Foreign Institutional Ownership and Cross-Border Lending *

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ABSTRACT

We study the role of foreign institutional investors in cross-border lending. We find that a borrower's foreign institutional ownership is positively associated with the likelihood of foreign banks leading a loan syndicate. This relation is stronger among borrowers with more opaque information environment and when foreign institutional shareholders have better access to soft information. We also find that foreign banks are more likely to extend loans to borrowers with foreign institutional shareholders that are headquartered in the same country or members of the same loan associations. These results are consistent with foreign institutional shareholders facilitating cross-border lending by reducing monitoring costs and information frictions faced by foreign lenders.

Keywords: Syndicated Loans, Foreign Institutional Ownership, Cross-Border Lending, Information Sharing

JEL Classification: G23, G32

1. Introduction

During the past two decades, foreign institutional investors played a prominent role in global equity markets. Between 2000 and 2020, U.S. equities held by foreign investors increased from US$1.7 trillion to $9.2 trillion. During the same period, foreign equities held by U.S. investors increased from US$1.6 trillion to $10.6 trillion.[1] Meanwhile, the cross-border bank lending has expanded by three-fold: the total outstanding claims of global banks' cross-border loans increased from US$8.2 trillion in 2001 to $22.4 trillion in 2020.[2] By mid-2021, cross-border lending consisted of up to 22.5% of U.S. banks' total balance. In this study, we explore the interaction between cross-border equity and debt investment. Specifically, we investigate whether the presence of foreign institutional shareholders facilitates or diminishes cross-border lending.

On the one hand, geographic and cultural distances worsen information asymmetry and increase monitoring costs, thereby discouraging foreign banks from lending to domestic borrowers. We argue that the presence of foreign institutional shareholders could facilitate the involvement of foreign lenders in syndicated loans for two non-mutually exclusive reasons. First, foreign institutions, less burdened by affiliations with management or private benefits, often serve as more independent and effective monitors compared with their domestic counterparts. Their presence thus reduces the need for foreign lenders to monitor or discipline managers of the borrowing firms. Second, owing to their extensive global investment experience and access to the management of investee firms, foreign institutional shareholders could possess nuanced information that is potentially valuable for foreign lenders in decision-making. This information could be exchanged between foreign institutions and foreign banks

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[1] The numbers are based on annual surveys of *Foreign Residents' Portfolio Holdings of U.S. Securities* and *U.S. Residents' Portfolio Holdings of Foreign Securities* conducted by the U.S. Department of the Treasury. The data is available from the website of the U.S. Department of the Treasury.
[2] See the Locational Banking Statistics of the Bank for International Settlements (BIS) at https://www.bis.org/statistics/bankstats.htm.

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through their international business networks, thereby alleviating the information frictions faced by foreign banks. These arguments predict a positive association between the presence of foreign institutional shareholders and the likelihood of cross-border loans (facilitation hypothesis).

One the other hand, the presence of foreign equity may lesson a firm's financing need for cross-border loans. Foreign equity investment can serve as an indicator of a firm's creditworthiness and overall financial stability. This, in turn, could reduce the firm's reliance on foreign banks' capital for endorsement in global capital markets. Moreover, the enhanced creditworthiness and financial health may enable the firm to secure better terms and larger amounts through alternative domestic funding sources, thereby reducing its dependence on foreign debt capital. These arguments suggest a negative association between the presence of foreign institutional shareholders and the likelihood of cross-border loans (substitution hypothesis).

We test the two competing predictions by using a sample of syndicated loans extended to both U.S. and non-U.S. firms between 2000 and 2019. We view that a borrower's access to foreign lenders increases with the participation of foreign lenders in a loan syndicate, labelled as the "foreignness" of a loan.[3] We define a loan as pure foreign when all lead lenders are foreign, a loan as semi-foreign when both foreign and domestic lead lenders are present, and a loan as domestic when all lead lenders are domestic. Consistent with the facilitation hypothesis, we find that a borrower's equity holdings by foreign institutions are positively associated with the foreignness of the loan. In contrast, the equity holdings by domestic institutions are negatively associated with a loan's foreignness. The above association holds for both non-U.S. and U.S. borrowers, even though foreign institutions hold much smaller equity stakes in the

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[3] We use "cross-border loan" and "foreign loan" interchangeably throughout this paper. We also use "foreign (lead) lender" and "foreign (lead) bank" interchangeably, as about 95% of the lead lenders in our sample are banks.

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U.S borrowers. In terms of economic significance, replacing 10% of a non-U.S. borrower's domestic institutional ownership with the same percentage of foreign institutional ownership increases the foreignness of the loan by 9.7%. This magnitude is comparable to the impact of assigning credit ratings to an unrated non-U.S. borrower, a mechanism widely considered as crucial in facilitating a firm's access to debt financing (Sufi 2009).

To provide further support for the facilitation hypothesis, we explore the scenarios where foreign institutional shareholders are more likely to have informational and monitoring advantages over foreign lenders. First, we identify opaque borrowers, namely those smaller in size, lacking credit ratings, possessing fewer foreign operations, or with limited past lending experience with the lead lenders. Foreign lenders are likely to face heightened information asymmetry when extending loans to these opaque borrowers, due to a lack of hard information and difficulty in acquiring soft information about them. Second, we identify foreign institutional shareholders that are more likely to possess superior information and monitoring abilities, such as blockholders and hedge funds, owing to their concentrated ownership. We find that the positive association between a borrower's foreign institutional ownership and the foreignness of the loan is more pronounced when the borrower is more opaque or when foreign blockholders or foreign hedge funds hold a larger equity stake. Furthermore, we explore the heterogeneity in country-level creditor protection and information sharing, two important institutions that influence firms' access to private credit in a country (Djankov, McLiesh, and Shleifer 2007). We find that the positive association between a borrower's foreign institutional ownership and the foreignness of the loan is more pronounced in countries with weaker creditor protection or poorer public information-sharing infrastructure (i.e., no public credit registries). These findings suggest some substitutability between county-level institutions and foreign institutional shareholders in facilitating firms' access to foreign credit.

Next, we propose two channels through which a borrower's foreign institutional shareholders could decrease foreign lenders' information and monitoring costs. The first is through simultaneously holding debt and equity of the same firm, i.e., dual ownership. Many large multinational banks have affiliated asset management arms, which often directly hold equity stakes in the firms with whom they have lending relationship. Information could be shared internally within the same financial institutions. The second is via external business networks. In recent years, institutional investors have increased their participation in both the primary and secondary loan markets (Jiang and Shao 2010; Ivanshina 2011). The frequent business interactions between banks and non-bank institutional investors facilitate the information sharing among them. To capture the external business interactions between foreign institutional shareholders and foreign banks, we identify two common business networks. First, we argue that when foreign institutional investors and foreign banks are both active members of the Loan Syndications and Trading Association (LSTA) and Loan Market Association (LMA), two prominent networks for participants interested in primary and secondary loan markets, they are more likely to engage in business interactions and, consequently, share information.[4] Second, we argue that when foreign banks and foreign institutional investors are headquartered in the same country, they are more likely to engage in business interactions and, as a result, share information. Our empirical findings suggest that the external network channel is incremental to and economically more important than the internal dual ownership channel.

We conduct a battery of robustness analyses, including controlling for lead bank country fixed effects, using alternative ways to measure loan characteristics and borrowers'

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[4] The LSTA was founded in New York City in December 1995, with a purpose to develop North American syndicated loan market. Its sister association, the LMA, was formed in London in December 1996, with a purpose to develop the loan markets in European, Middle East, and Africa (EMEA). Both the LSTA and LMA have hundreds of members including banks, institutional investors, service providers, and rating agencies. They both regularly organize educational, business, and social events for their members. Their members also have exclusive access to loan market data and analysis and can participate in the promotional events of loan sales. Both LSTA and LMA claim that their members enjoy more efficient loan executions and higher liquidity.

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access to foreign loans, and limiting our sample to borrowers with positive foreign institutional ownership. Our results remain robust. We further address the endogeneity concern that unobservable firm characteristics may influence the borrower's ability to attract both foreign institutional shareholders and foreign lenders. We use a stock's addition to the MSCI All Country World Index (ACWI) as a quasi-natural experiment that exogenously affects a firm's foreign institutional ownership. We identify firms in our sample whose stocks were added to the MSCI ACWI during our sample period as the treatment group. We create a control group using firms whose stocks were not added to the index and with covariates propensity-score matched with our treatment group. We find that relative to the control group, the treatment firms experience a significant increase in foreign institutional ownership in the years after their stocks were added to the MSCI index. More importantly, the foreignness of the loan for the treatment firms increases to a greater extent after their stocks were added to the MSCI index compared to that of the control firms. The above findings provide evidence supporting a causal relation between a borrower's foreign institutional ownership and its access to foreign lenders.

Finally, we examine whether a borrower's foreign institutional ownership affects the pricing terms of foreign loans. We find that a borrower's foreign institutional ownership is negatively associated with loan yield spread when the loan is foreign but not when the loan is domestic. This finding lends further support to the facilitation hypothesis, particularly through the information-sharing channel. Overall, our results suggest that foreign institutional shareholders not only improve borrowers' access to foreign lenders but also contribute to reducing their borrowing costs.

Our paper contributes to the literature in three ways. First, it adds to the growing literature documenting the positive role of foreign institutional shareholders in global capital markets (Fang et al. 2015; Tsang et al. 2019; Kacperczyk et al. 2021). It expands upon the study by Ferreira, Massa and Matos (2010), which identifies that foreign institutional investors

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facilitate cross-border mergers and acquisitions (M&As) by mitigating transaction costs and information asymmetry. Our evidence suggests that foreign institutional shareholders also facilitate the cross-border debt transactions. Second, it complements the literature studying the informational advantages that financial institutions have by dual-holding firms' debt and equity (Ferreira and Matos 2012; Peyravan 2020; Peyravan and Wittenberg-Moerman 2022). Our paper highlights a previously overlooked channel beyond dual holdings: information sharing through external business networks. Third, our paper extends the literature studying the mechanisms to mitigate information frictions in cross-border lending (Brown 2016; Delis, Hasan, and Ongena 2020). Our evidence suggests that the presence of foreign institutional shareholders could address the information gap faced by foreign lenders.

The remainder of the paper is organized as follows. Section 2 discusses the related literature and our predictions. Section 3 explains the data and research design. Section 4 presents the empirical results and Section 5 concludes.

2. Motivation, related literature, and predictions

Recent accounting and finance literature documents that foreign institutional shareholders play an increasingly important role in global equity markets (Fang, Maffett, and Zhang 2015; Tsang, Xie, and Xin 2019; Kacperczyk, Sundaresan, and Wang 2021). We extend this literature by testing the role that foreign institutional shareholders play in global debt markets.

Banks rely on both hard and soft information to make lending decisions (Petersen and Rajan 1994; 2002). Soft information is often acquired through social and business interactions with the borrowing firm and its operating partners, such as interviews, facet-to-face meetings, and site visits (Costello, Down, and Mehta 2020; Gustafson, Ivanov, and Meisenzahl 2021). Geographic distance and cultural dissimilarity significantly increase the difficulty and cost for

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foreign lenders to acquire such information. Heightened information frictions further increase monitoring costs, thereby dissuading foreign banks from extending loans to domestic borrowers.

