Does the "Foreignness" of Bank Loans Matter? Evidence from a New Dataset*

Jens Forssbæck[†] Frederik Lundtofte[‡] Martin Strieborny[§]
Anders Vilhelmsson[¶]

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Abstract

We analyze the heterogeneity of foreign bank loans in a newly constructed global dataset that explicitly distinguishes in a disaggregated loan-bank-firm setting between domestic loans and three categories of foreign loans: loans by subsidiaries of foreign banks, loans by foreign bank branches, and direct cross-border loans. We find that borrower characteristics and loan conditions often significantly differ across different foreign loan categories, with loans by foreign bank subsidiaries in many respects resembling domestic loans rather than other foreign loan categories. We also find pronounced non-monotonicities in loan conditions and borrower characteristics when moving from "less foreign" to "more foreign" bank loans.

JEL classification: G21, G32, F65.

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[†]Knut Wicksell Centre for Financial Studies and Department of Economics, Lund University; E-Mail: Jens.Forssbaeck@nek.lu.se

[‡]Knut Wicksell Centre for Financial Studies and Department of Economics, Lund University, E-Mail: Frederik.Lundtofte@nek.lu.se

[§]Knut Wicksell Centre for Financial Studies and Department of Economics, Lund University, E-Mail: Martin.Strieborny@nek.lu.se

[¶]Knut Wicksell Centre for Financial Studies and Department of Economics, Lund University, E-Mail: Anders.Vilhelmsson@nek.lu.se

1 Introduction

Bank loans remain the main source of external financing for firms in most countries around the world. In the wake of widespread financial deregulation and economic integration, this financing source has become increasingly international in recent decades, triggering a growing academic interest into the distinctive features and the economic impact of cross-border lending (e.g., Mian 2006; Detragiache, Tressel, and Gupta 2008; Giannetti and Ongena 2009; Giannetti and Laeven 2012b; De Haas and Van Horen 2013; Bruno and Hauswald 2014; Claessens and van Horen 2014a; Claessens 2017). Existing contributions to this literature usually focus on the dichotomy between domestic and foreign banks, using various definitions of bank "foreignness". In practice, lending from foreign banks can take different forms that include direct cross-border loans, loans extended by subsidiaries of foreign banks, loans from foreign bank branches, or co-syndication with local banks. These different modes of interaction between foreign banks and domestic borrowers imply different degrees of severity regarding lender-borrower information asymmetries and different possibilities for efficient bank monitoring of the local borrowers. They also have different implications in terms of bank regulation and the resolution of failed banks. For example, a foreign branch is legally and from a regulatory point of view an integral part of the foreign bank whereas a foreign subsidiary is an independent legal entity subject to bank regulation in the host country.

This paper contributes to existing literature on foreign banking by explicitly distinguishing among different degrees of "foreignness" at the level of individual bank loans in a new global database including many lenders and borrowers across different countries and over an extended period of time (1990-2016). Our dataset allows us to distinguish in the empirical analysis between loans extended by subsidiaries of foreign banks, loans by foreign bank branches, and direct cross-border loans by foreign lenders. To our knowledge, this is the first paper that makes explicit distinction between these three possible kinds of interactions between foreign banks and domestic borrowers in the highly disaggregated loan-borrower-lender setting. Our aim is to examine if this distinction between different degrees of "foreignness" at the level of individual bank loans matters in any substantial and possibly non-monotonic way.

In Section 3, we provide some preliminary evidence on both borrower characteristics and loan conditions and how they differ across domestic loans and the three categories of foreign loans. In Section 4 and Section 5, we further explore these differences in a more formal econometric framework. To keep this introductory empirical analysis of the

different foreign loans categories as simple as possible, we rely on straightforward logit regressions and keep the focus on the borrower characteristics like size, growth, share of fixed assets, share of foreign sales, et cetera. Naturally, both the borrower characteristics and the specific category of foreign loan will also affect the loan conditions like maturity, spread, or number of covenants. We are leaving for future research the causal analysis of this complex relationship between loan conditions and borrower characteristics as well as the accompanying issue of disentangling loan demand and loan supply in the context of different categories of foreign loans. We also leave for future research a deeper theoretical and empirical analysis of co-syndication between foreign and domestic banks and restrict our analysis in this paper to the sole lenders and the lead arrangers within the bank syndicates.

Overall, our results suggest that the coarse division of banking into domestic and foreign misses some important aspects that deserve further attention. Not only do loan conditions and borrower characteristics differ across different foreign loan categories, but these differences often exhibit certain non-monotonicities as one moves from the "less foreign" to the "more foreign" bank loans, i.e. from domestic loans via loans by subsidiaries of foreign banks to loans by foreign bank branches, and finally to direct cross-border loans. Even the more nuanced "brick-and-mortar-dichotomy" that divides cross-border banking activities into direct cross-border lending versus foreign bank presence in the form of branches and subsidiaries (see, e.g., Cerutti and Claessens 2017; Claessens 2017) does not seem to provide a full picture of the impact of foreign banks on the host economies. Indeed, the dividing line in a complex relationship between loan and borrower characteristics seems often to run between foreign subsidiaries together with domestic loans on the one side and foreign branches together with direct cross-border loans on the other side.

The next section puts our paper into the context of existing literature. Section 3 describes our data and provides some preliminary evidence comparing domestic loans and different categories of foreign loans. Section 4 presents the main empirical results and Section 5 reports the results of robustness tests. Section 6 concludes.

2 Literature Review and Contribution

This paper is related to two broad strands of literature that examine the importance and economic impact of foreign banks.

One strand of literature takes a more macroeconomic view, exploring the impact of foreign banks' entry and presence on the economic outcomes in the host economy. This

literature therefore often relies on data aggregated at the (foreign bank)*(host country) level (see, e.g., Detragiache, Tressel, and Gupta 2008; Giannetti and Ongena 2009; Claessens and Van Horen 2012, 2014a, 2014b; Cerutti and Claessens 2017). Alternatively, the researchers utilize the local geographical variation of foreign banks' entry into a large emerging country, e.g., by obtaining data at the bank-district level in case of India (Gormley 2010) or at the bank-municipality level in case of Mexico (Beck and Martinez Peria 2010). Similarly, Popov and Udell (2012) use survey data on firms from 16 small and medium-sized countries in Central and Eastern Europe and combine them with a locality-specific measure of financial health computed from balance sheet conditions of both foreign and domestic banks in a given locality. These bank-country or bank-location level data are sometimes combined with industry-level data (Bruno and Hauswald 2014) or firm-level data (Giannetti and Ongena 2009; Gormley 2010; Popov and Udell 2012) but without directly observing the bank-firm loan relationships. Giannetti and Ongena (2012) do observe a binary variable equal to one if a firm reports a relationship with a foreign bank in year 2000 and 2005. However, they cannot analyze the character of this relationship (loan purpose, interest rate charged, etc.) due to the lack of loan-level data. Claessens (2017) provides a review of this cross-border banking literature that takes a macroeconomic perspective.

The macro-oriented banking literature has already taken first steps towards recognizing the importance of different modes of entry of foreign banks into the domestic economy. In particular, Cerutti and Claessens (2017) distinguish between direct cross-border loans and "brick-and-mortar" lending via branches and subsidiaries. However, even this more nuanced dichotomy puts together lending by independent entities subject to regulation in the host country (subsidiaries) and lending by subordinate units that are an integral parts of foreign banks in both legal and regulatory terms (branches). More fundamentally, this literature focuses on the overall impact of foreign banks on the domestic economy rather than corporate finance aspects of lender-borrower relationships. The macroeconomic focus of this literature can also be seen in the fact that even if disaggregated data at the individual loan level is available, the researchers often aggregate it and use bank-country level data in their empirical analysis (e.g., Giannetti and Laeven 2012a, 2012b). De Haas and Van Horen (2013) represents in this regard a certain "bridge" towards a more microeconomic approach as they perform empirical analysis at both bank-country and bank-firm level. However, their focus is on the stability of bank-firm relationship during the recent financial crisis rather than on the individual borrower and loan characteristics.

A second strand of literature takes a more microeconomic view, linking the data at loan, lender, and borrower level. This enables an analysis at the highly disaggregated level of individual loans while also taking into account the characteristics of individual borrowers and lenders. An important part of this literature examines the interactions between banks and US corporate borrowers and does not particularly stress the specific role of foreign banks even though foreign banks active in the US market are generally included in the analysis (e.g., Ivashina and Scharfstein 2010a, 2010b; Gopalan, Udell, and Yerramilli 2011; Santos 2011; Lim, Minton, and Weisbach 2014). Another influential study focusing on borrowers from a single country does emphasize the role of foreign lending in the case of Pakistan (Mian 2006).[1] Closest to our paper is the subset of this literature that examines individual loans and their characteristics in a broad cross-country context (e.g., Esty and Megginson 2003; Qian and Strahan 2007; Bae and Goyal 2009; Giannetti and Yafeh 2012). Esty and Megginson (2003) examine the relationship between legal risk in the borrower's country and the structure of lending syndicates by looking at large project finance loan tranches to borrowers in 61 countries. However, they do not distinguish between domestic and foreign banks or domestic and cross-border loans. Qian and Strahan (2007) utilize the variation in creditor rights across 43 countries to analyze how the extent of creditor protection affects various loan characteristics like maturity or interest rate. Bae and Goyal (2009) extend their analysis by looking at both formal creditor rights and actual enforceability of contracts in a sample of individual loans to borrowers in 48 countries. The primary focus of these two papers is thus the cross-country variation in legal and institutional variables in the borrowers' countries rather than the cross-border character of individual loans, although they do look at the relative loan shares held by foreign versus domestic banks as one of their dependent (Qian and Strahan 2007) or independent (Bae and Goyal 2009) variables. Giannetti and Yafeh (2012) show that cultural distance between the lender's and borrower's country affects the loan characteristics like loan size and interest rate. They define the home country of borrowers and lenders based on the seat of their headquarters, resulting in a sample of approximately 70 borrower countries and 60 lender countries.

In our paper, we move beyond the simple dichotomy of foreign versus domestic bank loans as well as the "brick-and-mortar" distinction within the group of foreign loans. In particular, we explicitly distinguish between domestic loans, loans by subsidiaries of foreign banks, loans by foreign bank branches, and direct cross-border loans. We perform our

[1] Strictly speaking, Mian (2006) does not perform the analysis at the level of individual loans but aggregates the loans at the bank-firm pair level (see Mian 2006, p. 1473).

empirical analysis in a disaggregated loan-borrower-lender setting where we can directly observe both borrower and loan characteristics. In particular, we merge an extensive database of syndicated loans (Dealscan) with a database containing detailed information on both listed and non-listed firms (CIQ). Furthermore, we systematically distinguish between bank branches and bank subsidiaries and track both the immediate and global ultimate owners of lending banks in the period between 1990 and 2016. The final dataset then allows us to examine whether the potential differences regarding borrower-lender information asymmetries and bank regulation translate into observable differences between the domestic loans versus different categories of foreign loans as well as between different categories of foreign loans.

3 Data and Preliminary Evidence

The unit of observation in our empirical analysis is a loan-lender-borrower triplet, based on matched information on loan characteristics from Thomson Reuters/LPC's DealScan database (Dealscan) with lender and borrower characteristics from S&P Compustat/Capital IQ (CIQ). Dealscan comprises detailed information on mostly large and often syndicated corporate loans, with the loan-level information including borrower's ID, lender's ID, loan purpose, loan amount, interest rate, maturity, covenants, performance pricing information, et cetera. The lender's and borrower's ID is however a Dealscan-specific ID that is not linked to any standard financial database. Its use in the academic literature was particularly boosted by the introduction of a link between borrowers from Dealscan and information on listed companies from Compustat in the seminal paper by Chava and Roberts (2008).

In our dataset, we match both lenders and borrowers from Dealscan with a CIQ identifier that allows us to match the data also with corporate databases other than Compustat and that provides us with access to information also on non-listed companies. Our dataset thus includes both listed and non-listed borrowers and lenders.[2] Furthermore, we extend the information available for the loan-lender-borrower triplets in two important ways.

