How Foreign Banks Facilitate Trade in Tranquil and Crisis Times: Finance or Information?*

by

Stijn Claessens, Omar Hassib, and Neeltje van Horen*

September 2014

Abstract

Financially developed countries tend to export relatively more in financially vulnerable sectors, suggesting access to finance to be an important channel for promoting trade. This paper shows that in addition the presence of foreign banks plays a critical role in trade, specifically via two channels. First, bilateral exports tend to be higher in financially vulnerable sectors when the share of foreign banks is higher (finance channel). Second, this is even more so when foreign banks from the importing country are present (information channel), with the role of bilateral foreign bank presence especially strong in less developed economies and when institutional differences between the importing and exporting country are greater. Further supportive evidence is that during the global financial crisis exports from financially vulnerable sectors suffered less when foreign banks were present, except when they came from an importing country that suffered a banking crisis itself.

* Stijn Claessens is at the IMF, University of Amsterdam, and CEPR; Omar Hassib is at Maastricht University; and Neeltje van Horen is at De Nederlandsche Bank. We are grateful to JaeBin Ahn, Frederic Lambert, and seminar participants at Maastricht University for comments, and to Yangfan Sun for help with the bank, trade and UNIDO data. The views expressed in this paper are those of the authors and not necessarily of the institutions they are affiliated with. E-Mail addresses: sclaessens@imf.org; o.hassib@maastrichtuniversity.nl; n.van.horen@dnb.nl.

I. INTRODUCTION

Banks facilitate international trade by providing financing and guarantees to importers and exporters. While access to external funds is important for domestic production, it is especially important for exporting firms.[1] Several papers indeed show that in countries with strong financial institutions firms tend to export relatively more, especially in financially vulnerable sectors (e.g., Beck, 2002). Studying specific channels, Manova (2013) finds that in financially better developed countries firms in sectors more dependent on external finance and with less tangible assets more likely export and, when exporting, tend to export more.

While banks can facilitate trade through finance, they can potentially also facilitate trade by overcoming information asymmetries and other agency issues between importers and exporters. However, no study so far has examined whether a more developed financial system facilitates trade solely through providing funds to (potential) exporters (a *finance channel*) or whether it (also) facilitates trade by helping overcome information asymmetries between (potential) exporters and importers (an *information channel*). In this paper we examine whether an information channel coexists with a financing channel by studying the role of foreign owned banks in trade.

Combining detailed bilateral, sectoral trade data with bilateral foreign bank ownership data, we provide evidence suggesting that foreign banks facilitate exports through both channels, with the information channel being especially important when the exporting country is less economically developed and when institutional distance, measured along various dimensions, between the importing and exporting country is large. Furthermore, studying the contraction in trade during the global financial crisis, we find that foreign banks continue to facilitate trade, except if the foreign banks come from a country experiencing a banking crisis.

We consider this evidence in light of two hypotheses of how foreign banks can benefit exporting firms beyond what domestic banks can offer. First, foreign banks might handle specific financing needs of exporting firms better compared to domestic banks as they tend to have more sophisticated lending technologies, especially valuable in countries whose financial systems are institutionally still underdeveloped. Furthermore, their global focus and reach and greater ability to diversify risks might make them more likely to specialize in providing trade related financial products, like letters of credit. If this is the case, foreign banks could facilitate trade through a finance channel. Since they can do this better than domestic banks can, exports

[1] First, there exist substantial upfront sunk and variable costs that have to be incurred before revenues occur that are specific to exports, like learning about profitable export opportunities, setting up and maintaining foreign distribution networks, and costs related to shipping and duties. Furthermore, exporters' need for working capital are higher since cross-border transactions on average take between 30 and 90 days longer to process than domestic transactions. Finally, the added risk of selling products overseas makes insurance and other financial guarantees more necessary.

to all countries may be higher with greater general presence of foreign banks in an exporting country. While some of these factors also apply to (the financing of) imports, we expect overall effects to be stronger for exports as they require greater upfront investments.

