Repeated Interaction in Distant Lending Relationships *

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Abstract

This paper examines the impact of lender-borrower distance on renegotiation outcomes in the syndicated loan market. Borrowers in more distant lending relationships benefit disproportionately from repeated interaction relative to borrowers engaged with close banks, leading to marked decreases in spreads. During the analysis, I exploit a measure of lender-borrower distance derived from Facebook connections, encompassing not only physical distance but also additional dimensions crucial for capturing the costs of information transfers. Leveraging the modified Dealscan database, I compare terms before and after renegotiations for the same loan tranche. My results suggest that the additional informational frictions arising in more distant lending relationships are effectively resolved through repeated interaction. The empirical findings confirm the predictions of models of lending under agency frictions and provide novel insights into the dissolution of information asymmetries.

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1 Introduction

Informational asymmetries are common in economic applications and give rise to costly moral hazard (Arrow, 1963) and adverse selection (Akerlof, 1970) problems. Understanding the costs associated with information asymmetries and mechanisms that reduce such expenses is, therefore, crucial. This paper studies information asymmetries in the context of lending relationships.

In lending relationships, information asymmetries exist because the borrower is better informed about her own repayment probability than the lender. Several studies have argued that physical distance between the lender and borrower contributes to larger information asymmetries because the transfer of soft information is impeded (Berger, Miller, Petersen, Rajan, and Stein, 2005; Agarwal and Hauswald, 2010). Other contributions suggest similar inefficiencies for alternative measures of distance such as cultural (Giannetti and Yafeh, 2012) or ideological distance (Kempf, Luo, Schäfer, and Tsoutsoura, 2021).

Suppose a German firm takes out two loans from different lenders. The first bank is a German bank (e.g. Deutsche Bank). The second lender is Bank of America. This paper studies the differences of the loan terms between the close (Germany-Germany) and distant (US-Germany) lending relationship at origination and after renegotiations. All else equal, the previously cited papers suggest that the collection of soft information is easier for the German bank than the US bank.

Another strand in the literature has shown that repeated interaction facilitates lending relationships as information about borrower quality is reusable (Boot and Thakor, 1994; Boot, 2000; Bharath, Dahiya, Saunders, and Srinivasan, 2011). Repeated interaction thereby helps in overcoming information asymmetries.

My article is at the intersection of the challenges of distant lending relationships and the benefits of repeated interaction between lenders and borrowers. Provided that information asymmetries in distant lending relationships are larger than in close relationships, this paper seeks to understand whether repeated interaction can overcome this inefficiency. Revisiting the introductory example, I examine whether renegotiations between the German firm and the US bank differ from the

Germany-Germany case. Two competing mechanisms could potentially play a role: First, larger information asymmetries in distant lending relationships might allow for particularly large surpluses from renegotiations as these frictions are resolved. This hypothesis would imply that repeated interaction creates more surplus in the Germany-US case. Secondly, physical distance or different spoken languages persist throughout the lending relationship and may well be a hindrance in a renegotiation process. Under these circumstances, it could be that renegotiations between two distant parties are less efficient. Which of these hypotheses prevails is ultimately an empirical question. To the best of my knowledge, this is the first study to examine the interconnection between distance and repeated interaction.

I investigate the research question in the global syndicated loan market. The syndicated loan market represents around three quarters of total cross-border lending to non-financial corporations in high- and middle-income countries (Doerr and Schaz, 2021), thus constituting a suitable setting to observe distant and close lending relationships. The study leverages the modified Dealscan database, allowing to trace credit agreements through several rounds of renegotiations. Dealscan provides details about the loan terms such as the loan size, maturity, cost of borrowing and covenants. Throughout the analysis, I focus on the cost of borrowing, specifically the all-in-spread-drawn as the main outcome variable. In a highly competitive market, the loan spread that is charged is equal to the expected cost that the bank faces when granting this loan. The cost of borrowing should therefore reflect additional charges that arise when the transmission of (soft) information is more difficult. The main explanatory variables that I am interested in are lender-borrower distance, a renegotiation variable indicating whether an observed spread is at origination or after a renegotiation, and the interaction of distance and renegotiations.

This paper is not only about physical distance in lending relationships. As my main proxy for distance, I use a measure of social connectedness derived from Facebook connections. The measure calculates the relative probability that two people from different regions are friends with each other on Facebook. With the social connectedness measure, I capture not only physical distance but also the additional characteristics of a lending relationship that impact the transfer of soft information such as differences in culture, language and frequency of economic interactions. Nevertheless, the

main findings of the paper also hold when focusing on a particular aspect of distance such as physical or cultural distance.

The novel finding of this paper is that borrowers benefit disproportionately from repeated interaction in distant lending relationships relative to close relationships. I show that at origination the borrower has to pay a premium on the spread when borrowing from a distant bank, in line with the empirical findings of Giannetti and Yafeh (2012). However, through repeated interaction with the lender in renegotiations, this premium reduces to zero. My results align with an interpretation where informational asymmetries are higher in distant lending relationships but repeated interactions help in alleviating these additional frictions.

Boot and Thakor (1994) show theoretically that repeated interaction should result in a reduction in interest rates.[1] In this paper, I find that spreads are between 20-25 bps lower after renegotiations in close lending relationships. The benefits in distant lending relationships are larger.

Predictions about the effects of distance on the all-in-spread-drawn vary. On the one hand, banks incur costs from engaging with more distant borrowers because transportation costs for the negotiations and monitoring are higher (Herpfer, Mjøs, and Schmidt, 2023).[2] Hence, under perfect competition, when banks set spreads according to marginal costs associated with the loan, higher distance would imply higher spreads. However, when the collection of soft information is impeded by distance, close banks enjoy an informational advantage over more distant banks (Agarwal and Hauswald, 2010). Under imperfect competition, banks can therefore extract rents and ask for higher spreads in close lending relationships.[3]

Whether distance is associated with higher or lower spreads depends on the competitive environment of the market and is an empirical question. In my setting, I find that at origination a one standard deviation increase in distance, equivalent to the difference between Germany-Germany

[1] In the empirical literature, Bharath et al. (2011) find that a loan originated with a relationship lender in the syndicated loan market carries to 10-17 bps lower spreads compared to a scenario where there were no previous interactions with the lead bank.

[2] Additionally, greater distance is correlated with larger cultural differences. These cultural differences make negotiations more cumbersome and costly (Giannetti and Yafeh, 2012).

[3] Degryse and Ongena (2005) and Agarwal and Hauswald (2010) study two distinct but similar settings where they analyze loans by a single large local bank to mostly small-and medium sized enterprises. In line with the predictions under imperfect competition, they find empirical evidence for a negative correlation between spreads and distance.

and Germany-US lending relationships, is associated with a 12-16 bps increase in the spread. Given that the syndicated loan market is highly competitive with the largest global banks competing for market shares, it is not surprising to find that distant lending relationships are more expensive for borrowers at origination. My finding suggests that in the syndicated loan market competition is strong enough for banks to price loans according to marginal costs.

To determine whether borrowers benefit more from repeated interaction with distant banks, I first test whether distance changes the probability of a loan renegotiation. Renegotiations could be less likely in distant relationships because they are more time and resource consuming (Giannetti and Yafeh, 2012). On the other hand, renegotiations are a result of incomplete contracting at origination. Provided that information asymmetries are larger in distant lending relationships (Agarwal and Hauswald, 2010), I could observe renegotiations more frequently in distant lending relationships as there is more new information that accrues over the duration of the loan. I do not find evidence for a relationship between distance and the likelihood of a loan renegotiation, suggesting that both effects offset each other.

When I turn to renegotiation outcomes, I find that higher distance is associated with larger decreases in spreads post-renegotiation. Specifically, a one standard deviation increase in distance leads to a 10-14 bps additional benefit of renegotiation. This additional benefit almost perfectly offsets the 12-16 bps premium paid by distant borrowers at origination. The effect is stronger for rated firms that are publicly listed and issue large loans. For these firms, I would expect competition between banks to be particularly strong making it more likely that any gain from repeated interaction has to be shared with the borrower.

I analyze the premium that is paid by borrowers for engaging with a distant lender over the loan's duration. The premium becomes insignificant after the first renegotiation round. Conditional on a loan being renegotiated at least once before maturity, a significant distance premium is only paid in the first year of origination. While these findings do not explain why banks engage with foreign lenders at origination, they suggest that the cost of such a relationship has to be borne for a much shorter period than assumed in other studies (Yilmaz, 2018).

Matching between banks and borrowers occurs endogeneously. A common concern throughout

the analysis is that unobserved differences in credit risk are responsible for the result. I control for observable credit risk using credit ratings and firm characteristics. In the empirical framework a rich set of other control variables and fixed effects accounts for differences in loan contracts, industry specific shocks, local economic conditions, and macroeconomic shocks. A particular feature of the data is that I can estimate the benefit of repeated interaction within loan tranche. For the same loan, I compare spreads pre- and post-renegotiation and find that when the distance between lender and borrower is high at origination, the borrower experiences a disproportional decrease in spreads after renegotiation. The within-loan estimation significantly reduces the scope for potential confounding interpretations as it controls for all time-invariant differences in credit risk.

Furthermore, I account for selection concerns by implementing a Heckman selection model that estimates the probability of a firm-bank match in the first stage. The disproportional benefits of renegotiation in distant lending relationships remain after accounting for selection.

I further tighten identification by exploiting switches in lead arrangers. Lead arranger changes occur when lenders cannot agree on a common course during monitoring and renegotiations. The data suggests that the choice of the new lead bank after a change in the syndicate is orthogonal to the lead bank's distance from the borrower. Using this exogenous variation, I subsequently show that there is no premium for borrowing from a distant lender after renegotiations.

The main results of the paper can be summarized as follows. Borrowing from distant banks is expensive for firms in the form of a 12-16 bps distance premium at origination. The premium likely arises because the costs of collecting soft information and monitoring increase with distance (Agarwal and Hauswald, 2010). However, the additional costs of borrowing from a distant bank are mitigated through repeated interaction. In renegotiations, distant borrowers obtain additional decreases in spreads that offset the initial premium. The findings suggest that repeated interaction efficiently resolves the informational asymmetries that arise from distant lending relationships.

2 Related Literature

This article broadly relates to three strands in the financial intermediation literature.

First of all, I relate to the literature on the effects of various measures of distance in lending relationships. Petersen and Rajan (2002) document an increase in physical distance between lenders and borrowers between 1970 and 1990. A number of papers have later highlighted the adverse effects of distance in information acquisition processes. Berger et al. (2005) argue that physical proximity facilitates the collection of soft information. Lenders that are farther away from their borrowers therefore have to rely more on hard, easily verifiable information. Hollander and Verriest (2016) provide evidence that higher distance in lending relationships leads to tighter covenants. Their mechanism is again related to information asymmetries. Higher distance decreases the quality of information acquisition with lenders choosing to monitor more tightly as a consequence. More recently, Rehbein and Rother (2022) show that social ties within the US facilitate information sharing. Lenders increase aggregate loan volumes to SMEs in more connected counties relative to less connected areas. The superior collection of soft information in closer lending relationships provides lenders with considerable local market power. Agarwal and Hauswald (2010) show that lending relationships are more likely to form with physical proximity but that lenders use their market power and charge close borrowers higher spreads. However, when there is perfect competition, banks price loans according to the marginal costs of originating and monitoring this loan (Herpfer et al., 2023), implying that higher distance should be associated with higher spreads. Yilmaz (2018) finds evidence that cross-border lending is expensive to borrowers in the syndicated loan market. When it comes to alternative measures of lender-borrower distance, Giannetti and Yafeh (2012) find that an increase in cultural distance is associated with an increase in spreads. Similarly, Kempf et al. (2021) find that ideological differences after an election lead to reductions in lending volumes.

