syndicated loan. In the event of different leaders, we take the one with the largest size.

[13] Investment is defined as the ratio of capital expenditures to lagged assets, while growth is defined as the sales growth rate.

[14] Such predictions are good instruments given that they satisfy the two conditions required for an instrument to be valid. First, they are correlated, by construction, with the endogenous variables (*Borrower CSR* and *Lender CSR*). Second, the instruments are constructed using sector and country mean values of *Borrower CSR* and *Lender CSR* variables. These variables are expected not to be correlated with a borrower's loan rates. Additionally, the construction of the predicted values of *Borrower CSR* and *Lender CSR* eliminates the error term in the specifications that explain these endogenous variables. Such error term is arguably the source of the reverse causality problem as it incorporates the effect of loan rate on the borrower's as well as the lender's social responsibility policy. Thus, the proposed instruments are valid given that both conditions of a good instrument are satisfied. Finally, for the interaction *Borrower CSR* x *High Lender CSR*, as mentioned previously, we have taken as an instrument the product of the instrument of *Borrower CSR* and the instrument of *High Lender CSR*, which is constructed estimating a Probit model that uses the same specification as that for predicting *Lender CSR*. All these instruments pass the weak identification test as well as the overidentification test.

For both types of instruments, as is usual in GMM estimations, the lagged variables (up to three temporal lags) of the previous instrumental variables are also included in the set of instruments.

5.2. Base line results

Table 4 investigates whether borrowers' CSR influences the cost of debt financing using fixed-effect estimation. Column 1 shows results of specification (1) without including variables of lenders' characteristics. In column 2, we include variables capturing lenders' characteristics (*Lender CSR*, *Lender Size*, *Lender Profitability*, and *Lender Intangibility*). Column 3 includes interaction terms between borrowers' CSR and lenders' CSR (*Borrower CSR×High Lender CSR*). Finally, in Column 4, we also include the leading lender-fixed effects. The latter specification allows conducting a joint borrower and lender fixed-effect estimation.

Insert Table 4 about here

Focusing on the complete specification in column 4 that includes borrowers' and lenders' fixed effects, we find that there is a significant decrease in a borrower's loan spread when a borrower increases its social responsibility score (coefficient = -0.041 with t-statistics = -3.75), which confirms one of the contentions of the paper. Also, in terms of lenders' CSR, its effect on borrowers' CSR is not direct, but is just a moderator that enhances the effect of borrowers' CSR on loan rate. In particular, those firms that borrow from socially responsible lenders, show a significant additional decrease in their loan spread (coefficient = -0.010, t-statistic = -2.36). Such results indicate that although the main driver in the realm of social responsibility to obtain better financing conditions is borrowers' CSR behavior, there is an additional margin for further reduction in the loan rates when lenders are also socially responsible institutions (they are above the mean of the distribution). This result confirms that the matching between high borrower CSR and high lender CSR is a superior combination for obtaining the lowest spreads.

Regarding the control variables, as expected, we find that borrowers' characteristics that increase lenders' risk (borrower leverage) are associated with an increase in spreads. Conversely, those factors that decrease lender risk (the number of lenders in the syndicate, borrowers' rating, borrowers' age, and borrowers' profitability) or those factors that give lenders larger leeway (lender size and lender profitability) are associated with a reduction in loan spreads.

6. Robustness

6.1. Endogeneity issues

As alluded to earlier, there are two endogeneity problems related to the estimation of loan rates in terms of borrowers' and lenders' CSR. The problem related to the time-invariant component of the error term is addressed with the fixed effect estimation shown in Table 4. Regarding the second problem of possible reverse causality we employ a system GMM estimation and we use the instruments as described in 5.1.1 above.

Insert Table 5 about here

The results shown in Table 5, addressing the endogeneity problems, are similar to those found under the fixed-effect estimations approach displayed in Table 4. In columns 1, 2 and 3, as instruments of *Borrower CSR* we use the number of international NGOs operating in the borrower country. The instrument of lender CSR is the number of international NGOs operating in the corresponding lender country. Finally, for the interaction variable Borrower CSR×High Lender CSR, as explained in the methodological section, we have taken as instrument the product of the instrument of Borrower CSR and the instrument of High Lender CSR (see footnote 10 for further details). The results, once we focus on the complete specification (column 3 of Table 5), indicate that an increase in borrowers' CSR of one standard deviation (8.369) from its mean value leads to a decrease of 20.40 bp (0.031×78.625×8.369) in the spread (t-statistics = -3.71), representing a reduction of 25.95% [15] from the mean loan spread value of 78.62 bp.[16] Remarkably, when the increase in borrowers' CSR involves a socially responsible lender, the reduction in the loan spread is enhanced to 26.98 bp ([0.031+0.010]×78.625×8.369), representing a decrease of 34.32% from the mean loan spread. Considering that the mean loan amount is $1,290 million, a borrower that has increased its CSR one standard deviation from the mean of the

[15] Engelberg, Gao, and Parsons (2012) document comparable results when analyzing reduction in syndicated loan spreads when borrowers' and lenders' CEOs are friends (a measure of familiarity and trustworthiness). These authors find a reduction of 20 bp when firms have a rating in the B-BBB range and CEOs are friends in comparison to those firms with the same rating and in which CEOs have no personal relationships. It is important to remark how widespread the phenomenon of friendship is among board members (Hwank and Kim, 2009) and the consequences associated with this feature, not only in terms of financing conditions but also in terms of managerial turnovers and compensation.

[16] Note that the coefficient of *Borrower CSR* in column 3 is less negative (-0.031) compared with that documented in Table 4, (-0.042). This is consistent with the fact that in Table 5 we have addressed the reverse causality concern that associates increases in the cost of capital to reductions in borrowers' CSR investment. The idea is that a higher cost of capital means fewer resources to be spent on CSR investments (slack resources hypothesis; Waddock and Graves, 1997). Then, once we eliminate this source of negative correlation between *Cost of Capital* and *Borrower CSR*, the results should be a less negative relationship, as we find in Table 5.

distribution and that has a socially responsible institution as a lender can save up to $3.48 million (the loan rate changes from 4.42% to 4.15%).[17]

Finally, in column 4 of Table 5, we have re-estimated the complete specification but considering as alternative instruments for the potential endogenous variables (*Borrower CSR, Lender CSR,* and *Borrower CSR×High Lender CSR*), the corresponding prediction of these variables as explained in the methods section. The results of column 4 are very similar to those of column 3, which provides further confidence in the validity of the instruments used. Also the instruments in all specifications pass the weak identification tests as well as the overidentification tests, which confirm the suitability of the instruments used in the system GMM estimation. [18]

Overall, results pertaining to the control variables are basically consistent with those found in the previous specifications. However, there are several differences. First, *Collateral* becomes positive, which is consistent with Cerqueiro, Degryse, and Ongena (2011), given that collateral is a signal of low borrower quality and thus lenders charge higher loan rates to these firms. Second, maturity has a positive effect on loan rates, given the larger risks borne by lenders offering longer loan maturities (Gottesman and Roberts, 2004). Third, borrowers' market to book ratio is positive. Growth firms are riskier and they are charged higher rates. Fourth, borrowers' ownership concentration generates an increase in the loan rates. Note that the presence of large blockholders may generate problems of expropriation, which lenders may translate into larger spreads.[19] Last, lenders' intangibility, which is related to the existence of advanced monitoring technology that will facilitate the screening of borrowers, allows lenders to offer better financing conditions.