First, we systematically distinguish between subsidiaries and branches of banks. The former are independent legal entities while the latter are not. While branch offices may or may not have their own CIQ identifier, we made sure that our CIQ matches refer

[2] In their sample of listed companies, Chava and Roberts (2008) provide a Delscan-Compustat link also for some lenders but only if these acted also as borrowers at some point in time.

to legal entities, i.e., bank subsidiaries. One should also stress that branches of foreign subsidiaries are *not* "foreign branches" and consequently, we distinguish between the two. This allows us to identify those loans that were made via foreign branches rather than being provided by legal entities domiciled in the borrower's country.[3]

Second, we provide the whole history of both the immediate parent companies and the global ultimate owners of lenders at the quarterly frequency.[4] The existing information on lenders' owners available in Dealscan does not vary over time and does not even clearly identify the year in which it was taken. We therefore obtain the information on current parent from CIQ and then use the mergers and acquisition history from the same database to track the ownership of the lenders back to 1990. While this approach allows us to track the immediate parent company of the lender, it does not allow to reconstruct the history of global ultimate owners as, e.g., a bank's grandparent could have also been acquired during the 1990-2016 period. We therefore rely on an iterative procedure to identify lenders' correct global ultimate owner over time.[5]

Our final database covers the period 1990-2016. For each loan, we identify a "principal lender". For sole-lender loans, this is trivial. For syndicated loans (the majority of the sample), the principal lender is the lead arranger. If there are multiple lead arrangers, the principal lender is the lead arranger with the largest share in the syndicated loan. In case of identical shares in the loan by several lead arrangers (or if loan shares are not available), the principal lender is the largest of these in terms of sales, as reported in Dealscan. In terms of borrowers, we focus on non-financial firms and also exclude utilities

[3] Distinguishing branches from subsidiaries proved to be one of the trickiest part of our matching procedure. We checked for legal abbreviations (Ltd, Inc, AG, SA, etc.) that are associated with subsidiaries but not branches. It also turned out that branches are more likely to have a city in their names while subsidiaries' names are more likely to contain a country. Branches also never have "Key Board Members" listed under "Key Professionals" in the company Tearsheet in CIQ. If the organizational hierarchy was still unclear, we consulted "View details" or "View corporate tree" next to "Current and Pending Subsidiaries/Investments" that are included for all companies with subunits at the bottom of company Tearsheet in CIQ.

[4] Unfortunately, there is a limited availability of several borrower characteristics at the quarterly frequency, especially in the case of non-listed firms. In our empirical analysis, we therefore rely on yearly data.

[5] In particular, we iteratively reconstructed the ownership history for each "parent step" until we reached the global ultimate owner (GUO) for each bank. First, we created a watchlist in CIQ of all lender companies, obtained their immediate parent company, their GUO, as well as their previous parent companies. Then we extracted all M&A transactions where the parent is a target and where there is a change in majority ownership and run a matlab program to get a dated panel of the parent companies. Finally, we took all company names that are not GUOs, used Excel converter to get CIQ's ID, checked manually the converter's matches and started over the whole procedure with creating watchlist in CIQ. We stopped after 5 iterations when the database of GUOs became stable.

from the borrower sample. Table 12 provides further information about additional data sources and the exact definition for the dependent and independent variables used in the empirical analysis.

Table 1 and Table 2 provide descriptive statistics for the full sample and the estimation sample, respectively. The descriptive statistics for the full sample is based on maximum available number of observations, separately for each variable. The descriptive statistics for the estimation sample is based on the observations satisfying joint availability of the main independent variables in the least restrictive regression specification. Most of the empirical results reported in Section 4 and Section 5 are thus based on smaller samples due to additional independent variables and other constraints. The note to Table 2 provides the details.

Tables 3 to 6 provide some preliminary evidence for both the full and the estimation sample on loan types and purposes, as well as on borrower and loan characteristics, comparing domestic loans with different categories of foreign loans as well as comparing the foreign loan categories with each other.

When it comes to the loan purposes (the lower parts of Table 3 and Table 4), the classical dichotomy mostly holds, with firms' working capital needs covered disproportionately more by domestic loans and firms' financial needs related to capital structure supported disproportionately more by foreign loans (comparing the 2nd most frequent loan purpose as the most frequent loan purpose is the same across all four loan categories). However, the neat domestic-foreign dichotomy does not extend to the loan types (the upper parts of Table 3 and Table 4). Here the dividing line seems to separate domestic loans together with loans by foreign bank subsidiaries from direct cross-border loans and loans extended by branches of foreign banks. The former seem to specialize in providing credit lines while the latter serve their borrowers mostly via term loans.

The dividing line between the domestic loans/loans by foreign bank subsidiaries versus the loans by foreign bank branches/direct cross-border loans is quite visible also when it comes to various borrower characteristics (the upper parts of Table 5 and Table 6). Compared to domestic loans and loans by foreign bank subsidiaries, direct cross-border loans and loans extended by branches of foreign banks seem to serve mostly larger and faster growing borrowers, whether measured by total assets or number of employees. Maybe not surprisingly, foreign bank branches and lenders providing direct cross-border loans seem also to cater more to firms with a higher share of foreign sales.

When it comes to the loan characteristics (the lower parts of Table 5 and Table 6),

there is a neat relationship between loan maturity and the degree of loan foreignness, with the maturity monotonically and almost linearly increasing from domestic loans, over loans by subsidiaries of foreign banks, to loans by foreign bank branches, up to direct cross-border loans. However, this linear relationship breaks down in the case of the loan price measured by the interest rate spread, with the spread increasing as one moves from domestic loans to loans by subsidiaries of foreign banks, then decreasing from foreign subsidiaries to foreign branches before increasing again on the way from foreign branches to direct cross-border loans. In the case of loans denominated in foreign currency, the dividing line seems once again to run between domestic loans and loans by foreign subsidiaries on the one side versus loans by foreign branches and direct cross-border loans on the other side. This pattern is quantitatively somewhat less pronounced but still present also in the cases of the number of covenants and the number of performance pricing provisions.

Overall, Tables 3 to 6 make a rather strong case for moving beyond the traditional domestic-foreign dichotomy in the context of bank loans and for performing a deeper analysis focused on different degrees of bank loans' foreignness. In particular, there seem to be some pronounced non-monotonicities in both borrower and loan characteristics as one moves from domestic loans via loans by subsidiaries of foreign banks to loans by foreign bank branches, and finally to direct cross-border loans. And if there is one simple dividing line, it often seems to separate subsidiaries of foreign banks from foreign bank branches, suggesting that the brick-and-mortar dichotomy also does not provide the full picture of interactions between foreign banks and domestic borrowers. The next section further analyzes these issues in the context of a more formal econometric framework.

4 Main Empirical Results

This section provides the main empirical results, examining the impact of various borrower characteristics on the probability of these borrowers to obtain a foreign loan rather than a domestic one. In Table 7, we distinguish broadly between domestic and foreign loans in accordance with the bulk of existing literature. In the subsequent two tables, we exploit the information in our dataset and perform the empirical analysis at the finer level of different categories of foreign loans. In particular, the pairwise logit regressions in Table 8 and the multinomial logit regressions in Table 9 distinguish between loans extended by subsidiaries of foreign banks, loans by foreign bank branches, and direct cross-border loans by foreign lenders.

In Table 7, we follow the majority of existing literature and look at the simple domestic-foreign dichotomy in terms of bank loans. In particular, the table examines the impact of various firm characteristics on the probability of the firm obtaining a foreign rather than a domestic loan. The empirical framework consists of various logit regression specifications, where the unit of observation is a loan-borrower-lender triplet. The dependent variable is a dummy equal to one if the loan is a foreign one, i.e. if it is a loan extended by a subsidiary or branch of a foreign bank or a direct cross-border loan provided by a foreign lender. Consequently, the dummy is equal to zero for purely domestic loans extended by domestically owned and operated banks. We report both logit regressions coefficients and average marginal effects (AME) in all seven columns of Table 7. Column (1) represents our main specification where the borrowing firm's size and growth are measured by its total assets level and total assets growth, respectively. The specification also includes the following borrower characteristics: the return on assets, the leverage, the proportion of fixed assets that is represented by the ratio of "property, plant, and equipment" (PPE) over total assets, the share of foreign sales, a dummy taking value one for firms from high-tech SIC 4-digit industries and zero otherwise, and a dummy for listed firms. The other independent variables include the economic development of the country where the firm is located (proxied by that country's GDP per capita) as well as five different sets of fixed effects at the level of SIC 1–digit industry, year of the loan origination, loan type, loan purpose, and a broad geographical region of the borrowing firm. Column (2) of Table 7 drops the share of foreign sales from the set of included regressors, resulting in a significantly increased number of observations. Column (3) replaces total assets by number of employees when it comes to controlling for borrowing firm's size and growth. Columns (4) and (5) replace the proxy for firm's growth based on total assets by the growth rate of revenues and the growth rate of fixed assets, respectively. Column (6) adds the share of the R&D expenses over the borrowing firm's revenues into the set of regressors. Column (7) focuses on the subsample of listed firms (thus dropping the dummy for listed firms) in order to add market-to-book ratio into the set of included independent variables. Consequently, it also replaces the general measure of leverage (total debt divided by total assets) by market leverage (total debt divided by the sum of market capitalization and total debt).

The use of a simple dichotomy between domestic and foreign loans already reveals some interesting patterns in Table 7. Among the borrowing firms' characteristics, the share of foreign sales and the total assets growth seem to represent the two dimensions where the distinction between domestic and foreign loans is the clearest one. Fast-growing

firms and firms that obtain a large share of their revenues in foreign markets are the ones that disproportionately rely on loans by foreign rather than domestic banks. Both the logit regression coefficients and average marginal effects for the share of foreign sales and the total assets growth are positive and significant in all columns where they are included. Replacing the proxy for firm's growth by employment growth in column (3) and growth in fixed assets in column (5) yield the same results as the growth proxy based on total assets. Only the revenue growth in column (4) is not significant. This difference might be related to the fact that the growth in total assets, a rising share of fixed assets, and the employment growth would generally be associated with an increased need for external funding like bank loans, while the revenue growth could indicate rather the opposite as higher revenues represent ceteris paribus more internal finance at the firm's disposal. The market-to-book ratio that could also partially capture the firm's growth potential is also positive and significant in column (7). Overall, the fast growing firms thus seem to rely more on foreign loans, maybe because domestically owned and operated banks cannot provide them with sufficient funding to sustain their expansion. The reason for this could lie for example in the lack of domestic savings and/or underdevelopment of the domestic financial system. This interpretation would also be in accordance with the consistently negative and significant coefficients for the GDP per capita in the borrowing country, suggesting that it is especially firms in poor countries that rely on external financing provided by foreign banks.

The size of the borrowing firm (proxied by total assets), return on assets, leverage, and the share of fixed assets (proxied by the PPE/total assets ratio) are generally insignificant. Total assets are marginally significant in a few specifications and highly significant in column (2), where we drop the variable share of foreign sales. The significance of our proxy for firm size might therefore arise in this case from omitted variable bias, as large firms generally also have a higher share of foreign sales. Similarly, leverage is significant only in column (3), where we replace total assets with number of employees as a proxy for firm size. The significance could thus again be the result of an omitted variable bias. The size and leverage of a firm can namely be correlated with each other, and the number of employees might be a weaker proxy for the firm's size than total assets in this context. Leverage is also insignificant when measured as market leverage in the subsample of listed firms in column (7).

Finally, a few borrower characteristics have mostly a consistent sign but are often only marginally significant or not significant at all. These include the share of R&D

expenses and dummies for high-tech and listed firms. The marginally negative sign for R&D expenses in column (6) and the generally negative and sometimes significant high-tech dummy throughout the Table 7 would be in accordance with higher information asymmetries between borrower and lender and a lower availability of tangible collateral in case of technology- and research-intensive firms. These features could make it more difficult for borrowers to secure loans from foreign banks, which might face higher costs in overcoming information asymmetries and securing creditors' rights based on intangible collateral in domestic courts. The mostly negative sign for listed firms is more puzzling. If anything, one would expect the transparent listed firms to find it easier to secure loans from foreign banks.