Secondly, I relate to the large literature on relationship lending and repeated interaction. Boot (2000) argues that relationship banking mitigates information asymmetries. Past relationships generate specific durable and reusable information that aid the lender in determining the repayment ability of a firm. Boot and Thakor (1994) argue that loan rates should decrease over the course of a lender-borrower relationship. An alternate viewpoint states that the accumulation of private soft information by the lender leads to higher spreads for the borrower. Rajan (1992) and Sharpe (1990) posit that relationship borrowers are "locked-in" with their lenders, allowing these banks to extract

rents. On the empirical side, Bharath et al. (2011) provide evidence that repeated interaction in the syndicated loan market is beneficial in the form of a 10-17 bps advantage in spreads. This suggests that the gains from producing durable and reusable information are shared with the borrower.

Last but not least, I contribute to the literature on loan renegotiations. Roberts and Sufi (2009) show that about 90% of long-term debt contracts are renegotiated at least once prior to their maturity. The authors collect details on renegotiations from SEC filings and investigate the outcomes and determinants of these amendments. They document that renegotiations generate large changes to the terms of the initial contract. In addition, the paper cites the accrual of new information concerning the credit quality of the borrower as a main predictor for an amendment. Similarly, Roberts (2015) explores the role of dynamic renegotiations in the syndicated loan market, collecting information on all loan amendments for a random subsample of firms from SEC filings. He finds that the typical bank loan is renegotiated five times. Additionally, Denis and Wang (2014) explore covenant renegotiations in the absence of covenant violations. They document that covenants are renegotiated in 53% of all debt contracts and that a relaxation of covenants is about twice as likely as a covenant tightening.

This paper rests at the intersection of the literature on distance in lending relationships and the previous work on repeated interaction through loan renegotiations. It contributes to this literature by demonstrating that the benefits of repeated interactions increase with distance between lenders and borrowers.

3 Data

3.1 Syndicated Loans - Dealscan

I begin with the complete sample of syndicated loans in the Refinitiv Loan Pricing Corporation's Dealscan database from 1994 to 2021. This dataset provides detailed information on syndicated loan tranches at origination and at the time of amendments.

Refinitiv's data includes key loan terms such as type, amount, maturity, and spread. Contract terms are reported by the lead syndicate bank or collected from company filings of the borrower.

Importantly for this paper, Refinitiv also provides information on borrower ratings and syndicate member banks.

To focus on loans issued to the non-financial sector, I exclude borrowers with SIC codes between 6000 and 6999. Additionally, I exclude countries with fewer than 100 loans granted to borrowers over the sample period. I also exclude loans with missing data on either tranche amount, origination date, maturity, or the all-in-spread-drawn. Last but not least, I drop credit lines from the sample and focus on term loans.

The subsequent analysis requires a measure of distance between the borrower and the lender. Since the lender is a syndicate of banks, I adopt the procedure outlined by Berg, Saunders, and Steffen (2016) to identify the lead arranger of the syndicate. When a company decides to raise a syndicated loan, it invites bids from several banks, and the winning bidder becomes the lead arranger, serving as the main point of contact for the borrower during the syndication process.[4] Therefore, it is appropriate to focus on the connectedness between the lead arranger and the borrower, disregarding the role of other participant banks. In cases where there are multiple lead arrangers (22% of observations), I retain the lead arranger that is closest to the lender in terms of my measure of distance. This way, later estimates will be biased downwards and represent a lower bound of the true effect.

When determining the country of the lead arranging party, I consider the location of the lead bank's headquarters. Correctly identifying where final decisions on loan terms are made and with whom the borrower interacts is crucial for analyzing the impact of lender-borrower distance. There are three possibilities: decisions could be made at a branch level (e.g., the Frankfurt offices of Bank of America), at the lending bank's headquarters, or at the lender's parent level. Following Giannetti and Yafeh (2012), I disregard the possibility that decisions and interactions occur at a branch level. For instance, when Bank of America grants a loan to a German firm, I assume that workers from the Frankfurt branch could be involved, but the main decision-makers are employees from the U.S. headquarters of Bank of America.[5] I prioritize the location of the lender over the

[4] A detailed description of the institutional details in syndicated lending is provided by Blickle, Fleckenstein, Hillenbrand, and Saunders (2020).

[5] Alternatively, I could assume that decisions are taken at the Frankfurt branch but that the leading employees have social connections that resemble the social networks of US citizens.

location of the lender's parent mainly due to data limitations. Dealscan does not provide time-varying lender parent information. An example of differing lender and lender parent countries is Bankers Trust Co., where Dealscan provides the lender country (U.S.) and lender parent country (Germany). Since Deutsche Bank took over Bankers Trust in 1999, using the lender parent country to determine distance would incorrectly assume that loans granted by Bankers Trust before 1999 were typically negotiated and decided upon by employees with German social networks. Since banks that were acquired during the sample period typically issued more syndicated loans before the acquisition than afterward, I choose not to aggregate at the parent level. However, my findings are robust and quantitatively similar when using the lender's parent country.

More than two thirds of the loans in my sample are agreed upon between two parties from the same country. I plot the shares of domestic versus foreign lending by the three major syndication markets in Figure 1. In the US, domestic lending is between 60% and 70% throughout the sample period. In the aftermaths of the 2008 financial crisis, domestic lending was particularly prevalent in the Asian-Pacific and Western European markets with domestic lending shares higher than 80%. Cross-border lending has since become more prominent in these two markets and most recently accounted for one third of lending in my sample.

Insert Figure 1 here.

I rely on LPC Dealscan's novel database structure to trace loan originations and later renegotiations. A renegotiation or amendment usually triggers a new observation in Dealscan that will be recorded under the same loan tranche id but a different *tranche activation date*.[6] Amendments or renegotiations are common in syndicated loans. After plotting the renegotiation likelihood by origination year in Figure A1, I make the following observations: First, the probability of a given loan being renegotiated before maturity is around 1/3 in the more recent years and lower in the early sample. This number appears very low in contrast to Roberts and Sufi (2009) who find that over 90% of long term debt contracts are renegotiated. While Roberts and Sufi (2009) use a random

[6] In the previous version, known as Dealscan - Legacy in WRDS, it was less convenient to track renegotiations as each renegotiated loan was recorded under a new facility ID.

subsample of loan agreements and search firms' SEC filings post-origination for changes to loan terms, LPC Dealscan relies heavily on self-reporting by banks after terms are renegotiated. Banks have incentives to report new deals as Refinitiv publishes 'league tables' of the largest arrangers (Blickle et al., 2020). I suspect that incentives to report renegotiations are smaller given that it has little or no impact on the 'league tables'. This explains the sharp difference in the percentage of renegotiated agreements between this paper and the prior literature (e.g. Roberts and Sufi (2009)). However, I assume that banks do not have different incentives to report renegotiations of loans to socially closer or more distant borrowers. Consequently, I am confident that the underreporting of amendments in Dealscan will not bias my results in a significant manner. Secondly, there appears to be a sharp increase in the probability of renegotiations around 2010. Again, I suspect this increase to be data-driven. Third, I notice a strong decline in the likelihood of a renegotiation in 2019-2021. Since my data ends in 2021, loans issued in these later years have simply not (yet) been renegotiated.

To alleviate the previous concerns, I construct a sample consisting of loans originated between 2010 and 2018 and record renegotiations of these agreements between 2010 and 2021.

Even though, I suspect that a vast number of renegotiations are not recorded in Dealscan, I still observe that they matter. Figure 2 depicts origination versus renegotiation volume in US dollars over the sample period. Since I focus, on loans originated in 2010 and later, renegotiation volume in the early years of the sample is low. In later years, renegotiations actually become more important in terms of volume than new originations. These descriptive findings motivate a more detailed analysis of loan renegotiations.

Insert Figure 2 here.

3.2 Social Connectedness Index

The primary measure of lender-borrower distance used in this study comes from the Social Connectedness Index (SCI). The SCI utilizes anonymized data from Facebook's friendship networks

to assess the connectedness between two locations. I obtained the country-country version of the data from the Humanitarian Data Exchange and merged them with lender-borrower pairs. Bailey, Gupta, Hillenbrand, Kuchler, Richmond, and Stroebel (2021) utilized the same country-country measure to analyze international trade flows.

The SCI quantifies the relative probability of a Facebook friendship link between users in different regions. To facilitate the interpretation of the results, I standardize the SCI measure. A one standard deviation change in the country-country social connectedness is equivalent to the difference between Germany-Germany relationships and Germany-US relationships. To ease the interpretation of findings on the context of a literature that has preferred measures of distance over measures of proximity, I also take the negative of the standardized SCI and term it 'social distance' throughout the paper.

3.3 Related Measures of Lender-Borrower Distance

Throughout the analysis, several additional measures of lender-borrower distance are employed.

First, I follow the procedure outlined in Giannetti and Yafeh (2012) to obtain a measure of *cultural distance* between countries based on the World Values Survey (WVS) (Haerpfer, Inglehart, Moreno, Welzel, Kizilova, Diez-Medrano, Lagos, Norris, Ponarin, and Puranen, 2022). The WVS investigates attitudes, values and beliefs worldwide, with its first wave conducted in 1981 and the seventh wave completed between 2017 and 2022. Inglehart (1997) and Inglehart and Baker (2000) describe an approach to clustering answers to the survey along two dimensions: traditional versus secular values and survival versus self-expression. I directly extract the values for these two dimensions from the WVS and aggregate them by country and wave. A cultural map of the countries participating in the most recent wave of the WVS can be found in Figure A2 of the Appendix.

To calculate the distance between lender-borrower pairs, I compute the Euclidean distance between the traditional vs. secular and survival vs. self-expression dimensions (Giannetti and Yafeh, 2012). When matching the cultural distances to the loan-level data, I use the cultural distance from the last survey wave before the loan was originated.

Additionally, I include the physical distance between the capitals of two countries as a measure of lender-borrower distance. The data is downloadable from Kristian Skrede Gleditsch's website.

3.4 Supplementary Data

Dealscan provides information on loans to both private and public firms. For public firms in my sample, I add balance sheet and P&L data from Compustat.[7]

I further supplement my data with GDP per capita and Debt-to-GDP ratios from the World Bank and BIS, as well as data on creditor rights from Djankov, McLiesh, and Shleifer (2007).[8] The creditor rights index follows the procedure developed by Porta, Lopez-de Silanes, Shleifer, and Vishny (1998) and assigns a score between 0 (weak creditor rights) and 4 (strong creditor rights) to each country.

All continuous variables are winsorized at the 1st and 99th percentile.[9] Summary statistics are reported in Table 1.

Insert Table 1 here.

4 The Determinants of Loan Renegotiations

I begin my analysis exploring the relationship between lender-borrower proximity and the probability of a loan renegotiation. The focus of this paper is on renegotiations in the absence of covenant violations. Therefore, the renegotiations that I observe should be beneficial to both contracting parties in order for them to agree. However, renegotiations are not costless. Costs can incur in the form of an amendment fee as well as legal fees. Additionally, borrower and lender have to spend time and effort on completing the agreement. In consequence, renegotiations should be ob-

[7] I am grateful to Chava and Roberts (2008) for providing a Dealscan-Compustat borrower link until the end of 2017 and to Franz Hinzen for extending the link to 2021.

[8] This dataset is somewhat limited as it ends in 2002. I take the 2002 differences in creditor rights as a time-invariant control variable, assuming that differences in creditor rights are sticky.

[9] The results are also robust to winsorization at 5 and 95 percent levels.

served, whenever the Pareto-improvement from the new over the old agreement is greater than the renegotiation cost.