6.2. Sample selection issues

A possible bias in the results obtained so far could be due to a sample selection bias given that firms tracked by Sustainalytics may also be more likely to participate in the syndicated loan market. To evaluate and correct for this possible

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[17] The overall facility volume in 2009 in the syndicate loan market was $2.2 trillion according to the DealScan database. Thus, a decrease of 26.98 bp related to an increase in a firm's CSR by one standard deviation amounts to an overall average reduction of $5.935 billion in average total financing cost.

[18] The adoption of a system GMM approach allows conducting dynamic estimations by including as explanatory variables the dependent variable lagged by different periods. Such estimation allows eliminating a possible spurious correlation given that past lending conditions may affect current CSR policy as well as current lending conditions (persistence). In an unreported estimation, we found that although there is persistence in the lending conditions, such significant inertia in the loan rates does not hinder the negative effect of variations in borrowers' CSR in loan rates, particularly for *High Lender CSR*. Hence, the results found are not spurious and connected due to the persistence in the lending conditions.

[19] The difference between some of the coefficients of control variables and the corresponding ones of Table 4 stems from the fact that the reverse causality effect moves in the opposite direction to the effect shown in Table 4 (e.g. higher cost of capital detracts firms' growth as well as collateral requirements). Then, when the reverse causality, which is negative, is tackled (Table 5), a neutral effect (Table 4) becomes positive (Table 5).

problem if present, we have constructed the corresponding inverse Mills ratio (Heckman, 1979), related to borrowers' and lenders' CSR in the following manner: first, we use the original sample before being crossed with *Sustainalytics* and conduct a Probit estimation of a dummy variable that is equal to 1 when Sustainalytics tracks a borrower that participates in the syndicated loan market and is equal to 0 otherwise. We take as explanatory variables: *Borrower Rating*, *Borrower Size*, *Borrower Age*, *Borrower Profitability*, *Borrower Leverage*, *Borrower Market Book*, *Borrower Blockholders' Stake* as well as control dummies for year, sector and country. *Borrower Mills ratio* is obtained from this estimation. Second, the correction for lenders follows the same logic. We use the sample previously referred to and we estimate a dummy variable that is equal to 1 (0) when Sustainalytics does (does not) track a lender participating in the syndicated loan market. We take as explanatory variables: *Lender Size*, *Lender Profitability*, *Lender Intangibility* as well as controls for year and country. The variable *Lender Mills ratio* is obtained from this estimation.

Finally, when we conduct estimations at facility level, we construct a Mills ratio of facilities (*Borrower_Lender Mills ratio* in Table 6). We compute such value by conducting a regression at facility level from the original sample on the probability that the borrower and at least one lender of the facility are tracked by Sustainalytics. We use as explanatory variables the joint set of variables used to compute the aforementioned *Borrower Mills ratio* and *Lender Mills ratio*.

We include the corresponding Mills ratios in all parametric specifications from Table 5 on, to accommodate for such potential sample selection problem. The coefficients of the Mills ratios are insignificant indicating that sample selection bias is not an issue in our study.

6.3. Estimation at facility level

In Table 6, we show the results of estimating specification (1) but at facility level. Such analysis is more efficient than the previous ones as it uses all primary information given that there is no aggregation of lenders' variables. However, the disadvantage in this estimation is that it is a cross-section and does not benefit from panel data advantages, which may lead to inconsistent results. Nevertheless, similarity between the panel data and the cross-section results can strengthen the results found. The sample that we use for the facility-level analysis considers all the facilities that connect borrowers and lenders which are tracked by Sustainalytics.

Insert Table 6 about here

The results of conducting a robust regression over the sample of all facilities are consistent with those found using the year-borrower as the unit of analysis (panel data analysis). In fact, the effects found are even greater, which is not surprising given that in the construction of the panel data we smoothed the variables of interest through the weighted average scheme explained in Section 3.1.

6.4. Missing data

A possible concern is that the missing data in our sample could share a systematic component, resulting in spurious correlation between borrowers' CSR and loan rates. We have investigated whether those borrowers that present a larger proportion of missing data over the five years of our sample period, present significant differences in the main explanatory variables. We have found (untabulated) that *Borrower CSR* has a value of 51.95 for the "missing borrowers" and a value of 52.01 for the "non-missing borrowers" and the difference is not statistically significant, (p-value = 0.99). Similarly, the differences between the cost of capital among both types of firms are only of 2 basis points (p-value = 0.81). Likewise, the values for the variables capturing borrowers' characteristics (size, age, profitability, leverage, market to book, intangibility, and blockholders' stake) are not statistically significantly different between the two groups.

Finally, we have reestimated the specifications in Table 5 (available upon request) focusing on those borrowers that have fewer missing observations. The results remain qualitatively unchanged from those found in Table 5. Hence, we can preclude that results are generated by spurious correlation related to a systematic error for firms with more missing observations.

6.5. Nonparametric estimation

As a further robustness test, we apply a nonparametric (distribution free) procedure which is normality-independent. Additionally, the nonparametric estimations may provide more consistent estimates for the variables that are weak predictors (Rubin and Thomas, 2000).

The notion behind the nonparametric procedure is to evaluate, without assumptions on the underlying distribution, the impact on the cost of capital of applying a "shock" related to changes in CSR policies once we compare firms with similar characteristics over different variables (*e.g.* size, age, financial structure, ownership structure). The "shock" applied is an increase in borrowers' CSR from the first to the last quartile. In Table 7, we show the results of conducting such nonparametric procedure for two different variables that are the cost of capital and investment in the subsequent period. We

consider two different situations: First, when lenders' CSR is in the first quartile of the distribution (column 1) and second, when it is in the last quartile of the distribution (column 2). Under both scenarios we apply the aforementioned shock, which is an increase in borrowers' CSR from the first quartile to the last quartile of the distribution.

The procedure used is the Propensity Score Matching (PSM) estimator (Hirano and Imbens, 2004). We match the observation using all the variables that appear in specification (1).