Second, foreign banks, especially those headquartered in the importing country, might be able to assess the risks involved with trade financing better than domestic banks can as they are more able to overcome information asymmetries and contracting problems. Having a physical presence in both the importing and exporting country might allow a foreign bank to better acquire and process information related to risks on both the importer and exporter side of the transaction. With exports involving countries with different laws and regulations, a foreign bank aware of these differences might also be better equipped to assess various transaction and general country risks. Also with enforceability of international contracts being more limited, a foreign bank present in both countries may be able to enforce contracts more easily if needed. If these benefits contribute to reducing the cost of external finance for exporting firms, foreign banks can also facilitate trade through what we call an information channel (which includes an enforcement channel), with foreign banks from the importing country present in the exporting country as the main agents and bilateral exports being especially affected.

In order to assess the importance of both channels, we exploit variations among financial systems in 107 exporting countries along several dimensions. First, as Figure 1 shows, there exists no or, if at all, a slightly negative, relation between domestic financial development and the share of foreign banks, i.e., a country can be financially highly developed (or underdeveloped) with few or many foreign banks present.[2] As such, we can assess the impact of foreign banks over and beyond the impact of general financial development. Second, in most countries where foreign banks are present, banks from several different home countries are active. In fact, only in 10 percent of the countries in our sample are banks from only one home country active. This allows us to examine both the impact of general as well as specific bilateral presence on bilateral exports allowing us to differentiate between the two channels: whereas foreign banks in general could facilitate exports to all countries through the finance channel, foreign banks from the importing country active in the exporting country should be the ones that especially facilitate bilateral exports through the information channel.

We combine a large dataset on bilateral foreign bank presence with data on bilateral, sectoral exports for 28 manufacturing sectors over the period 1995-2009 to examine the strength of both channels. The use of sectoral data allows us to exploit variation at the industry level with respect to dependency on external finance and endowments of tangible assets that are usable as collateral, in addition to country variation in (bilateral) foreign bank presence. These industry characteristics are for technological reasons innate to the manufacturing process and are

[2] Claessens and van Horen (2014) show that foreign bank presence can be explained by various factors, only one of which is a country's general (and financial) development.

unlikely to be determined by either the level of financial development or the share of (bilateral) foreign banks. At the same time, firms more reliant on external finance and with fewer tangible assets are expected to benefit more from the presence of foreign banks as they can facilitate trade through the finance and/or information channel. In our empirical strategy, we therefore study the impact of both general and bilateral foreign bank presence interacted with sector indicators of external financial dependence and asset tangibility on bilateral trade. This allows us to also include both importer and exporter fixed effects and therefore reduce any residual endogeneity and reverse causality concerns.

Our regression results confirm the established fact that countries with more developed financial sectors tend to export relatively more in sectors that have greater natural external financial dependence and less tangible assets, indicating that access to finance is an important channel. Controlling for this effect, we find that sectors with greater external financial dependence and less tangible assets tend to export more when a larger share of the banking sector is foreign owned and even more so when foreign banks headquartered in the importing country are present in the exporting country, indicating that foreign banks facilitate trade through both a finance and information channel. The impact of bilateral foreign bank presence is especially large in less developed economies and when differences in the availability of credit information, and the quality of the contracting and regulatory environments between the importing and exporting country are greater, providing further evidence that foreign banks also facilitate trade by overcoming informational barriers and helping in contract enforcement.

When studying the collapse in trade during the global financial crisis, we find that foreign banks can both facilitate and impede trade flows depending on the shocks they themselves experience. Controlling for changes in sector-specific import demand, time-invariant sources of comparative advantage, and shocks to aggregate production and credit conditions in the exporting countries, we shows that exports suffer less in sectors with greater external financial dependence and less tangible assets when foreign bank presence is greater. The effect of bilateral foreign bank presence during the global financial crisis depends, however, on the parent banks' health: if foreign banks are from an importing country that itself experiences a banking crisis, then exports decline more in financially vulnerable sectors; if not, then exports in these sectors decline less. With a crisis at home, the finance channel can thus overwhelm the information channel.

The remainder of the paper is structured as follows. The next section describes the literature on financial sector development, trade and foreign bank ownership. Section 3 describes the different data sources we combine and presents the methodology. Section 4 discusses our empirical results for normal times and Section 5 for during the global financial crisis. Section 6 concludes.