Roberts and Sufi (2009) identify that the accrual of new information is the most important determinant of a renegotiation. Additionally, the terms of the initial contract matter in determining the likelihood and outcome of a renegotiation. I am interested in learning whether not only the initial terms but also the distance between lender and borrower matter at origination. Two competing mechanisms could be at work. Renegotiations in distant lending relationships could be less likely due to higher renegotiation costs. Interaction between distant parties could be more time and resource consuming (Giannetti and Yafeh, 2012), reducing the potential surplus from renegotiations. On the other hand, renegotiations could occur more frequently in distant lending relationships. Renegotiations are a result of incomplete contracting at origination. Provided that higher distance is associated with larger information asymmetries, new information accruing from repeated interaction could be more valuable in distant lending relationships, triggering more renegotiations. To determine the aggregate effect of distance on the likelihood of a renegotiation, I run the following OLS specification:

$$\begin{aligned} \mathbb{1}_{Renegotiated_{i,j,b}} = \beta_0 + \beta_1 \times Social\,Distance_{j,b} + Loan\,Controls \\ + Firm\,Controls + Country\,Econ\,Conditions\,Controls + Fixed\,Effects \end{aligned} \tag{1}$$

i indicates a loan agreement between firm j and bank b. For this analysis, I collapse the data consisting of originations and renegotiations to a loan-tranche level and define as the outcome variable an indicator for whether or not the loan was renegotiated prior maturity. I include the number of banks, tranche amount, maturity, spread as well as indicators about the existence of a pricing grid and covenant-contract in the regression. These loan controls will be measured at the time of origination. To account for time-varying changes in economic conditions, I add a vector of country-specific control variables containing the credit-to-GDP ratio in the country of the borrower, and GDP-per-capita ratios in the country of borrower and lender. A vector of firm characteristics includes total sales, leverage, net income over assets, and PP&E over assets and controls for size as well as firm-specific risk.

To account for differences in interest rate environments, I add currency x time fixed effects. Different risk profiles of loans will be captured with rating x year fixed effects. Industry x time effects account for shocks to specific industries. Finally, I add both borrower country and lender country fixed effects to account for time-invariant differences in economic environments. Borrower country fixed effects also account for the possibility that Refinitiv is better at tracking renegotiations in some jurisdictions than others (i.e. the availability of public filings such as the SEC's 8-K report).

Insert Table 2 here.

Table 2 presents the results. Across all specifications, the social distance between borrower and lender is not significantly related to the likelihood of an amendment. The result is consistent with an interpretation of additional benefits of renegotiations in distant lending relationships due to the accrual of relatively more new information. This accrual of new information does, however, not lead to more frequent renegotiations because the costs of renegotiation between distant parties are higher.

The number of banks in the syndicate is positively related to the probability of a renegotiation. Given that more banks in the syndicate will imply higher renegotiation costs, the result suggests that it is more difficult to account for all contingencies at the time of origination when the syndicate is large, making renegotiation more likely. Similarly, larger loans appear to be renegotiated more frequently. Agreements with longer maturity also experience more renegotiations. Pricing does not appear to have an impact on the likelihood of renegotiations. Interestingly, contracts with less restrictive covenants, are significantly more likely to be renegotiated. Although not at the heart of this paper, the results provides additional evidence that covenant violations are not the primary cause of loan renegotiations (e.g. Roberts and Sufi (2009)).

In sum, this section finds that distance between contracting parties does not lead to more or less frequent renegotiations. What remains unclear is whether distance does not matter in renegotiations or whether increased costs of high-distance renegotiations are offset through additional benefits.

5 The Costs and Benefits of Distant Lending Relationships

Next, I shift attention from the probability of a renegotiation occuring to renegotiation outcomes. A loan agreement contains many contract terms that are negotiated simultaneously. For most of these terms, it is hard to determine which party benefits from changes in terms. For example, an increase in the loan amount could benefit both the borrower because an investment can be carried out but also the lender through an increase in interest income. Comparable to the prevailing literature, I therefore focus on the cost of borrowing as the primary outcome variable, as it allows for an easy and comparable interpretation as to which party profits from a change. The cost of borrowing is going to be measured as the all-in-spread-drawn.

I run an OLS-model and regress the all-in-spread-drawn on my measure of social distance, a renegotiation dummy and the interaction of the two. I hypothesize that spreads should be higher with social distance given the findings in Giannetti and Yafeh (2012) or Kempf et al. (2021). Ex-ante it appears unclear whether renegotiations lead to lower or higher spreads. Roberts (2015) shows that good (bad) news about the borrower's economic situation predicts lower (higher) spreads post-renegotiation. My main interest lies in finding the sign of the coefficient on the interaction between social distance and amendments. In particular, I am interested in whether repeated interaction can revert the effects of distance in lending relationships.

The regression framework is:

$$\begin{aligned} AISD_{i,j,b,r} &= \beta_0 + \beta_1 \times Social\,Distance_{j,b} + \beta_2 \times Amendment_{i,r} \\ &+ \beta_3 \times Social\,Distance_{j,b,r} \times Amendment_{i,r} + Ex\text{-}ante\,Loan\,Controls \\ &+ Firm\,Controls + Country\,Econ\,Conditions\,Controls + Fixed\,Effects \end{aligned} \tag{2}$$

$AISD_{i,j,b,r}$ is the all-in-spread drawn paid for loan i that is agreed upon between firm j and bank b The indicator r represents the renegotiation round and is zero for originations. Social distance is always measured at the time of loan origination. Amendment is an indicator variable that is equal to one if the observation is due to a renegotiation, i.e. $r < 0$. I include a vector of ex-ante loan controls that consists of the tranche amount, maturity, number of lenders, number of

loan purposes, and pricing grid as well as covenant-lite dummies at the time of loan origination. Furthermore, I add the same time-varying controls for economic conditions in the country of the lender and borrower and the same borrowing-firm controls as I did before. The set of fixed effects is identical to Table 2. In some specifications, I exploit the granularity of the data and add a loan tranche fixed effect. Thereby, I compare spreads for the same loan pre- and post-renegotiation.

The framework is akin to a differences-in-differences setup with a continuous treatment variable (social distance) and a treatment event (i.e. the renegotiation). Consequently, identification relies on the parallel trends assumption. Since matching between lead banks and borrowers occurs endogenously, selection bias is a lingering concern in the presented empirical framework. The main identification threat is that distant lending relationships are different in unobservable dimensions from close relationships. To gain an understanding of the severity of such concerns, I present differences between domestic and cross-border lending relationships in Table 3.

Insert Table 3 here.

Cross-border lending is associated with larger loan tranches with a longer maturity that are more likely to be covenant-lite than domestic lending. In addition, cross-border loans are issued by borrowers who are rated slightly better. I can control for such differences in my setup. Nevertheless, cross-border loans carry significantly higher spreads, bringing up concerns that there are unobservable risk factors associated with cross-border lending. I will discuss these concerns more thoroughly in Section 5.5.

5.1 Main results

Table 4 reports the results for the differences-in-differences framework. From specification (1) through (4), I gradually add the control variables from Equation (2). Including ex-ante loan controls or firm characteristics leads to sizeable increases in the R-squared, suggesting that they capture additional loan-specific risks that are not absorbed by the extensive set of fixed effects. The country-level controls, on the other hand, cannot explain additional variation in the all-in-spread-drawn,

possibly because any such heterogeneity will be captured by the currency x time, borrower and lender country fixed effects.

Across all specifications the coefficient on social distance β_1 is positive and significant. β_1 confirms the hypothesis that higher social distance between lender and borrower will be associated with higher spreads all else equal. The sign and economic magnitude of the coefficient suggest that a German firm borrowing from a German lead bank would pay roughly 12-16 additional basis points, if it chose to borrow from a US bank.

I also find a negative and statistically significant coefficient on the *Amendment* dummy. In the first four specifications, borrowers pay around 20-25 bps lower spreads post renegotiation. In column (5), I include loan tranche fixed effects. The only variation in spreads now arises from renegotiation. Even in this tight framework, amendments on average lead to reductions in spreads of around 10 bps. The finding suggests that borrowers benefit from the Pareto-improving renegotiation through lower costs of borrowing. Lenders on the other hand benefit from higher loan amounts and longer maturities (Table A4 of the Appendix).

Insert Table 4 here.

The main coefficient of interest β_3 is the interaction term between social distance and the amendment. It captures the additional cost of borrowing from socially distant lenders. Across all specifications, β_3 is negative and significant. This suggests that there is no additional cost of social distance through renegotiations. Instead, socially distant borrowers benefit more from repeated interaction than socially close borrowers. Depending on the specification, β_3 is between 10 to 14 bps per one standard deviation increase in social distance. Comparing this renegotiation benefit to the initial cost of social distance (12-16 bps) suggests that amendments offsets most of the initial disadvantage from borrowing from a distant bank.

A numerical example using the numbers from column (4) illustrates this intuition. Again assume, a German firm lends from two different banks. Deutsche Bank is a Germany-based lender, Bank of America is headquartered in the US. The standardized social distance measure within Germany is around -0.5, between the US and Germany it is 0.5. The firms are identical in all other regards.

The regression suggests that upon origination, the loan from Deutsche Bank carries a 13 bps lower spread than the loan from Bank of America. After renegotiation of the agreement with Deutsche Bank, the German firm benefits from a 25 bps decrease in spreads. On the other hand, the company can obtain a 36 bps decrease after renegotiating with Bank of America. Therefore, the difference in spreads between the two loans decreases to 2 basis points post-renegotiation.

The benefit of renegotiating with a socially distant bank remains in the strict loan tranche fixed effects specification in column (5). Clearly, the magnitude of the coefficient reduces significantly to 5 bps. At the same time, the R-squared jumps to 95%. I interpret column (5) as evidence that, not surprisingly, unobservable differences in borrowers matter. Accounting for a large part of these differences with tranche fixed effects, somewhat reduces the estimated β_3. Given that only a small variation in spreads remains unexplained after including tranche fixed effect, I view this as evidence that there is indeed a benefit of renegotiating with distant banks.

5.2 Cross-Sectional Heterogeneity

Next, I explore cross-sectional variation in my sample. I am interested in learning which loans contribute more to my previous findings. I focus on heterogeneity in loan and borrower characteristics that are correlated with the competitive environment that the lender faces. When repeated interaction is beneficial, the extent to which the lender has to pass on gains to the borrower depends on the distribution of bargaining power. More competition between banks should, therefore, result in additional benefits for borrowing firms. Table 5 presents the cross-sectional results.

Insert Table 5 here.

Firstly, I divide loans at the medium tranche amount into either small or large loans each year. I assume that competition between banks for larger loans is higher. Columns (1) and (2) show that the benefits of renegotiation are only present for large loans.

In a similar vein, I distinguish between unrated, rated, private, and public firms in columns (3) - (6). Regardless of lender-borrower distance, borrowers benefit more from renegotiation when there is more competition between banks (loans to rated and public firms).

In columns (7) and (8), I distinguish between new and mature lending relationships by the number of previous lender-borrower interactions. This split captures the role of information asymmetries in the relationship. In more mature lending relationships, the benefits from renegotiation should be lower. The data supports this claim. In particular, the additional value of renegotiation in distant lending interactions is about twice as large in new relationships relative to mature relationships.

Overall, this section confirms predictions that competition between lenders matters for the pass-through of gains from renegotiation to interest rates. My effects are strongest for large loans, issued by public and rated firms.

5.3 Dynamics of Repeated Interaction

So far, I have treated renegotiations as binary, either they have occured or not (yet). In reality, loans can be renegotiated through several rounds. The dynamics of such repeated interactions are plotted in Figure 3. I augment the previous empirical framework and change the binary pre- vs post-amendment dummy to a discrete variable that is equal to the renegotiation round. Round zero corresponds to originations. The new regression framework is now equal to

$$\begin{aligned} Spread_{i,j,b,r} = \beta_0 + \beta_1 \times Social\,Distance_{j,b} + \lambda \times Renegotiation\,round_{i,r} \\ + \gamma \times Social\,Distance_{j,b} \times Renegotiation\,round_{i,r} \\ + Ex\text{-}ante\,Loan\,Controls + Country\,Econ\,Conditions\,Controls + Fixed\,Effects \end{aligned} \tag{3}$$

with λ and γ representing vectors of coefficient estimates. I plot the marginal effects of a one standard deviation increase in social distance for each renegotiation round. These margins are equal to the sum of β_0 and the vector γ.

Insert Figure 3 here.

At origination I observe a social distance premium that is roughly around 13 bps. This premium declines through renegotiations and becomes insignificant after the first renegotiation round.