We posit that foreign institutional shareholders could facilitate cross-border lending for two non-mutually exclusive reasons. First, recent literature shows that foreign institutional shareholders, particularly those domiciled in the U.S. and other common-law countries, serve as effective monitors due to their fewer business and social ties with local firms (Ferreira and Matos 2008; Aggarwal, Erel, Ferreira, and Matos 2011; Bena, Ferreira, Matos, and Pires 2017; Luong et al. 2017). As a result, the presence of foreign institutional shareholders could mitigate agency problems and alleviate the necessity for costly lender monitoring.

Second, foreign institutional shareholders *possess* valuable information that could potentially aid foreign lenders in decision-making and contribute to alleviating the information frictions faced by foreign lenders through information sharing. Foreign institutional shareholders can cultivate nuanced information about investee firms through their extensive investment experience and relationships with local stakeholders. This allows them to more effectively evaluate the operational risks that investee firms encounter. Furthermore, as active monitors, foreign institutional shareholders often have access to and engage with the management of investee firms (Ferreira and Matos 2008; Aggarwal, Erel, Ferreira, and Matos 2011; Bena, Ferreira, Matos, and Pires 2017). These interactions assist them in obtaining soft information about the firm, particularly regarding the quality of its management, which could impact its credit risk (Anderson, Mansi, and Reeb 2004; Ashbaugh-Skeife, Collins, and LaFond 2006; Cremers, Nair, and Wei 2007). Consistent with this notion, Kacperczyk et al. (2021) find that foreign institutional shareholders are better at predicting future stock returns relative to their domestic counterparts.

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We argue that there are two potential channels through which foreign institutional shareholders could *share* information with foreign lenders. The first is via lenders simultaneously holding the borrowing firm's equity and debt, i.e., dual ownership. There has been ample evidence suggesting information sharing through dual holdings. Ivashina and Sun (2011) find that institutional investors participate in syndicated loans to obtain private information for trading. Peyravan (2020) and Peyravan and Wittenberg-Moerman (2022) also provide evidence consistent with dual holders having informational advantages over non-dual holders. More relevantly, Ferreira and Matos (2012) demonstrate that universal banks, whose asset management arms hold substantial equity stakes in the borrowing firms, possess an informational advantage in lending, encompassing both ex-ante screening and ex-post monitoring.

The second channel operates through external business networks. While this channel has not been previously explored by academic studies, it finds support in anecdotes. In recent decades, the dividing line between debt and equity investing has gradually become blurrier, as evidenced by non-bank institutional investors participating in the primary and secondary loan markets (Ivashina and Sun 2011; Lim, Minton and Weisbach 2014) and banks investing in public equity (Ferreira and Matos 2012; Ferreira, Matos, and Pires 2018). Banks frequently transact with institutional investors in both primary and secondary loan markets through debt instruments, such as the Collateralized Debt Obligations (CDOs) and Collateralized Loan Obligations (CLOs).[5] These markets have grown substantially in the past two decades (Gande and Saunders 2012). Numerous banks and non-bank financial institutions actively participate as members of prominent international loan associations such as LSTA and LMA. They are

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[5] A CDO is a complex structured finance product that is backed by a pool of loans and other assets. A CLO is a structured finance product that is backed by payments from a pool of loans. Both CDOs and CLOs are sold to banks and institutional investors, such as hedge funds, insurance firms, and asset managers. According to the U.S. Department of the Treasury, U.S. insurance firms and mutual funds are the largest holders of both U.S. and non-U.S. CLO securities (https://home.treasury.gov/data/treasury-international-capital-tic-system-home-page/tic-forms-instructions/securities-c-annual-cross-us-border-portfolio-holdings).

also interconnected through intricate cross-border transactions. Regulators have been actively monitoring such cross-border financial interconnectedness to prevent systemic risk and instability (IMF 2010). In the recent default of the Chinese property giant Evergrande, 128 global banks and 121 non-banking institutions were discovered to be affected due to their direct and indirect investments in Evergrande's debt and debt derivatives. [6] These business interactions and interconnections offer potential opportunities for information sharing between banks and non-bank financial institutions.

Given that foreign institutional shareholders bridge the information and monitoring gaps faced by foreign lenders, we expect a positive association between foreign institutional ownership and the likelihood of cross-border loans. We term this line of arguments as the facilitation hypothesis.

It is also plausible that the presence of foreign institutional shareholders could decrease the likelihood of cross-border loans. Equity investments from foreign institutions might be perceived as an endorsement of a firm's creditworthiness and overall financial stability in global capital markets. This endorsement could help the firm secure more favourable terms and larger amounts through alternative domestic and foreign funding sources. Consistent with this notion, Ball, Hail, and Vasvari (2018) find that non-U.S. firms experience enhanced monitoring and greater visibility after cross-listing their equity in the U.S. Subsequently, they issue more foreign bonds through public offerings. If one considers foreign bonds and foreign loans as substitutes, this could, in turn, reduce these firms' financing needs through cross-border bank loans. We term this line of arguments as the substitution hypothesis.

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[6] See Bloomberg article https://www.bloomberg.com/news/articles/2021-12-10/china-tries-to-manage-global-message-on-evergrande-collapse.

3. Data and research design

3.1. Data, sample, and variable definitions

We focus on syndicated bank loans extended to both U.S and non-U.S. borrowers between 2000 and 2019. We first collect bank loan data from the DealScan database of Thomson Reuters' Loan Pricing Corporation. We then manually match each borrower in DealScan with firms in Compustat and Worldscope by name and country of domicile and assign each borrower with identifiers (ISIN, SEDOL, and CUSIP). We use borrowers' financial information in the fiscal year immediately before the loan origination date. Next, we extract information on firms' equity holdings by institutional investors from the FactSet Ownership (LionShares) database, which dates back to 1999. FactSet collects ownership data from public sources, including investor filings with regulatory agencies and company annual reports. Following Ferreira and Matos (2008), we aggregate equity holdings information at the firm-quarter level. We link each borrower in our sample with firms in FactSet using ISIN, SEDOL, and CUSIP and obtain each borrower's institutional ownership data in the calendar quarter immediately before the loan origination date. For each borrower-quarter, we separately calculate the equity holdings by foreign and domestic institutions (*IO_FOR* and *IO_DOM*). We define domestic institutions as those headquartered in the same country as the borrower's country of domicile and the rest as foreign institutions. Similarly, we define a lender as foreign when its parent institution is headquartered in a country different from the borrower's home country. We rely on the location of lender parent headquarter to make this distinction, because: (1) banks often follow centralized policies when extending large loans, and this definition is in line with prior literature studying cross-border syndicated loans (e.g., Giannetti and Laeven 2012; Brown 2016); and (2) inter-firm relationship-building and information-sharing are more

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likely to occur at the headquarter level than at the local branch or subsidiary level (Ferreira and Matos 2012).[7]

While prior studies often identify foreign loans in a binary way, we consider the heterogeneity within the lender team and view the foreignness of a loan increasing with the participation of foreign lenders in the loan syndicate. As discussed in Section 2, foreign lenders likely face higher information asymmetry than domestic lenders due to the geographic and cultural distance from the borrowing firm. We thus view a lending team with only foreign lenders facing highest information asymmetry and a team with only domestic lenders facing lowest information asymmetry. A team with both foreign and domestic lenders faces medium information asymmetry: domestic lenders may not share their full information set with foreign lenders in the team, because geographic and cultural distance creates information frictions.[8] Such a granular definition of loan foreignness captures the salience of the information frictions the lending team faces, which increase with foreign lender participation or loan foreignness. We acknowledge that not all foreign lenders are alike and thus explore the heterogeneity in the foreign lender location and characteristics in Section 4.3.

In our main analysis, we define a loan's foreignness (*LEAD_FOR*) as follows: it is set as zero when all lead lenders are domestic (domestic loan), one when both foreign and domestic lead lenders are present (semi-foreign loan), and two when all lead lenders are foreign (pure foreign loan). We focus on lead lenders because they are primarily responsible for collecting information and monitoring (Sufi 2007).[9] In the robustness analysis in Section 4.4, we use alternative ways to measure a loan's foreignness, including the fraction of foreign lenders (both

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[7] In untabulated results, we find consistent results using the location of the lender local branch/subsidiary to identify foreign lenders.
[8] Economic theory suggests that cultural similarity within the team makes the communication more efficient and coordination easier (Bolton, Brunnermeier, and Veldkamp 2013). Although there is no prior literature focusing on the differences within the lead lender team, Giannetti and Yafeh (2012) find that cultural distance between lead lenders and participant lenders affects their risk sharing.
[9] We identify a lender as a lead when the lender role is stated as "Lead", "Bookrunner", "Agent", or "Arranger", or when variable "Lead Arranger Credit" is flagged as "Yes". This approach is consistent with prior studies (Ball, Bushman, and Vasvari 2008; Prilmeier 2017).

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leading and participating ones) in the loan syndicate (*FRACTION_FOR*), the percentage of loan shares held by foreign lenders (*SHARES_FOR*), and an indicator for a foreign syndication country (*SYNDICATION_FOR*).

We require non-missing information on lead lender identity, loan origination date, offering amount, yield spread (all-in-drawn), and maturity. We also require non-missing information on control variables. Finally, following Bena et al. (2017), we restrict the sample to countries whose stock market capitalization is at least $10 billion and with a minimum of ten observations during our sample period. Our final sample includes 37,445 loan packages extended to 8,722 unique borrowing firms from 52 countries between 2000 and 2019.

Table 1, Panel A presents the sample distribution by borrower country. About 64% of all the loans in our sample are extended to U.S. borrowers. The U.K. accounts for more than 4% of the sample, followed by Japan and Canada. The majority of loans in our sample are foreign, comprising 13.1% as pure foreign and 51.3% as semi-foreign. U.S. borrowers also have the highest number of semi-foreign loans and pure foreign loans, but the percentage of their foreign loans with respect to the total number of loans is much smaller than some other countries. For example, quite a few European and Latin American countries have no domestic loans (e.g., Portugal, Hungary, Argentina, Columbia, and Peru), possibly due to their underdeveloped domestic syndicated loan markets. In terms of foreign institutional holdings, borrowing firms from Ireland have the highest foreign institutional holdings (43%) but zero domestic institutional holdings, consistent with Ireland offering tax benefits to foreign investors. Firms from Hungary have an average of 24% foreign institutional holdings, followed by firms from Netherlands and Canada (i.e., 20%). U.S. borrowers have an average of 4% foreign institutional holdings and 59% domestic institutional holdings. In contrast, non-U.S. borrowers have significantly higher foreign institutional holdings (11%) and significantly lower domestic institutional holdings (7%) (untabulated). Given the differences in the

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distributions of both cross-border loans and institutional holdings for U.S. and non-U.S. borrowers, we conduct our main analysis for U.S. and non-U.S. firms separately.

Table 1, Panel B reports the sample distribution by the calendar year of loan origination. We observe a clear drop in the number of loans issued around 2007 and the number bounced back in 2011. This pattern is consistent with the financial crisis depressing the global loan markets, which recovered a few years later. A similar pattern holds for foreign loans, which suffered a temporary decline during the financial crisis. Interestingly, the level of foreign institutional holdings is not affected by the financial crisis and exhibits a gradual increase over the sample period.