Overall, the results in Table 7 provide some clear and intuitive results for some borrower characteristics (loans by foreign banks are more prevalent for growing firms and firms with a high share of foreign sales), while the results for other features of borrowing firms are mixed or insignificant. It is in particular this latter group where the distinction between different kinds of foreign loans might provide additional insights. For example, the issue of information asymmetries and lack of tangible collateral might matter differently, dependent on whether the foreign loan is extended by a subsidiary of foreign bank, by a foreign bank branch, or by a foreign bank without any institutional presence in the borrower's country. In the next two tables, we examine whether this is indeed the case.

In Table 8, we perform pairwise logit regressions between four different types of loans: purely domestic loans, loans by subsidiaries of foreign banks, loans by foreign bank branches, and purely cross-border loans by banks outside the country of the borrowing firm. The first three columns compare domestic loans with the three different categories of foreign loans. The last three columns provide comparisons among different foreign loan categories. Thus, for example, in the first column the dependent variable equals one for loans extended by a subsidiary of a foreign bank and zero for purely domestic loans, while in the last column the dependent variable equals one for direct cross-border loans and zero for loans extended by a foreign bank branch. The included regressors and fixed effects correspond to the main specification from column (1) in Table 7. Similarly to Table 7, we report both logit regression coefficients and average marginal effects (AME) in all columns of Table 8.

The first three columns of Table 8 confirm the importance of moving beyond the simple domestic-foreign loans dichotomy and distinguishing among different categories of foreign loans. In particular, the insignificance of borrowing firm's size in Table 7 seems to stem

from a certain non-monotonicity in the relationship between borrower size and bank loan foreignness. Compared to loans provided by purely domestic banks, subsidiaries of foreign banks seem to serve smaller borrowers while foreign bank branches and direct cross-border loans are associated with larger borrowers. Given these opposite effects, pooling the different categories of foreign loans together can easily generate an insignificant coefficient for firm's total assets in Table 7, leading to the simplistic conclusion that the borrowing firm's size does not matter for the probability of obtaining a foreign rather than domestic loan.

When it comes to the borrower characteristics that were significant in column (1) of Table 7 (i.e., share of fixed assets, share of foreign sales, total assets growth, a dummy for firms in high-tech industries, a dummy for listed firms), the first three columns of Table 8 reveal an interesting pattern. The differential effect in the case of these borrower characteristics seems to be driven by differences between domestic loans on the one side and loans by foreign bank branches and/or direct cross-border loans on the other side. By contrast, there seems to be no difference between domestic loans and loans provided by subsidiaries of foreign banks, the only exception being the case of the high-tech dummy. The difference between domestic loans and loans by foreign bank branches/direct cross-border loans seems to be also the sole driving force behind the result from Table 7 that firms located in poor countries disproportionately rely on foreign rather than domestic loans. By contrast, the coefficient for GDP per capita in the borrower's country is insignificant when comparing domestic loans and loans provided by subsidiaries of foreign banks.

The last three columns of Table 8 reinforce the point that subsidiaries of foreign banks and foreign bank branches do not necessarily serve the same corporate clients. In particular, foreign bank branches provide loans to firms that are bigger, faster growing, have a lower share of fixed assets and are located in countries with lower GDP per capita. Their clients also seem to have lower returns on assets and higher shares of foreign sales compared to clients of foreign bank subsidiaries, although these effects are only marginally significant. Overall, Table 8 seems to suggest that when it comes to the distinction between domestic loans and different categories of foreign loans, there is an important dividing line between foreign bank branches and subsidiaries of foreign banks. By contrast, there seem to be fewer statistically significant differences in terms of borrower characteristics between purely domestic bank loans and loans extended by foreign bank subsidiaries (first column of Table 8) or between loans by foreign bank branches and

direct cross-border loans (last column of Table 8).

Finally, one can also perceive the four possible bank loan categories according to the degree of their "foreignness" (i.e., starting with purely domestic loans, then loans by foreign bank subsidiaries, then loans by foreign bank branches, and finally direct cross-border loans), with the six pairwise logit regressions in Table 8 always comparing the "more foreign" bank loans with the "less foreign" ones. In this context, statistically significant logit regression coefficients or average marginal effects with opposing signs for the same independent variable would suggest a certain non-monotonicity in the relationship between borrower characteristics and the bank loan "foreignness". One such example is the case of firm size proxied by total assets in the first three columns of Table 8 that has been discussed above. The comparison of loans provided by foreign bank branches and direct cross-border loans in the last column of Table 8 reveals additional non-monotonic patterns. Direct cross-border loans seem to be associated with borrowers that have a higher share of fixed assets, experience slower growth in total assets, and are more likely to be from a high-tech sector. These effects are generally the opposite from the significant effects for those variables in the previous columns, suggesting that direct cross-border loans might be in certain aspects fundamentally different from both domestic loans and loans by foreign bank subsidiaries and branches. In the case of the high-tech dummy, the non-monotonic pattern is slightly more complicated. Besides a positive and significant coefficient in the last column of Table 8, the high-tech dummy also shows a positive and marginally significant effect in the fifth column, but it is negative and significant in the first two columns. We leave further examination of these non-monotonicities for the future research.

In Table 9, we further explore the differences between domestic bank loans on the one side and the three categories of foreign bank loans on the other side. In particular, we perform a series of multinomial logit regressions, following the seven specifications from Table 7 but looking separately at comparisons of domestic loans with different categories of foreign loans. The regressions thus expand on the first three columns of Table 8 where we examined the baseline specification. Given the non-monotonicities between various borrower characteristics and the degree of bank loan foreignness revealed in Table 8, we deliberately refrain from the use of ordered logit regressions. For space reasons, we report only the multinomial logit regression coefficients and not average marginal effects.

The results in Table 9 generally confirm the findings from Table 8 in a broader set of different specifications. Subsidiaries of foreign banks generally serve smaller firms

(as measured by borrowing firms' total assets) than domestically owned and operated banks. By contrast, it is the larger firms that are more likely to obtain a loan from a foreign bank branch or a direct cross-border loan instead of a domestic loan. Compared to domestic banks, foreign bank branches generally provide loans to firms with a lower share of fixed (PPE) assets in total assets. However, there is no significant difference in terms of borrowers' share of fixed assets between domestic loans and either the direct cross-border loans or the loans provided by subsidiaries of foreign banks. Loans by foreign bank branches and direct cross-border loans are disproportionately more frequently obtained by firms with a higher share of foreign sales. By contrast, this effect is only marginally significant in two out of seven specifications when it comes to comparing domestic loans with loans by subsidiaries of foreign banks. Similar results emerge in the cases of the borrowing firm's growth rate and the economic development of the country where the borrowing firm is located. The total assets growth and GDP per capita in the borrower's country are significantly different between domestic loans and loans by foreign subsidiaries only in one specification each. By contrast, all specifications consistently show that borrowing firms that experience a high rate of total assets growth and are located in countries with lower GDP per capita are more likely to obtain a bank loan from a foreign bank branch or a direct cross-border loan instead of a domestic loan. When it comes to firms in high-tech industries, the previous results in Table 8 suggested that subsidiaries of foreign banks and foreign bank branches are less likely to provide loans to such firms compared to domestic banks, but there seemed to be no difference between domestic and direct cross-border loans in this regard. Table 9 confirms this pattern although the results for the high-tech dummy seem to be somewhat more robust in case of foreign subsidiaries than foreign branches across all seven specifications. The results for the dummy for listed firms are also confirmed. There is a lower likelihood of listed firms obtaining direct cross-border loans in Table 9 except for the second specification that might suffer from omitted variable bias due to dropping of the share of foreign sales from the set of independent variables. At the same time, the dummy for listed firms is insignificant in all specifications when it comes to comparing domestic loans with loans provided by subsidiaries or branches of foreign banks.

Regarding the remaining variables, the results in Table 9 generally confirm the findings from Table 7. Revenue growth is never significant and return on assets almost never significant both in Table 7 and Table 9. The universal measure of leverage as well as the market leverage for the subsample of listed firms are also mostly insignificant in Table 9. The one exception is the specification in column (3) where we measure borrowing firm's

size and growth by employment rather than total assets. These are also the same results as in Table 7. The marginally significant difference between domestic and foreign loans regarding R&D expenses of the borrowing firms from Table 7 seems to be driven by the difference between domestic loans and direct cross-border loans. There are some interesting results when it comes to alternative measures of borrowing firms' growth that deserve further examination in future research. When comparing either loans by foreign bank branches or direct cross-border loans with purely domestic loans, employment growth and growth in the share of fixed assets have the same positive coefficients as total assets growth and are mostly significant. By contrast, subsidiaries of foreign banks seem to serve mostly firms with lower employment growth and declining share of fixed assets relative to domestic banks.

Overall, the results in Table 8 and Table 9 suggest that neither the simple domestic-foreign loan dichotomy nor the distinction between direct cross-border loans and "brick-and-mortar" activities of foreign banks (pooling together loans by foreign bank branches and subsidiaries) provides a full picture of the complex relationship between borrower characteristics and the degree of foreignness of the bank loans that they rely on.

5 Robustness Tests

In order to be able to estimate the pairwise logit and multinomial logit regressions in the previous section, we had to restrain both the use of fixed effects and the time coverage of the estimated sample. The reason is that with a high number of fixed effects, logit estimators drop a large number of observations due to the lack of variation within individual fixed effects groups. The use of data prior to 1999 exacerbates the problem due to the generally smaller number of observations on individual foreign loan categories during this earlier period of our sample. We have therefore relied on data from the 1999-2016 period and applied the most restrictive set of fixed effects that still allowed to perform multinomial logit regressions comparing domestic loans with the three different categories of foreign loans. This reduced set of fixed effects includes 1-digit SIC industry, year of the loan origination, loan type, loan purpose, and a broad geographical region of the borrowing firm.

Our ability to estimate pairwise logit and multinomial logit regressions is crucial given that the distinction among different categories of foreign loans is the main purpose of this paper. For better comparison among tables in the previous section, we have relied on the restricted 1999-2016 sample and the reduced set of fixed effects also when running

the simple logit regressions based on the traditional domestic-foreign loans dichotomy (Table 7). In this section, we thus re-run Table 7 while using a stricter set of fixed effects and exploiting the whole available time span of our data.

Table 10 re-runs all seven specifications from Table 7, using both the set of fixed effects from previous estimations ("reduced FE") and a stricter set of fixed effects that includes 2-digit SIC industry, year of the loan origination, loan type, loan purpose, country of the borrowing firm, and country of the lending bank. We refer to this stricter set of fixed effects as "full FE". The estimations with the reduced set of fixed effects are thus closer to the original estimations from Table 7, but they are not identical. As mentioned above, estimations using the stricter (full) set of fixed effects drop certain observations due to insufficient variation within individual groups of fixed effects. In Table 10, we drop the same observations also in the estimations with a reduced set of fixed effects to make the two regression samples within each column fully comparable. Table 11 runs the same seven pairs of estimations as Table 10, but it makes use of observations from all available years in our sample (1990-2016) instead of being restricted to the 1999-2016 period.

The results in Table 10 and Table 11 are generally very similar, except for the second column where Table 11 has a substantially higher number of observations than Table 10. Notice that the only difference between Table 10 and Table 11 is the time coverage and that the second column is the only one where the variable "share of foreign sales" is not included among the regressors. This suggests that that inclusion of foreign sales as an independent variable might be already quite effective in restricting the sample to the years after 1998. As for differences between both tables and the estimations from the previous section, the borrowing firms' size captured by total assets seems to be more consistently significant in Table 10 and Table 11 than in Table 7. This fact could be related to country selection. Arguably, dropping more observations due to lack of variation within individual fixed effects groups in Table 10 and Table 11 would disproportionately affect observations from small and poor borrower countries with fewer observations per country. Data from such countries are not only less abundant but are also more likely to be noisy when available, which could explain why dropping them increases the significance for certain variables like firm size.