Throughout future renegotiation rounds, the premium remains indistinguishable from zero, suggesting that repeated interaction can overcome the challenges imposed through distant lender-borrower relationships.

In this analysis, I omit the vector of firm controls to ensure that I have a sufficiently large number of loans per renegotiation round in my sample. In the Appendix, I show that the result is qualitatively similar when I include firm controls but confidence intervals for later renegotiation rounds are much wider (Figure A3).

Another way to analyze the dynamics of repeated interaction is to calculate the average cost of borrowing from a socially distant bank (the social distance premium) over a loan's duration.

For this purpose, I augment the dataset and create a loan x year panel. The first observation per loan will be in the year of its origination. I then follow loans until its stated maturity, taking into account that maturity might have been extended through renegotiations. In each year, I calculate the all-in-spread-drawn that the loan carries.

For instance, assume a loan is originated in 2010 with initial terms including a 350 bps spread and maturity in 2015. In June 2012 the loan is renegotiated and now has a spread of 300 bps and a maturity in 2017. I find no additional amendments for this loan. I will then have the loan in my panel from 2010-2017. The all-in-spread-drawn will be 350 bps in 2010 and 2011 and 300 bps in later years.

I use this panel and run the following regression

$$\begin{aligned} Spread_{i,j,b,t} = \beta_0 + \beta_1 \times Social\ Distance_{j,b} + \lambda \times Years\ since\ origination_{i,t} \\ +\gamma \times Social\ Distance_{j,b} \times Years\ since\ origination_{i,t} + Ex\text{-}ante\ Loan\ Controls \\ +Firm\ controls + Country\ Econ\ Conditions\ Controls + Fixed\ Effects \end{aligned} \tag{4}$$

separately for the group of loans that are renegotiated at least once and the group of loans that are never renegotiated.

Insert Figure 4 here.

The marginal effects of social distance on the all-in-spread-drawn are depicted in Figure 4. For both groups of loan, borrowers pay a premium at the time of origination when they borrow from a more distant bank. However, the premium decreases monotonically for the groups of loans that are renegotiated. Statistically, already after the first year, the social distance premium is zero for loans that are renegotiated.

The graph provides additional evidence about the cost associated with borrowing from a distant bank. So far, I showed that a premium is paid only until the first renegotiation round but had nothing to say about the timing of the amendment. Here I show that conditional on a loan being renegotiated, a significant interest rate premium is only charged for the first year.

5.4 Exploiting Lead Arranger Switches

The results thus far suggest that repeated interaction offsets the costs of distant lending relationships. Another way to approach this would be to ask whether distance still matters after the loan has been originated. A feature of the data is that I observe not only the syndicate composition at origination but also throughout later renegotiations. I can therefore exploit switches in the lead arranger where the new lead bank is either closer or further away and determine the impact on spreads.

Lead arranger changes are not exogeneous. To the best of my understanding, they occur when syndicate members cannot agree on a common course during renegotiations or for other clearly endogeneous reasons. However, the data suggests that the choice of the new lead bank may be orthogonal to its distance from the borrower. In total, I observe 1219 cases in which the lead bank changes. In 420 cases the distance of the new lead bank is different from the previous distance. The new lead bank is socially more distant (closer) from the previous lead in 209 (211) cases. Hence, the distribution of lead bank changes suggests that when there is a change, there is not a trend towards selecting a closer or more distant bank as new lead arranger.

I exploit the orthogonality of the lead bank change and regress the all-in-spread-drawn on the interaction of an amendment dummy and a dummy variable for the lead bank change. Importantly, I conduct this analysis within loan-tranche. Table 6 presents the results.

Insert Table 6 here.

In column (1) I include only the amendment dummy and confirm that the average renegotiation benefits the borrower through lower spreads. In column (2) I show that after a lead bank change, the borrower pays even lower spreads.

In column (3), I distinguish between lead bank changes where the lender-borrower distance increases or decreases. The coefficients are almost identical, suggesting that lead bank changes are beneficial to the borrower but the distance of the new lead bank no longer matters.

I interpret the results in Table 6 as evidence that lender-borrower distance does not have an impact on lending terms post-origination.

5.5 Robustness

I conduct a series of robustness tests. In Table 7, I re-run the main test (Equation (2)) with different subsamples. Firm controls are excluded in this table, to ensure sufficient number of observations for the different subgroups.

Insert Table 7 here.

In column (2), I exclude loans for which multiple banks share the lead arranger role. I continue to observe a premium for distant borrowers at origination and subsequent reversal.

I exclude US borrowers in column (3). US firms are by far the largest group of borrowers in the syndicated loan market. Excluding them does not alter the result. The benefit of renegotiating with distant banks therefore appears to be a global phenomenon and not restricted to the US.

In column (4), I focus on the intensive margin of social distance. I include only cross-border loans in the analysis and seek to learn whether additional social distance matters. I do not find any significant effects of social distance, neither at origination nor at the renegotiation stage. Column (4) suggests that most of the effect can be attributed to whether a firm borrows from a domestic or foreign bank.

Next, I address lingering concerns about selection driving my results. Thus far, I cannot fully rule out that differences in spreads arise due to unobserved differences in borrowers. The selection mechanism that could undermine my results could be that borrowers approach socially closer banks first. While good borrowers are granted a loan, bad borrowers are rejected. In consequence, high risk borrowers are more likely to pair with distant banks explaining the premium paid at origination. Such an argument would in particular change the interpretation of the coefficient on social distance at origination β_1.

To tackle such concerns, I first employ borrower fixed effects in column (2) of Table 8. Borrower fixed effects will absorb any time-invariant unobserved differences in borrowers. A large increase in the R-squared of the regression provides evidence that borrower fixed effects do explain differences in spreads quite well. The coefficient on social distance indeed reduces significantly to around 5 bps. In statistical terms the coefficient is no longer distinguishable from zero. Hence, when I focus on the subset of borrowers who borrow from different lead banks during the sample period, the cost of social distance is small or zero depending on the interpretation. I therefore cannot rule out that the premium that I find for borrowing from distant banks is perhaps justified by credit risk.

Nevertheless, the main result of the paper holds. I still find that renegotiating with socially distant banks is beneficial to the borrower through a stronger decrease in spreads.

Insert Table 8 here.

I also implement a Heckman selection model to analyse to which extent selection drives my results. In the first stage of the model, I estimate the probability that a borrower obtains a loan from a given lead bank in a probit model. The level of observation is a lender-loan relationships and the dependent variable takes a value of one in case a lender is granted a specific loan. Potential lenders are the top 50 banks in terms of deals completed in the country of the borrower at the time the loan is granted. I include the previously introduced controls for loan characteristics and country-economic conditions in the probit model. Additionally, I create a variable *Bank Rank* that ranks banks according to the number of deals completed previously and I calculate the number of

potential lenders that come from socially distant countries. The setup is adapted from Giannetti and Yafeh (2012) that implement a very similar model.

Column (3) shows that the probability of a loan being granted by a given bank decreases in the social distance of the bank and borrower. Furthermore, I find that banks that are ranked better are more likely to grant a loan. Last but not least, the probability of a loan being granted by a specific bank increases in the number of socially distant banks that are potential lenders. These findings are in line with the descriptive evidence presented in Figure 1 that domestic lending is preferred over cross-border relationships.

I include the inverse Mills-ratio from column (3) in the second stage of the Heckman model. In this specification, I still find a social distance premium at origination that is similar in magnitude to my main result. The main coefficient β_3 is unchanged compared to the baseline specification.

In summary, I find mixed evidence that my results about a social distance premium at origination could be selection-driven. The benefits of renegotiating with distant lead banks remain strong throughout the robustness tests.

I employ two additional measures of distance in Table 9. The cultural distance measures the extent to which two countries political beliefs and values are similar according to the World Values Survey Haerpfer et al. (2022). Physical distance is a useful proxy for costs associated with travel Herpfer et al. (2023).

Insert Table 9 here.

I find that both cultural as well as physical distance matter at the time of origination. After renegotiations, there is no longer a difference in whether firms borrow from closer or more distant banks. The additional benefit of renegotiation holds with both additional measures and even in the tight tranche fixed effects specifications.

The result is partially in line with Giannetti and Yafeh (2012), who argue that repeated interaction mitigates some of the effects of cultural distance but claim that it takes several interactions

before distance is overcome. In this paper, I find that the social distance premium is indistinguishable from zero after the first renegotiation round.

Finally, in columns (6) and (7) I rerun the baseline specification with a binary measure of distance. Specifically, I include a dummy whether the lead bank is located in a different country than the borrower. Borrowing from a foreign lead bank is associated with a 15-25 bps benefit from renegotiation relative to borrowing from a domestic bank.

6 Conclusion

This paper provides evidence for a disproportionate benefit from repeated interaction in more distant lending relationships. I argue that information asymmetries in distant lending relationships are larger than in close relationships because the transmission of soft information is impeded (Berger et al., 2005; Agarwal and Hauswald, 2010). The resolution of information asymmetries through repeated interaction, therefore, creates larger surpluses in more distant lending relationships. In the highly competitive syndicated loan market, borrowers pay spreads according to the marginal cost of the lending relationship. The empirical findings in this paper show that firms pay higher spreads at origination when borrowing from a distant bank. The premium paid for distance subsequently declines to zero through renegotiations between bank and borrower.

The findings suggest that the additional informational asymmetries that arise from distance between two contracting parties are not persistent and that repeated interaction alleviates these frictions.

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List of Tables

Table 1: Summary Statistics

Note: Descriptive statistics of term loan originations between 2010 and 2018 and their renegotiations between 2010 and 2021. The AISD is the all-in-spread-drawn. All continuous variables are winsorized at the 1st and 99th percentile.

	N	Mean	SD	Min	p10	p25	Median	p75	p90	Max
Loan Characteristics										
Tranche Amount (mUSD)	33,905	310.44	372.46	12.00	22.00	55.00	155.00	400.00	885.00	1,400.00
Maturity (years)	33,905	5.89	1.62	3.00	3.67	5.00	6.00	7.01	8.01	9.50
Performance Pricing	33,905	0.06	0.23	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Covenant-Lite	33,905	0.23	0.42	0.00	0.00	0.00	0.00	0.00	1.00	1.00
Transaction Related Loan	33,905	0.28	0.45	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Issuance Year	33,905	2,015.09	2.82	2,010.00	2,011.00	2,013.00	2,015.00	2,017.00	2,018.00	2,021.00
Amendment	33,905	0.48	0.50	0.00	0.00	0.00	0.00	1.00	1.00	1.00
Measures of Distance										
Social Distance	33,905	-0.00	1.00	-3.11	-1.59	0.13	0.13	0.80	0.83	0.84
Physical Distance	33,487	1.32	2.49	0.00	0.00	0.00	0.00	0.73	6.43	6.63
Cultural Distance	32,979	0.25	0.43	0.00	0.00	0.00	0.00	0.55	1.04	1.22
Previous Lender-Borrower Interaction	33,905	6.70	7.87	1.00	1.00	2.00	4.00	8.00	16.00	84.00
Previous Lead-Bank-Borrower Interaction	33,905	5.87	7.10	1.00	1.00	2.00	3.00	7.00	14.00	84.00
Ratings										
Issuer Rating (1-lowest 21-highest)	9,527	8.44	2.03	6.00	6.00	7.00	8.00	10.00	12.00	13.00
Outcome Variables										
AISD (bps)	33,905	385.01	174.50	137.50	175.00	250.00	375.00	475.00	650.00	800.00
Firm Characteristics										
Sales (mUSD)	8,664	12,760.35	27,373.28	205.80	378.63	941.59	2,620.53	7,750.50	34,008.76	113,047.44
Leverage	8,666	0.70	0.20	0.36	0.44	0.55	0.69	0.83	0.97	1.13
Net income over assets	8,469	0.02	0.05	-0.10	-0.05	-0.00	0.03	0.06	0.09	0.13
PP&E over assets	8,647	0.27	0.23	0.02	0.03	0.08	0.19	0.42	0.65	0.75

Table 2: Determinants of Loan Renegotiations

Note: Table reports the results of an OLS estimation of Equation (1). Renegotiated is a dummy equal to one if a loan is renegotiated at least once before maturity. Loan controls include the number of banks, tranche amount, maturity, spread as well as indicators about the existence of a pricing grid and covenant-contract. The vector of country-specific control variables contains the credit-to-GDP ratio (borrower country) and GDP-per-capita ratios (borrower and lender country). The vector of firm characteristics includes total sales, leverage, net income over assets, and PP&E over assets. Throughout the paper, standard errors are clustered at *borrower country* × *lender country* level.