Insert Table 7 about here

Results in Panel A of Table 7 indicate a decrease of 26.9 bp (t-statistic = -4.23) when the shock on borrowers' CSR is made among those borrowers whose lenders' CSR is in the first quartile of the distribution. When we replicate the shock to borrowers whose lenders' CSR is in the last quartile of the distribution we find a decrease in the lending spread of 35.95 bp (t-statistic = -4.50). Thus, we document an additional marginal reduction of 9 bp in the cost of capital. Hence, the marginal reduction in the loan rate after an increase in borrowers' CSR when lenders have socially responsible ratings above the average is even larger than the 6.5 bp found when employing the parametric analysis.

Such nonparametric analysis also allows for investigating an alternative explanation to our results. Under this alternative view, the reduction in the cost of capital was not indeed associated with higher trust as a consequence of reduction in asymmetric information problems but would be a strategic move on the part of lenders inducing borrowers to take on larger investments related to CSR that may eventually benefit lenders' business in the future through new future loans (Hellmann, Lindsey, and Puri, 2008). To discriminate between these alternative explanations, we have conducted a nonparametric estimation on the impact of changes in borrowers' CSR on borrowers' investment intensity (defined as the ratio of borrowers' capital expenditures to total assets lagged by one period). Results indicate (Panel B of Table 7) that there is a negative impact on subsequent-period investment (-0.46 and t-statistics = -3.38), when there is a "shock" to borrowers' CSR –a move from the first to the last quartile of the distribution- and lenders' CSR is in the first quartile. This negative effect is even more pronounced (-0.57 and t-statistics = -2.16), when a lender is highly socially responsible (its CSR is in the last quartile of the distribution). This result confirms the notion that the reduction in the loan spread is not a way for lenders to stimulate borrowers' investment in general and in CSR in particular, to gain more business in the future. Our conjecture is that the reduction in the cost of capital found is explained in terms of the amelioration of asymmetric

information and monitoring costs as more socially responsible borrowers become more trustworthy, particularly when matched with socially responsible lenders (familiarity).

6.6. National cultural differences and CSR

We conduct an additional analysis in Table 8 on the effect of country culture differences among borrowers and lenders in the way that the CSR signal is interpreted. Such analysis would confirm our interpretation of the results in terms of reduction in information asymmetries related to the matching between socially responsible borrowers and socially responsible lenders.

The concept of national culture is conceived as a set of values, beliefs, norms, and assumptions about human nature and behavior that distinguish one society from another (Hofstede, 1980). National culture may shape firms' behavior and, in the present context, may affect the cost of capital. Acute cultural differences between borrowers and lenders enhance information asymmetries and increase lenders' interpretation difficulties regarding CSR thereby increasing financing costs. The aforementioned phenomenon is documented in Giannetti and Yafeh (2011) who find that a lead bank in a syndicated loan arrangement has fewer incentives to lend to culturally distant borrowers and if so the loan rates charged are higher. Thus, we posit that socially responsible lenders will have more difficulties in interpreting borrowers' CSR signal positively when cultural differences between borrowers and lenders are large. Hence, we expect that the matching between socially responsible borrowers and lenders will generate lower reduction in the cost of capital when the cultural distance between lenders' and borrowers' countries is large.

Similarly to previous studies, we define our proxy of *Cultural differences* as the Euclidean distance between the 4 cultural dimensions of borrowers' and lenders' countries (see the Appendix for the definition of the variable). These dimensions are: power distance, individualism/collectivism, uncertainty avoidance, and masculinity/femininity.[20]

To examine the relation between CSR and national culture differences, we included in the estimation of the loan rates the interaction term that crosses the "matching" term *Borrower CSR×High Lender CSR* with the variable on *Cultural*

[20] According to Hofstede (2001), *power distance* is the extent to which the less powerful members of organizations and institutions (e.g. the family) accept and expect that power is distributed unequally; *individualism/collectivism* is the degree to which individuals are integrated into groups, so under individualistic cultures, everyone is expected to look after him/herself and his/her immediate family; *masculinity* refers to the distribution of roles between the sexes; *uncertainty avoidance* is designed to measure a society's tolerance for uncertainty and ambiguity, so cultures that avoid uncertainty minimize the possibility of such situations by strict laws and rules, safety and security measures, and on the philosophical and religious level by a belief in absolute truth. Some studies include a last variable of *long-term orientation* defined as thrift and perseverance. We have ruled out using this latter component because it is not available for all countries. However, the inclusion of this component does not alter our results.

Differences. We expect a positive coefficient on *Borrower CSR×High Lender CSR×Cultural differences*. Also for completing the specification we include the variable of *Cultural Differences* as well as the interaction variables of *Borrower CSR×Cultural Differences* in addition to *Lender CSR×Cultural Differences*.

Results of this analysis are presented in Table 8. Once we focus on the complete specification of column 3, we observe a set of different results. First, cultural differences between borrowers' and lenders' countries are associated with increases in the cost of capital (coefficient 0.03 with t-statistics 2.27) as in Giannetti and Yafeh (2011). Second, when we focus on the matching between borrowers' CSR and that of lenders (*Borrower CSR×High Lender CSR*), cultural differences hinder the reduction in the cost of capital. In particular, if there are no cultural differences between borrowers' country and that of the leading lender, the marginal impact of an increase in one standard deviation of borrowers' CSR when the lender is highly responsible is a reduction of 7.24 bp (0.011×78.625×8.369). However, if the cultural distance between borrowers' country and the leading lender's country is equal to the mean value of the distribution (13.32), the marginal reduction in the cost of capital is of 6.36 bp (7.24-0.0001×78.625×13.32×8.369 = 7.24-0.88 = 6.36). That is, there is a relative lower reduction of 12.15% (0.88/7.24) in the loan spreads. This result confirms that cultural differences hinder the interpretation of borrowers' CSR as a positive signal by socially responsible lenders.

Insert Table 8 about here

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7. Conclusion

The provision of external finance is hampered by numerous frictions inherent in capital markets. As shown previously, loan rates often exhibit substantial dispersion even after controlling for differences in borrowers, lenders, and markets (Cerqueiro, Degryse, and Ongena, 2011) implying that banks price loans in a discretionary manner. We propose several observable and codifiable characteristics representing the socially responsible stance of borrowers and lenders that represent such discretionary determinants of the cost of capital. In particular, we show that familiarity as manifested by *joint and mutual* appreciation of, and voluntary investment in corporate social responsibility (CSR) by *both* lenders and borrowers, can ameliorate the severity of asymmetric information and thus represent a potent explanatory determinant of the reduction in the cost of debt finance. In particular, we find that superior appreciation of both lenders and borrowers

along the social responsibility dimension further enhances the reduction in the cost of debt finance in comparison with the reduction achieved when only borrowers behave in a socially responsible manner.