6 Conclusions

Loans by foreign banks to domestic borrowers are not a homogeneous group. We construct a new global dataset at the disaggregated loan-lender-borrower level that distinguishes be-

tween domestic loans and three different categories of foreign loans: loans by subsidiaries of foreign banks, loans by foreign bank branches, and direct cross-border loans. Our data allows us to examine whether borrower characteristics and loan conditions differ between these loan categories. The results from both simple pairwise comparisons and a more formal econometric framework confirm that the traditional domestic-foreign dichotomy does not provide a full picture of the various interactions between foreign banks and domestic borrowers. Both borrower characteristics and loan conditions often significantly differ across different foreign loan categories. In particular, loans by subsidiaries of foreign banks resemble in many aspects more closely the purely domestic loans rather than other categories of foreign loans. At the same time, our analysis often reveals pronounced non-monotonicities in terms of loan conditions and borrower characteristics as one moves from the "less foreign" to the "more foreign" bank loans, i.e. from loans by subsidiaries of foreign banks via loans by foreign branches to direct cross-border loans.

The results presented in this paper represent just an initial analysis of different categories of foreign bank loans in a disaggregated loan-lender-borrower setting comprising many different countries over an extended period of time. Apart from some preliminary evidence on loan conditions, the paper focuses mostly on borrower characteristics, and it does not attempt to disentangle loan demand and loan supply. Future research could look deeper into the causal forces driving the complex relations between loan conditions and borrower characteristics to provide a better understanding of the results presented in this paper. Another fruitful area for future research would be a deeper analysis of co-syndication between foreign and domestic banks in the context of different categories of foreign loans.

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Table 1: Descriptive statistics, full sample

	Mean	Std. dev.	Median	1 perc.	99 perc.	N
Firm characteristics						
Total assets (constant USD mn)	10,387	30,798	1,342	8.89	181,246	116,260
Total assets growth	0.038	0.24	-0.0055	-0.54	1.12	110,904
Total no. of employees ('000s)	21.9	67.9	4.56	0.026	271	65,953
Employee growth	0.048	0.26	0.020	-0.81	1.05	53,259
Prop., plant & eqpm./total assets	0.58	0.44	0.51	0.0034	2.02	91,822
Prop., plant & eqpm. growth	0.096	0.33	0.044	-0.82	1.49	87,026
Total revenue growth	0.028	0.26	-0.0018	-0.78	1.05	111,260
Return on assets	0.037	0.069	0.039	-0.25	0.21	109,162
Leverage	0.35	0.28	0.31	0	1.45	117,286
Market leverage (listed firms)	0.26	0.19	0.23	0	0.75	71,591
Market-to-book ratio (listed firms)	3.15	8.55	1.49	0.044	37.7	71,699
Share of foreign sales	0.28	0.29	0.19	0	0.98	50,753
R&D expense/revenue	0.014	0.047	0	0	0.24	116,799
High-tech firm (dummy)	0.15	0.36	0	0	1	180,305
Listed firm (dummy)	0.38	0.49	0	0	1	256,053
Loan characteristics						
Loan amount (constant USD mn)	268	845	81.4	1.34	2,937	254,730
Maturity (months)	58.9	47.9	60	5	264	232,529
No. of lenders	5.46	6.36	3	1	31	255,161
Syndicated (dummy)	0.87	0.34	1	0	1	256,053
Spread (bp)	244	166	225	17.5	850	151,586
No. of covenants	0.36	0.94	0	0	4	255,161
No. of perf. pricing provisions	0.44	1.52	0	0	6	255,161
Collateralized (dummy)	0.37	0.48	0	0	1	256,053
Loan in borrower's home currency (dummy)	0.81	0.40	1	0	1	205,231

This table reports descriptive statistics for firm- and loan-level variables for the full sample, i.e. the maximum number of available observations for each variable individually. Variable definitions are found in Table 12.

Table 2: Descriptive statistics, estimation sample

	Mean	Std. dev.	Median	1 perc.	99 perc.	N
Firm characteristics						
Total assets (constant USD mn)	11,050	31,011	1,684	18.5	178,842	74,218
Total assets growth	0.055	0.25	0.0082	-0.50	1.14	74,218
Total no. of employees ('000s)	24.3	75.3	5.40	0.037	296	47,956
Employee growth	0.047	0.25	0.023	-0.73	0.97	39,767
Prop., plant & eqpm./total assets	0.59	0.43	0.52	0.0080	1.99	74,218
Prop., plant & eqpm. growth	0.085	0.31	0.043	-0.77	1.30	68,650
Total revenue growth	0.046	0.27	0.013	-0.70	1.09	74,063
Return on assets	0.043	0.062	0.042	-0.18	0.22	74,218
Leverage	0.34	0.26	0.31	0	1.28	74,218
Market leverage (listed firms)	0.25	0.18	0.22	0	0.72	51,216
Market-to-book ratio (listed firms)	3.09	7.84	1.61	0.058	31.1	51,215
Share of foreign sales	0.30	0.30	0.22	0	0.98	38,987
R&D expense/revenue	0.013	0.043	0	0	0.21	74,170
High-tech firm (dummy)	0.17	0.38	0	0	1	74,218
Listed firm (dummy)	0.82	0.38	1	0	1	74,218
Loan characteristics						
Loan amount (constant USD mn)	419	1,034	141	1.93	4,287	74,090
Maturity (months)	52.3	33.8	60	6	156	70,093
No. of lenders	7.10	7.63	5	1	35	74,218
Syndicated (dummy)	0.91	0.28	1	0	1	74,218
Spread (bp)	204	147	175	17	750	47,014
No. of covenants	0.68	1.19	0	0	4	74,218
No. of perf. pricing provisions	0.89	2.03	0	0	7	74,218
Collateralized (dummy)	0.38	0.49	0	0	1	74,218
Loan in borrower's home currency (dummy)	0.79	0.40	1	0	1	74,103

This table reports descriptive statistics for firm- and loan-level variables for the estimation sample. Variable definitions are found in Table 12. The estimation sample is defined on the basis of availability of independent variables in the least restrictive regression specification estimated, and includes only observations for which the following borrower-firm and loan-level variables are simultaneously non-missing: Total assets, Total assets growth, PPE/Total assets, Return on assets, Leverage, Industry, Listed firm dummy, Loan type, Loan purpose, and Loan origination date. Additionally, the home country of the lender bank (but not necessarily of its immediate parent or ultimate owner) must be identified. For most regression specifications, the effective sample estimated is smaller, mainly due to the inclusion of additional independent variables (in particular the Share of foreign sales). For specifications that contain the exact independent variables defining the "estimation sample", the effective sample size is smaller than the number of obs. in this table would suggest, due to three main reasons: (i) the dependent variable places additional restrictions on data availability, because it requires that the lender's immediate parent and/or ultimate owner is identified; (ii) the sample period is restricted to loans originated from 1999 onwards; (iii) dummy variables that perfectly predict the outcome in logit regressions are automatically excluded.

Table 3: Most frequent loan types and loan purposes, by degree of foreignness, full sample

	Degree of foreignness			
	Domestic	Subsidiary	Branch	Direct cross-border
Loan types				
Most frequent loan type	Credit line	Credit line	Term loan	Term loan
% most frequent	52.7	45.9	52.5	47.2
2nd most frequent loan type	Term loan	Term loan	Credit line	Credit line
% 2nd most frequent	37.5	40.1	28.4	36.1
3rd most frequent loan type	Other	Fixed-rate notes & bonds	Other	Other
% 3rd most frequent	3.15	3.99	5.63	5.27
Loan purposes				
Most frequent loan purpose	Gen. corp. purp./other	Gen. corp. purp./other	Gen. corp. purp./other	Gen. corp. purp./other
% most frequent	43.8	31.8	37.3	38.4
2nd most frequent loan purpose	Work. cap.-related	Cap. structure-related	Cap. structure-related	Cap. structure-related
% 2nd most frequent	17.3	23.9	19.2	16.7
3rd most frequent loan purpose	Cap. structure-related	M&A	CAPEX	CAPEX
% 3rd most frequent	14.9	14.3	16.5	13.7

This table shows the three most frequent loan types and loan purposes by "degree of foreignness", with frequency percentages for each category. Percentages are non-weighted. Loan types (loan purposes) are among 9 (7) composite categories, aggregated from the original LoanType and PrimaryPurpose indications in DealScan, as specified in Table 12. Frequencies reported are for the full sample, i.e., for the maximum number of observations for which Loan type and Loan purpose are individually available.

Table 4: Most frequent loan types and loan purposes, by degree of foreignness, estimation sample

	Degree of foreignness			
	Domestic	Subsidiary	Branch	Direct cross-border
Loan types				
Most frequent loan type	Credit line	Credit line	Term loan	Term loan
% most frequent	57.1	49.7	48.7	45.9
2nd most frequent loan type	Term loan	Term loan	Credit line	Credit line
% 2nd most frequent	33.2	38.2	32.3	38.2
3rd most frequent loan type	Other	Fixed-rate notes & bonds	Other	Other
% 3rd most frequent	3.13	3.85	5.26	4.99
Loan purposes				
Most frequent loan purpose	Gen. corp. purp./other	Gen. corp. purp./other	Gen. corp. purp./other	Gen. corp. purp./other
% most frequent	41.0	30.1	35.2	39.8
2nd most frequent loan purpose	Work. cap.-related	Cap. structure-related	Cap. structure-related	Cap. structure-related
% 2nd most frequent	19.9	27.0	22.3	18.0
3rd most frequent loan purpose	Cap. structure-related	Work. cap.-related	CAPEX	M&A
% 3rd most frequent	16.9	15.7	14.0	11.8

This table shows the three most frequent loan types and loan purposes by "degree of foreignness", with frequency percentages for each category. Percentages are non-weighted. Loan types (loan purposes) are among 9 (7) composite categories, aggregated from the original LoanType and PrimaryPurpose indications in DealScan, as specified in Table 12. Frequencies reported are for the estimation sample, which includes only observations for which the following variables are simultaneously non-missing: Total assets, Total assets growth, PPE/Total assets, Return on assets, Leverage, Industry, Listed firm dummy, Loan type, Loan purpose, Loan origination date, and home country of the lender bank.

Table 5: Mean firm and loan characteristics, by degree of foreignness, full sample

	Degree of foreignness				Mean differences					
	Domestic (0)	Subsidiary (1)	Branch (2)	Direct cross-border (3)	1–0	2–0	3–0	2–1	3–1	3–2
Percent of total (no. of loans)	60.8	4.58	2.12	32.5						
Percent of total (loan volume)	56.7	3.10	1.86	38.3						
Firm characteristics										
Total assets (constant USD mn)	8,110	7,717	19,671	17,027	-393	11,562***	8,917***	11,955***	9,310***	-2,644**
Total assets growth	0.039	0.022	0.061	0.069	-0.017***	0.022***	0.030***	0.039***	0.047***	0.0076
Total no. of employees ('000s)	19.6	13.5	30.9	32.7	-6.07***	11.4***	-23.6***	17.4***	19.2***	1.81
Employee growth	0.042	0.045	0.075	0.062	0.0032	0.033***	0.020***	0.030**	0.017*	-0.012
Prop., plant & eqpm./total assets	0.57	0.57	0.59	0.58	-0.0033	0.018	0.0091**	0.021	0.012	-0.0089
Prop., plant & eqpm. growth	0.089	0.11	0.12	0.11	0.016**	0.031***	0.018***	0.014	0.0013	-0.013
Total revenue growth	0.034	0.00080	0.016	0.042	-0.033***	-0.018**	0.0086***	0.015*	0.042***	0.026***
Return on assets	0.041	0.036	0.037	0.044	-0.0053***	-0.0040**	0.0026***	0.0013	0.0079***	0.0066***
Leverage	0.34	0.39	0.34	0.34	0.053***	0.0012	0.0080***	-0.052***	-0.045***	0.0068
Market leverage (listed firms)	0.25	0.26	0.27	0.25	0.016***	0.022***	0.0052***	0.0056	-0.011**	-0.017***
Market-to-book ratio (listed firms)	2.89	2.78	2.84	3.77	-0.11	-0.048	0.88***	0.063	0.99***	0.93***
Share of foreign sales	0.26	0.28	0.37	0.39	0.023**	0.11***	0.13***	0.087***	0.11***	0.019
R&D expense/revenue	0.013	0.013	0.0080	0.011	-0.00042	-0.0049***	-0.0019***	-0.0045***	-0.0015**	0.0030***
High-tech firm	0.14	0.13	0.13	0.17	-0.0080*	-0.0095	0.028***	-0.0015	0.036***	0.037***
Listed firm	0.48	0.44	0.51	0.43	-0.043***	0.027***	-0.052***	0.070***	-0.0092	-0.079***
Loan characteristics										
Loan amount (constant USD mn)	285	207	270	362	-78.0***	-14.9	76.6***	63.1***	155***	91.5***
Maturity (months)	52.0	54.6	57.0	62.1	2.56***	4.97***	10.1***	2.41***	7.53***	5.11***
No. of lenders	5.79	5.86	7.04	6.30	0.069	1.25***	0.50***	1.18***	0.43***	-0.74***
Syndicated	0.93	0.82	0.89	0.91	-0.11***	-0.044***	-0.021***	0.064***	0.087***	0.023***
Spread (bp)	227	246	194	248	19.6***	-32.8***	21.5***	-52.4***	1.92	54.3***
No. of covenants	0.50	0.67	0.33	0.24	0.17***	-0.17***	-0.26***	-0.34***	-0.43***	-0.089***
No. of perf. pricing provisions	0.66	0.78	0.39	0.31	0.12***	-0.27***	-0.35***	-0.39***	-0.47***	-0.083***
Collateralized	0.35	0.46	0.37	0.38	0.11***	0.025***	0.030***	-0.089***	-0.084***	0.0046
Loan in borrower's home curr.	0.93	0.92	0.41	0.48	-0.014***	-0.52***	-0.46***	-0.51***	-0.44***	0.068***