	(1) Renegotiated	(2) Renegotiated	(3) Renegotiated	(4) Renegotiated
Social Distance	-0.005	-0.005	-0.006	-0.005
	(-1.02)	(-1.04)	(-1.04)	(-0.55)
Number of banks		0.011***	0.012***	0.013***
		(4.82)	(5.31)	(5.04)
Tranche Amount (mUSD)		0.000***	0.000***	0.000***
		(3.79)	(3.41)	(4.25)
Maturity (years)		0.030***	0.031***	0.036***
		(3.34)	(3.52)	(5.08)
AISD (bps)		-0.000	-0.000	-0.000
		(-1.11)	(-1.09)	(-1.61)
Performance Pricing		-0.018	-0.024	-0.009
		(-0.93)	(-1.37)	(-0.69)
Covenant-Lite		0.148***	0.145***	0.132***
		(8.21)	(8.50)	(4.61)
Country controls	No	No	Yes	Yes
Firm controls	No	No	No	Yes
Currency x Year FE	Yes	Yes	Yes	Yes
Rating x Year FE	Yes	Yes	Yes	Yes
Industry x Year FE	Yes	Yes	Yes	Yes
Borrower Country FE	Yes	Yes	Yes	Yes
Lender Country FE	Yes	Yes	Yes	Yes
Adj. R^2	0.136	0.168	0.155	0.213
Observations	17,212	17,212	16,340	4,347

* p<0.10, ** p<0.05, *** p<0.01, t-statistics in parentheses.

Table 3: Domestic versus Cross-Border Lending

Note: Descriptive statistics. Column (1) summarizes loans by a syndicate of lenders where at least one of the lead lenders is from the same country as the borrowing firm. Column (2) contains the rest of the sample.

	Domestic lending		**Cross-border**	
	Mean	Median	Mean	Median
Observations	24,235		9,670	
Loan Characteristics				
Tranche Amount (mUSD)	282.06	130.00	381.59	231.55
Maturity (years)	5.76	5.46	6.21	6.25
Performance Pricing	0.06		0.05	
Covenant-Lite	0.18		0.36	
Transaction Related Loan	0.28		0.29	
Issuance Year	2,015.10	2015.00	2,015.06	2015.00
Measures of Lender-Borrower Distance				
Social Distance	-0.32	0.13	0.81	0.83
Physical Distance	0.07	0.00	4.49	5.93
Cultural Distance	0.00	0.00	0.91	0.96
Previous Lender-Borrower Interaction	6.57	4.00	7.01	4.00
Previous Lead-Bank-Borrower Interaction	5.84	3.00	5.96	3.00
Ratings				
Issuer Rating (1-lowest 21-highest)	8.62	8.00	8.10	7.00
Cost of Borrowing				
AISD (bps)	373.92	350.00	412.79	393.00
Firm Characteristics				
Observations	6,200		2,464	
Sales (mUSD)	10,974.14	2464.30	17,254.86	3120.78
Leverage	0.69	0.68	0.71	0.70
Net income over assets	0.02	0.03	0.02	0.02
PP&E over assets	0.26	0.18	0.29	0.23

Table 4: Pre- versus Post-Renegotiation Spreads

Note: Table reports the results of an OLS estimation of Equation (2). The dependent variable is the all-in-spread-drawn. Ex-ante loan controls comprise of the following loan characteristics measured at the time of loan origination: tranche amount, maturity, number of lenders, number of loan purposes, and pricing grid as well as covenant-lite dummies. The vector of country-specific control variables contains the credit-to-GDP ratio (borrower country) and GDP-per-capita ratios (borrower and lender country). The vector of firm characteristics includes total sales, leverage, net income over assets, and PP&E over assets.

	(1) AISD (bps)	(2) AISD (bps)	(3) AISD (bps)	(4) AISD (bps)	(5) AISD (bps)
Social Distance	16.543***	11.805***	13.653***	13.103***	
	(6.18)	(4.56)	(4.77)	(4.01)	
Amendment	-25.696***	-21.697***	-21.611***	-24.906***	-11.639***
	(-7.34)	(-7.35)	(-7.31)	(-5.50)	(-5.22)
Social Distance × Amendment	-9.664***	-11.678***	-13.600***	-12.094**	-5.112**
	(-2.70)	(-3.54)	(-3.77)	(-2.06)	(-2.51)
Ex-ante Loan Controls	No	Yes	Yes	Yes	No
Country controls	No	No	Yes	Yes	No
Firm controls	No	No	No	Yes	No
Tranche FE	No	No	No	No	Yes
Currency x Year FE	Yes	Yes	Yes	Yes	Yes
Rating x Year FE	Yes	Yes	Yes	Yes	Yes
Industry x Year FE	Yes	Yes	Yes	Yes	Yes
Borrower Country FE	Yes	Yes	Yes	Yes	Yes
Lender Country FE	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.266	0.365	0.356	0.424	0.950
Observations	33,399	28,158	27,209	6,576	19,733

* p<0.10, ** p<0.05, *** p<0.01, t-statistics in parentheses.

Table 5: Renegotiation Outcomes: Cross-Sectional Heterogeneity

Note: Table reports the results of an OLS estimation of Equation (2) for different subsamples. The dependent variable is the all-in-spread-drawn. *Smaller loans* are smaller than the median tranche amount in a year. *Unrated firms* do not have a credit rating in LPC Loan Connector. *Private firms* are not found in Compustat at the time of loan origination. In columns (7) and (8), I split loans by the number of previous interactions between bank and borrower.

	(1) AISD (bps)	(2) AISD (bps)	(3) AISD (bps)	(4) AISD (bps)
Amendment	-1.554*	-18.254***	-7.199***	-18.173***
	(-1.81)	(-7.78)	(-3.24)	(-8.37)
Social Distance × Amendment	-0.613	-5.967***	-4.703*	-8.191**
	(-0.23)	(-3.04)	(-1.87)	(-2.11)
Country controls	Yes	Yes	Yes	Yes
Tranche FE	Yes	Yes	Yes	Yes
Currency x Year FE	Yes	Yes	Yes	Yes
Rating x Year FE	Yes	Yes	Yes	Yes
Industry x Year FE	Yes	Yes	Yes	Yes
Borrower Country FE	Yes	Yes	Yes	Yes
Lender Country FE	Yes	Yes	Yes	Yes
Subsample	Smaller Loans	Larger Loans	Unrated Firms	Rated Firms
Adj. R^2	0.966	0.937	0.952	0.951
Observations	8,423	10,280	12,897	6,474

	(5) AISD (bps)	(6) AISD (bps)	(7) AISD (bps)	(8) AISD (bps)
Amendment	-10.330***	-22.368***	-12.022***	-11.505***
	(-3.57)	(-7.45)	(-3.20)	(-9.09)
Social Distance × Amendment	-4.821*	-9.827**	-7.251*	-3.499*
	(-1.95)	(-2.27)	(-1.89)	(-1.91)
Country controls	Yes	Yes	Yes	Yes
Tranche FE	Yes	Yes	Yes	Yes
Currency x Year FE	Yes	Yes	Yes	Yes
Rating x Year FE	Yes	Yes	Yes	Yes
Industry x Year FE	Yes	Yes	Yes	Yes
Borrower Country FE	Yes	Yes	Yes	Yes
Lender Country FE	Yes	Yes	Yes	Yes
Subsample	Private Firms	Public Firms	Max 1 prev. bank-firm interaction	More than 1 previouzs bank-firm interaction
Adj. R^2	0.953	0.910	0.938	0.962
Observations	14,223	3,891	9,413	9,975

* p<0.10, ** p<0.05, *** p<0.01, t-statistics in parentheses.

Table 6: Lead Arranger Switches

Note: Table reports results of an OLS estimation of the all-in-spread-drawn on the interactions of renegotiations and lead bank changes. *Lead Bank Change* takes a value of one whenever I observe a switch in lead banks. *Lead Bank Change - Distance* ↑ or (↓) is one when there is a change in lead banks and the new lead bank is socially more distant (closer) from the previous lead bank.

	(1) AISD (bps)	(2) AISD (bps)	(3) AISD (bps)
Amendment	-12.593***	-12.057***	-12.256***
	(-5.12)	(-5.27)	(-5.34)
Amendment × Lead Bank Change		-10.358***	
		(-4.08)	
Amendment × Lead Bank Change - Distance ↓			-12.231**
			(-2.55)
Amendment × Lead Bank Change - Distance ↑			-12.184**
			(-2.60)
Country controls	Yes	Yes	Yes
Tranche FE	Yes	Yes	Yes
Currency x Year FE	Yes	Yes	Yes
Rating x Year FE	Yes	Yes	Yes
Industry x Year FE	Yes	Yes	Yes
Borrower Country FE	Yes	Yes	Yes
Lender Country FE	Yes	Yes	Yes
Adj. R^2	0.950	0.950	0.950
Observations	19,606	19,606	19,606

* p<0.10, ** p<0.05, *** p<0.01, t-statistics in parentheses.

Table 7: The Benefits of Renegotiation - Subsample Analysis

Note: Table reports results of the main OLS specification from Equation (2) for different subsamples. Cross-border lending excludes all loans where lead arranger and borrower are from the same country.

	(1) AISD (bps)	(2) AISD (bps)	(3) AISD (bps)	(4) AISD (bps)
Social Distance	13.653***	25.165***	11.202***	-43.048
	(4.77)	(6.15)	(5.24)	(-1.23)
Amendment	-21.611***	-22.991***	-10.461*	-72.721**
	(-7.31)	(-7.54)	(-1.95)	(-2.53)
Social Distance × Amendment	-13.600***	-13.916**	-11.277***	51.948
	(-3.77)	(-2.09)	(-3.89)	(1.48)
Ex-ante Loan Controls	Yes	Yes	Yes	Yes
Country controls	Yes	Yes	Yes	Yes
Currency x Year FE	Yes	Yes	Yes	Yes
Rating x Year FE	Yes	Yes	Yes	Yes
Industry x Year FE	Yes	Yes	Yes	Yes
Borrower Country FE	Yes	Yes	Yes	Yes
Lender Country FE	Yes	Yes	Yes	Yes
Subsample	Baseline	Exclude loans with multiple lead banks	Exclude US borrowers	Cross-border lending
Adj. R^2	0.356	0.358	0.400	0.385
Observations	27,209	22,566	6,675	7,399

* p<0.10, ** p<0.05, *** p<0.01, t-statistics in parentheses.

Table 8: Borrower FEs and Heckman Sample Selection Model

Note: Columns (1) and (2) report results from an OLS estimation of Equation (2). In column (3), I run a probit model and estimate the likelihood of a specific bank-borrower match for each loan origination in the sample. Column (4) is again an OLS specification (Equation (2)) which includes the inverse Mills Ratio from column (3) as a control variable.