Table 1, Panel C presents the sample distribution from the lender side. While lenders from 85 countries arranged syndicated loans in our sample, we list the top 25 countries ranked by the total number of foreign loans.[10] Lenders headquartered in these countries arranged 99.6% of cross-border loans in our sample. Lead lenders from the U.K. arranged the highest number of cross-border loans (11,145), representing 89.6% of all loans arranged by U.K. lenders and 46.2% of all the cross-border loans in our sample (24,112). Among the 11,145 cross-border loans originated by U.K. lead lenders, 9,062 are semi-foreign loans, and 2,083 are pure foreign loans. Lead lenders from Japan (8,109), France (7,638), Germany (7,204), and Canada (6,355) also arranged substantial numbers of cross-border loans. Furthermore, while the number of cross-border loans arranged by U.S. lead lenders is high (5,457), cross-border loans only represent 19.1% of the total loans arranged by U.S. lenders, consistent with U.S. banks being more active in their domestic syndicated loan market. In general, the sample distribution of lead lenders is in line with prior literature (e.g., Giannetti and Yafeh 2012; Brown 2016). This table also illustrates that the biggest players in the cross-border syndicated loan markets are

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[10] Note that a loan could be arranged by multiple lead lenders. Therefore, the total number of loan packages listed in this table is higher than the number of unique loan packages used in our sample.

lenders from developed countries, possibly due to their abundant funds and rich experience in global capital markets.[11]

3.2. Research design

To examine the impact of a borrower's foreign institutional ownership on its access to foreign lenders, we estimate the following ordinary least squares (OLS) model:[12]

$$\textit{Loan Foreignness} = \beta_1 IO\_FOR + \beta_2 IO\_DOM + \textit{CONTROL VARIABLES} + \textit{FIXED EFFECTS.} \quad (1)$$

We also use an Ordered Logit as an alternative model specification in our main analysis. The dependent variable *Loan Foreignness* is measured using either *LEAD_FOR* or alternative measures. The main independent variable of interest is *IO_FOR*, the percentage of a borrower's equity shares owned by foreign institutions, measured at the calendar quarter immediately before the loan origination date. We control for domestic institutional ownership (*IO_DOM)* and insider ownership (*INSIDER OWN*), defined as the percentage of shares closely held by insiders, including officers, directors, and their immediate families and shares held in trusts and pension plans. The information on insider ownership is obtained from WorldScope. Since the sum of equity stakes by all shareholders should be one, we denote the omitted group of shareholders as retail investors. We do not provide any ex-ante prediction on the sign of coefficient β_2 on *IO_DOM*. On the one hand, domestic institutions might have business ties with domestic lenders. Borrowers with higher domestic institutional ownership could thus obtain domestic loans at more favorable terms, decreasing their demand for foreign loans. On the other hand, relative to retail investors and insiders, domestic institutions could be better monitors. The presence of domestic institutional shareholders could thus reduce foreign lenders'

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[11] The top ten lead lenders in terms of the number of cross-border loans in our sample are all multinational banks including BNP Paribas SA (France), Deutsche Bank AG (Germany), Royal Bank of Scotland Plc (U.K.), HSBC (U.K.), Barclays Bank Plc (U.K.), Sumitomo Mitsui Banking Corp (Japan), Bank of Tokyo-Mitsubishi UFJ Ltd (Japan), ABN AMRO Bank NV (Netherlands), Bank of Nova Scotia (Canada), and Royal Bank of Canada (Canada).

[12] We use the OLS model for its ease of interpreting coefficients (e.g., interaction terms) and flexibility of including multiple fixed effects.

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concern for borrower moral hazard and improve borrowers' access to foreign lenders. Furthermore, when insiders own a larger percentage of shares, it is more difficult for outside shareholders to challenge the management, leading to greater insider entrenchment (Iliev, Lins, Miller, and Roth 2015). We thus predict a negative coefficient on *INSIDER OWN*. We assume that lenders consider a borrower's existing ownership structure when making lending decisions. This assumption is plausible given that a publicly listed firm's ownership structure is public information. Various prior studies have also provided evidence validating this assumption (Lin, Ma, Malatesta, and Xuan 2012; Sunder, Sunder, and Wongsunwai 2014; Liao 2015).

Since loan facilities within the same package are often arranged by the same lead lenders, we estimate Equation (1) at the package level. [13] If a package has multiple loan facilities, we use the loan information from the largest facility, which presumably is more representative of the loan features. We get very similar results if we use the average loan characteristics across different facilities (see Section 4.4 for more details). We control for various firm-level and loan-level variables that may affect a borrower's access to foreign lenders. At the firm level, we control for *LEVERAGE* (sum of short-term and long-term debt divided by total assets), *FIRM SIZE* (the natural logarithm of market value of equity, converted from local currencies to U.S. dollars using the fiscal year end exchange rate), market-to-book ratio (*MTB*, defined as market value of equity divided by book value of equity), return on assets (*ROA*, defined as EBITDA divided by total assets), *TANGIBILITY* (net PP&E divided by total assets), and *CROSS LIST*, cross-listing in the U.S. equity markets. Smaller borrowers and borrowers with higher growth rate, lower profitability, higher leverage, and lower tangibility face higher agency costs of debt. Consequently, these borrowers may have more difficulty in accessing foreign lenders. On the one hand, equity listing in the U.S. may provide certification

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[13] We randomly check 300 loan facilities and find that in all the cases, different facilities within the same package have the same group of lead lenders.

for international borrowers and thereby increases their likelihood of obtaining cross-border external financing. On the other hand, cross-listing in the U.S. may encourage firms to issue more cross-border bonds via public offerings, thus reducing their financing needs via cross-border private loans (Ball et al. 2017). Lastly, we include the percentage of a borrower's foreign sales as a control variable (*FOREIGN SALES*). The presence of foreign operations may increase the borrower's visibility and facilitate foreign lenders' information acquisition (Houston, Itzkowitz, and Naranjo 2017). As a result, borrowers with larger foreign sales are more likely to obtain cross-border loans.[14] We measure all firm-level control variables at the fiscal year end immediately before the loan origination date.

At the loan level, we control for package size (*LOG(LOANSIZE)*, the natural logarithm of the offering amount in U.S. dollars), maturity (*LOG(MATURITY)*, the natural logarithm of the number of months to maturity), *INTEREST SPREAD* (all-in-drawn spread in percentage) and the use of covenants (*LOG(1+NUM_COV)*, the natural logarithm of one plus the number of covenants), as well as indicators for secured debt, takeover loans, term loans, and the presence of performance pricing provisions. We also obtain borrowers' long-term credit ratings from Standard & Poor's and include indicators for the availability of credit ratings and for investment-grade rating ("BBB" or above) in all regressions.

Finally, to account for the influence of time-varying country-level economic development on the borrower's ability to obtain cross-border loans, we control for the borrower country's gross domestic product (GDP) per capita (the natural logarithm of GDP). Detailed variable definitions are listed at Appendix A. We also include borrower country, industry, and year fixed effects to control for unobservable country, industry, and year factors that may affect the borrower's access to cross-border loans.[15] Following Bena et al. (2017), we cluster standard

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[14] We also use a firm's foreign assets as an alternative measure for its foreign operations and find very similar results (untabulated).

[15] We are unable to include firm fixed effects in our regressions, because our analysis is at the loan-package level and more than half of firms in our sample have only one or two loans.

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errors at the country-year level to account for heterogeneity and within-country-year correlation. All continuous variables are winsorized at the 1ˢᵗ and 99ᵗʰ percentiles.

3.3. Summary statistics

Panel A of Table 2 reports the summary statistics of our regression sample. On average, our sample firms have 7% of their shares owned by foreign institutions and 40% of their shares owned by domestic institutions. In terms of other firm-level characteristics, our sample firms have an average leverage ratio of 31%, market-to-book ratio of 2.83, and tangibility ratio of 33%. The sample firms are on average profitable: The mean of ROA is 10%. The average percentage of foreign sales is 21%, however, with a median of one. Of our full sample, 6% of firms are cross-listed in the U.S., rising to 17% among the non-U.S. borrowers (untabulated). At the loan level, the average loan foreignness is 0.77, with a median of one. These numbers correspond to 13.1% of loans in our sample being pure foreign (*LEAD_FOR*=2) and 51.3% being semi-foreign (*LEAD_FOR*=1). Overall, 37% of loans in our sample are secured, 44% are rated, and 20% are rated as investment grade. The average loan package size is approximately $709 million, in line with the typical size of international syndicated loans (Hong et al. 2016). The average loan maturity is 45 months. In addition, 29% of our sample loans have performance pricing provisions, 10% are takeover loans, and 26% are term loans.

Panel B of Table 2 presents the univariate comparison of the average firm and loan characteristics across domestic, semi-foreign, and pure foreign loans. We observe that the foreignness of loans increases with borrowers' foreign institutional ownership: the domestic loan subsample has the lowest foreign institutional ownership (4.3%) and the pure foreign loan subsample has the highest foreign institutional ownership (10.1%). In contrast, the foreignness of loans decreases with domestic institutional ownership. Within cross-border loans, while semi-foreign loans are associated with an average of 43.6% domestic institutional ownership, pure foreign loans are associated with an average of only 13.1% domestic institutional

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ownership. Other firm and loan characteristics also tend to differ across these three types of loans. For example, borrowers issuing semi-foreign loans tend to have the highest leverage, market-to-book ratio, ROA, tangibility and foreign sales and the lowest insider ownership. Borrowers issuing pure foreign loans tend to have the largest firm size, highest insider ownership, lowest tangibility, and lowest ROA and most likely to be cross-listed in the U.S. Domestic loans are most likely to be secured and least likely to be rated or rated as investment grade. Domestic loans also have the smallest package size, shortest maturity, highest number of covenants, and highest yield spread. In contrast, pure foreign loans have the lowest number of covenants and are least likely to include performance pricing provisions, likely due to the high monitoring cost that foreign lenders face. Semi-foreign loans tend to be the largest in size with the longest maturity and lowest yield spread, suggesting that large loans often require the collaborations from both domestic and foreign lead lenders. Borrowers of semi-foreign loans are also most likely to be rated and rated as investment grade. These above differences highlight the importance of controlling for firm and loan characteristics in our regressions.

4. Empirical Results

4.1. Main results

Table 3 presents the OLS estimation results for all countries (Column 1), the non-U.S. borrower subsample (Column 2), and the U.S. borrower subsample (Column 3). We also report the results for all countries using an Ordered Logit model (Column 4). The coefficient on foreign institutional ownership (*IO_FOR)* is positive and significant across all columns, suggesting that borrowers with a higher percentage of shares held by foreign institutions have better access to foreign lenders. In contrast, we find a negative and significant coefficient on domestic institutional ownership (*IO_DOM*) in all columns, suggesting that equity ownership by domestic institutions reduces a borrower's access to foreign lenders. An explanation is that

due to a lack of business interactions with domestic institutions, foreign lenders are concerned about the expropriation risk from local institutional shareholders. An alternative explanation is that domestic institutions often have close business ties with domestic banks, which could help borrowers obtain loans from domestic banks with more favorable terms.[16] We also find that both the magnitude and statistical significance of the coefficient on *IO_DOM* is smaller for the U.S. subsample relative to the non-U.S. subsample (with the difference being statistically significant), suggesting that U.S. institutional shareholders are less likely to deter U.S. borrowers from accessing foreign lenders. This is likely attributed to U.S. institutions having globally diversified portfolios and business networks, facilitating connection with non-U.S. banks.