This table reports the percentage distribution of domestic loans and three categories of foreign loans (loans from subsidiaries of foreign banks, loans from branches of foreign banks, and direct cross-border loans) in terms of both number of loans and loan volume (real USD loan amount), mean borrower-firm and loan characteristics by loan category, and mean differences of these characteristics between the different loan categories, with indications of whether differences are statistically significant. The table reports percentage distributions, means and mean differences for the full sample, i.e., the maximum number of observations for each variable individually. Variable definitions are found in Table 12. Mean difference tests are t-tests assuming unequal variances between groups. Significance levels reported are for H_0 : Mean difference = 0 against a 2-sided alternative. */**/*** indicates statistical significance at the 10/5/1 percent level.

Table 6: Mean firm and loan characteristics, by degree of foreignness, estimation sample

	Degree of foreignness				Mean differences					
	Domestic (0)	Subsidiary (1)	Branch (2)	Direct cross-border (3)	1–0	2–0	3–0	2–1	3–1	3–2
Percent of total (no. of loans)	62.9	4.11	2.09	30.9						
Percent of total (loan volume)	60.5	2.48	1.73	35.3						
Firm characteristics										
Total assets (constant USD mn)	8,550	6,605	18,769	16,294	-1,945***	10,218***	7744***	12,164***	9,689***	-2,475*
Total assets growth	0.050	0.033	0.081	0.079	-0.017***	0.031***	0.029***	0.048***	0.046***	-0.0020
Total no. of employees ('000s)	20.9	12.6	29.9	32.3	-8.20***	9.10***	11.4***	17.3***	19.6***	2.34
Employee growth	0.042	0.048	0.072	0.060	0.0058	0.030***	0.018***	0.024*	0.012	-0.012
Prop., plant & eqpm./total assets	0.58	0.59	0.60	0.59	0.012	0.021*	0.012***	0.0095	0.00021	-0.0093
Prop., plant & eqpm. growth	0.079	0.092	0.13	0.098	0.013	0.049***	0.019***	0.036***	0.0062	-0.030***
Total revenue growth	0.044	0.026	0.041	0.061	-0.019***	-0.0030	0.016***	0.016	0.035***	0.019**
Return on assets	0.045	0.037	0.039	0.046	-0.0072***	-0.0054***	0.0016***	0.0017	0.0087***	0.0070***
Leverage	0.33	0.39	0.34	0.34	0.052***	0.0025	0.0029	-0.049***	-0.049***	0.00037
Market leverage (listed firms)	0.24	0.26	0.27	0.25	0.017***	0.028***	0.0089***	0.011	-0.0077	-0.019***
Market-to-book ratio (listed firms)	2.89	2.62	3.00	3.83	-0.27*	0.12	0.95***	0.39	1.22***	0.83***
Share of foreign sales	0.27	0.31	0.38	0.40	0.039***	0.11***	0.13***	0.074***	0.093***	0.019
R&D expense/revenue	0.013	0.011	0.0083	0.010	-0.0018**	-0.0049***	-0.0028***	-0.0031**	-0.0010	0.0021**
High-tech firm	0.17	0.15	0.14	0.18	-0.021***	-0.026***	0.011***	-0.0055	0.032***	0.037***
Listed firm	0.83	0.75	0.88	0.80	-0.086***	0.042***	-0.033***	0.13***	0.053***	-0.075***
Loan characteristics										
Loan amount (constant USD mn)	408	255	352	484	-153***	-56.7*	76.1***	96.1***	229***	133***
Maturity (months)	50.6	52.3	54.6	57.8	1.67***	4.06***	7.20***	2.39**	5.53***	3.14***
No. of lenders	7.19	6.91	7.75	7.29	-0.29*	0.56**	0.093	0.84***	0.38**	-0.46*
Syndicated	0.93	0.84	0.90	0.93	-0.092***	-0.027***	-0.0023	0.065***	0.089***	0.025***
Spread (bp)	195	212	192	224	16.8***	-2.95	28.3***	-19.8***	11.5***	31.2***
No. of covenants	0.83	1.11	0.52	0.37	0.27***	-0.31***	-0.46***	-0.58***	-0.74***	-0.16***
No. of perf. pricing provisions	1.11	1.32	0.63	0.47	0.21***	-0.48***	-0.64***	-0.69***	-0.85***	-0.16***
Collateralized	0.39	0.52	0.40	0.38	0.14***	0.0097	-0.012***	-0.13***	-0.15***	-0.021
Loan in borrower's home curr.	0.92	0.91	0.41	0.47	-0.0099*	-0.50***	-0.45***	-0.49***	-0.44***	0.057***

This table reports the percentage distribution of domestic loans and three categories of foreign loans (loans from subsidiaries of foreign banks, loans from branches of foreign banks, and direct cross-border loans) in terms of both number of loans and loan volume (real USD loan amount), mean borrower-firm and loan characteristics by loan category, and mean differences of these characteristics between the different loan categories, with indications of whether differences are statistically significant. The table reports percentage distributions, means and mean differences for the estimation sample, which includes only observations for which the following variables are simultaneously non-missing: Total assets, Total assets growth, PPE/Total assets, Return on assets, Leverage, Industry, Listed firm dummy, Loan type, Loan purpose, Loan origination date, and home country of the lender bank. Variable definitions are found in Table 12. Mean difference tests are t-tests assuming unequal variances between groups. Significance levels reported are for H_0 : Mean difference = 0 against a 2-sided alternative. */**/*** indicates statistical significance at the 10/5/1 percent level.

Table 7: Probability of foreign loans: Logit regressions of the domestic-foreign loan dichotomy

	(1)		(2)		(3)		(4)		(5)		(6)		(7)	
	Coeff.	AME	Coeff.	AME	Coeff.	AME	Coeff.	AME	Coeff.	AME	Coeff.	AME	Coeff.	AME
Total assets (log)	0.083	0.017	0.12***	0.028***			0.086	0.018*	0.085	0.018	0.083	0.017	0.11*	0.021*
	(0.054)	(0.011)	(0.046)	(0.010)			(0.053)	(0.011)	(0.054)	(0.011)	(0.055)	(0.011)	(0.060)	(0.012)
Return on assets	-0.62	-0.13	-0.69	-0.16	-1.15	-0.23	-0.50	-0.10	-0.45	-0.093	-0.74	-0.15	-1.43*	-0.29*
	(1.04)	(0.22)	(0.97)	(0.22)	(0.85)	(0.17)	(1.13)	(0.23)	(1.04)	(0.22)	(1.10)	(0.23)	(0.84)	(0.17)
Leverage	0.073	0.015	0.091	0.021	0.43***	0.084***	0.070	0.015	0.10	0.022	0.042	0.0086		
	(0.23)	(0.048)	(0.18)	(0.042)	(0.16)	(0.030)	(0.23)	(0.047)	(0.23)	(0.048)	(0.23)	(0.047)		
PPE/total assets	0.024	0.0050	-0.049	-0.011	0.051	0.0100	0.0058	0.0012	0.011	0.0023	0.019	0.0040	-0.014	-0.0028
	(0.087)	(0.018)	(0.10)	(0.023)	(0.087)	(0.017)	(0.093)	(0.019)	(0.089)	(0.018)	(0.087)	(0.018)	(0.10)	(0.020)
Share of foreign sales	1.15***	0.24***			1.59***	0.31***	1.15***	0.24***	1.18***	0.24***	1.17***	0.24***	1.28***	0.26***
	(0.31)	(0.067)			(0.30)	(0.059)	(0.31)	(0.067)	(0.31)	(0.067)	(0.30)	(0.066)	(0.31)	(0.066)
Total assets growth	0.33***	0.069***	0.43***	0.097***							0.34***	0.070***	0.36***	0.071***
	(0.088)	(0.019)	(0.099)	(0.023)							(0.088)	(0.019)	(0.12)	(0.025)
No. of employees (log)					0.0066	0.0013								
					(0.033)	(0.0065)								
Employee growth					0.27***	0.054***								
					(0.077)	(0.015)								
Revenue growth							0.22	0.045						
							(0.15)	(0.030)						
PPE growth									0.34***	0.071***				
									(0.071)	(0.014)				
R&D/revenue											-1.40*	-0.29*		
											(0.73)	(0.15)		
Market leverage													-0.51	-0.10
													(0.49)	(0.098)
Market-to-book ratio													0.0079**	0.0016**
													(0.0032)	(0.00065)
High-tech dummy	-0.15**	-0.031**	-0.047	-0.011	-0.15*	-0.030	-0.16**	-0.032**	-0.16**	-0.034**	-0.097	-0.020	-0.20**	-0.040**
	(0.076)	(0.016)	(0.086)	(0.019)	(0.093)	(0.019)	(0.077)	(0.016)	(0.073)	(0.015)	(0.069)	(0.014)	(0.079)	(0.016)
Listed dummy	-0.26*	-0.054	0.13	0.030	-0.12	-0.023	-0.27*	-0.056*	-0.27*	-0.057*	-0.27*	-0.055*		
	(0.16)	(0.033)	(0.13)	(0.029)	(0.086)	(0.017)	(0.16)	(0.033)	(0.15)	(0.033)	(0.16)	(0.033)		
Borr. ctry GDP/cap. (log)	-0.87***	-0.18***	-0.48*	-0.11*	-1.27***	-0.25***	-0.88***	-0.18***	-0.87***	-0.18***	-0.87***	-0.18***	-0.95***	-0.19***
	(0.27)	(0.052)	(0.27)	(0.060)	(0.23)	(0.039)	(0.27)	(0.052)	(0.27)	(0.053)	(0.27)	(0.052)	(0.27)	(0.052)
Fixed effects														
1-digit SIC industry	Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Year	Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Loan type	Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Loan purpose	Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Borrower region	Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Observations	33,096		53,204		23,926		33,046		32,343		33,076		27,254	
Pseudo R-squared	0.16		0.14		0.18		0.16		0.16		0.16		0.18	
Clusters	82		86		68		82		82		82		77	

This table reports the results of logit regressions of the probability of foreign loans as a function of key borrower-firm characteristics and control variables. The dependent variable is the Foreign loan dummy (see Table 12 for variable definitions). For each regression specification, the table reports logit coefficient estimates with standard errors in parentheses ("Coeff.") as well as average marginal effects ("AME") with standard errors obtained using the delta method in parentheses. Specification (1) proxies firm size by Total assets and firm growth by Total assets growth. Specification (2) excludes Share of foreign sales as an independent variable, as this variable substantially reduces the number of available observations. Specification (3) uses Total number of employees (rather than Total assets) as a proxy of firm size, and Employee growth as a measure of firm growth. Specifications (4) and (5) use Total revenue growth and PPE growth, respectively, as proxies of firm growth. Specification (6) adds R&D expenses over total revenue as an additional explanatory variable. Specification (7) is estimated only for listed firms, includes the Market-to-book ratio, and substitutes Market leverage for Leverage. The sample is restricted to loans originated between 1999 and 2016. All specifications include fixed effects for 1-digit SIC industry, Year, Loan type, Loan purpose, and Borrower region. The borrower region fixed effects are dummy variables for each of the World Bank's geographical regions (East Asia & Pacific, Europe & Central Asia, Latin America & Caribbean, Middle East & N. Africa, North America, South Asia, and Sub-Saharan Africa), based on the borrower firm's home country. Standard errors are clustered at borrower country level. */**/*** indicates statistical significance at the 10/5/1 percent level.