	(1) AISD (bps)	(2) AISD (bps)	(3) Loan Granted	(4) AISD (bps)
Social Distance	13.653***	4.796	-0.012***	10.980***
	(4.77)	(1.36)	(-3.22)	(3.12)
Amendment	-21.611***	-15.741***		-16.273***
	(-7.31)	(-11.54)		(-7.39)
Social Distance × Amendment	-13.600***	-7.530***		-13.502***
	(-3.77)	(-2.81)		(-3.67)
Credit to GDP - Borrower	0.599***	0.112	-0.000***	0.449**
	(2.62)	(0.90)	(-3.01)	(2.23)
Per capita GDP - Borrower	-122.339	-1.663	-0.208***	-137.411*
	(-1.62)	(-0.02)	(-7.13)	(-1.68)
Per capita GDP - Lead Bank	85.396	12.437	0.027	131.645
	(1.07)	(0.23)	(1.16)	(1.33)
Bank Rank			-0.030***	
			(-128.89)	
Number socially distant banks			-0.000***	
			(-3.25)	
Mills Ratio				47.120***
				(3.39)
Ex-ante Loan Controls	Yes	Yes	Yes	Yes
Borrower FE	No	Yes	No	No
Currency x Year FE	Yes	Yes	No	Yes
Rating x Year FE	Yes	Yes	No	Yes
Industry x Year FE	Yes	Yes	No	Yes
Borrower Country FE	Yes	Yes	No	Yes
Lender Country FE	Yes	Yes	No	Yes
Specification	Baseline	Borrower FE	Heckman 1st Stage	Heckman 2nd Stage
Adj. R^2	0.356	0.680		0.365
Pseudo R^2			0.089	
Observations	27,209	23,721	1,291,621	24,548

* p<0.10, ** p<0.05, *** p<0.01, t-statistics in parentheses.

Table 9: Other Measures of Distance

Note: Table reports results from an augmented estimation of Equation (2). In columns (2) through (5), I replace the social distance measure with measures of cultural distance (Giannetti and Yafeh, 2012) and physical distance (log kilometers). In columns (6) and (7), I replace distance with a dummy variable *Foreign Lead Bank* which indicates that lender and borrower are headquartered in different countries.

	(1) AISD (bps)	(2) AISD (bps)	(3) AISD (bps)	(4) AISD (bps)	(5) AISD (bps)	(6) AISD (bps)	(7) AISD (bps)
Amendment	-24.906***	-21.100***	-21.138***	-19.677***	-19.885***	-19.143***	-19.453***
	(-5.50)	(-7.57)	(-9.22)	(-6.33)	(-11.43)	(-5.79)	(-11.40)
Social Distance	13.103***						
	(4.01)						
Social Distance × Amendment	-12.094**						
	(-2.06)						
Cultural Distance		21.217***					
		(2.97)					
Cultural Distance × Amendment		-20.327**	-14.109**				
		(-2.51)	(-2.09)				
Log(Physical Distance)				3.306***			
				(3.87)			
Log(Physical Distance) × Amendment				-2.848***	-1.708**		
				(-3.09)	(-2.59)		
Foreign Lead Bank						28.367***	
						(4.08)	
Foreign Lead Bank × Amendment						-25.577***	-15.822***
						(-3.42)	(-2.81)
Ex-ante Loan Controls	Yes	Yes	No	Yes	No	Yes	No
Country controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tranche FE	No	No	Yes	No	Yes	No	Yes
Currency x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rating x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lender Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.424	0.424	0.906	0.425	0.906	0.424	0.906
Observations	6,576	6,422	3,073	6,569	3,138	6,576	3,138

* p<0.10, ** p<0.05, *** p<0.01, t-statistics in parentheses.

List of Figures

Figure 1: Domestic versus Cross-Border Lending Shares by Syndication Market

Note: The domestic lending share is the value-weighted share of syndicated term loans originated by a syndicate of lenders where at least one of the lead lenders is from the same country as the borrowing firm.

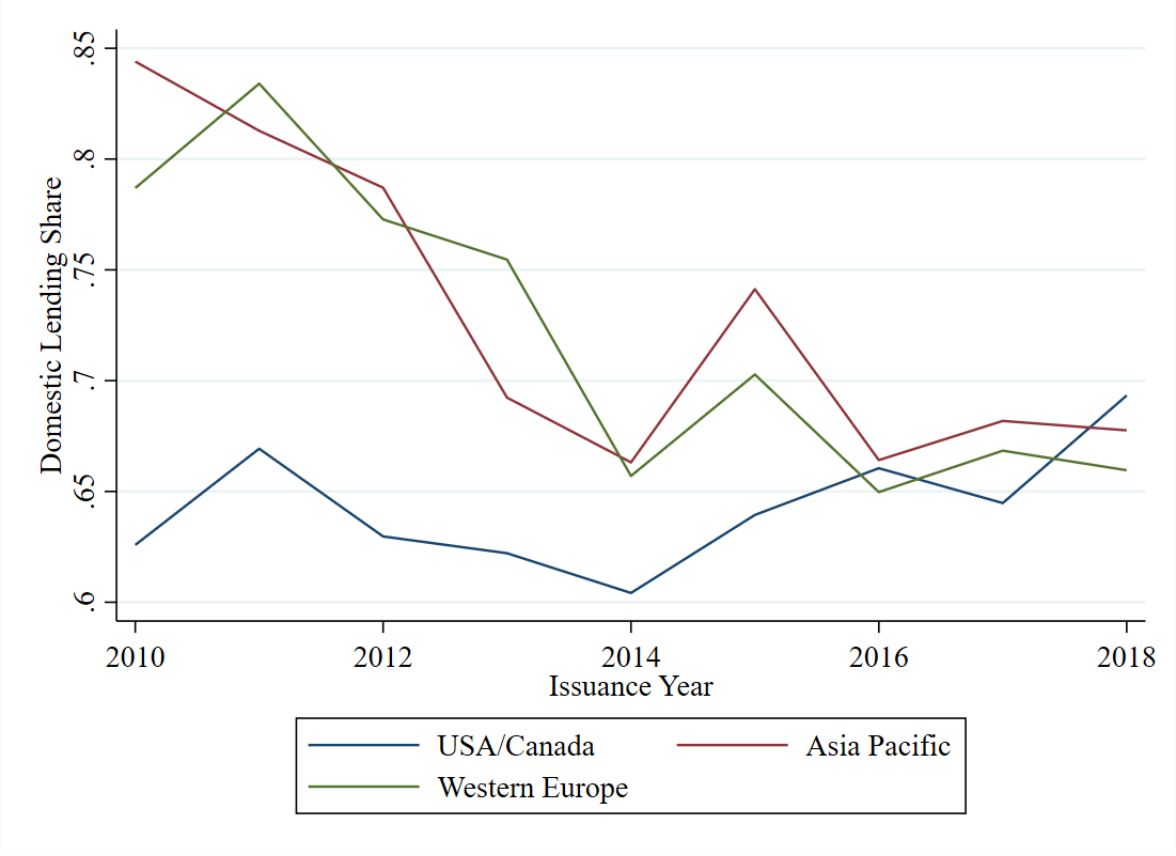


Figure 2: Origination versus Renegotiation Volume

Note: Figure plots origination versus renegotiation volume for syndicated term loans originated between 2010 and 2018.

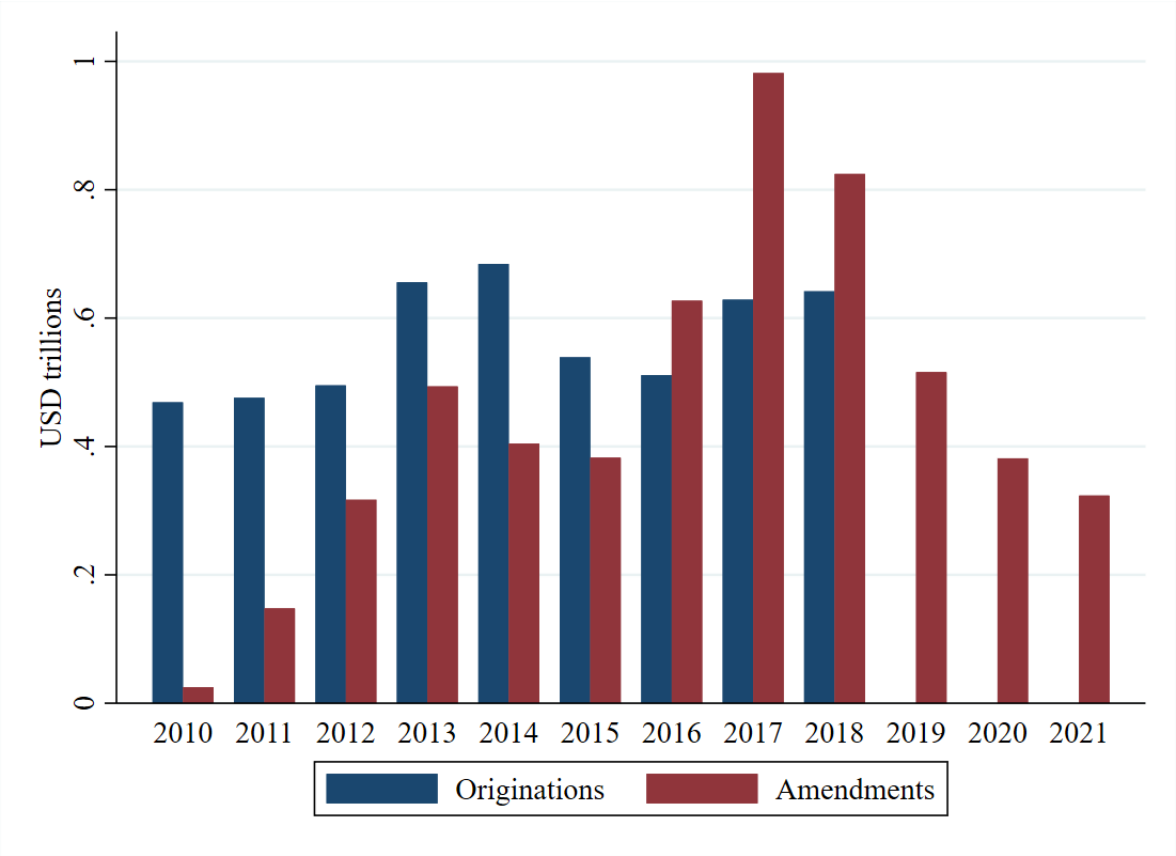


Figure 3: Dynamics of Loan Renegotiations

Note: Figure depicts the marginal effect of social distance (*Social Distance Premium*) on the all-in-spread-drawn at the time of origination and latter renegotiation rounds (Equation (3)). Vertical bars refer to 95% confidence intervals.