Our results indicate a reduction of 20.4 basis points in spreads (25.9% reduction from the mean loan spread of 78.6 basis points) when there is an increase of one standard deviation in borrowers' CSR from its mean value. This reduction is further enhanced to 27 basis points when lenders are socially responsible institutions as well (amounting to 34.3% of the mean spread). Thus, an important contribution of our analysis is to show that borrowers' CSR investment is a particularly valuable signal that can trigger steep reductions in the cost of capital if capital providers *are capable of interpreting such signal in a correct way*. This is achieved when capital providers invest in CSR as well. The superior matching between contracting parties' CSR contributes to the formation of trust and helps ameliorate credit market frictions (information asymmetries), leading to a reduction in loan rates.

Appendix: Variables Definition

Dependent Variable:	
Cost of Capital	Describes the amount the borrower pays in basis points for each dollar drawn down. It adds the spread of the loan with any annual (or facility) fee paid to the bank group. This variable is the weighted average of all loans spreads borne by a borrower in one year, weighted by the facility amount to the overall amount raised for the corresponding borrower in the year (this variable is defined as All-in Spread Drawn in DealScan). We take this variable in a log scale.
Main Explanatory Variables: [21]	
Borrower CSR	Sustainalytics score for borrowers' CSR. This score is the sum of each of the scores assigned to the 199 items that cover different social issues, averaged by corresponding weight for the different stakeholders (community, customers, employees, corporate governance, suppliers, and environment) and rated on a scale from 0 (worst) to 100 (best).
Lender CSR	Sustainalytics score for lenders' CSR computed following the same pattern as *Borrower CSR* (see footnote #19 for the weighting scheme applied).
Cultural Differences	It is the Euclidean distance between borrowers' and lenders' countries of the following dimensions: Power Distance, Individualism, Uncertainty Avoidance, and Masculinity (Hofstede, 1980).
Control variables:	
Deal amount	Size of the loan in a log scale (see footnote #19 for the weighting scheme applied).
Maturity	Maturity (in months) of the facility in a log scale (see footnote #19 for the weighting scheme applied).
Collateral	Dummy that is equal to 1 if the loan requires collateral and zero otherwise (see footnote #19 for the weighting scheme applied).
Number of Lenders	Number of lenders participating in the facility in a log scale (see footnote #19 for the weighting scheme applied).
Borrower Rating	Moody's rating on borrowers' riskiness. In particular, following Qian and Strahan (2007), this variable consists of an index ranging from 1 to 6, representing Moody's senior debt rating at the close of the loan. When Moody's ratings are unavailable. S&P ratings are used. The index equal to 6 represents a rating of "Aaa", 5 indicates "Aa", and so on until 1 indicating "B" or worse. If there is no rating information for the borrower, zero is assigned to this variable, and a separate indicator for unrated borrowers is included.
Borrower Size	Total assets in a log scale
Borrower Age	Number of years since first listed in a log scale.
Borrower Profitability	Borrowers' net income divided by total equity assets (ROE).
Borrower Leverage	Book value of debt divided by total assets.
Borrower Market to Book	Market equity value to equity book value.
Borrower Blockholders' Stake	The stake of the ten largest blockholders (%) in a log scale
Lender Size	Total assets in a log scale (see footnote #19 for the weighting scheme applied).
Lender Profitability	Lenders' net income divided by equity capital (ROE) (see footnote #19 for the weighting scheme applied).
Lender Intangibility	Lenders' ratio of intangible to the total amount of assets (see footnote #19 for the weighting scheme applied).

[21] All variables of the characteristics of contracts (Deal amount, Maturity, Collateral, Number of Lenders) are computed as the weighted average of such characteristics for all facilities borne by a borrower in a year, where the weights are the ratio of each facility amount to the overall amount raised for the corresponding borrower in the year. The treatment of lenders' characteristics (Lender CSR, Lender Size, Lender Profitability, and Lender Intangibility) follows the same scheme, but also takes into consideration the stake of each lender in the corresponding facility.

Table 1

Summary Statistics

This table presents the descriptive statistics (mean, standard deviations, minimum and maximum) of the variables that are used in the analysis. The sample is the result of crossing 4 databases: Sustainalytics Platform that provides information on CSR; OSIRIS that provides data on financial and ownership structure for borrowers; LPC Reuters DealScan database provides detailed data on syndicated loans made around the world by banks to large firms; and Bankscope database that provides financial information on banks around the world. Data from DealScan are filtered to allow for only confirmed loans, and to exclude loans made to firms in the financial and public sectors. Our sample after crossing the aforementioned 4 databases is a panel composed of 513 firms for the period 2003-2007 and with 2,535 aggregated loans composed of an average of almost 5 facilities per loan (12,545 facilities). The final number of observations for which we have information on all variables of specification (1) in the text is 1,568 firm-year, which correspond to 7,436 facilities. The definition of the variables is given in the Appendix. For the sake of comparability the variables are not presented in a log metric.

	Obs.	Mean	S. D.	Min	Max
Cost of Capital (bp)	1,568	78.625	72.861	2.171	700.000
Borrower CSR	1,568	52.005	8.369	30.900	82.100
Lender CSR	1,568	60.421	6.072	39.304	82.200
Cultural Differences	1,568	13.317	23.228	0	97.729
Deal Amount (Mil.)	1,568	1,290	1,890	30	24,000
Maturity (months)	1,568	16.168	16.571	0	59
Collateral	1,568	0.112	0.305	0	1
Number of Lenders	1,568	14.513	8.346	1	81
Borrower Rating	1,568	2.761	1.529	0	6
Borrower Size (Mil.)	1,568	14,100	28,600	2,358	295,000
Borrower Age	1,568	14.521	9.948	1	56
Borrower Profitability	1,568	0.132	0.077	-0.003	0.340
Borrower Leverage	1,568	0.634	0.163	0.155	1.253
Borrower Market Book	1,568	4.023	27.944	0.813	23.667
Borrower Blockholders' Stake	1,568	51.516	24.195	18.750	100
Lender Size (Mil.)	1,568	863,000	381,100	65,200	1,920,000
Lender Profitability	1,568	0.179	0.516	-0.02	0.479
Lender Intangibility	1,568	0.005	0.006	0.000	0.040

Table 2.

Contingency Analysis

The table records the mean values of the variables we use in the analysis. We divide the sample in terms of firm-level observations whose borrowers have scores on CSR above (CSR Borrower=1) or below (CSR Borrower=0) the mean value of the distribution for the corresponding sector and year. We also make a second division in terms of lenders' CSR averaged by firm-year observation being above (CSR Lender=1) or below (CSR Lender=0) the mean value of the distribution for the corresponding year. The sample is the result of crossing 4 databases: Sustainalytics Platform provides information on CSR; OSIRIS provides data on financial and ownership structure for borrowers; LPC Reuters DealScan database provides detailed data on syndicated loans made around the world by banks to large firms; and Bankscope database provides financial information on banks around the world. Data from DealScan are filtered to allow for only confirmed loans, and to exclude loans made to firms in the financial and public sectors. Our sample, after crossing the aforementioned 4 databases, is a panel composed of 513 firms for the period 2003-2007 and with 2,535 aggregated loans (12,545 facilities). The final number of observations for which we have information on all variables of specification (1) in the text is 1,568 firm-year, which correspond to 7,436 facilities. We conduct a two-tailed t-test. P-values are in parentheses. Variables are defined in the Appendix. For sake of comparability, the variables are not presented in a log metric.