II. LITERATURE REVIEW

This paper adds to the literature on the role of financial frictions in international trade. A number of theoretical papers have shown that countries with a relatively well-developed financial system can have a comparative advantage in industries that rely more on external finance (Kletzer and Bardhan, 1987; Beck, 2002; Matsuyama, 2005; and Wynne, 2005). Building on this theoretical work, a number of cross-country studies have exploited sectoral trade data to show that in countries with strong financial institutions financially vulnerable sectors tend to export more (Beck, 2002, 2003; Svaleryd and Vlachos, 2005; Hur, Raj and Riyanto, 2006; Manova, 2013; Becker, Chen and Greenberg, 2013). Studies using firm-level data from high-income countries and emerging markets provide further evidence that credit constraints negatively affect firms' scope of export products, number of destinations, and the value of foreign sales (Greenaway, Guariglia and Kneller, 2007; Muuls, 2008; Manova, Wei and Zhang, forthcoming; Berman and Hericourt, 2010; Minetti and Zhu, 2011). While most papers focus on how financial development affects trade, a few papers also examine the interplay between financial and institutional development and how this affects trade.[3]

The sharp drop in trade following the global financial crisis triggered research on the role of finance, especially trade finance, as a causal factor. Ahn (2011) develops a model that predicts foreign lending supply shocks to have larger adverse impacts on trade than on domestic activity. Using sectoral import data from the US, Chor and Manova (2013) show that credit conditions in exporting countries affected international trade during the crisis. Ahn, Amiti, and Weinstein (2011) document price effects over the financial crisis period consistent with a drying up of trade finance. Evidence from other crises confirms some of these patterns. Amiti and Weinstein (2011) show that Japanese banks transmitted financial shocks to exporters during the crises that plagued Japan in the 1990s. Iacovone and Zavacka (2009), using cross-country evidence from 23 banking crises, find export growth to be particularly slow in sectors more reliant on external finance. Berman and Martin (2012) find that while for an average country the disruption effect of a banking crisis in partner countries is moderate, it is much larger and long-lasting for African exporters, suggesting their relative underdeveloped financial systems cannot offset the drying up of trade finance from partners.

Others, however, challenge this view. Levchenko, Lewis and Tesar (2010) find vertical linkages, intermediate inputs and composition effects to be more important in explaining the drop in trade than disruptions in trade credit. Bricongne et al (2012) find that, while exports of French firms in more external financially dependent sectors were more adversely hit during the global crisis, the effect is small compared to the impact of demand shocks. Our paper builds on

[3] Ju and Wei (2011) develop a general equilibrium model in which countries where institutions are well developed, finance is not an independent source of comparative advantage in trade, while in countries with weak institutions it is. Matsuyama (2005) develops a theoretical model to illustrate how corporate governance and contractual enforcement can affect the patterns of international trade in the presence of credit market imperfections.

this literature, by not only examining the role of one particular type of financial intermediary, namely foreign banks in general and in its bilateral representation, in facilitating trade, but also doing also so in both tranquil and crisis times.

The second main strand of literature this paper builds on the behavior and implications of foreign banks. This literature is large (for an overview, see Claessens and Van Horen, 2013) and views on whether and how foreign banks contribute to financial development and economic performance vary. Foreign banks have been found to lower the overall costs and increase the quality of financial intermediation, increase access to financial services, and enhance the financial and economic performance of their borrowers (Claessens, Demirguc-Kunt and Huizinga, 2001; Clarke, Cull, Martinez Peria and Sanchez, 2003, Martinez-Peria and Mody, 2004; Claessens, 2006). These beneficial effects are thought to result from increases in banking competition, the introduction and spill-over of new, more sophisticated technologies, and from enhanced domestic regulatory reforms. And these effects can extend to affects trade. In Ahn‘s (2011) model, for example, foreign banks, as they have a comparative advantage in evaluating firm creditworthiness, specialize in international trade finance. And foreign banks can play a role in the enforcement of contracts across borders, being more effective than domestic banks and exporters in pursuing financial claims against importers, as suggested by the models of Olsen (2012), Schmidt-Eisenlohr (2013), and Antras and Foley (forthcoming), and by evidence in the last paper on the choice of types of trade finance.