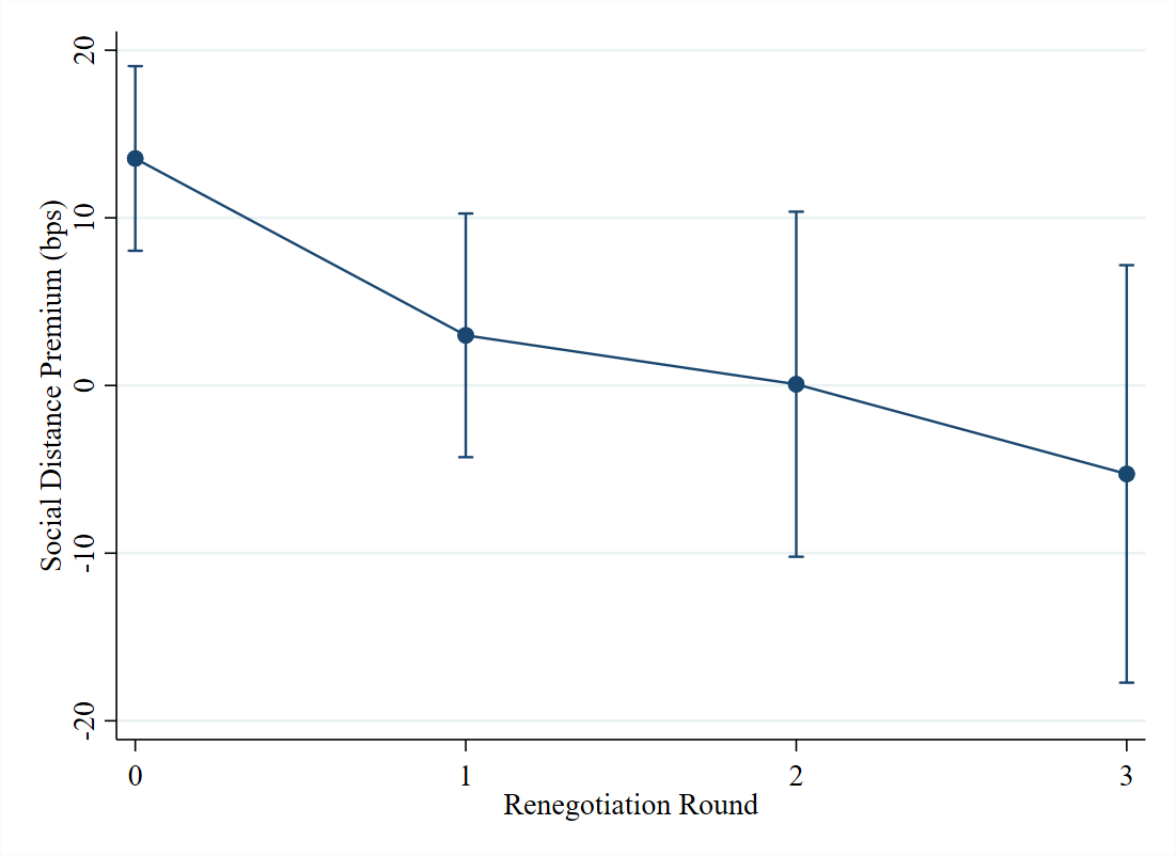
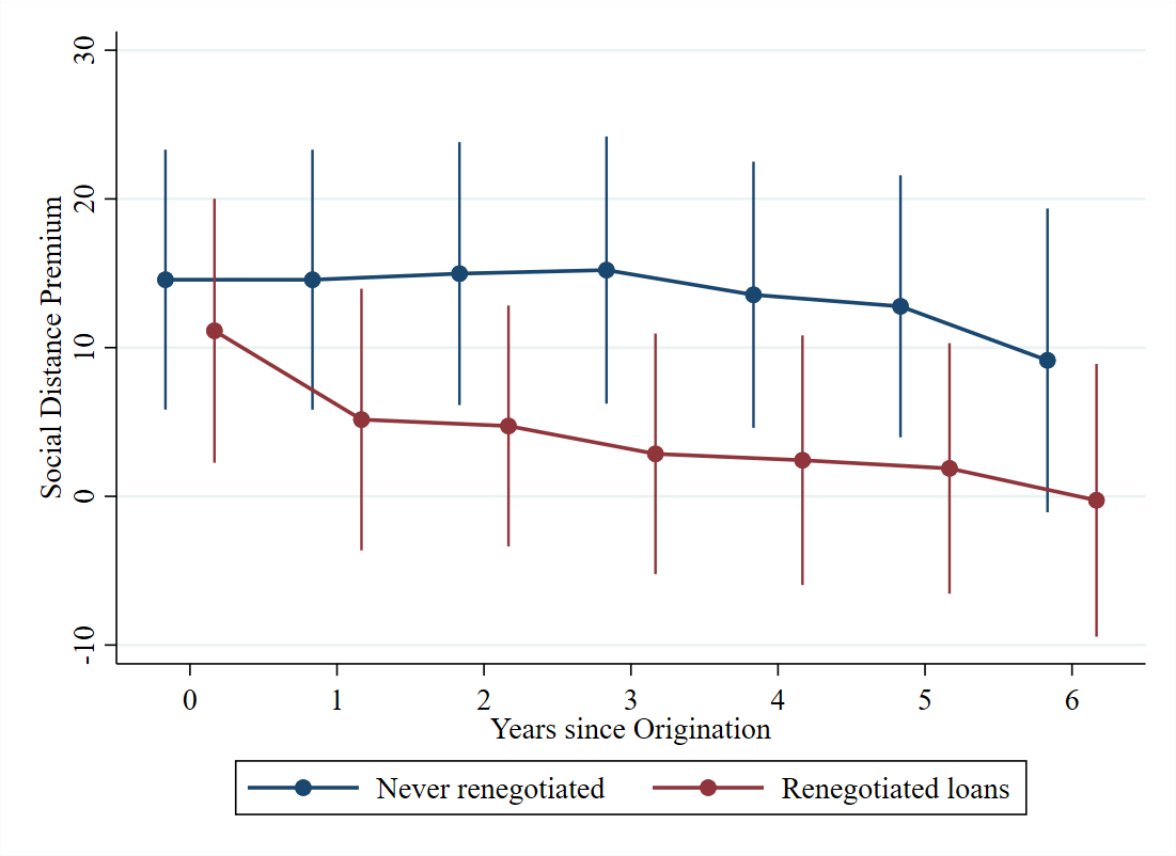


Figure 4: Social Distance Premium over Time

Note: Figure depicts the marginal effect of social distance on the all-in-spread-drawn at the time of origination and in the years post origination (Equation (4)). 95% confidence intervals are shown. The sample is split into loans that are never renegotiated and loans that are renegotiated at least once.



Appendix

A Appendix

A.1 Data

Table A1: Variable Definitions

Description	Unit	Data Source	Variable Name/Formula
Loan Characteristics			
Tranche Amount	mUSD	Dealscan	tranche_amount_converted
Issuance Year		Dealscan	year(tranche_active_date)
Maturity		Dealscan	years(maturity_date-active_date)
All-in-Spread-Drawn	bps	Dealscan	all_in_spread_drawn_bps
Performance Pricing	0/1	Dealscan	performance_pricing
Covenant-Lite	0/1	Dealscan	covlite
Number of Banks		Dealscan	number_of_lenders
Syndication Market		Dealscan	country_of_syndication
Renegotiation Round		Dealscan	tranche_o_a
Transaction Related Loan	0/1	own calculation	Primary purpose equal to LBO, acquisition, takeover, sponsored buyout or exit financing
Amendment	0/1	own calculation	tranche_o_a > 0
Distance Measures			
Social Connectedness		Meta	scaled_sci
Social Distance		own calculation	-scaled_sci/std(scaled_sci)
Traditional Values		World Values Survey	TradAgg
Survival Values		World Values Survey	SurvSAgg
Cultural Distance		own calculation	Euclidean distance between two countries traditional and survival values
Physical Distance	km	Kristian Skrede Gleditsch	kmdist
Log Physical Distance		own calculation	log(kmdist)
Previous Lender-Borrower Interaction		own calculation	Previous interactions in Dealscan between Bank and Borrower
Previous Lead-Bank-Borrower Interaction		own calculation	Previous interactions in Dealscan between Bank (as Lead Bank) and Borrower

Continued on next page

Table A1 – continued from previous page

Description	Unit	Data Source	Variable Name/Formula
Lead Bank Change	0/1	own calculation	Change of lead bank after a renegotiation
Lead Bank Change - Distance Down	0/1	own calculation	Change of lead bank after a renegotiation - new lead bank is socially closer
Lead Bank Change - Distance Up	0/1	own calculation	Change of lead bank after a renegotiation - new lead bank is socially more distant
Borrower Characteristics			
Borrower Country		Dealscan	country
SIC Code		Dealscan	sic_code
Issuer Rating	1-21 (low-high)	LPC Loan Connector	issuer_rating
Total Assets	mUSD	Compustat	at
Property, Plant & Equipment	mUSD	Compustat	ppent
Total Equity	mUSD	Compustat	teq
Stockholders Equity	mUSD	Compustat	seq
Total Liabilities	mUSD	Compustat	lt
PP&E over Assets		own calculation	ppent/at
Leverage		own calculation	lt/at
Sales	mUSD	Compustat	sale
Net Income	mUSD	Compustat	nicon
Net Income over Assets		own calculation	nicon/assets
Market Value	mUSD	Compustat	mkvalt
Market-to-Book Ratio		own calculation	seq/mkvalt
Lender Characteristics			
Lender Country		Dealscan	lender_operating_country
Lender Parent Country		Dealscan	lender_parent_operating_country
Bank Rank		own calculation	Ranks banks per country by the number of loans issued up to period t
Socially Distant Banks		own calculation	Counts top 50 lenders for every country that have distance scores greater than the median distance
Other			
Credit to GDP		BIS	
Per Capita GDP		World Bank	

Figure A1: Likelihood of Renegotiations by Loan Origination Year

Note: Plot displays the share of renegotiated loans by loan origination year.

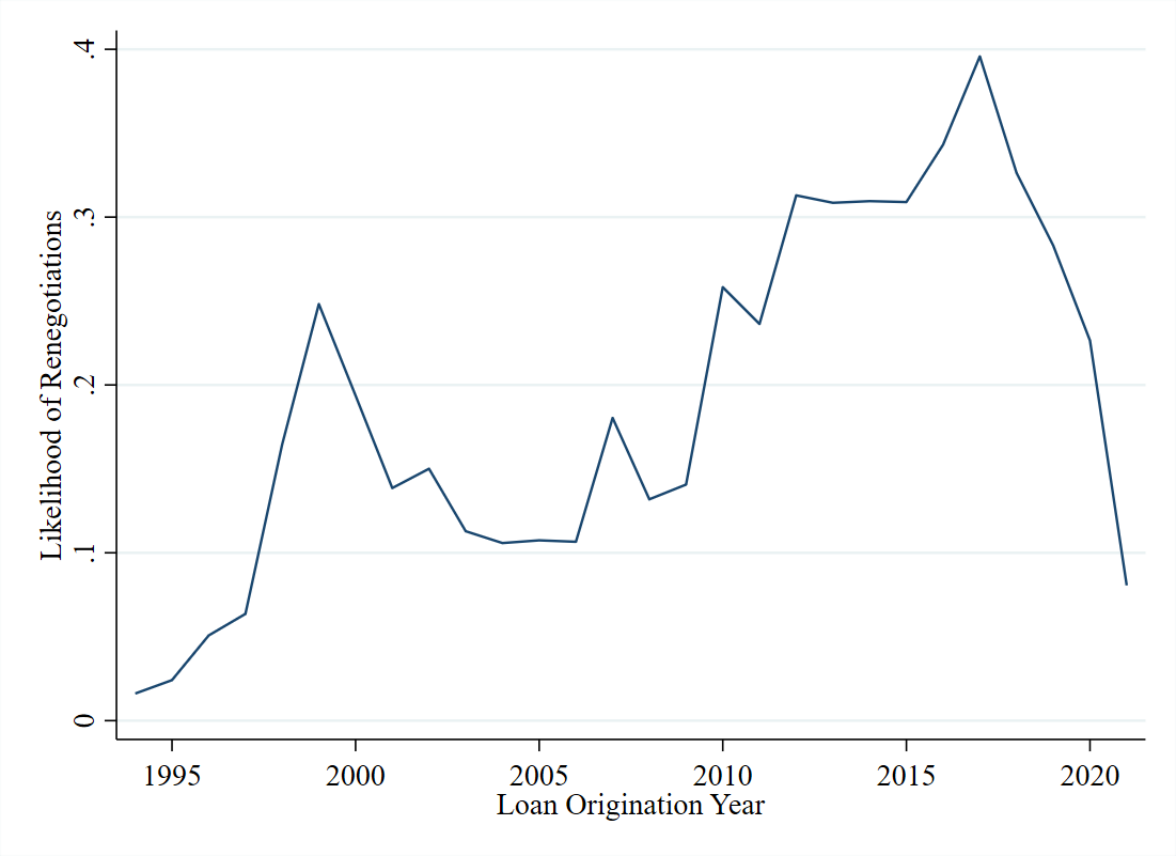
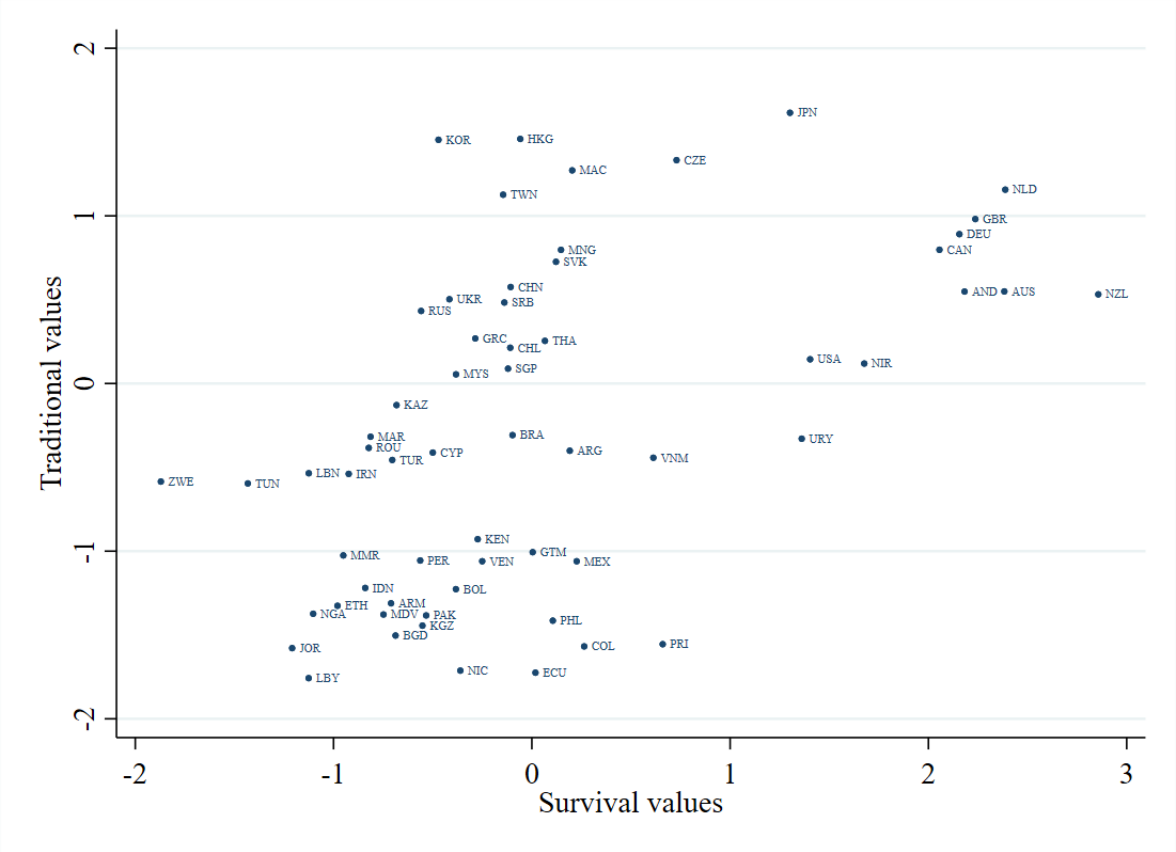