	(1) CSR Borrower=1	(2) CSR Borrower=0	(3) CSR Lender=1	(4) CSR Lender=0	(1)-(2) t-test (Mean)	(3)-(4) t-test (Mean)
Cost of Capital	70.245	97.792	68.029	84.643	(0.000)	(0.000)
Borrower CSR			52.174	51.663		(0.091)
Lender CSR	60.788	60.050			(0.106)	
Cultural Differences	21.605	12.886	13.214	13.551	(0.000)	(0.792)
Deal Amount	1,300	1,280	1,550	1,140	(0.003)	(0.000)
Maturity (months)	23.396	9.986	17.796	15.896	(0.000)	(0.019)
Collateral	0.086	0.171	0.093	0.122	(0.000)	(0.069)
Number of Lenders	14.021	14.719	14.112	14.741	(0.000)	(0.151)
Borrower Rating	2.998	2.450	2.738	2.775	(0.000)	(0.649)
Borrower Size (Mil.)	15,000	11,900	16,800	12,500	(0.075)	(0.037)
Borrower Age	15.129	13.131	15.123	14.179	(0.000)	(0.071)
Borrower Profitability	0.134	0.126	0.139	0.127	(0.046)	(0.038)
Borrower Leverage	0.627	0.649	0.623	0.640	(0.011)	(0.059)
Borrower Market to Book	4.441	3.069	5.960	2.923	(0.371)	(0.039)
Borrower Blockh. Stake	50.646	53.506	50.813	51.916	(0.031)	(0.385)
Lender Size (Mil.)	874,000	859,000	1,200,000	674,000	(0.824)	(0.000)
Lender Profitability	0.200	0.172	0.188	0.166	(0.092)	(0.115)
Lender Intangibility	0.005	0.005	0.006	0.005	(0.734)	(0.005)

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Table 3

Contingency Analysis. Interaction Effects

The table shows the mean values of the Cost of Capital, defined as the amount the borrower pays in basis points for each dollar drawn down. It adds the spread of the loan with any annual (or facility) fee paid to the bank group. This variable is the weighted average of all loans spreads borne by a borrower in one year, where the weights are the ratio of each facility amount to the overall funds raised by the corresponding borrower in the year (in DealScan is defined as All-in Spread Drawn). We divide the sample in terms of firm-level observations whose borrowers have scores on CSR above (CSR Borrower=1) or below (CSR Borrower=0) the mean value of the distribution for the corresponding sector and year. Also, we make a second division in terms of lenders' CSR averaged by firm-year observation being above (CSR Lender=1) or below (CSR Lender=0) the mean value of the distribution for the corresponding year. The sample is the result of crossing 4 databases: Sustainalytics Platform provides information on CSR; OSIRIS provides data on financial and ownership structure for borrowers; LPC Reuters DealScan database provides detailed data on syndicated loans made around the world by banks to large firms; Bankscope database provides financial information on banks around the world. Data from DealScan are filtered to allow for only confirmed loans, and to exclude loans made to firms in the financial and public sectors. Our sample, after crossing the aforementioned 4 databases, is a panel composed of 513 firms for the period 2003-2007 and with 2,535 aggregated loans (12,545 facilities). The final number of observations for which we have information on all variables of specification (1) in the text is 1,568 firm-year, which correspond to 7,436 facilities. We conduct a two-tailed t-test. P-values are in parentheses. For the sake of comparability the values are not presented in a log metric.

Contract Characteristics	(1) CSR Borrower=1 CSR Lender=1	(2) CSR Borrower=1 CSR Lender=0	(3) CSR Borrower=0 CSR Lender=1	(4) CSR Borrower=0 CSR Lender=0	(1)-(2) t-test (Mean)	(3)-(4) t-test (Mean)
Cost of Capital	62.762	74.542	79.954	105.686	(0.003)	(0.000)
Contract Characteristics	(1) CSR Lender=1 CSR Borrower=1	(2) CSR Lender=1 CSR Borrower=0	(3) CSR Lender=0 CSR Borrower=1	(4) CSR Lender=0 CSR Borrower=0	(1)-(2) t-test (Mean)	(3)-(4) t-test (Mean)
Cost of Capital	62.762	79.954	74.542	105.686	(0.000)	(0.001)

Table 4

Fixed Effects Estimations

The table reports the results of conducting fixed-effect estimations on the Cost of Capital. The specification includes dummies of borrowers' and lenders' countries, as well as borrowers' sector and temporal dummies. In column 4, we also include a set of dummies: one for each leading bank, to control for lender fixed effects. Cost of Capital is the amount the borrower pays in basis points for each dollar drawn down (log scale); Borrower CSR is the Sustainalytics score for borrowers' CSR. Lender CSR is the Sustainalytics score for lenders' CSR; Borrower CSR × High Lender CSR is the product of Borrower CSR to High Lender CSR, which is a dummy that is equal to 1 (0) when Lender CSR is above (below) the mean value for the corresponding year; Deal Amount is the size of the loan in a log scale; Maturity is the maturity (in months) of the facility in a log scale; Collateral is a dummy that is equal to 1 if the loan requires collateral and zero otherwise; Number of Lenders is the number of financial providers participating in the facility in a log scale; Borrower Rating is Moody's rating on borrowers' riskiness; Borrower Size is the total assets in a log scale; Borrower Age is the number of years since first listed in a log scale; Borrower Profitability is borrowers' operating income divided by total equity (ROE); Borrower Leverage is the book value of debt divided by total assets; Borrower Market Book is the market equity value to equity book value; Borrower Blockholders' Stake is the stake of the 10 largest blockholders (%) in a log scale; Lender Size is the total assets in a log scale; Lender Profitability is lenders' operating income divided by total equity (ROE); Lender Intangibility is lenders' ratio of intangible assets to the total amount of assets. See the Appendix for details of the previous variables. Hausman test contrasts the null hypothesis of no significant differences between the coefficients of the random-effects estimation and those of the fixed effect one. *, ** and *** denote significance at the 10%, 5% and 1% levels respectively. Robust t-statistics adjusted for clustering by firm are reported inside the parentheses.