In terms of economic significance, we find that that a 10% increase in the borrower's foreign institutional ownership increases the foreignness of loan by 3.3% for non-U.S. borrowers, and 3.0% for U.S. borrowers.[17] In contrast, a 10% increase in the borrower's domestic institutional ownership decreases the foreignness of loan by 6.4% for non-U.S. borrowers, and 0.2% for U.S. borrowers. In other words, by replacing 10% of the borrower's domestic institutional ownership with the same percentage of foreign institutional ownership, the loan foreignness could increase by 9.7% for non-U.S. borrowers and 3.2% for U.S. borrowers. This magnitude is comparable to the impact of possessing credit ratings, a factor considered to be arguably the most crucial determinant for debt financing (Sufi 2009). The regression coefficients on *D_RATING* suggest that assigning credit ratings to a non-rated borrower increases the loan foreignness by 8.8% for non-U.S. borrowers and 3.8% for U.S. borrowers.

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[16] This explanation is supported by the results from analyzing loan yield spread. We find that borrowers' domestic institutional ownership significantly reduces the yield spread of domestic loans. See more discussions in Section 4.6.

[17] The standard deviation of foreign institutional ownership is 0.11 for non-U.S. borrowers and 0.04 for U.S. borrowers.

In terms of other firm-level variables, we find that borrowers with larger size, higher leverage ratio, lower market-to-book ratio, and more foreign sales have better access to foreign lenders. GDP per capita is negatively associated with loan foreignness, probably because in countries and periods with high economic outputs, there is abundant supply of credit from domestic banks. In terms of loan characteristics, we find that cross-border loans tend to be larger, unsecured, rated, and term loans. These findings are largely consistent with those in prior literature (e.g., Qian and Strahan 2007).

4.2. Cross-sectional analysis

4.2.1. Borrower information environment

Building on our argument that foreign institutional shareholders bridge the information and monitoring gaps faced by foreign lenders, we expect the facilitation role of foreign institutional shareholders to be more pronounced among borrowers with a more opaque information environment. Prior literature uses firm size and the availability of credit rating as proxies for borrowers' information quality (e.g., Mian 2006; Bharath, Sandeep, Saunders, and Srinivasan 2011; Lin et al. 2012). We thus consider borrowers with smaller size and without credit ratings to face higher information opacity due to a lack of hard information. *SMALL_FIRM* is an indicator variable equal to one if the borrower size is below the sample median, and zero otherwise. *UN_RATED* is an indicator variable equal to one if credit rating is unavailable for a given borrower before loan origination, and zero otherwise. Houston et al. (2017) argue that when borrowers have foreign operations (e.g., foreign sales and assets), it is easier for foreign lenders to gather soft information. Prior studies also suggest that a past lending relationship reduces information asymmetry between the borrower and lenders because lenders could acquire soft information through repeated transactions with the same borrower (Bharath et al. 2011; Prilmeier 2017). We thus consider borrowers with lower foreign sales or limited past experience with the same lead lenders as facing higher information opacity, due to

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the difficulty for foreign lenders to acquire soft information. *FOR_SALES_LOW* is an indicator variable equal to one if the borrower's foreign sales are below the sample median, and zero otherwise. *REL_LOW* is an indicator variable equal to one if the percentage of borrowed amounts from the same lead lender in the past five years is below the sample median, and zero otherwise.

Table 4 reports the results after including the indicator variable for opaque information environment (*OPAQUE*) and its interaction terms with *IO_FOR* and *IO_DOM*. *OPAQUE* is assigned the value of *SMALL_FIRM*, *UN_RATED, FOR_SALES_LOW* and *REL_LOW* in four regressions, respectively. We find that in all four regressions, the coefficient on the interaction term *IO_FOR×OPAQUE* is positive and significant, suggesting that foreign institutional shareholders are more effective in assisting opaque borrowers in accessing foreign lenders. Interestingly, we find that the coefficient on *IO_DOM×OPAQUE* is negative and significant but the coefficient on *IO_DOM* is mostly insignificant. This finding suggests that domestic institutional ownership deters borrowers from accessing foreign lenders, but only among opaque borrowers. This is consistent with the explanation that the absence of business interactions between foreign banks and domestic institutions hinders the former from obtaining the soft information required to screen and monitor the opaque borrowers. Overall, we view these results as supporting the facilitation hypothesis.

4.2.2. Foreign institutional shareholders' access to soft information

From the perspective of institutional shareholders, we examine whether foreign institutional shareholders with superior information and monitoring abilities are more likely to facilitate cross-border lending. In particular, foreign blockholders and hedge funds as considered more likely to possess soft information as they are shown to be active monitors with access to management and/or have more incentives and abilities to acquire soft information (Brav, Jiang, Partnov, and Thomas 2008). Therefore, we separately calculate the ownership by

blockholders and non-blockholders, as well as hedge funds and non-hedge funds. We define an institution as a blockholder if it holds at least 1% of the borrowers' equity. We define an institution as a hedge fund if FactSet labels its manager style as "Hedge Fund".

Table 5 reports the results after breaking down foreign institutional ownership into ownership by different institution types. In Column (1), we find that foreign blockholders (*IO_FOR_IBH*) play a more prominent role in increasing borrowers' access to foreign lenders than foreign non-blockholders: the coefficient on *IO_FOR_IBH* is positive and significant, while the coefficient on *IO_FOR_NON_IBH* is negative and insignificant. In Column (2), although both coefficients on *IO_FOR_HEDGE* and *IO_FOR_NON_HEDGE* are positive and significant, the statistical and economic significance of the former is much larger: a one-standard-deviation increase in *IO_FOR_HEDGE* (0.009) is associated with a 2.9% increase in the loan foreignness, while a one-standard-deviation increase in *IO_FOR_NON_HEDGE* (0.10) is associated with a 0.9% increase in the loan foreignness. Overall, we view these results as supporting the facilitation hypothesis. These findings also provide validation to our argument that foreign institutional shareholders have informational advantages over foreign lenders (Section 2).

4.2.3. Country-level institutions

We also investigate how country-level institutions interact with foreign institutional shareholders in facilitating borrowers' access to foreign credit. We expect foreign institutional shareholders to play a more important role in countries with poorer public information-sharing infrastructure. We use the presence of public credit registry (PCR) to capture the quality of a country's public information-sharing infrastructure. PCR is a public database that collects borrower and loan information from lenders and shares it with all financial institutions. PCR is mandated by national regulators and provides a formal channel for financial institutions to share information (Djankov et al. 2007; Jappelli and Pagano 2002; Balakrishnan and Ertan

2021). We thus expect foreign institutional shareholders to play a more important information-sharing role in countries where foreign lenders lack access to the public information-sharing source.[18]

We obtain information on PCRs for our sample countries from Djankov et al. (2007). Table 6, Columns (1) and (2) report the results after using *NO_PCR*, an indicator for no PCR in a country, as the interaction variable. The stand-alone term *NO_PCR* is subsumed by the country fixed effects. We report the results separately for all countries and the subsample without the U.S. borrowers to ensure that the findings are not sensitive to assigning all U.S. borrowers into the *NO_PCR* category. In both columns, the coefficient on the interaction term *IO_FOR×NO_PCR* is positive and significant, suggesting that borrowers' foreign institutional ownership improves their access to foreign lenders more when the borrowers' home countries lack formal information-sharing infrastructure. The coefficient on *IO_DOM×NO_PCR* is positive and significant in Column (1) for all countries, but not in Column (2) for the non-U.S. subsample. This discrepancy is driven by U.S. borrowers' domestic institutional shareholders playing a less prominent role in deterring access to foreign loans (see results in Table 3, Column 3).

Due to a lack of access to local social and political networks, foreign lenders often rely on formal courts for contract enforcement in the event of a default (Mian 2006). This makes foreign lenders more vulnerable to default risk. As a result, foreign banks often hesitate to lend to firms located in countries with weak creditor rights. Prior literature finds that better information and stronger creditor rights are substitute factors that help the development of local private credit market (Jappelli and Pagano 2002; Djankov et al. 2007). We thus expect foreign institutional shareholders to play a more important role in countries with weaker creditor rights.

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[18] Djankov et al. (2007) and Jappelli and Pagano (2002) find that private credit bureaus (PCBs) also facilitate information sharing among lenders. However, we do not find PCBs play a role in our setting, potentially due to poor coverage of PCBs in some countries. It could also be due to foreign lenders being excluded from information sharing if PCBs were owned by local banks.

We obtain the creditor rights index of a borrower's home country from Djankov et al. (2007). This index, ranging from zero to four, measures the legal rights of secured lenders in bankruptcy across four aspects. These aspects include restrictions on creditor consent, the ability of secured creditors to seize collateral, priority of payment for secured creditors, and whether management stays. A higher score indicates stronger creditor rights. We define a country as having weak creditor protection (*WEAK_CRED*) when its creditor rights index is below the sample median of two. We report the results using *WEAK_CRED* as an interaction term in Table 8, Columns (3) and (4). We again report the results for all countries, as well as the subsample excluding U.S. borrowers to ensure that our findings are not driven by assigning all U.S. borrowers into the low creditor protection category. In both columns, the coefficient on the interaction term *IO_FOR×WEAK_CRED* is positive and significant. This result is consistent with our expectation that foreign institutional shareholders are more important in helping borrowers access foreign lenders when creditor protection is weak. Interestingly, we find that the coefficient on *IO_DOM×WEAK_CRED* is positive and significant in the regression using all countries (Column 3), but negative and significant using the non-U.S. subsample (Column 4). The latter result suggests that domestic institutional shareholders more strongly deter borrowers from accessing foreign lenders in countries with weaker creditor protection. An explanation is that foreign lenders are more concerned about the expropriation risk from local shareholders in countries lacking legal protection. Another explanation is that in countries with weaker creditor protection, informal channels are more important for accessing loans. Therefore, borrowers' domestic institutional shareholders play a more important role in helping them access domestic banks. The reversal of the sign of the coefficient on *IO_DOM×WEAK_CRED* after including U.S. borrowers is again consistent with U.S. domestic institutional shareholders playing a less prominent role in deterring U.S. borrowers from accessing foreign lenders.

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Overall, results in this section suggest some substitutability between county-level institutions and foreign institutional shareholders in facilitating firms' access to foreign credit.

4.3. Mechanism analysis

In this section, we test two concurring channels through which foreign institutional shareholders share information with foreign banks and the relative importance of these two channels.

To capture the internal dual-ownership channel, we collect information on equity holdings in the borrowing firms by banks and their subsidiaries. We use two business networks to capture the external channel for information sharing. First, we argue that when foreign institutional investors and foreign banks are both active members of the LSTA and LMA, two leading networks for financial institutions interested in primary and secondary loan markets, they are more likely to have business interactions and thus share information. We obtain the current membership information from LSTA and LMA websites.[19] Second, we argue that when foreign banks and foreign institutional investors are headquartered in the same country, they are more likely to have business interactions and thus share information.

We conduct two separate analyses to test the above channels. In both analyses, we focus on pure foreign loans to understand the choice of lender identity/location conditioning on the lender being foreign. Only 3% of pure foreign loans in our sample have a lead lender holding at least 1% equity stakes at the borrowing firm either themselves or via their subsidiaries.[20] In contrast, 59% of pure foreign loans are led by LSTA/LMA members and 22% are led by banks headquartered in the same countries as the foreign institutional shareholders. Given the more

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[19] We are unable to obtain historical LSTA/LMA membership information. However, a representative from LMA suggests that their membership list tends to be stable over time.