Figure A2: Cultural Map of the World

Note: Plot illustrates the traditional and survival values obtained from the World Values Survey for different countries. Cultural distance is approximated by the distance between two markers in this chart.



A.2 Supplementary Evidence

Table A2: Loan Characteristics

Note: In this table I exclude all observations that correspond to amendments and focus on loan characteristics at the time of origination. I split loans into two categories: i) loans that are never renegotiated according to Dealscan, ii) loans that are renegotiated at least once and report mean values for several loan related characteristics.

	Never Renegotiated	Amended at least once
Observations	11,666	5,985
Loan Characteristics		
Tranche Amount (mUSD)	258.73	347.91
Maturity (years)	5.46	5.84
Performance Pricing	0.07	0.10
Covenant-Lite	0.09	0.26
Transaction Related Loan	0.31	0.47
Issuance Year	2,013.82	2,014.27
Measures of Lender-Borrower Distance		
Social Distance	-0.26	0.09
Physical Distance	1.30	1.33
Cultural Distance	0.25	0.25
Previous Lender-Borrower Interaction	3.24	3.86
Previous Lead-Bank-Borrower Interaction	2.79	3.24
Ratings		
Issuer Rating (1-lowest 21-highest)	9.11	8.29
Cost of Borrowing		
AISD (bps)	376.22	405.48
Firm Characteristics		
Observations	3,263	1,712
Sales (mUSD)	21,057.70	7,774.50
Leverage	0.67	0.70
Net income over assets	0.02	0.02
PP&E over assets	0.31	0.25

Table A3: Replication of Main Table Using Lender Parents

Note: In this table, I rerun the same tests as in Table 4. However, I measure distance between the borrower and lender parent (as opposed to the lender, which may be a subsidiary that is located in a different place than the parent).

	(1) AISD (bps)	(2) AISD (bps)	(3) AISD (bps)	(4) AISD (bps)	(5) AISD (bps)
Social Distance	14.854***	10.003***	12.663***	14.227***	
	(5.34)	(3.48)	(4.55)	(4.38)	
Amendment	-26.226***	-22.244***	-22.119***	-25.391***	-11.790***
	(-6.87)	(-6.70)	(-6.60)	(-6.33)	(-5.61)
Social Distance × Amendment	-8.700**	-10.537***	-12.654***	-10.781*	-4.672**
	(-2.35)	(-3.11)	(-3.58)	(-1.91)	(-2.32)
Ex-ante Loan Controls	No	Yes	Yes	Yes	No
Country controls	No	No	Yes	Yes	No
Firm controls	No	No	No	Yes	No
Tranche FE	No	No	No	No	Yes
Currency x Year FE	Yes	Yes	Yes	Yes	Yes
Rating x Year FE	Yes	Yes	Yes	Yes	Yes
Industry x Year FE	Yes	Yes	Yes	Yes	Yes
Borrower Country FE	Yes	Yes	Yes	Yes	Yes
Lender Country FE	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.267	0.366	0.357	0.426	0.950
Observations	33,351	28,110	27,189	6,566	19,727

* p<0.10, ** p<0.05, *** p<0.01, t-statistics in parentheses.

Figure A3: Dynamics of Loan Renegotiations with firm controls

Note: Figure depicts the marginal effect of social distance on the all-in-spread-drawn at the time of origination and latter renegotiation rounds. In addition to the variables specified in Equation (3), I add a vector of firm controls. 95% confidence intervals are shown.

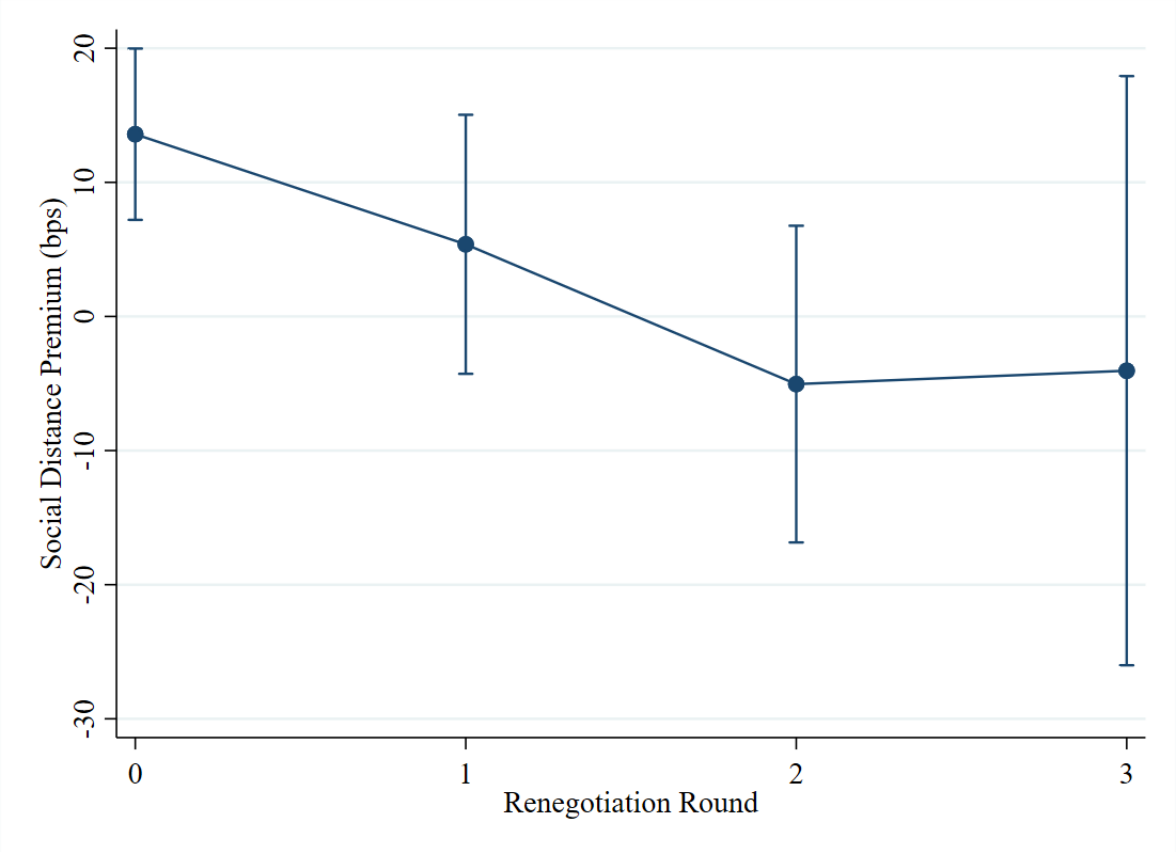


Table A4: Other Contract Terms

Note: In this Table, I estimate coefficients for Equation (2), replacing the outcome variable $AISD$ with other loan contract terms, i.e. maturity and tranche amount.

	(1) Maturity (yrs)	(2) Maturity (yrs)	(3) Ln(Amount)	(4) Ln(Amount)
Social Distance	0.123***		-0.005	
	(3.29)		(-0.22)	
Amendment	1.242***	-0.095**	0.119***	-0.013
	(24.16)	(-2.34)	(4.95)	(-0.84)
Social Distance × Amendment	0.005	0.020	0.090**	0.032*
	(0.07)	(0.38)	(2.46)	(1.67)
Ex-ante Loan Controls	Yes	No	Yes	No
Country controls	Yes	Yes	Yes	Yes
Firm controls	Yes	Yes	Yes	Yes
Tranche FE	No	Yes	No	Yes
Currency x Year FE	Yes	Yes	Yes	Yes
Rating x Year FE	Yes	Yes	Yes	Yes
Industry x Year FE	Yes	Yes	Yes	Yes
Borrower Country FE	Yes	Yes	Yes	Yes
Lender Country FE	Yes	Yes	Yes	Yes
Adj. R^2	0.418	0.802	0.448	0.957
Observations	6,583	3,854	6,576	3,854

* p<0.10, ** p<0.05, *** p<0.01, t-statistics in parentheses.

Table A5: Within-US Social Connectedness

Note: Here, I focus on the subset of loans that are agreed upon by US firms and banks. Subsequently, I measure social distance not at the country but the state-level.

	(1) AISD (bps)	(2) AISD (bps)	(3) AISD (bps)	(4) AISD (bps)
State Soc. Distance	10.491***	9.082***	7.019*	
	(3.93)	(3.45)	(1.68)	
Amendment	-27.544***	-23.848***	-23.260***	-11.183***
	(-9.02)	(-8.85)	(-4.36)	(-5.73)
State Soc. Distance × Amendment	-1.381	-2.103	3.542	-0.715
	(-0.48)	(-0.83)	(0.92)	(-0.63)
Sales (mUSD)			0.000	
			(0.69)	
Leverage			60.143**	
			(2.49)	
Net income over assets			-412.195***	
			(-5.72)	
PP&E over assets			-15.119	
			(-0.65)	
Ex-ante Loan Controls	No	Yes	Yes	No
Tranche FE	No	No	No	Yes
Rating x Year FE	Yes	Yes	Yes	Yes
Industry x Year FE	Yes	Yes	Yes	Yes
Borrower State FE	Yes	Yes	Yes	Yes
Lender State FE	Yes	Yes	Yes	Yes
Adj. R^2	0.323	0.423	0.510	0.942
Observations	14,603	12,045	3,244	9,566

* p<0.10, ** p<0.05, *** p<0.01, t-statistics in parentheses.