Dependent Variable: Cost of Capital (t+1)	Borrower fixed effects (1)	Borrower fixed effects (2)	Borrower fixed effects (3)	Borrower and Lender fixed effects (4)
Borrower CSR	-0.042***	-0.042***	-0.042***	-0.041***
	(-3.809)	(-3.804)	(-3.892)	(-3.751)
Lender CSR		-0.001	-0.001	-0.001
		(-0.017)	(-0.170)	(-0.094)
Borrower CSR×High Lender CSR			-0.010**	-0.010**
			(-2.234)	(-2.365)
Deal Amount	0.024	0.024	0.022	0.025
	(1.310)	(1.310)	(1.244)	(1.359)
Maturity	0.001	0.001	0.005	0.000
	(0.034)	(0.034)	(0.287)	(0.001)
Collateral	0.001	0.001	0.001	0.000
	(0.898)	(0.882)	(0.935)	(0.753)
Number of Lenders	-0.044***	-0.044***	-0.044***	-0.055***
	(-2.959)	(-2.953)	(-2.948)	(-3.458)
Borrower Rating	-0.054***	-0.054***	-0.053***	-0.056***
	(-4.501)	(-4.468)	(-4.417)	(-4.573)
Borrower Size	-0.110	-0.110	-0.115	-0.158
	(-1.016)	(-1.016)	(-1.068)	(-1.429)
Borrower Age	-0.052*	-0.052*	-0.056**	-0.049*
	(-1.768)	(-1.767)	(-1.903)	(-1.650)
Borrower Profitability	-0.067***	-0.067***	-0.068***	-0.066***
	(-3.061)	(-3.055)	(-3.081)	(-2.901)
Borrower Leverage	0.060**	0.060**	0.044*	0.050*
	(2.276)	(2.274)	(1.659)	(1.869)
Borrower Market to Book	0.006	0.006	0.007	0.005
	(0.690)	(0.687)	(0.748)	(0.559)
Borrower Blockholders' Stake	0.027	0.027	0.033	0.031
	(0.508)	(0.508)	(0.625)	(0.589)
Lender Size	-0.034**	-0.034**	-0.031	-0.045**
	(-2.246)	(-2.235)	(-1.260)	(-2.242)
Lender Profitability	-0.033*	-0.033*	-0.048**	-0.060**
	(-1.753)	(-1.751)	(-2.402)	(-2.409)
Lender Intangibility	-0.002	-0.002	-0.004	-0.003
	(-0.220)	(-0.205)	(-0.378)	(-0.273)
Intercept	10.520***	10.517***	10.481***	10.352***
	(4.731)	(4.724)	(4.829)	(4.652)
Observations	1,568	1,568	1,568	1,568
Fitness test (F-test)	5.97 (0.000)	6.07 (0.000)	6.66 (0.000)	11.10 (0.000)
R^2 (%)	9.73	9.74	10.15	11.80
Hausman Test	764.54 (0.000)	703.04 (0.000)	518.21 (0.000)	318.82 (0.000)

Table 5

Determinants of the Cost of Capital (System GMM, Endogeneity Control)

Table 5 reports the results of conducting a system GMM estimation on the syndicated loans spread (in logs) in terms of borrowers' CSR, lenders' CSR, the interaction between the previous variables as well as different controls defined in specification (1). The specification includes dummies of borrowers' and lenders' countries, as well as borrowers' sector and temporal dummies. We correct for endogeneity problems in columns (1) to (3) using as instruments of Borrower CSR and Lender CSR the number of NGOs in the corresponding country, as explained in the main text. In column (4) we use as instruments of Borrower CSR and Lender CSR the prediction of these variables from a specification defined in the main text. We include Borrower and Lender Mills ratio to tackle sample selection issues, as explained in the main text. Cost of Capital is the amount the borrowers pay in basis points over LIBOR for each dollar drawn down (log scale); Borrower CSR is the Sustainalytics score for borrowers' CSR. Lender CSR is the Sustainalytics score for lenders' CSR; Borrower CSR × High Lender CSR is the product of Borrower CSR to High Lender CSR, which is a dummy that is equal to 1 (0) when Lender CSR is above (below) the mean value for the corresponding year; Deal Amount is the size of the loan in a log scale. Maturity is the maturity (in months) of the facility in a log scale; Collateral is a dummy that is equal to 1 if the loan requires collateral and zero otherwise; Number of Lenders is the number of financial providers participating in the facility in a log scale; Borrower Rating is Moody's rating on borrowers' riskiness; Borrower Size is the total assets in a log scale; Borrower Age is the number of years since first listed in a log scale; Borrower Profitability is borrowers' operating income divided by total equity (ROE); Borrower Leverage is the book value of debt divided by total assets; Borrower Market Book is the Market equity value to equity book value; Borrower Blockholders' Stake is the stake of the 10 largest blockholders (%) in a log scale; Lender Size is the total assets in a log scale; Lender Profitability is Lenders' operating income divided by total equity (ROE); Lender Intangibility is lenders' ratio of intangible assets to the total amount of assets. See the Appendix for details of the previous variables. We use the Stock & Yogo (2005) weak identification test, where the null hypothesis is that instruments are weak (non-significant correlation with the endogenous variable). The AR (2) is a test for a second-order serial correlation in the residuals, which is distributed as N(0,1) under the null hypothesis of no serial correlation. For the Hansen test, the J statistic is distributed as a chi-square under the null hypothesis of instrument validity, that is, no correlation with the error term (p-values reported in parentheses). *, ** and *** denote significance at the 10%, 5% and 1% levels respectively. Robust t-statistics adjusted for clustering by firm are reported inside the parentheses.