[20] The percentage of foreign loans with dual ownership is much smaller than that in Ferreira and Matos (2012) where roughly 10% of loans have a lead lender holding at least 1% equity stakes at the borrowing firm. This difference is likely driven by the significant dual ownership by domestic lenders. For example, about 14.8% of loans in our full sample have a domestic lead lender holding at least 1% equity stakes at the borrowing firm.

frequent occurrence of common networks than dual ownership among foreign lenders and foreign institutional shareholders, we expect the external channel to play a more dominant role in driving the information sharing.

In the first analysis, we examine whether foreign banks who are LSTA/LMA members are more likely to lead loans extended to a borrower with foreign institutional shareholders who are also members. To implement this analysis, we expand the package-level data to the package-lender level. For a given loan, all foreign lead lenders, both members and non-members, are potential matches. For example, if a loan has five foreign lead lenders, the expanded package-lead-lender level data will have five observations pertaining to this loan. The expanded sample size also allows us to include firm fixed effects. Column (1) of Table 7 presents the result. The dependent variable is *LEAD_LENDER_MEMBER*, which equals one if the foreign lead lender is a member of the LSTA or LMA, and zero otherwise. For independent variables, we calculate the percentage of equity shares owned by foreign institutions that are also LSTA/LMA members (*IO_FOR_MEMBER*). To disentangle the internal dual-ownership channel from the external business network channel, we split *IO_FOR_MEMBER* into *IO_FOR_MEMBER_DUAL* and *IO_FOR_MEMBER_NON_DUAL*, capturing the percentages of equity shares owned by dual-holders (i.e., lenders) and other non-lender institutions, respectively. We multiple *IO_FOR_MEMBER_DUAL* by 100 to ease the interpretation of coefficients. We find positive and significant coefficients on both *IO_FOR_MEMBER_DUAL* and *IO_MEMBER_NON_DUAL*, suggesting that both dual ownership and external business networks increase the likelihood of having a foreign lead bank that is also a loan association member. However, the economic significance of external business networks is much larger than that of dual ownership: a one-standard-deviation increase in *IO_FOR_MEMBER_NON_DUAL* (0.059) is associated with 7.1% increase in the likelihood of having a foreign lead bank that is also a loan association member, relative to 2.6%

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increase in the likelihood pertaining to a one-standard-deviations increase in *IO_FOR_MEMBER_DUAL* (0.038).

In the second analysis, we examine whether the location of the borrowers' foreign institutional shareholders can predict the location of foreign lead lenders. To explore the potential matching between a borrower's foreign institutional shareholder country and a lender country, we expand the package-level data to the package-lead-lender-country level. For a given loan, lead lenders located in all foreign countries, are potential matches. To make the package-lead-lender-country level analysis more manageable, we keep the top 25 lead lender countries in this analysis. Thus, there are 25 observations pertaining to each loan. Column (2) of Table 7 presents the result. The dependent variable is *LEAD_LENDER_COUNTRY*, which equals one if the foreign lead lender is from the same country as the foreign institutional shareholder, and zero otherwise. For independent variables, we separately calculate the percentage of equity shares owned by foreign institutions from the top 25 countries (*IO_FOR_COUNTRY*). To disentangle the internal dual-ownership channel from the external business network channel, we split *IO_FOR_COUNTRY* into *IO_FOR_COUNTRY_DUAL* and *IO_FOR_COUNTRY_NON_DUAL*, capturing the percentages of equity shares owned by dual-holders (i.e., lenders) and other non-lender institutions located in a particular country, respectively. We multiple *IO_FOR_COUNTRY_DUAL* by 100 to ease the interpretation of coefficients. We find that the coefficients on *IO_FOR_COUNTRY_DUAL* and *IO_FOR_COUNTRY_NON_DUAL* are both positive and significant, suggesting that firms are more likely to borrow from lead lenders located in the same country as their foreign institutional shareholders with or without dual ownership. However, similar to that in Column (1), the economic significance of ownership by non-dual-holders is bigger: a one-standard-deviation increase in *IO_FOR_COUNTRY_NON_DUAL* (0.013) is associated with 7.9% increase in the likelihood of having a foreign lead bank that is from the same country as foreign

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institutional shareholders, relative to an increase of only 3.3% for a one-standard-deviation increase in *IO_FOR_COUNTRY_ DUAL* (0.011).

Taken together, the results in Table 7 suggest that both the dual ownership and business network channels are in play. However, the latter channel appears to be economically more important than the former in facilitating the information sharing between foreign banks and foreign institutional shareholders.

4.4. Robustness analysis

In this section, we conduct several additional analyses to check the robustness of our main results. To ensure that our results are not driven by foreign lead banks headquartered in a few developed countries, we include lead bank country fixed effects in our regression. Table 8, Column (1) presents the results. Our results stay robust: the coefficient on *IO_FOR* is positive and significant, while the coefficient on *IO_DOM* stays negative and significant.

In Section 3, we mentioned that we use the loan characteristics of the largest facility to construct loan-package level controls. In Column (2) of Table 8, we show that our results are robust to using average loan characteristics (e.g., interest spread and maturity) as control variables. The magnitudes of coefficients on *IO_FOR* (0.236) and *IO_DOM* (-0.060) are very similar to those reported in Table 3, Column (1).

In Columns (3) to (5) of Table 8, we use three alternative measures to capture a borrower's access to foreign lenders. In our main analysis, the variable *LEAD_FOR* is discrete and only considers the location information of the lead lenders. In a loan syndicate, each participating lender is ultimately responsible for its own assessment of the borrower's credit quality and the lead lenders owe no fiduciary duties to the participating banks (Esty 2001; Ivashina 2009; Lin et al. 2012). We thus expand the scope of our measure on foreign lender participation to include all lenders, both leading and participating ones. In Column (3), we use the fraction of foreign lenders (*FRACTION_FOR*) defined as the number of foreign lenders

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divided by the total number of lenders in the loan syndicate. In Column (4), we use the percentage of loan amount held by foreign lenders (*SHARES_FOR*). A higher value of *FRACTION_FOR* or *SHARES_FOR* suggests higher participation from foreign lenders. These two variables are continuous, thus capturing foreign lender participation at a more granular level. The number of observations drops significantly from 37,445 to 11,579 when we use *SHARES_FOR* as dependent variable due to missing values for lender shares in DealScan. In Column (5), we use the location of syndication instead of the location of lead lender parent headquarter to identify foreign loans (Carey and Nini 2007). The indicator variable *SYNDICATION_FOR* is defined as one if the country of syndication is foreign. Our results stay robust to all three alternative measures for foreign lender participation.

Lastly, we restrict our analysis to a subsample of firms with positive foreign institutional ownership to address the concern that firms with foreign shareholders are different from those without. In Table 8, Column (6), we find that the coefficient on *IO_FOR* remains positive and significant. We also find that the coefficient on *IO_DOM* is no longer significant. This finding suggests that foreign lenders are indifferent to the presence of domestic institutional shareholders conditional on having foreign institutional shareholders on board.

4.5. Identification

The presence of foreign institutional shareholders is endogenous. The positive association between foreign institutional ownership and access to foreign loans could be explained by unobservable borrower characteristics or reverse causality. To address the endogeneity concern, we use a stock's addition to MSCI All Country World Index (ACWI) as a quasi-natural experiment that exogenously affects a borrower's foreign institutional ownership. This approach has been widely used by prior studies examining the casual effect of foreign institutional ownership on firm behavior (e.g., Bena et al. 2017; Tsang et al. 2017; Kacperczyk et al. 2021). We identify 417 borrowing firms whose stocks were added to the

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MSCI ACWI index during our sample period (treatment group). We select 381 borrowing firms whose stocks were not added to the index and were matched with the treatment firms along all covariates in the years prior to the index addition (using Propensity Score Matching (PSM) with replacement and 0.01 caliper). To better capture the changes in a borrower's access to foreign lenders around its stock's addition to the MSCI index, we transform the unit of analysis from loan-package level to firm-year level.[21] We keep all firm-years with outstanding syndicated loans. For a given firm-year, *MAX_LEAD_FOR* is a discrete variable defined as zero if all outstanding loans are domestic, two if all outstanding loans are pure foreign, and one otherwise. This variable thus captures the maximum level of foreign lender participation at a given firm-year. We also use the maximum value of loan characteristics across all outstanding loans when conducting the matching. However, we get similar results by using the average value of the percentage of foreign lenders and other loan-level variables (untabulated).

Panel A of Table 9 shows the pre-treatment means of the treatment and control groups and tests the difference in means between the two groups. The treatment and control firms are similar in both firm and loan characteristics prior to the treatment. They are also similar in access to foreign lenders (*MAX_LEAD_FOR)*. Panel B of Table 9 reports the difference-in-differences (DiD) regression results.[22] *TREAT* is a dummy variable that equals one if a firm is added to the MSCI ACWI, and zero otherwise. *POST* is a dummy variable that equals one in the years after a firm's stock is added to the MSCI ACWI, and zero otherwise. The interaction term *TREAT×POST* thus captures the DiD effect. The stand-alone term *POST* is subsumed by year fixed effects. Column (1) reports the regression results on *IO_FOR*. The coefficient on *TREAT×POST* is positive and significant (0.022), suggesting that the treatment firms' foreign

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[21] A firm-year level analysis is consistent with prior studies using this shock to study the casual inference of foreign institutional ownership.
[22] Since we match treatment and control firms on all covariates, we do not include these covariates in the DiD estimation. This approach is consistent with prior literature using MSCI ACWI inclusion as a shock to foreign institutional ownership (e.g., Bena et al. 2017).

institutional ownership increased by 2.2% in the years after their stocks were added to MSCI ACWI index relative to the control firms. This magnitude is comparable to prior studies using MSCI index addition as a shock to foreign institutional ownership.[23] Column (2) reports the results on *MAX_LEAD_FOR*. The coefficient on *TREAT×POST* is positive and significant, suggesting that foreign lenders' participation rate increases by 3.9% among the treatment firms after their stocks are added to the MSCI index.[24] The above findings provide evidence supporting a causal relation between borrowers' foreign institutional ownership and their access to foreign lenders.

4.6. Borrowing costs of cross-border loans

Thus far, we have established that borrowers' foreign institutional ownership helps them access foreign loans, likely driven by information sharing between foreign institutional shareholders and foreign lenders. The next question is: does foreign institutional ownership also contribute to reducing the borrowing costs of foreign loans?

To explore the differential role of foreign institutional shareholders in the pricing of domestic and foreign loans, we regress loan yield spread (*INTEREST SPREAD*) on *IO_FOR* and its interaction with *LEAD_FOR_CO*, an indicator for semi-foreign loans, and *LEAD_FOR_ONLY*, an indicator for pure foreign loans. As a benchmark, we also include *IO_DOM* and its interaction with the two indicators. We control for firm-level and loan-level variables as in Table 3. We conduct the analysis at the facility level because yield spread varies across facilities within the same loan package. We report the result in Column (1), Table 10 for

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[23] Bena et al. (2017, Table 7) document an increase of 2% in foreign institutional ownership after a stock is added to MSCI ACWI index and Kacperczyk et al. (2021, Table 4) document an increase of 1.9%.