However, this literature also shows that the effects can depend on some conditions. Limited economic development and entry barriers seem to hinder the beneficial effects of foreign banks and can lead to “cream skimming” (Demirguc-Kunt, Laeven and Levine, 2004; Beck and Martinez Peria, 2008; Detragiache, Gupta and Tressel, 2008). Foreign banks also add less to financial development and access to financial services in countries where they have a limited market share, where enforcing contracts is costly, and where creditor information is limited available (Claessens and Van Horen, 2014). And, some studies show that the presence of foreign banks can be destabilizing when the parent bank is hit by a shock, especially when the foreign affiliate is not financed by local deposits (Cetorelli and Goldberg, 2012a and 2012b, Ongena, Peydro and Van Horen, 2013, and De Haas and Van Lelyveld, 2014). Our paper adds to these literatures by studying the role (bilateral) foreign banks play in facilitating trade in both tranquil and crisis times. To the best of our knowledge, no paper has so far empirically researched these questions.

III. DATA

We want to examine to which extent the presence of foreign banks facilitates firms' export and through what specific channels, finance or information. To this end, we need to combine sectoral and bilateral data on exports with detailed and bilateral data on foreign bank presence. We also need sectoral data on external financial dependence and asset tangibility. Furthermore, in order to exploit the idea that generating information about the riskiness of firms and countries tends to be more difficult in less developed countries, we want a sample that includes high-income countries, emerging markets as well as developing countries.

We obtain data on bilateral trade flows for 134 countries at the 3-digit ISIC industry level for 28 manufacturing sectors from the UN COMTRADE database for the period 1995-2009. To account for the skewed distribution in exports and deal with zero observations, our dependent variable is the log of the value of exports from country *i* to country *j* in 3-digit ISIC sector *s* and year *t*. The value of exports and number of trade partners differ greatly across countries and sectors. Appendix Table 1 reports for each exporting country total export in the 28 manufacturing sectors, the number of different sectors a country exports in and the number of trading partners (all measured in 2007).

To determine total and bilateral foreign bank presence in each importing-exporting pair, we use the bank ownership database constructed by Claessens and Van Horen (2014). The database contains ownership information of all current and past active commercial banks, saving banks, cooperative banks and bank holding companies that reported financial statements to Bankscope at least one year between 1995 and 2009. It covers 135 countries and coverage is very comprehensive, with banks included accounting for 90 percent or more of banking system assets. A bank is considered foreign owned if 50 percent or more of its shares is owned by foreigners, with residence of its main owner determined as the country for which the total shares held by foreigners is the highest.[4]

To capture the importance of foreign banks in financial intermediation, we match ownership data with balance sheets data provided by Bankscope. Since we are interested in studying both the impact of general foreign bank presence and of the presence of foreign banks headquartered in the importing country specifically, our main variables of interest are: the share of the assets of <u>all</u> foreign banks active in exporting country *i* in total bank assets in exporting country *i* at time *t* (FB_{it}) and the asset share of foreign banks from importing country *j* active in exporting country *i* of total bank assets in exporting country *i* (BFB_{ijt}).[5]

[4] This implies that a foreign bank may be considered French owned, even though French investors only hold 20 percent while German and UK shareholders each hold 15 percent. In general, however, a foreign bank is majority owned by one parent bank. For further details see Claessens and Van Horen (2014).

[5] We do not include indirect links, as when countries *i* and *j* have no direct foreign bank links, but do have bank links with a common, third country as we expect these to be economically less important.

In our baseline regression we do not want to take the crisis period into account and we end our estimations therefore in 2007. Since asset information is scarce in Bankscope prior to 2005, our baseline sample period using asset shares covers the years 2005-2007. As robustness tests, however, we calculate general and bilateral foreign bank presence based on the number of banks so as to also estimate our regression model for the full period 1995-2007. We also exclude a number of countries from our sample: offshore centers, as very specific factors may drive a bank's decision to enter those;[6] and exporting countries for which the share of banks with asset information available from Bankscope is less than 60 percent in at least one year between 2005 and 2007.[7] This leaves us with a final sample of 107 exporting and 134 importing countries. Appendix Table 2 provides a list of all exporting countries in our sample the share of foreign banks (in assets and numbers), the number of foreign banks present, and in how many different countries the parent banks are headquartered (all as of 2007).