Dependent Variable: Cost of Capital (t+1)	(1)	(2)	(3)	(4)
Borrower CSR	-0.034***	-0.034***	-0.031***	-0.035***
	(-3.652)	(-3.740)	(-3.718)	(-5.636)
Lender CSR		-0.001	-0.001	-0.002
		(-1.429)	(1.420)	(-0.303)
Borrower CSR × High Lender CSR			-0.010***	-0.004***
			(-4.006)	(-2.962)
Deal Amount	-0.010	-0.029	0.014	0.001
	(-0.232)	(-0.662)	(0.277)	(0.038)
Maturity	0.064***	0.064*	0.069***	0.049**
	(2.628)	(1.691)	(2.730)	(2.493)
Collateral	0.004***	0.004***	0.004***	0.001*
	(6.242)	(6.311)	(5.667)	(1.611)
Number of Lenders	-0.079**	-0.036	-0.110**	-0.073***
	(-1.922)	(-0.846)	(-2.372)	(-2.588)
Borrower Rating	-0.263***	-0.269***	-0.248***	-0.286***
	(-7.604)	(-8.075)	(-7.443)	(-9.859)
Borrower Size	-0.016	-0.023	-0.009	-0.025
	(-0.562)	(-0.777)	(-0.325)	(-0.941)
Borrower Age	-0.006	-0.004	-0.002	-0.017
	(-0.172)	(-0.109)	(-0.045)	(-0.640)
Borrower Profitability	-0.123***	-0.127***	-0.137***	-0.146***
	(-4.997)	(-5.169)	(-5.645)	(-7.325)
Borrower Leverage	0.074***	0.074***	0.076***	0.067***
	(3.069)	(2.942)	(3.095)	(3.242)
Borrower Market to Book	0.028***	0.028***	0.023**	0.020***
	(2.769)	(2.933)	(2.030)	(3.271)
Borrower Blockholders' Stake	0.099***	0.105***	0.084***	0.103***
	(3.881)	(4.239)	(3.257)	(5.065)
Lender Size	-0.171***	-0.185***	-0.112*	-0.014
	(-3.247)	(-3.068)	(-1.804)	(-0.439)
Lender Profitability	-0.105***	-0.111***	-0.109***	-0.086**
	(-4.150)	(-4.334)	(-4.020)	(-1.956)
Lender Intangibility	-0.057***	-0.057***	-0.040***	-0.028***
	(-5.212)	(-5.237)	(-3.164)	(-2.932)
Borrower Mills ratio	0.059	0.042	0.053	0.066
	(0.884)	(0.629)	(0.770)	(1.100)
Lender Mills ratio	-0.069	-0.116	-0.057	0.001
	(-0.383)	(-0.644)	(-0.284)	(0.069)
Intercept	5.898***	5.129***	5.033***	6.065***
	(20.94)	(19.46)	(5.990)	(11.23)
Observations	1,568	1,568	1,568	1,568
Fitness test (Wald test)	1,179.43 (0.000)	1,182.43 (0.000)	1190.68 (0.000)	1,576.72 (0.000)
Weak identification test	14.85 (0.000)	13.25 (0.003)	6.51 (0.011)	16.45 (0.000)
AR(2) test	0.13 (0.901)	0.12 (0.902)	0.05 (0.994)	1.65 (210)
Hansen test (overidentification)	116.01 (0.354)	114.07 (0.376)	101.72 (0.537)	152.71 (0.160)

Table 6

Estimation at Facility Level. Robust Regression

The table reports the results of conducting a robust regression at a facility level on the Cost of Capital in terms of the variables shown in specification (1) in the main text. The specification includes a set of different dummies. First, dummies of borrowers and lenders to control for fixed effects at a borrowers' and lenders' level. Second, dummies of borrowers' and lenders' countries, as well as borrowers' sector and temporal dummies for tackling country, sector and temporal effects. Additionally, we include a facility Mills ratio to control for possible sample selection bias on those facilities that link borrowers and lenders that are tracked by Sustainalytics -see the details in the main text. Cost of Capital is the amount the borrower pays in basis points over LIBOR for each dollar drawn down (log scale); Borrower CSR is the Sustainalytics score for borrowers' CSR. Lender CSR is the Sustainalytics score for lenders' CSR; Borrower CSR × High Lender CSR is the product of Borrower CSR to High Lender CSR, which is a dummy that is equal to 1 (0) when Lender CSR is above (below) the mean value for the corresponding year; Deal Amount is the size of the loan in a log scale; Maturity is the maturity (in months) of the facility in a log scale; Collateral is a dummy that is equal to 1 if the loan requires collateral and zero otherwise; Number of Lenders is the number of financial providers participating in the facility in a log scale; Borrower Rating is Moody's rating on borrowers' riskiness; Borrower Size is the total assets in a log scale; Borrower Age is the number of years since first listed in a log scale; Borrower Profitability is borrowers' operating income divided by total equity (ROE); Borrower Leverage is the book value of debt divided by total assets; Borrower Market Book is the Market equity value to equity book value; Borrower Blockholders' Stake is the stake of the 10 largest blockholders (%) in a log scale; Lender Size is the total assets in a log scale; Lender Profitability is Lenders' operating income divided by total equity (ROE); Lender Intangibility is lenders' ratio of intangible assets to the total amount of assets. See the Appendix for details of the previous variables. *, ** and *** denote significance at the 10%, 5% and 1% levels respectively. Robust t-statistics adjusted for clustering by firm are reported inside the parentheses.

Dependent Variable: Cost of Capital	(1)	(2)	(3)
Borrower CSR	-0.075***	-0.075***	-0.073***
	(-2.682)	(-2.677)	(-2.630)
Lender CSR		-0.004	-0.001
		(1.200)	(0.470)
Borrower CSR × High Lender CSR			-0.030***
			(-2.760)
Deal Amount	0.033**	0.033**	0.033**
	(2.401)	(2.386)	(2.416)
Maturity	0.082***	0.083***	0.082***
	(7.417)	(7.424)	(7.391)
Collateral	0.014	0.014	0.014
	(0.345)	(0.347)	(0.345)
Number of Lenders	-0.043***	-0.043***	-0.045***
	(-2.807)	(-2.807)	(-2.889)
Borrower Rating	-0.412***	-0.412***	-0.412***
	(-45.327)	(-45.326)	(-45.312)
Borrower Size	-0.061***	-0.061***	-0.062***
	(-5.824)	(-5.807)	(-5.933)
Borrower Age	-0.059***	-0.059***	-0.058***
	(-4.693)	(-4.700)	(-4.631)
Borrower Profitability	-0.165***	-0.165***	-0.166***
	(-12.550)	(-12.559)	(-12.620)
Borrower Leverage	0.080***	0.080***	0.079***
	(6.710)	(6.709)	(6.668)
Borrower Market to Book	0.011	0.011	0.011
	(0.549)	(0.546)	(0.542)
Borrower Blockholders' Stake	0.012	0.012	0.017
	(0.377)	(0.378)	(0.547)
Lender Size	-0.187***	-0.191***	-0.183***
	(-2.845)	(-2.887)	(-2.778)
Lender Profitability	-0.027	-0.025	-0.030
	(-0.603)	(-0.562)	(-0.653)
Lender Intangibility	-0.021	-0.020	-0.018
	(-1.135)	(-1.127)	(-1.000)
Borrower_Lender Mills ratio	0.001	0.001	0.003
	(0.075)	(0.074)	(0.209)
Intercept	6.749***	6.555***	6.511***
	(4.393)	(4.233)	(4.291)
Observations	7,436	7,436	7,436
Fitness test (F- test)	479.67 (0.000)	484.65 (0.000)	492.22 (0.000)
R^2 (%)	46.0	46.1	47.1

Table 7

Nonparametric Estimation

The table reports the results of conducting a nonparametric estimation of changes in the cost of capital as well as in the new investment, when there is a change in Borrower CSR from below the first quartile to the last quartile of the distribution and when this change happens in the event that Lender CSR is below (above) the mean of the distribution as shown in column 1 (column 2). The procedure used is the Propensity Score Matching (PSM) estimator (Hirano and Imbens 2004). We match the observation using all the variables that appear in specification (1) of the main text. Cost of Capital describes the amount the borrower pays in basis points over LIBOR for each dollar drawn down. It adds the spread of the loan with any annual (or facility) fee paid to the bank group. This variable is the weighted average of all loans spreads borne by a borrower in one year, weighted by the facility amount to the overall amount raised for the corresponding borrower in the year. New Investment is the ratio of borrowers' capital expenditures to total asset lagged by one period. *, ** and *** denote significance at the 10%, 5% and 1% levels respectively. T-statistics inside the parentheses.