[24] We find that treatment firms' domestic institutions are crowded out by foreign institutions after the index addition: The treatment firms' domestic institutional ownership decreases by 2%, but insider ownership and ownership by retail investors remain unchanged after the index addition. This is probably because domestic institutions find firms in the index no longer profitable to invest in due to their popularity. The increase in foreign lender participation among the treatment firms after index addition should thus be interpreted as the combined effect of an increase in foreign institutional ownership and a decrease in domestic institutional ownership. In unreported analysis, we additionally control for borrowers' domestic ownership in the DiD regression and find a similar coefficient on *TREAT×POST*.

the full sample and Column (2) for the non-U.S. borrower subsample. In both columns, we find that the coefficients on *IO_FOR×LEAD_FOR_CO* and *IO_FOR×LEAD_FOR_ONLY* are negative and significant. More importantly, we find that the coefficients on *IO_FOR+IO_FOR×LEAD_FOR_CO* and *IO_FOR+IO_FOR×LEAD_FOR_ONLY* are negative and significant in most cases. These results suggest that borrowers' foreign institutional ownership helps reduce the borrowing cost of foreign loans. We also find that the coefficient on *IO_DOM* is negative and significant, but the coefficients on *IO_DOM×LEAD_FOR_CO* and *IO_DOM×LEAD_FOR_ONLY* are both positive and significant in most cases. These results suggest that borrowers' domestic institutional ownership helps reduce the borrowing cost of domestic loans, but this effect is attenuated among foreign loans. The differential roles that a borrower's foreign and domestic institutional shareholders play among domestic and foreign loans further support the facilitation hypothesis, particularly through the information-sharing channel: potential information sharing between foreign (domestic) lenders and foreign (domestic) institutional shareholders helps reduce the cost of borrowing.

5. Conclusion

We examine whether borrowers' foreign institutional ownership affects their access to foreign lenders. Using a sample of international syndicated loans extended to U.S. and non-U.S. borrowers, we find that borrowers, especially those with an opaque information environment and located in countries lacking public information-sharing infrastructure and with weak creditor protection, have better access to loans arranged by foreign lenders when they have a larger proportion of equity held by foreign institutional shareholders. Our additional analysis supports the idea that foreign lenders are more willing to lend to these

borrowers because their foreign institutional shareholders bridge their information and monitoring gaps.

This paper adds to the literature studying the cross-border lending market. Findings in this paper also contribute to the literature on foreign institutional investors by extending their information and monitoring roles to global debt markets and identifying a novel information-sharing channel through external business networks. Our findings have important policy implications. Our results suggest that economic reforms targeting at liberalizing a country's equity market to foreign investors (e.g., Balakrishnan, Vashishtha, and Verrecchia 2019) may have the additional benefit of improving its firms' access to foreign lenders.

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Appendix A: Variable Definitions

Variable	Definition	Source
Firm Level		
IO_FOR	Percentage of shares owned by foreign institutions.	FactSet
IO_DOM	Percentage of shares owned by domestic institutions.	FactSet
LEVERAGE	Sum of the short-term and long-term debt divided by total assets.	WorldScope&Compustat
FIRM SIZE	Natural logarithm of market value of equity.	Same as above
MTB	Market value of equity divided by book value of equity.	Same as above
ROA	Earnings before interest, tax, depreciation and amortization (EBITDA) divided by total assets.	Same as above
TANGIBILITY	Net PP&E divided by total assets.	Same as above
CROSS LIST	Indicator variable equal to one if a borrower is cross-listed in the U.S., and zero otherwise.	Same as above
INSIDER OWN	Percentage of shares closely held by insiders, including officers, directors, and their immediate families and shares held in trusts and pension plans.	Same as above
FOREIGN SALES	Foreign sales divided by total sales.	Same as above
Loan Level		
LEAD_FOR	Discrete variable equal to zero if all lead lenders are domestic, one if there are both domestic and foreign lead lenders, and two if all lead lenders are foreign.	DealScan
D_SECURED	Indicator variable equal to one if a loan is secured, and zero otherwise.	DealScan
D_RATING	Indicator variable equal to one if rating is available for a loan, and zero otherwise.	DealScan
INVESTGRADE	Indicator variable equal to one if a loan is rated as investment grade, and zero otherwise.	DealScan
LOG(LOANSIZE)	Natural logarithm of a loan's offering amount.	DealScan
LOG(MATURITY)	Natural logarithm of a loan's maturity in months.	DealScan
INTEREST SPREAD	All-in-drawn spread in percentages.	DealScan
LOG(1+NUM_COV)	Natural logarithm of one plus the number of covenants contained in a loan contract.	DealScan
PERFPRICING	Indicator variable equal to one if a loan has performance-pricing provisions, and zero otherwise.	DealScan
TAKEOVER	Indicator variable equal to one if the loan purpose is takeover, and zero otherwise.	DealScan
TERM LOAN	Indicator variable equal to one for a term loan, and zero otherwise.	DealScan
Country Level		
LOG(GDP)	Natural logarithm of gross domestic per capita.	World Bank

Table 1: Sample Distribution

Panel A reports the sample distribution by borrowers' home country. Panel B presents the sample distribution by the calendar year of loan origination. Panel C presents the sample distribution of the top 25 lead lender countries based on the total number of cross-border loans. Domestic loans are defined as those arranged by domestic lenders. Semi-foreign loans are defined as those arranged by both domestic and foreign lenders. Pure foreign loans are defined as those arranged by foreign lenders only.

Panel A: Sample Distribution by Borrower Country

Borrower Country Name	Total Num. of Loans	Num. of Domestic Loans	Num. of Semi-foreign Loans	Num. of Pure Foreign Loans	IO_FOR	IO_DOM
ARGENTINA	26	0	3	23	0.01	0.00
AUSTRALIA	652	130	333	189	0.08	0.03
AUSTRIA	32	1	21	10	0.16	0.01
BELGIUM	71	0	59	12	0.09	0.02
BRAZIL	191	4	73	114	0.05	0.01
CANADA	1,188	343	656	189	0.20	0.21
CHILE	86	3	19	64	0.03	0.01
CHINA	427	78	197	152	0.09	0.01
COLOMBIA	23	0	7	16	0.02	0.00
DENMARK	81	4	48	29	0.04	0.03
FINLAND	86	1	62	23	0.14	0.05
FRANCE	753	109	545	99	0.12	0.06
GERMANY	522	67	388	67	0.15	0.06
GREECE	109	10	36	63	0.13	0.00
HONG KONG	978	20	711	247	0.07	0.02
HUNGARY	30	0	15	15	0.24	0.00
INDIA	675	127	220	328	0.07	0.04
INDONESIA	81	2	42	37	0.06	0.00
IRELAND	260	26	89	145	0.43	0.00
ISRAEL	40	6	10	24	0.10	0.00
ITALY	247	25	165	57	0.10	0.02
JAPAN	1,347	1,000	209	138	0.07	0.13
JORDAN	10	1	5	4	0.00	0.00
KAZAKHSTAN	28	1	8	19	0.00	0.00
KOREA, SOUTH	596	134	170	292	0.07	0.00
KUWAIT	33	2	10	21	0.00	0.00
LUXEMBOURG	78	5	27	46	0.25	0.00
MALAYSIA	141	14	71	56	0.05	0.00
MEXICO	165	9	68	88	0.06	0.02
NETHERLANDS	313	35	211	67	0.20	0.02
NEW ZEALAND	25	3	13	9	0.04	0.00

Borrower Country Name	Total Num. of Loans	Num. of Domestic Loans	Num. of Semi-foreign Loans	Num. of Pure Foreign Loans	IO_FOR	IO_DOM
NIGERIA	16	1	8	7	0.03	0.00
NORWAY	144	12	93	39	0.11	0.06
PAKISTAN	12	0	11	1	0.00	0.06
PERU	19	0	2	17	0.01	0.00
PHILIPPINES	113	12	37	64	0.05	0.00
POLAND	39	2	23	14	0.10	0.10
PORTUGAL	33	0	24	9	0.10	0.01
QATAR	35	0	18	17	0.02	0.00
RUSSIA	219	6	61	152	0.03	0.00
SAUDI ARABIA	32	4	20	8	0.00	0.00
SINGAPORE	266	27	163	76	0.11	0.01
SOUTH AFRICA	135	12	53	70	0.02	0.01
SPAIN	395	58	275	62	0.09	0.02
SWEDEN	161	9	118	34	0.09	0.11
SWITZERLAND	259	31	147	81	0.14	0.02
THAILAND	72	15	19	38	0.03	0.00
TURKEY	329	2	50	277	0.09	0.00
UNITED ARAB EMIRATES	77	6	42	29	0.03	0.00
UNITED KINGDOM	1,654	343	1,067	244	0.13	0.13
UNITED STATES	24,130	10,632	12,488	1,010	0.04	0.59
VIETNAM	11	1	0	10	0.01	0.00
Total	37,445	13,333	19,210	4,902		

Year	Total Num. of Loans	Num. of Domestic Loans	Num. of Semi-Foreign Loans	Num. of Pure Foreign Loans	IO_FOR	IO_DOM
2000	2,374	1,069	1,031	274	0.02	0.31
2001	2,344	1,051	1,060	233	0.03	0.34
2002	2,335	1,057	1,069	209	0.03	0.35
2003	2,242	912	1,091	239	0.04	0.38
2004	2,413	892	1,252	269	0.04	0.41
2005	2,603	812	1,373	418	0.06	0.39
2006	2,363	793	1,150	420	0.06	0.40
2007	2,364	795	1,086	483	0.07	0.39
2008	1,669	690	611	368	0.07	0.35
2009	1,018	466	424	128	0.07	0.36
2010	1,461	506	770	185	0.08	0.39
2011	2,042	679	1,114	249	0.09	0.43
2012	1,673	636	827	210	0.08	0.41
2013	1,734	509	1,007	218	0.09	0.43
2014	1,784	505	1,068	211	0.10	0.44
2015	1,643	503	922	218	0.10	0.45
2016	1,352	381	818	153	0.11	0.49
2017	1,460	392	922	146	0.10	0.51
2018	1,386	388	864	134	0.11	0.50
2019	1,185	297	751	137	0.11	0.50
Total	37,445	13,333	19,210	4,902		

Panel C: Sample Distribution of Top 25 Foreign Lead Lender Country

Lead Lender Country	Total Num. of Loans by Lead Lenders	Number of Semi-Foreign Loans	Number of Pure-Foreign Loans
UNITED KINGDOM	12,442	9,062	2,083
JAPAN	9,087	6,763	1,346
FRANCE	8,260	6,082	1,556
GERMANY	7,660	5,628	1,576
CANADA	7,240	5,605	750
UNITED STATES	28,577	3,451	2,006
SWITZERLAND	4,035	3,406	511
NETHERLANDS	3,548	2,487	835
SPAIN	3,029	2,323	371
ITALY	2,784	1,846	754
CHINA	1,954	1,333	341
BELGIUM	1,407	1,065	282
AUSTRALIA	1,720	951	299
TAIWAN	1,289	745	481
SINGAPORE	1,392	808	400
NORWAY	1,137	809	211
AUSTRIA	827	367	437
DENMARK	605	500	67
SWEDEN	661	470	83
UNITED ARAB EMIRATES	532	191	295
IRELAND	487	401	64
MALAYSIA	372	240	81
HONG KONG	754	194	85
KOREA, SOUTH	512	153	120
BAHRAIN	252	107	136