Table 8: Probability of foreign loan category: Pairwise logit regressions of "foreignness"

	Domestic (0) vs. subsidiary (1)		Domestic (0) vs. branch (1)		Domestic (0) vs. direct cross-border (1)		Subsidiary (0) vs. branch (1)		Subsidiary (0) vs. direct cross-border (1)		Branch (0) vs. direct cross-border (1)	
	Coeff.	AME	Coeff.	AME	Coeff.	AME	Coeff.	AME	Coeff.	AME	Coeff.	AME
Total assets (log)	-0.24***	-0.0062***	0.15**	0.0015**	0.12**	0.023**	0.38***	0.080***	0.32***	0.016***	-0.0072	-0.00027
	(0.051)	(0.0022)	(0.066)	(0.00066)	(0.051)	(0.0093)	(0.11)	(0.021)	(0.047)	(0.0035)	(0.059)	(0.0022)
Return on assets	0.22	0.0056	-1.17	-0.012	-0.52	-0.099	-3.22*	-0.69*	-0.62	-0.032	1.20	0.045
	(0.76)	(0.019)	(1.91)	(0.020)	(1.23)	(0.23)	(1.75)	(0.40)	(0.72)	(0.036)	(0.90)	(0.032)
Leverage	0.17	0.0043	0.26	0.0026	-0.011	-0.0022	0.48	0.10	-0.37*	-0.019*	-0.47	-0.017
	(0.34)	(0.0088)	(0.47)	(0.0049)	(0.24)	(0.045)	(0.34)	(0.075)	(0.21)	(0.011)	(0.31)	(0.012)
PPE/total assets	0.17	0.0045	-0.58**	-0.0058**	0.037	0.0070	-0.90***	-0.19***	-0.21	-0.011	0.58***	0.021***
	(0.31)	(0.0079)	(0.29)	(0.0027)	(0.076)	(0.015)	(0.21)	(0.049)	(0.20)	(0.011)	(0.22)	(0.0078)
Share of foreign sales	0.96	0.025	1.37**	0.014**	1.16***	0.22***	0.80*	0.17*	0.36	0.018	-0.25	-0.0092
	(0.68)	(0.019)	(0.60)	(0.0056)	(0.28)	(0.057)	(0.42)	(0.089)	(0.52)	(0.025)	(0.42)	(0.015)
Total assets growth	0.044	0.0011	0.98***	0.0098***	0.33***	0.064***	0.58***	0.12***	0.18	0.0090	-0.57**	-0.021**
	(0.14)	(0.0037)	(0.35)	(0.0037)	(0.082)	(0.017)	(0.22)	(0.047)	(0.12)	(0.0066)	(0.26)	(0.0093)
High-tech firm (dummy)	-0.28**	-0.0072**	-0.44**	-0.0044**	-0.13	-0.024	-0.0066	-0.0014	0.25*	0.013*	0.37**	0.014**
	(0.12)	(0.0033)	(0.19)	(0.0022)	(0.078)	(0.015)	(0.29)	(0.061)	(0.14)	(0.0072)	(0.18)	(0.0067)
Listed firm (dummy)	-0.049	-0.0013	-0.21	-0.0021	-0.29**	-0.056**	-0.11	-0.024	-0.31	-0.016	-0.071	-0.0026
	(0.59)	(0.015)	(0.24)	(0.0025)	(0.13)	(0.025)	(0.45)	(0.096)	(0.37)	(0.019)	(0.21)	(0.0078)
Borr. ctry GDP/cap. (log)	-0.29	-0.0075	-0.99***	-0.0100***	-0.92***	-0.17***	-0.83***	-0.18***	-0.58**	-0.030***	0.092	0.0034
	(0.52)	(0.013)	(0.33)	(0.0028)	(0.25)	(0.045)	(0.28)	(0.057)	(0.23)	(0.011)	(0.13)	(0.0049)
Fixed effects												
1-digit SIC industry	Yes		Yes		Yes		Yes		Yes		Yes	
Year	Yes		Yes		Yes		Yes		Yes		Yes	
Loan type	Yes		Yes		Yes		Yes		Yes		Yes	
Loan purpose	Yes		Yes		Yes		Yes		Yes		Yes	
Borrower region	Yes		Yes		Yes		Yes		Yes		Yes	
Observations	23,501		23,140		31,773		1,323		9,934		9,573	
Pseudo R-squared	0.084		0.18		0.18		0.22		0.15		0.071	
Clusters	52		52		80		46		80		78	

This table reports the results of pairwise logit regressions of the different categories of loan "foreignness" as functions of key borrower-firm characteristics and controls, where each regression only includes two loan categories. In terms of included independent variables, all regressions in this table correspond to specification (1) in Table 7. For each pairwise regression, the table reports logit coefficient estimates with standard errors in parentheses ("Coeff.") as well as average marginal effects ("AME") with standard errors obtained using the delta method in parentheses. In specification (1), the dependent variable takes on zero value if the loan is domestic and unit value if the loan is from a subsidiary of a foreign bank. In specification (2), the dependent variable takes on zero value if the loan is domestic and unit value if the loan is from a branch of a foreign bank. In specification (3), the dependent variable takes on zero value if the loan is domestic and unit value if the loan is a direct cross-border loan. In specification (4), the dependent variable takes on zero value if the loan is from a subsidiary of a foreign bank and unit value if the loan is from a branch of a foreign bank. In specification (5), the dependent variable takes on zero value if the loan is from a subsidiary of a foreign bank and unit value if it is a direct cross-border loan. In specification (6), the dependent variable takes on zero value if the loan is from a branch of a foreign bank and unit value if it is a direct cross-border loan. The sample is restricted to loans originated between 1999 and 2016. All specifications include fixed effects for 1-digit SIC industry, Year, Loan type, Loan purpose, and Borrower region. The borrower region fixed effects are dummy variables for each of the World Bank's geographical regions (East Asia & Pacific, Europe & Central Asia, Latin America & Caribbean, Middle East & N. Africa, North America, South Asia, and Sub-Saharan Africa), based on the borrower firm's home country. Standard errors are clustered at borrower country level. */**/*** indicates statistical significance at the 10/5/1 percent level.

Table 9: Probability of foreign loan category: Multinomial logit regressions of "foreignness"

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Subsidiary loans							
Total assets (log)	-0.23***	-0.15**		-0.23***	-0.24***	-0.23***	-0.25***
	(0.053)	(0.063)		(0.053)	(0.051)	(0.053)	(0.066)
Return on assets	0.11	-0.26	-0.41	0.14	0.15	-0.24	0.40
	(0.68)	(0.52)	(0.56)	(0.70)	(0.70)	(0.90)	(1.10)
Leverage	0.24	-0.082	0.53**	0.24	0.28	0.19	
	(0.34)	(0.16)	(0.21)	(0.34)	(0.33)	(0.34)	
PPE/total assets	0.17	0.021	0.29	0.17	0.16	0.16	-0.056
	(0.28)	(0.24)	(0.31)	(0.29)	(0.28)	(0.28)	(0.31)
Share of foreign sales	0.92		1.28*	0.94	0.94	0.97	1.16*
	(0.64)		(0.71)	(0.64)	(0.64)	(0.64)	(0.65)
Total assets growth	0.097	0.32**				0.11	-0.0080
	(0.14)	(0.15)				(0.14)	(0.20)
No. of employees (log)			-0.28***				
			(0.042)				
Employee growth			0.052				
			(0.12)				
Revenue growth				0.080			
				(0.13)			
PPE growth					-0.31***		
					(0.096)		
R&D/revenue						-2.39	
						(2.36)	
Market leverage							0.21
							(0.62)
Market-to-book ratio							0.0029
							(0.0079)
High-tech dummy	-0.30**	-0.20*	-0.45***	-0.33***	-0.28**	-0.22**	-0.40*
	(0.12)	(0.11)	(0.14)	(0.12)	(0.12)	(0.11)	(0.21)
Listed dummy	-0.045	-0.068	0.30	-0.049	-0.054	-0.055	
	(0.54)	(0.24)	(0.43)	(0.54)	(0.53)	(0.53)	
Borr. ctry GDP/cap. (log)	-0.31	-0.11	-0.86***	-0.31	-0.31	-0.30	-0.31
	(0.42)	(0.35)	(0.31)	(0.42)	(0.43)	(0.42)	(0.45)
Branch loans							
Total assets (log)	0.13*	0.18***		0.12*	0.13**	0.13*	0.14**
	(0.069)	(0.042)		(0.071)	(0.068)	(0.070)	(0.066)
Return on assets	-1.67	-2.15**	1.53	-1.13	-1.26	-2.06	-0.88
	(1.67)	(1.05)	(1.36)	(1.74)	(1.31)	(1.83)	(2.10)
Leverage	0.40	0.17	0.92***	0.38	0.38	0.31	
	(0.43)	(0.32)	(0.17)	(0.40)	(0.41)	(0.41)	

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Table 9 – continued from previous page

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PPE/total assets	-0.56**	-0.48**	-0.40*	-0.67**	-0.62**	-0.58***	-0.66**
	(0.23)	(0.20)	(0.23)	(0.27)	(0.26)	(0.22)	(0.27)
Share of foreign sales	1.42**		1.67**	1.41**	1.48***	1.48***	1.63***
	(0.56)		(0.77)	(0.57)	(0.57)	(0.53)	(0.59)
Total assets growth	0.94***	0.80***				0.95***	0.88**
	(0.31)	(0.23)				(0.31)	(0.45)
No. of employees (log)			0.094*				
			(0.048)				
Employee growth			0.16				
			(0.28)				
Revenue growth				0.14			
				(0.30)			
PPE growth					1.03***		
					(0.26)		
R&D/revenue						-5.20	
						(4.26)	
Market leverage							-0.68
							(0.56)
Market-to-book ratio							0.0094
							(0.0076)
High-tech dummy	-0.52***	-0.26*	-0.41*	-0.50***	-0.53***	-0.35	-0.42*
	(0.17)	(0.15)	(0.22)	(0.16)	(0.17)	(0.22)	(0.21)
Listed dummy	-0.23	0.49	-0.11	-0.24	-0.28	-0.24	
	(0.21)	(0.35)	(0.22)	(0.21)	(0.19)	(0.20)	
Borr. ctry GDP/cap. (log)	-0.97***	-0.59**	-1.49***	-1.01***	-0.98***	-0.97***	-0.94***
	(0.32)	(0.30)	(0.28)	(0.33)	(0.32)	(0.33)	(0.32)
Direct cross-border loans							
Total assets (log)	0.12**	0.15***		0.12**	0.12**	0.12**	0.15***
	(0.051)	(0.040)		(0.050)	(0.051)	(0.051)	(0.056)
Return on assets	-0.57	-0.55	-1.38	-0.48	-0.39	-0.67	-1.65*
	(1.17)	(1.12)	(1.00)	(1.26)	(1.17)	(1.22)	(0.95)
Leverage	0.026	0.11	0.38*	0.023	0.060	-0.0018	
	(0.22)	(0.19)	(0.21)	(0.22)	(0.22)	(0.22)	
PPE/total assets	0.039	-0.030	0.038	0.023	0.029	0.034	0.028
	(0.077)	(0.088)	(0.087)	(0.081)	(0.078)	(0.078)	(0.091)
Share of foreign sales	1.17***		1.63***	1.17***	1.19***	1.19***	1.28***
	(0.28)		(0.25)	(0.28)	(0.28)	(0.28)	(0.29)
Total assets growth	0.32***	0.42***				0.33***	0.37***
	(0.083)	(0.095)				(0.084)	(0.095)
No. of employees (log)			0.042				
			(0.030)				
Employee growth			0.32***				
			(0.094)				
Revenue growth				0.25			