In 2007, 1,074 foreign banks headquartered in 77 different home countries were active in our sample of exporting countries. The importance of foreign banks varies greatly by exporting, host country and can be from a zero (e.g., Ethiopia) up to a 100 percent share, as for some other African countries. Our econometric identification strategy relies in part on having in a specific exporting country, foreign banks from more than one country. On average, 11 foreign banks from six different home countries are present in an exporting country and only in very few countries (11) are only foreign banks from one country present. In 78 percent of the 12,815 possible exporting-importing combinations in our sample at least one foreign bank is present, yet in only six percent of these pairs is a bank headquartered in the importing country present in the exporting country.

Our empirical strategy also relies on exploiting industry differences with respect to dependency on external finance and the availability of tangible assets, as done in prior literature, also for exports (e.g., Manova, 2013). For technological reasons innate to the manufacturing process, producers in certain industries incur higher up-front investment that cannot be generated internally, thus typically requiring more external finance (Rajan and Zingales, 1998). Sectors also differ in firms' endowments of tangible assets, such as plant, property and equipment, that can serve as collateral for raising outside finance, with firms having less tangible assets likely having more difficulty to attract external finance, especially in less financial developed and institutionally weaker countries (Braun, 2003; Claessens and Laeven, 2003). These two industry characteristics are widely viewed as sector-specific, technologically-determined

[6] We define the following countries as offshore centers: Andorra, Antigua and Barbuda, Bahamas, Bahrain, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Cyprus, Liechtenstein, Mauritius, Netherlands Antilles, Panama, Seychelles and Singapore.
[7] Including these countries does not affect our main results

characteristics innate to the manufacturing process, and exogenous from the perspective of an individual firm, with industries' relative ranking also tending to be stable over time.

In this literature, external financial dependence is defined as the fraction of total capital expenditure not financed by internal cash flows from operations, and asset tangibility as the share of net plant, property and equipment in total book-value assets. Even though these sector characteristics could differ across countries, the measures are typically constructed using US data.[8] We use the values as provided by Manova (2013), who calculates these (following Braun, 2003) using data for all publicly-listed US-based companies available in Compustat averaged over 1986-1995. Appendix Table 3 lists for all sectors in our sample these ratios for external finance dependency and asset tangibility.

We also use a number of other variables as control variables to capture country differences. These include, besides domestic financial sector development, real GDP of both the importing and exporting country, the kilometer distance between the two, and various variables to capture countries' economic and institutional environments. Appendix Table 4 provides a detailed description of the variables used and their sources.

In terms of preliminary evidence, Figure 2 shows that foreign bank presence and a country's aggregate export activity are slightly negatively related. This, however, is partly explained by the fact that, while trade is generally positively related to countries' financial development, foreign bank presence can be high in both financially (and economically) developed as well as underdeveloped countries (see Figure 1).[9] This underlines the importance to control for the impact of financial development in the exporting country when assessing the specific role of foreign banks in facilitating trade. Furthermore, these simple scatter diagrams ignore any sectoral variation. Nevertheless, Figure 3 shows that bilateral foreign bank presence and a country's bilateral export activity are slightly positively related. While this relation also ignores variation across sectors, it provides some preliminary evidence that the information channel may play a role in facilitating trade. We next explore these questions more formally in our econometric analyses.

[8] This is for three reasons. First, as the US has one of the most advanced financial systems, the behavior and choices of firms likely reflect optimal choices of external financing and asset structure, and not financing constraints. Second, detailed firm-level data needed to construct the variables are not available for many countries. Finally, for our empirical strategy only a relative ranking of sectors across the two dimensions is needed; therefore using US data is not a problem if industries' relative ranking is the same across countries even if the exact magnitudes may vary.

[9] Most high-income countries and the more developed emerging markets tend to be in the upper-left part of the graph, while lesser developed (African) countries, where foreign bank presence tends to be high due to past colonial links, tend to be in the lower-right part of the graph.