Table 2: Descriptive Statistics

This table presents summary statistics for 37,445 syndicated loans extended to 8,722 unique firms between 2000 and 2019. Panel A presents the summary statistics of our main analysis. Panel B presents the univariate comparison of the average firm and loan characteristics between domestic versus cross-border loans. Please refer to Appendix A for detailed variable definitions. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Summary Statistics

variable	N	Mean	Stdev	P25	P50	P75
Firm level						
IO_FOR	37,445	0.07	0.11	0.00	0.03	0.09
IO_DOM	37,445	0.40	0.38	0.00	0.32	0.80
LEVERAGE	37,445	0.31	0.18	0.17	0.30	0.43
FIRM SIZE	37,445	7.51	2.03	6.22	7.57	8.91
MTB	37,445	2.83	3.41	1.19	1.88	3.09
ROA	37,445	0.10	0.09	0.06	0.10	0.15
TANGIBILITY	37,445	0.33	0.28	0.08	0.26	0.55
CROSS LIST	37,445	0.06	0.24	0.00	0.00	0.00
INSIDER OWN	37,445	0.21	0.25	0.01	0.12	0.36
FOREIGN SALES	37,445	0.21	0.29	0.00	0.01	0.38
Loan level						
LEAD_FOR	37,445	0.77	0.66	0.00	1.00	1.00
D_SECURED	37,445	0.37	0.48	0.00	0.00	1.00
D_RATING	37,445	0.44	0.50	0.00	0.00	1.00
INVESTGRADE	37,445	0.20	0.40	0.00	0.00	0.00
LOG(LOANSIZE)	37,445	5.63	1.47	4.65	5.70	6.65
LOG(MATURITY)	37,445	3.62	0.69	3.18	3.87	4.09
INTEREST SPREAD	37,445	1.77	1.28	0.80	1.50	2.50
NUM_COV	37,445	2.48	3.44	0.00	0.00	5.00
LOG(1+NUM_COV)	37,445	0.78	0.94	0.00	0.00	1.79
PERFPRICING	37,445	0.29	0.45	0.00	0.00	1.00
TAKE OVER	37,445	0.10	0.30	0.00	0.00	0.00
TERM LOAN	37,445	0.26	0.44	0.00	0.00	1.00
Country level						
LOG(GDP)	37,445	10.50	0.72	10.52	10.69	10.84

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Panel B: Univariate Comparison across Different Types of Loans

Variable	Domestic Loans	Semi-Foreign Loans	Pure Foreign Loans	Mean diff. (2)-(1)		Mean diff. (3)-(2)	
	(1)	(2)	(3)				
Firm level							
IO_FOR	0.043	0.077	0.101	0.034	***	0.024	***
IO_DOM	0.457	0.436	0.131	-0.022	***	-0.304	***
LEVERAGE	0.286	0.320	0.309	0.035	***	-0.011	***
FIRM SIZE	6.555	8.015	8.099	1.460	***	0.084	***
MTB	2.769	2.970	2.455	0.201	***	-0.515	***
ROA	0.097	0.112	0.090	0.015	***	-0.023	***
TANGIBILITY	0.314	0.355	0.295	0.041	***	-0.060	***
CROSS LIST	0.034	0.062	0.122	0.027	***	0.061	***
INSIDER OWN	0.213	0.192	0.299	-0.021	***	0.107	***
FOREIGN SALES	0.140	0.249	0.240	0.108	***	-0.009	*
Loan level							
D_SECURED	0.462	0.322	0.294	-0.140	***	-0.028	***
D_RATING	0.320	0.519	0.466	0.199	***	-0.052	***
INVESTGRADE	0.129	0.242	0.214	0.113	***	-0.028	***
LOG(LOANSIZE)	4.788	6.287	5.344	1.499	***	-0.943	***
LOG(MATURITY)	3.520	3.706	3.554	0.186	***	-0.152	***
INTEREST SPREAD	1.993	1.627	1.692	-0.366	***	0.065	***
NUM_COV	3.034	2.513	0.831	-0.521	***	-1.682	***
LOG(1+NUM_COV)	0.941	0.803	0.277	-0.138	***	-0.526	***
PERFPRICING	0.303	0.323	0.097	0.020	***	-0.226	***
TAKE OVER	0.094	0.112	0.075	0.018	***	-0.037	***
TERM LOAN	0.206	0.231	0.509	0.025	***	0.279	***
Country level							
LOG(GDP)	10.634	10.574	9.863	-0.060	***	-0.712	***

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Table 3: Foreign Institutional Ownership and Cross-Border Loans

This table presents the baseline regression results on loan foreignness. The dependent variable *LEAD_FOR* is a discrete variable equal to zero if all lead banks are domestic (domestic loan); one if there are both domestic and foreign lead banks (semi-foreign loan); and two if all lead banks are foreign (pure foreign loan). *IO_FOR (IO_DOM)* is the percentage of the borrower's equity shares owned by foreign (domestic) institutions. Columns (1) – (3) report the OLS results for all countries, non-U.S. borrowers, and U.S. borrowers, respectively. Columns (4) reports all countries results using an Ordered Logit model. All regression analyses are conducted at the loan package level. Please refer to Appendix A for detailed definitions of the other variables. All regressions include country, industry (two-digit SIC), and year fixed effects. Standard errors are clustered at the country-year level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	All Countries	Non-U.S. Borrowers	U.S. Borrowers	All Countries
	(1)	(2)	(3)	(4)
IO_FOR	0.234***	0.329***	0.298***	0.813***
	(0.041)	(0.052)	(0.052)	(0.171)
IO_DOM	-0.059***	-0.643***	-0.024*	-0.134**
	(0.016)	(0.069)	(0.012)	(0.065)
LEVERAGE	0.201***	0.097**	0.157***	0.829***
	(0.020)	(0.043)	(0.020)	(0.079)
FIRM SIZE	0.042***	0.036***	0.033***	0.170***
	(0.004)	(0.005)	(0.006)	(0.016)
MTB	-0.002**	-0.007***	-0.001	-0.011***
	(0.001)	(0.002)	(0.001)	(0.004)
ROA	-0.016	0.171*	-0.089**	0.141
	(0.037)	(0.098)	(0.033)	(0.146)
TANGIBILITY	0.007	-0.065**	0.031	0.058
	(0.019)	(0.031)	(0.025)	(0.075)
CROSS LIST	0.000	-0.010		0.038
	(0.024)	(0.025)		(0.094)
INSIDER OWN	-0.046***	-0.008	-0.019	-0.179***
	(0.015)	(0.022)	(0.019)	(0.060)
FOREIGN SALES	0.112***	0.065***	0.186***	0.420***
	(0.016)	(0.021)	(0.020)	(0.065)
LOG(GDP)	-0.278***	-0.205***	-0.079***	-1.122***
	(0.041)	(0.047)	(0.010)	(0.178)
D_SECURED	-0.019*	-0.014	0.005	-0.099**
	(0.011)	(0.018)	(0.012)	(0.040)
D_RATING	0.073***	0.088***	0.038***	0.288***
	(0.010)	(0.019)	(0.009)	(0.035)
INVESTGRADE	-0.047***	-0.052**	-0.024*	-0.206***
	(0.013)	(0.021)	(0.013)	(0.045)
LOG(LOANSIZE)	0.076***	0.013*	0.114***	0.335***
	(0.006)	(0.007)	(0.007)	(0.030)
LOG(MATURITY)	0.031***	-0.023*	0.050***	0.157***
	(0.008)	(0.012)	(0.010)	(0.034)
INTEREST SPREAD	0.008	0.009	0.009	0.036
	(0.006)	(0.010)	(0.007)	(0.024)
LOG(1+NUM_COV)	0.010*	0.023*	0.002	0.057***
	(0.006)	(0.013)	(0.007)	(0.021)

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	All Countries	Non-U.S. Borrowers	U.S. Borrowers	All Countries
	(1)	(2)	(3)	(4)
PERFPRICING	0.012	0.012	0.009	0.061*
	(0.010)	(0.019)	(0.012)	(0.037)
TAKE OVER	-0.016	-0.059***	-0.004	-0.060
	(0.013)	(0.019)	(0.014)	(0.049)
TERM LOAN	0.064***	0.060***	0.081***	0.204***
	(0.011)	(0.016)	(0.014)	(0.046)
Model	OLS	OLS	OLS	Ordered Logit
Country, industry, year FE	Yes	Yes	Yes	Yes
p-value for IO_FOR=IO_DOM	0.000	0.000	0.000	0.000
N	37,445	13,315	24,130	37,445
adj. R-sq	0.343	0.333	0.230	0.223

Table 4: Analysis on Borrower Information Environment

This table presents the OLS regression results on whether the relation between loan foreignness and borrowers' institutional ownership varies with borrowers' information environment. The dependent variable *LEAD_FOR* is a discrete variable equal to zero if all lead banks are domestic (domestic loan); one if there are both domestic and foreign lead banks (semi-foreign loan); and two if all lead banks are foreign (pure foreign loan). *IO_FOR (IO_DOM)* is the percentage of the borrower's equity shares owned by foreign (domestic) institutions. *REL_LOW* is an indicator variable equal to one if the percentage of borrowed amounts from the same lead bank in the past five years is below the sample median. *FOR_SALES_LOW* is an indicator variable equal to one if the borrower's foreign sales are below the sample median. *UN_RATED* is an indicator variable equal to one if credit rating is not available for a given loan. *SMALL_FIRM* is an indicator variable equal to one if the borrower size is below the sample median. The variable *OPAQUE* takes the value of *REL_LOW*, *FOR_SALES_LOW*, *UN_RATED*, and *SMALL_FIRM*, respectively. All regression analyses are conducted at the loan package level. For brevity, we do not report coefficient estimates on control variables. Standard errors are clustered at the country-year level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	All Countries	All Countries	All Countries	All Countries
	(1)	(2)	(3)	(4)
OPAQUE measured by	SMALL_FIRM	UN_RATED	FOR_SALES_LOW	REL_LOW
IO_FOR	0.065	0.164***	0.157***	0.075*
	(0.049)	(0.051)	(0.042)	(0.046)
IO_DOM	0.002	-0.035*	-0.028	0.012
	(0.021)	(0.019)	(0.022)	(0.015)
IO_FOR×OPAQUE	0.447***	0.137**	0.256***	0.333***
	(0.079)	(0.067)	(0.069)	(0.063)
IO_DOM×OPAQUE	-0.111***	-0.049***	-0.070***	-0.152***
	(0.020)	(0.017)	(0.022)	(0.019)
OPAQUE	-0.022	-0.061***	0.017	0.049***
	(0.015)	(0.014)	(0.015)	(0.012)
Controls	Yes	Yes	Yes	Yes
Country, industry and year FE	Yes	Yes	Yes	Yes
N	37,445	37,445	37,445	37,445
adj. R-sq	0.346	0.344	0.344	0.346

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Table 5: Analysis on Foreign Institutional Shareholder Type

This table presents the OLS regression results of foreign institutional shareholder type on loan foreignness. The dependent variable *LEAD_FOR* is a discrete variable equal to zero if all lead banks are domestic (domestic loan); one if there are both domestic and foreign lead banks (semi-foreign loan); and two if all lead banks are foreign (pure foreign loan). *IO_FOR_IBH* and *IO_FOR_NON_IBH* are the percentages of a borrower's equity shares owned by foreign institutional blockholders and foreign non-blockholders, respectively. Blockholders are defined as those holding at least 1% equity stakes. *IO_FOR_HEDGE* and *IO_FOR_NON_HEDGE* are the percentages of a borrower's equity shares owned by foreign hedge funds and foreign non-hedge funds, respectively. All regression analyses are conducted at the loan package level. For brevity, we do not report coefficient estimates on control variables. All regressions include country, industry, and year fixed effects. Standard errors are clustered at the country-year level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	All Countries	All Countries
	(1)	(2)
IO_FOR_IBH	0.463***	
	(0.075)	
IO_FOR_NON_IBH	-0.144	
	(0.107)	
IO_FOR_HEDGE		3.176***
		(0.482)
IO_FOR_NON_HEDGE		0.085*
		(0.049)
IO_DOM	-0.052***	-0.059***
	(0.016)	(0.016)
Controls	Yes	Yes
Country, industry, and year FE	Yes	Yes
p-value for different IO types	0.000	0.000
N	37,445	37,445
adj. R-sq	0.344	0.344