Continued on next page

Table 9 – continued from previous page

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
				(0.17)			
PPE growth					0.38***		
					(0.075)		
R&D/revenue						-1.23*	
						(0.65)	
Market leverage							-0.58
							(0.47)
Market-to-book ratio							0.0083***
							(0.0031)
High-tech dummy	-0.12	-0.021	-0.11	-0.12	-0.13*	-0.066	-0.17**
	(0.078)	(0.090)	(0.098)	(0.079)	(0.073)	(0.074)	(0.074)
Listed dummy	-0.29**	0.13	-0.17**	-0.30**	-0.30**	-0.29**	
	(0.13)	(0.13)	(0.081)	(0.13)	(0.13)	(0.13)	
Borr. ctry GDP/cap. (log)	-0.92***	-0.51*	-1.29***	-0.92***	-0.91***	-0.91***	-1.01***
	(0.26)	(0.27)	(0.23)	(0.26)	(0.26)	(0.26)	(0.27)
Fixed effects (for each category)							
1-digit SIC industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan type	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan purpose	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower region	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	33,096	53,204	23,926	33,046	32,343	33,076	27,254
Pseudo R-squared	0.15	0.13	0.17	0.15	0.16	0.15	0.17
Clusters	82	86	68	82	82	82	77

This table reports the results of multinomial logit regressions of the different categories of loan "foreignness" as functions of key borrower-firm characteristics and controls. The dependent variable is "Degree of foreignness" (see Table 12 for variable definitions). The base category is domestic loans, and the table thus reports separate sets of estimates for each of the other categories (loans from subsidiaries of foreign banks, loans from branches of foreign banks, and direct cross-border loans). The seven specifications reported in this table correspond to specifications (1)–(7) in Table 7. Only multinomial logit coefficient estimates with standard errors in parentheses are reported. The sample is restricted to loans originated between 1999 and 2016. All specifications include fixed effects for 1-digit SIC industry, Year, Loan type, Loan purpose, and Borrower region. The borrower region fixed effects are dummy variables for each of the World Bank's geographical regions (East Asia & Pacific, Europe & Central Asia, Latin America & Caribbean, Middle East & N. Africa, North America, South Asia, and Sub-Saharan Africa), based on the borrower firm's home country. Standard errors are clustered at borrower country level. */**/*** indicates statistical significance at the 10/5/1 percent level.

Table 10: Robustness I: Comparisons between full FE and reduced FE logit regressions of the domestic-foreign loan dichotomy, 1999-2016

	(1)		(2)		(3)		(4)		(5)		(6)		(7)	
	Full FE	Red. FE	Full FE	Red. FE	Full FE	Red. FE	Full FE	Red. FE	Full FE	Red. FE	Full FE	Red. FE	Full FE	Red. FE
Total assets (log)	0.12*	0.098*	0.14***	0.13***			0.12*	0.10*	0.12*	0.10*	0.12*	0.098*	0.15**	0.12*
	(0.067)	(0.058)	(0.050)	(0.049)			(0.066)	(0.057)	(0.067)	(0.058)	(0.067)	(0.059)	(0.072)	(0.064)
Return on assets	-1.54***	-0.75	-1.35***	-0.91	-1.43***	-1.35**	-1.46***	-0.72	-1.45***	-0.61	-1.51***	-0.88	-2.41***	-1.38*
	(0.34)	(0.97)	(0.34)	(0.84)	(0.46)	(0.67)	(0.33)	(1.00)	(0.36)	(0.95)	(0.35)	(1.04)	(0.44)	(0.82)
Leverage	0.39**	0.17	0.27**	0.099	0.54***	0.47***	0.39**	0.17	0.44***	0.21	0.39***	0.14		
	(0.15)	(0.20)	(0.13)	(0.19)	(0.13)	(0.18)	(0.16)	(0.20)	(0.16)	(0.20)	(0.15)	(0.19)		
PPE/total assets	-0.00075	0.033	-0.21**	-0.071	-0.092	0.086	-0.013	0.021	0.00056	0.019	0.0021	0.028	-0.059	-0.0071
	(0.10)	(0.091)	(0.098)	(0.11)	(0.13)	(0.073)	(0.10)	(0.095)	(0.097)	(0.092)	(0.10)	(0.090)	(0.11)	(0.11)
Share of foreign sales	1.05***	1.18***			1.32***	1.43***	1.05***	1.18***	1.09***	1.20***	1.04***	1.21***	1.08***	1.31***
	(0.15)	(0.32)			(0.16)	(0.26)	(0.15)	(0.32)	(0.16)	(0.31)	(0.16)	(0.31)	(0.16)	(0.32)
Total assets growth	0.18***	0.30***	0.10	0.40***							0.18***	0.31***	0.19**	0.32***
	(0.064)	(0.072)	(0.069)	(0.098)							(0.064)	(0.073)	(0.081)	(0.095)
No. of employees (log)					0.087	0.027								
					(0.077)	(0.042)								
Employee growth					0.12	0.22**								
					(0.094)	(0.089)								
Revenue growth							0.086	0.29**						
							(0.073)	(0.12)						
PPE growth									0.24***	0.35***				
									(0.037)	(0.065)				
R&D/revenue											0.30	-1.48*		
											(1.10)	(0.79)		
Market leverage													0.082	-0.37
													(0.27)	(0.47)
Market-to-book ratio													0.0081*	0.0071**
													(0.0047)	(0.0031)
High-tech dummy	0.10	-0.13*	0.056	-0.050	0.11	-0.13	0.097	-0.14*	0.12*	-0.14**	0.090	-0.073	0.10	-0.18**
	(0.071)	(0.078)	(0.084)	(0.079)	(0.10)	(0.099)	(0.070)	(0.080)	(0.070)	(0.072)	(0.10)	(0.068)	(0.071)	(0.074)
Listed dummy	0.035	-0.13**	0.13*	0.14	0.046	-0.095	0.032	-0.14**	0.036	-0.14**	0.033	-0.14**		
	(0.12)	(0.067)	(0.071)	(0.12)	(0.14)	(0.072)	(0.12)	(0.068)	(0.12)	(0.064)	(0.12)	(0.068)		
Borr. ctry GDP/cap. (log)	-2.64**	-0.95***	-1.18*	-0.61**	-5.36**	-1.21***	-2.65**	-0.96***	-2.73**	-0.95***	-2.63**	-0.95***	-2.31**	-1.01***
	(1.06)	(0.27)	(0.67)	(0.28)	(2.12)	(0.23)	(1.06)	(0.27)	(1.09)	(0.27)	(1.06)	(0.27)	(1.14)	(0.29)
Fixed effects														
1-digit SIC industry	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
2-digit SIC industry	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan type	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan purpose	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower country	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Borrower region	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Lender country	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Observations	32,234	32,234	51,488	51,496	23,182	23,182	32,184	32,184	31,500	31,500	32,214	32,214	26,587	26,587
Pseudo R-squared	0.39	0.16	0.35	0.13	0.37	0.17	0.39	0.16	0.39	0.16	0.39	0.16	0.39	0.17
Clusters	40	40	46	46	34	34	40	40	40	40	40	40	39	39

This table compares the results of logit regressions of the probability of foreign loans as a function of key borrower-firm characteristics and control variables with different sets of fixed effects. The dependent variable is the Foreign loan dummy (see Table 12 for variable definitions). For each regression specification, the first column reports logit coefficient estimates with a "full" set of fixed effects, and the second column reports logit estimates with the "reduced" set of fixed effects used in all prior regressions. The "full" set of fixed effects includes 2-digit SIC industry, Year, Loan type, Loan purpose, Borrower country, and Lender country. This set of fixed effects is too restrictive to use to estimate the determinants of each category of foreign loans due to insufficient number of observations, which is why the "reduced" set (1-digit SIC industry, Year, Loan type, Loan purpose, and Borrower region) is otherwise used throughout the paper. For the full-FE regressions, a substantial number of observations are dropped due to lack of variation within fixed effects groups. The reduced-FE regressions in this table drop the exact same observations to make each regression sample fully comparable. The seven specifications correspond to specifications (1)–(7) in Table 7. The sample is restricted to loans originated between 1999 and 2016. Standard errors (in parentheses) are clustered at borrower country level. */**/*** indicates statistical significance at the 10/5/1 percent level.

Table 11: Robustness II: Comparisons between full FE and reduced FE logit regressions of the domestic-foreign loan dichotomy, all years

	(1)		(2)		(3)		(4)		(5)		(6)		(7)	
	Full FE	Red. FE	Full FE	Red. FE	Full FE	Red. FE	Full FE	Red. FE	Full FE	Red. FE	Full FE	Red. FE	Full FE	Red. FE
Total assets (log)	0.12*	0.10*	0.11**	0.11**			0.12*	0.10*	0.12*	0.10*	0.12*	0.099*	0.15**	0.12*
	(0.065)	(0.056)	(0.057)	(0.045)			(0.065)	(0.055)	(0.066)	(0.057)	(0.065)	(0.057)	(0.071)	(0.063)
Return on assets	-1.61***	-0.76	-1.23***	-0.90	-1.45***	-1.38**	-1.53***	-0.73	-1.53***	-0.64	-1.58***	-0.90	-2.46***	-1.41*
	(0.33)	(0.94)	(0.30)	(0.56)	(0.45)	(0.68)	(0.32)	(0.98)	(0.34)	(0.93)	(0.36)	(1.02)	(0.43)	(0.81)
Leverage	0.39***	0.18	0.35***	0.14	0.54***	0.47***	0.39**	0.17	0.43***	0.21	0.39***	0.14		
	(0.15)	(0.19)	(0.10)	(0.14)	(0.13)	(0.18)	(0.15)	(0.19)	(0.15)	(0.20)	(0.14)	(0.19)		
PPE/total assets	0.0026	0.037	-0.23**	-0.073	-0.089	0.088	-0.010	0.024	0.00075	0.019	0.0052	0.032	-0.057	-0.0028
	(0.10)	(0.091)	(0.093)	(0.091)	(0.13)	(0.073)	(0.10)	(0.095)	(0.096)	(0.092)	(0.10)	(0.090)	(0.11)	(0.11)
Share of foreign sales	1.04***	1.17***			1.31***	1.42***	1.04***	1.17***	1.08***	1.19***	1.04***	1.20***	1.08***	1.30***
	(0.15)	(0.32)			(0.16)	(0.27)	(0.15)	(0.32)	(0.16)	(0.32)	(0.16)	(0.31)	(0.15)	(0.32)
Total assets growth	0.19***	0.31***	0.13*	0.39***							0.19***	0.31***	0.20**	0.33***
	(0.065)	(0.072)	(0.077)	(0.094)							(0.066)	(0.073)	(0.083)	(0.094)
No. of employees (log)					0.089	0.029								
					(0.076)	(0.041)								
Employee growth					0.15*	0.25***								
					(0.088)	(0.097)								
Revenue growth							0.089	0.29**						
							(0.074)	(0.12)						
PPE growth									0.23***	0.34***				
									(0.035)	(0.064)				
R&D/revenue											0.24	-1.48*		
											(1.12)	(0.78)		
Market leverage													0.11	-0.36
													(0.27)	(0.47)
Market-to-book ratio													0.0077	0.0069**
													(0.0048)	(0.0033)
High-tech dummy	0.094	-0.14*	0.056	-0.045	0.11	-0.13	0.089	-0.15*	0.11	-0.15**	0.084	-0.081	0.092	-0.19**
	(0.071)	(0.080)	(0.080)	(0.067)	(0.10)	(0.098)	(0.070)	(0.083)	(0.071)	(0.074)	(0.10)	(0.070)	(0.073)	(0.075)
Listed dummy	0.037	-0.13**	0.063	0.074	0.045	-0.096	0.035	-0.14**	0.033	-0.15**	0.035	-0.14**		
	(0.12)	(0.067)	(0.049)	(0.12)	(0.14)	(0.072)	(0.12)	(0.067)	(0.12)	(0.063)	(0.12)	(0.067)		
Borr. ctry GDP/cap. (log)	-2.64**	-0.95***	-1.01	-0.65**	-5.37**	-1.21***	-2.66**	-0.96***	-2.74**	-0.95***	-2.64**	-0.95***	-2.30**	-1.01***
	(1.06)	(0.27)	(0.72)	(0.27)	(2.13)	(0.23)	(1.07)	(0.27)	(1.10)	(0.27)	(1.07)	(0.27)	(1.13)	(0.29)
Fixed effects														
1-digit SIC industry	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
2-digit SIC industry	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan type	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan purpose	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Borrower country	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Borrower region	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Lender country	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Observations	32,398	32,398	60,541	60,549	23,202	23,202	32,348	32,348	31,619	31,619	32,378	32,378	26,694	26,694
Pseudo R-squared	0.39	0.16	0.35	0.13	0.37	0.17	0.39	0.16	0.39	0.16	0.39	0.16	0.39	0.17
Clusters	40	40	46	46	34	34	40	40	40	40	40	40	39	39