	(1) Change in CSR & Lender CSR=0	(t-statistics)	(2) Change in CSR & Lender CSR=1	(t-statistics)
		Panel A		
Cost of Capital	-26.900***	(-4.230)	-35.948***	(-4.500)
		Panel B		
New Investment	-0.460***	(-3.380)	-0.566***	(-2.160)

Table 8

The Moderating Effect of Cultural Differences (NGO)

Table 8 reports the results of conducting a system GMM estimation on the syndicated loans spread over LIBOR (in logs) in terms of borrowers' CSR, lenders' CSR, the interaction between the previous variables and with that of cultural differences as well as different controls defined in specification (1). The specification includes dummies of borrowers' and lenders' countries, as well as borrowers' sector and temporal dummies. We correct for endogeneity problems using as instruments of Borrower CSR and Lender CSR the number of NGOs in the corresponding country, as explained in the main text. We include Borrower and Lender Mills ratio to tackle sample selection issues, as explained in the main text. Cost of Capital is the amount the borrower pays in basis points over LIBOR for each dollar drawn down (log scale); Borrower CSR is the Sustainalytics score for borrowers' CSR. Lender CSR is the Sustainalytics score for lenders' CSR; Borrower CSR x High Lender CSR is the product of Borrower CSR to High Lender CSR, which is a dummy that is equal to 1 (0) when Lender CSR is above (below) the mean value for the corresponding year; Deal Amount is the size of the loan in a log scale; Cultural Differences is the Euclidean distance between borrowers' and lenders' countries of the following dimensions: Power Distance, Individualism, Uncertainty Avoidance and Masculinity. We also include the interaction terms that result from multiplying Cultural Differences by Borrower CSR; Lender CSR and Borrower CSR x High Lender CSR. Maturity is the maturity (in months) of the facility in a log scale; Collateral is a dummy that is equal to 1 if the loan requires collateral and zero otherwise; Number of Lenders is the number of financial providers participating in the facility in a log scale; Borrower Rating is Moody's rating on borrowers' riskiness; Borrower Size is the total assets in a log scale; Borrower Age is the number of years since first listed in a log scale; Borrower Profitability is borrowers' operating income divided by total equity (ROE); Borrower Leverage is the book value of debt divided by total assets; Borrower Market Book is the Market equity value to equity book value; Borrower Blockholders' Stake is the stake of the 10 largest blockholders (%) in a log scale; Lender Size is the total assets in a log scale; Lender Profitability is Lenders' operating income divided by total equity (ROE); Lender Intangibility is lenders' ratio of intangible assets to the total amount of assets. See the Appendix for details of the previous variables. We use the Stock & Yogo (2005) weak identification test, where the null hypothesis is that instruments are weak (non-significant correlation with the endogenous variable). The AR (2) is a test for a second-order serial correlation in the residuals, which is distributed as N(0, 1) under the null hypothesis of no serial correlation. For the Hansen test, the J statistic is distributed as a chi-square under the null hypothesis of instrument validity, that is, no correlation with the error term (p-values reported in parentheses). *, ** and *** denote significance at the 10%, 5% and 1% levels respectively. Robust t-statistics adjusted for clustering by firm are reported inside the parentheses.

Dependent Variable: Cost of Capital (t+1)	(1)	(2)	(3)
Borrower CSR	-0.030***	-0.030***	-0.034***
	(-3.015)	(-3.157)	(-3.653)
Borrower CSR × Cultural Differences	-0.001***	-0.001***	-0.001*
	(-3.335)	(-3.063)	(-1.698)
Lender CSR		-0.001	-0.019
		(-1.336)	(1.467)
Lender CSR × Cultural Differences		-0.000	-0.000
		(-0.502)	(-0.940)
Borrower CSR × High Lender CSR			-0.011***
			(-2.920)
Borr. CSR × High L. CSR × Cult. Differ.			0.001**
			(1.939)
Cultural Differences	0.039***	0.031**	0.026**
	(3.929)	(2.098)	(2.275)
Deal Amount	-0.006	-0.031	-0.004
	(-0.139)	(-0.643)	(0.068)
Maturity	0.053**	0.038*	0.045*
	(2.214)	(1.633)	(1.619)
Collateral	0.004***	0.004***	0.004***
	(5.917)	(5.866)	(4.774)
Number Lenders	-0.100**	-0.067*	-0.099**
	(-2.229)	(-1.633)	(-1.976)
Borrower Rating	-0.260***	-0.257***	-0.240***
	(-7.098)	(-7.116)	(-6.468)
Borrower Size	-0.019	-0.030	-0.012
	(-0.621)	(-0.937)	(-0.364)
Borrower Age	-0.000	-0.002	-0.015
	(-0.012)	(-0.041)	(-0.409)
Borrower Profitability	-0.132***	-0.136***	-0.138***
	(-5.325)	(-5.475)	(-5.228)
Borrower Leverage	0.100***	0.094***	0.088***
	(4.026)	(3.606)	(3.373)
Borrower Market Book	0.024**	0.024**	0.020*
	(2.446)	(2.518)	(1.684)
Borrower Blockholders' Stake	0.068**	0.066**	0.078***
	(2.446)	(2.400)	(2.816)
Lender Size	-0.168***	-0.208***	-0.252***
	(-3.042)	(-3.316)	(-3.222)
Lender Profitability	-0.097***	-0.106***	-0.112***
	(-3.734)	(-4.111)	(-3.708)
Lender Intangibility	-0.055***	-0.059***	-0.048***
	(-4.890)	(-5.020)	(-3.324)
Borrower Mills ratio	0.060	0.053	0.061
	(0.849)	(0.745)	(0.820)
Lender Mills ratio	-0.064	-0.073	-0.026
	(-0.389)	(-0.428)	(-0.120)
Intercept	6.166***	6.051***	5.303***
	(11.704)	(11.657)	(6.873)
Observations	1568	1568	1568
Fitness test (Wald test)	1590.68 (0.000)	1623.40 (0.000)	1740.88 (0.000)
Weak identification test	19.90 (0.000)	19.64 (0.000)	16.57 (0.000)
AR(2) test	0.92 (0.358)	0.91 (0.364)	0.80 (0.422)
Hansen test (overidentification)	115.29 (0.362)	112.46 (0.390)	101.17 (0.546)

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