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Table 6: Analysis on Country-Level Institutional Characteristics

This table presents the OLS regression results on whether the relation between loan foreignness and borrowers' institutional ownership varies with country-level institutional characteristics. The dependent variable *LEAD_FOR* is a discrete variable equal to zero if all lead banks are domestic (domestic loan); one if there are both domestic and foreign lead banks (semi-foreign loan); and two if all lead banks are foreign (pure foreign loan). *IO_FOR (IO_DOM)* is the percentage of the borrower's equity shares owned by foreign (domestic) institutions. *NO_PCR* takes the value one if the borrower's home country does not have a public credit registry. *WEAK_*CRED takes the value one if the borrower's home country has creditor rights index equal to or smaller than the sample median of two. Data on public credit registry and creditor rights index are obtained from Djankov et al. (2007). All regression analyses are conducted at the loan package level. For brevity, we do not report coefficient estimates on control variables. All regressions include country, industry, and year fixed effects. Standard errors are clustered at the country-year level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	All Countries	Non-U.S. Borrowers	All Countries	Non-U.S. Borrowers
	(1)	(2)	(3)	(4)
IO_FOR	-0.013	0.155	0.069	0.191***
	(0.110)	(0.109)	(0.064)	(0.067)
IO_DOM	-0.912***	-0.843***	-0.313***	-0.453***
	(0.250)	(0.239)	(0.111)	(0.119)
IO_FOR×NO_PCR	0.295**	0.213*		
	(0.117)	(0.120)		
IO_DOM×NO_PCR	0.852***	0.209		
	(0.250)	(0.246)		
IO_FOR×WEAK_CRED			0.239***	0.248***
			(0.079)	(0.092)
IO_DOM×WEAK_CRED			0.255**	-0.341**
			(0.111)	(0.136)
Controls	Yes	Yes	Yes	Yes
Country, industry and year FE	Yes	Yes	Yes	Yes
N	37,332	13,202	37,332	13,202
adj. R-sq	0.342	0.333	0.342	0.333

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Table 7: Mechanism Test: Dual Ownership vs. Business Networks

This table presents the OLS regression results of the mechanism tests. In Column (1), the dependent variable is *LEAD_LENDER_MEMBER*, which equals one if the foreign lead lender is a member of the LSTA or LMA, and zero otherwise. *IO_FOR_MEMBER_DUAL* is the percentage of dual foreign institutional ownership by institutions that are also LSTA/LMA members multiplied by 100. *IO_FOR _MEMBER_NON_DUAL* is the percentage of foreign institutional ownership by institutions that are also LSTA/LMA members but excluding those held by lead lenders. The analysis is conducted at the package-lead-lender level. In Column (2), the dependent variable is *LEAD_LENDER_COUNTRY*, which equals one if the foreign lead lender is from the same country as the foreign institutional shareholder, and zero otherwise. *IO_FOR_COUNTRY_DUAL* is the percentage of dual foreign institutional ownership from the same country as the foreign lead lender multiped by 100, and *IO_FOR _COUNTRY_NON_DUAL* is the percentage of foreign institutional ownership from the same country as the foreign lead lender but excluding those held by lending banks. The analysis is conducted at the package-lead-lender-country level. Please refer to Appendix A for detailed definitions of the other variables. All regressions include firm and year fixed effects. Standard errors are clustered at the country-year level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	All Countries	All Countries
	(1)	(2)
	LEAD_LENDER _MEMBER	LEAD_LENDER _COUNTRY
IO_FOR_MEMBER_DUAL	0.433***	
	(0.054)	
IO_FOR_MEMBER_NON_DUAL	1.864***	
	(0.107)	
IO_FOR_COUNTRY_DUAL		0.299***
		(0.499)
IO_FOR_COUNTRY_NON_DUAL		6.112***
		(0.164)
IO_DOM	-0.126***	-0.071***
	(0.048)	(0.024)
Controls	Yes	Yes
Firm and year FE	Yes	Yes
N	40,891	138,188
adj. R-sq	0.095	0.204

Table 8: Robustness Analysis

This table presents the results of robustness checks. Column (1) reports the OLS regression results after including lead lender country fixed effects. Column (2) reports the OLS regression results using the average loan characteristics as controls. Columns (3)-(5) report the OLS regressions results using the number of foreign lenders divided by total number of lenders (*FRACTION_FOR*), the percentage of shares retained by foreign lenders (*SHARES_FOR*), and an indicator for whether a loan is syndicated in a foreign market (*SYNDICATION_FOR*) as dependent variable, respectively. Column (6) presents the OLS regression results conditional on borrowers having positive foreign institutional ownership. All regression analyses are conducted at the loan package level. For brevity, we do not report coefficient estimates on control variables. All regressions include country, industry (two-digit SIC), and year fixed effects. Standard errors are clustered at the country-year level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	Lead bank country FE	Average loan characteristics	Alternative measures for cross-border loans			IO_FOR > 0
	(1)	(2)	(3)	(4)	(5)	(6)
	LEAD_FOR	LEAD_FOR	FRACTION _FOR	SHARES_FOR	SYNDICATION _FOR	LEAD_FOR
IO_FOR	0.193***	0.236***	0.120***	0.204***	0.140***	0.279***
	(0.042)	(0.041)	(0.022)	(0.042)	(0.031)	(0.045)
IO_DOM	-0.051***	-0.060***	-0.077***	-0.059***	-0.030***	-0.037
	(0.016)	(0.016)	(0.008)	(0.013)	(0.005)	(0.023)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Country, industry, and year FE	Yes	Yes	Yes	Yes	Yes	Yes
p-value for IO_FOR=IO_DOM	0.000	0.000	0.000	0.000	0.000	0.000
N	37,445	37,445	37,445	11,579	37,445	30,499
adj. R-sq	0.372	0.344	0.503	0.474	0.162	0.336

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Table 9: Identification

This table presents the results of the identification test in a panel dataset consisting of firm-years with outstanding loans in our sample. The treatment group consists of 417 firms added to the MSIC ACWI in our sample period. The control group includes 381 firms that best match treated firms using Propensity Score Matching (0.01 caliper). The matching is based on all control variables. For loan level controls, we take the maximum value across outstanding loans in a given firm-year. Panel A shows the sample means of treated and control groups in the years before they were added to the MSCI ACWI index and the *t*-tests results of the sample means across these two groups. Panel B presents the difference-in-differences estimation using the matched sample. For a given firm-year, *MAX_LEAD_FOR* is a discrete variable defined as zero if all outstanding loans are domestic, two if all outstanding loans are pure foreign, and one otherwise. *IO_FOR (IO_DOM)* is the percentage of the borrower's equity shares owned by foreign (domestic) institutions. *TREAT* is a dummy variable that equals one if a firm is added to the MSCI ACWI, and zero otherwise. *POST* is a dummy variable that equals one in the years after a firm is added to the MSCI ACWI, and zero otherwise. All analyses are conducted at firm-year level. All regressions include country, industry, and year fixed effects. Standard errors are clustered at the country-year level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Summary Statistics (pre-treatment)

Variable	Treated	Control	*t*-test (*p*-value)
IO_FOR	0.068	0.069	0.910
IO_DOM	0.331	0.337	0.824
LEVERAGE	0.303	0.304	0.896
FIRM SIZE	7.633	7.609	0.829
MTB	3.059	2.922	0.485
ROA	0.124	0.131	0.313
TANGIBILITY	0.345	0.346	0.965
CROSS LIST	0.077	0.060	0.363
INSIDER OWN	0.337	0.341	0.829
FOREIGN SALES	0.258	0.266	0.729
MAX_D_SECURED	0.317	0.325	0.788
MAX_D_RATING	0.400	0.417	0.629
MAX_INVESTGRADE	0.170	0.178	0.760
LOG(MAX_LOANSIZE)	5.646	5.585	0.481
LOG(MAX_MATURITY)	3.323	3.458	0.048
MAX_INTEREST SPREAD	1.435	1.414	0.780
LOG(1+MAX_NUM_COV)	0.783	0.815	0.638
MAX_PERFPRICING	0.357	0.362	0.886
MAX_TAKE OVER	0.158	0.139	0.448
MAX_TERM LOAN	0.336	0.320	0.642
LOG(GDP)	10.141	10.212	0.278
MAX_LEAD_FOR	0.835	0.871	0.410

Panel B: Difference-in-Differences Estimation

	All Countries	All Countries
	(1)	(2)
	IO_FOR	MAX_LEAD_FOR
TREAT	0.000	-0.042***
	(0.003)	(0.015)
TREAT×POST	0.022***	0.039**
	(0.004)	(0.015)
Country, industry, and year FE	Yes	Yes
N	6,899	6,899
adj. R-sq	0.471	0.259

Table 10: Foreign Institutional Ownership and Cross-Border Loan Terms

This table presents the OLS regression results of the relation between foreign institutional ownership and cross-border loan terms. *INTEREST SPREAD* is the all-in-drawn spread in percentage at the loan facility level. *LEAD_FOR_CO* is a dummy variable that equals one for a semi-foreign loan. *LEAD_FOR_ONLY* is a dummy variable that equals one for a pure foreign loan. *IO_FOR (IO_DOM)* is the percentage of the borrower's equity shares owned by foreign (domestic) institutions. We do not report coefficient estimates on control variables. Standard errors are clustered at the country-year level and reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	All Countries	Non-U.S. Borrowers
	(1)	(2)
	INTEREST SPREAD	
IO_FOR	0.289*	0.312
	(0.165)	(0.237)
IO_DOM	-0.464***	-1.828***
	(0.060)	(0.269)
IO_FOR×LEAD_FOR_CO	-0.504***	-0.907***
	(0.174)	(0.239)
IO_DOM×LEAD_FOR_CO	0.073	1.146***
	(0.054)	(0.305)
IO_FOR×LEAD_FOR_ONLY	-0.365*	-0.639**
	(0.195)	(0.267)
IO_DOM×LEAD_FOR_ONLY	0.321**	2.833***
	(0.126)	(0.544)
LEAD_FOR_CO	-0.097***	-0.179***
	(0.036)	(0.066)
LEAD_FOR_ONLY	0.024	-0.073
	(0.052)	(0.075)
Controls	Yes	Yes
Country, industry, and year FE	Yes	Yes
p-value and coefficients for:		
IO_FOR+IO_FOR×LEAD_FOR_CO	-0.215**	-0.595***
	(0.025)	(0.000)
IO_FOR+IO_FOR×LEAD_FOR_ONLY	-0.076	-0.327**
	(0.523)	(0.016)
IO_DOM+IO_DOM×LEAD_FOR_CO	-0.391***	-0.682***
	(0.000)	(0.000)
IO_DOM+IO_DOM×LEAD_FOR_ONLY	-0.143	1.005**
	(0.197)	(0.037)
N	54,307	20,217
adj. R-sq	0.448	0.429

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