This table compares the results of logit regressions of the probability of foreign loans as a function of key borrower-firm characteristics and control variables with different sets of fixed effects. The dependent variable is the Foreign loan dummy (see Table 12 for variable definitions). For each regression specification, the first column reports logit coefficient estimates with a "full" set of fixed effects, and the second column reports logit estimates with the "reduced" set of fixed effects used in all prior regressions. The "full" set of fixed effects includes 2-digit SIC industry, Year, Loan type, Loan purpose, Borrower country, and Lender country. This set of fixed effects is too restrictive to use to estimate the determinants of each category of foreign loans due to insufficient number of observations, which is why the "reduced" set (1-digit SIC industry, Year, Loan type, Loan purpose, and Borrower region) is otherwise used throughout the paper. For the full-FE regressions, a substantial number of observations are dropped due to lack of variation within fixed effects groups. The reduced-FE regressions in this table drop the exact same observations to make each regression sample fully comparable. The seven specifications correspond to specifications (1)–(7) in Table 7. The sample is unrestricted in terms of sample period, and includes all possible years. Standard errors (in parentheses) are clustered at borrower country level. */**/*** indicates statistical significance at the 10/5/1 percent level.

Table 12: Variable definitions and sources

Variable	Definition, source	Comment
Foreign loan (dummy)	A loan is defined as domestic (dummy = 0) if the principal lender as well as its immediate parent and its global ultimate owner are domiciled in the same country as the borrower firm, otherwise it is classified as a foreign loan (dummy = 1).	The principal lender is the lender bank for sole-lender loans, and the (largest) lead arranger for syndicated loans. The matching of lenders and borrowers between Dealscan and CIQ, and the mapping of lenders' immediate parents and global ultimate owners, are described in Section 3.
Degree of foreignness	Categorical variable defining a loan as *domestic* according to the same criteria as above; as a *foreign subsidiary* loan if the principal lender is domiciled in the same country as the borrower but either the lender's immediate parent or its global ultimate owner is domiciled in a different country; as a *foreign branch* loan if the principal lender is identified as a branch of a bank domiciled in a country other than that of the borrower; and as a *direct cross-border* loan if the principal lender is domiciled in a country other than that of the borrower.	
Total assets (constant USD mn)	CIQ Total Assets for the year preceding the loan origination year, converted from CIQ Filing Currency to USD using the relevant exchange rate from Dec. the same year, and deflated to Dec. 2015 USD using the monthly US CPI.[a]	Total Assets $\leq$ 0 are treated as missing. Remaining values are winsorized at 0.5 and 99.5 percent, and used in natural logarithm form in regressions.
Total assets growth	ln(Total assets)$_{t-1}$ − ln(Total assets)$_{t-2}$, where Total assets is defined as above and t is the loan origination year.	Total Assets $\leq$ 0 are treated as missing. Growth rates are winsorized at 0.5 and 99.5 percent.
Total no. of employees ('000s)	(CIQ Total Employees for the year preceding the loan origination year) $\times 10^{-3}$.	Total Employees $\leq$ 0 are treated as missing. Natural logarithm used in regressions.
Employee growth	ln(Tot. no. empl.)$_{t-1}$ − ln(Tot. no. empl.)$_{t-2}$, where Tot. no. empl. is Total no. of employees as defined above and t is the loan origination year.	Total Employees $\leq$ 0 are treated as missing. Growth rates are winsorized at 0.5 and 99.5 percent.
Prop., plant & eqpm./total assets	CIQ Gross PPE for the year preceding the loan origination year, divided by CIQ Total Assets for the same year.	Treated as missing if Gross PPE $\leq$ 0 or Total Assets $\leq$ 0. Winsorized at 0.5 and 99.5 percent.
Prop., plant & eqpm. growth	ln(Gross PPE)$_{t-1}$ − ln(Gross PPE)$_{t-2}$, where Gross PPE is measured in constant USD, and t is the loan origination year.	Gross PPE $\leq$ 0 is treated as missing. Growth rates are winsorized at 0.5 and 99.5 percent.
Total revenue growth	ln(CIQ Total Rev.)$_{t-1}$ − ln(CIQ Total Rev.)$_{t-2}$, where Total revenue is measured in constant USD, and t is the loan origination year.	Total Rev. $\leq$ 0 is treated as missing. Growth rates are winsorized at 0.5 and 99.5 percent.
Return on assets	(CIQ Operating Income)$_{t-1}$ × 0.625/[0.5 × $\sum_{k=1}^{2}$(Total assets)$_{t-k}$], where Operating Income is measured in constant 2015 USD, Total assets is defined as above, and t is the loan origination year.	Definition conforms to CIQ's standard def. of ROA. Treated as missing if Total Assets $\leq$ 0. Winsorized at 0.5 and 99.5 percent.
Leverage	CIQ Total Debt for the year preceding the loan origination year, divided by CIQ Total Assets for the same year.	Treated as missing if Total Debt $<$ 0 or Total Assets $\leq$ 0. Winsorized at 0.5 and 99.5 percent.
Market leverage (listed firms)	CIQ Total Debt for the year preceding the loan origination year, divided by the sum of CIQ Market Capitalization as of Dec. 31 and CIQ Total Assets less CIQ Total Equity for the same year.	Treated as missing if Total Debt $<$ 0, Total Equity $<$ 0, Total Assets $\leq$ 0, or Market Capitalization $\leq$ 0. Winsorized at 0.5 and 99.5 percent.

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Table 12 – continued from previous page

Variable	Definition, source	Comment
Market-to-book ratio (listed firms)	CIQ Market Capitalization as of Dec. 31 in the year preceding the loan origination year, divided by CIQ Total Equity for the same year.	Treated as missing if Total Equity < 0 or Market Capitalization ≤ 0. Winsorized at 0.5 and 99.5 percent.
Share of foreign sales	$[(\text{Tot. rev.})_{t-1} - (\text{HC rev.})_{t-1}]/(\text{Tot. rev.})_{t-1}$, where Tot. rev. is CIQ Total Revenue, HC rev. is Home country revenue based on reported revenue for geographical segments, and t is the loan origination year.	Treated as missing if reported Home country revenue ≤ 0 or Total Revenue ≤ 0. If the sum of all reported non-negative and non-overlapping revenue figures for the first 15 geographical segments $>$ Total revenue, Total revenue is replaced by this sum (this removes instances where reported HC rev. $>$ Total revenue).
R&D expense/revenue	CIQ R&D Expenses for the year preceding the loan origination year, divided by CIQ Total Revenue for the same year.	Treated as missing if R&D Expenses < 0 or Total Revenue ≤ 0. Winsorized at 0.5 and 99.5 percent.
High-tech firm (dummy)	Takes on unit value if the borrower firm's primary SIC industry coincides with one of c. 60 4-digit SIC codes corresponding to high-tech sectors, zero otherwise.	Definition of high-tech sectors follows Pagano et al. (2002), Table A2.
Listed firm (dummy)	Takes on unit value if the borrower firm has a ticker, or if either of CIQ Last Sale Price (stock price) or CIQ Market Capitalization is non-missing and > 0 on the facility start date.	
Industry	Dummy variables for the borrower firm's 1- or 2-digit Primary SIC Code in CIQ.	Financial firms (primary 1-digit SIC equal to 6) and utilities (primary 2-digit SIC equal to 49) are excluded from the sample of borrower firms.
Borrower country GDP/capita (constant USD)	From WDI for all countries except Taiwan, which is sourced from Oxford Economics. In constant 2010 USD.	Natural logarithm used in regressions.
Loan amount (constant USD mn)	(DealScan Facility Amount) $\times 10^{-6}$, deflated to Dec. 2015 USD using the monthly US CPI.	
Maturity (months)	DealScan Maturity.	
No. of lenders	For each DealScan Facility ID, the number of unique Company IDs listed in the Lender Shares portion of the database.	
Syndicated (dummy)	Takes on unit value if DealScan's Distribution Method indication equals "Syndication", zero otherwise.	
Spread (bp)	DealScan All-In Drawn spread. Measures the total cost of funds drawn from a facility (including any fees) in basis points over LIBOR.	Winsorized at 0.5 and 99.5 percent.
No. of covenants	For each DealScan Package ID, the sum of the number of financial and net-worth covenants plus one for each category of sweep (Excess-Cash-Flow, Asset-Sales, Debt-Issuance, Equity-Issuance or Insurance-Proceeds) that is non-missing and non-zero.	
No. of perf. pricing provisions	For each DealScan Facility ID, the number of Performance Pricing Types listed.	
Collateralized (dummy)	Takes on unit value if DealScan Secured equals "Yes", zero otherwise.	
Loan in borrower's home currency (dummy)	Takes on unit value if DealScan Currency equals the official currency of the country where the borrower is domiciled, zero otherwise.	
Loan type	Dummy variables for 9 loan type categories – Acq./eqm. Facility, Bridge Loan, Credit line, Fixed-rate notes & bonds, Floating-rate notes & bonds, Letter of Credit, Securitization, Term loan, or Other – aggregated by authors from the original DealScan Loan Type categories.[b]	

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Table 12 – continued from previous page

Variable	Definition, source	Comment
Loan purpose	Dummy variables for 7 loan purpose categories – Bankruptcy, CAPEX, Cap. structure-related, Gen. corp. purp./other, M&A, Reorganization, or Work. cap.-related – aggregated by authors from the original DealScan Primary Purpose categories.[b]	

This table reports definitions and sources of all variables used in tabulations and regressions. The two primary data sources used are Thomson Reuters/LPC's DealScan database for loan-level data, and S&P Compustat/Capital IQ (CIQ) for firm-level data on matched borrower (and lender) firms. Borrower-firm financial statement data are in CIQ's "Fiscal Year" date format from c. 2000, and in "Annual" format before that. Combined variables (ratios and growth rates) never mix date formats.

Table notes:

[a] Exchange rates are monthly rates from FRED for major currencies (AUD, ATS, BEF, BRL, CAD, CNY, DKK, EUR, FIM, FRF, DEM, GRD, HKD, INR, IEP, ITL, JPY, MYR, MXN, NLG, NZD, NOK, PTE, SGD, ZAR, KRW, ESP, LKR, SEK, CHF, TWD, THB, GBP, and VEF). Remaining exchange rates are from Datastream, originally sourced from Thomson-Reuters, WM/Reuters, MSCI, IFS, or national sources, as available. US CPI is *CPI – Urban Consumers, All Items* from CIQ.

[b] There are 63 original Loan Type categories and 42 Primary Purpose categories in DealScan. Exact definitions of the aggregated categories available upon request.