IV. FOREIGN BANKS AND TRADE IN TRANQUIL TIMES

To examine the role of foreign banks in facilitating trade in tranquil times, we closely follow the specification of Manova (2013), who uses a traditional gravity trade model extended with the level of financial development (captured by private credit to GDP, as is standard in the literature). Since our goal is to examine the role of foreign banks in facilitating trade over and above the impact of financial development, our baseline model extends this specification by including also the total and bilateral shares of foreign banks in the exporting country. To test whether general and bilateral foreign bank presence facilitates trade through the finance or information channels, we allow the impact of these variables to vary by sectors that differ with respect to the dependency on external finance and asset tangibility. With this specification we can test the causal effect of (bilateral) foreign bank presence on export activity through the two channels. It also allows us to address the concern that both financial development and the share of (bilateral) foreign banks might be endogenous to the decision to export.[10] We include an extensive set of fixed effects, covering importer, exporter, year and industry, to make sure that our results are not driven by omitted variables or general changes in trade. In our robustness tests, we further include a number of additional control variables (like the countries' broader institutional environment and factor endowments).

Our baseline model is then specified as follows:

$$lnE_{ijst} = \beta_1 FD_{it} + \beta_2 FD_{it} \cdot extfin_s + \beta_3 FD_{it} \cdot tang_s + \gamma_1 FB_{it} + \gamma_2 FB_{it} \cdot extfin_s + \gamma_3 FB_{it} \cdot tang_s + \delta_1 BFB_{ijt} + \delta_2 BFB_{ijt} \cdot extfin_s + \delta_3 BFB_{ijt} \cdot tang_s + \kappa' X_t + \epsilon_i + \mu_j + \varphi_s + \tau_t + \eta_{ijst},$$

where subscripts *i* and *j* denote exporting and importing country respectively, and *s* and *t* denote industry and year respectively; E_{ijst} stands for the (log of) exports from country *i* to country *j* in sector *s* in year *t*, FD_{it} captures financial development in the exporting country *i* at time *t*, and $extfin_s$ and $tang_s$ measure the external financing dependency and asset tangibility of the sector *s*; FB_{it} captures the share of foreign banks in the exporting country *i* at time *t*; BFB_{ijt} captures the share of foreign banks from the importing country *j* active in the exporting country *i* at time *t*; k' is a coefficient vector and X_t is a matrix of control variables which, in the base line specification and consistent with a gravity model, includes the (log of) real GDP (in dollars) in the exporting and importing country at time *t* and the (log of) the distance between the two; ϵ_i, μ_j, φ_s and τ_t are vectors of exporter-, importer-, industry- and year-fixed effect coefficients, respectively; and η_{ijst} is the error term. Regressions are estimated using OLS and standard errors are clustered by exporting-importing pairs.

[10] While (bilateral) foreign bank presence could follow trade, as when foreign banks presence follows from firms establishing subsidiaries abroad that (bilaterally) trade, this possibility is unlikely to systematically correlate with the sector-specific characteristics on external financing and asset tangibility dependencies.

A. Baseline results

Table 1 provides the baseline regression results. It first (column 1) replicates the specification of Manova (2013) and finds nearly identical results: financial development increases exports for those sectors more financially dependent and with less tangible assets. The gravity variables, importer GDP and the distance between exporter and importer, also have the expected signs, positive and negative respectively. Coefficients on these key variables are also of similar magnitudes and overall explanatory power is very similar to that of Manova. Two differences are financial development and GDP in the exporting country, which have the opposite signs. This likely reflects the short sample over which we estimate and the many fixed effects we add to the regression, including at the exporter level, which absorb much of the limited time-variation between 2005 and 2007 in exporting countries' financial and economic developments. Indeed, in the last regression where the sample period is substantially longer (1995-2007), both variables have the expected positive signs.

We next add to the regression the share of overall foreign bank presence in the exporting country and its interactions with sectoral financial dependence and asset tangibility. We find (column 2) that foreign bank presence itself is not necessarily associated with greater exports – reflecting perhaps again in part that we use exporter fixed effects and a short time sample. When interacting it with financial dependence and intangibles intensity, however, we find that countries with a higher share of foreign banks export relatively more in sectors more dependent on external finance and with less tangible assets to pledge as collateral. These effects are clearly in addition to the financing effects of general financial sector development (the coefficients for those interaction variables actually do not change much). This suggests that general foreign bank presence provides for additional financing to financially vulnerable firms, maybe because of associated better technology and know-how, which allows firms to access export markets and increase their exports. In other words, these results suggest that foreign banks facilitate trade through a financing channel.

We next add the bilateral foreign bank presence as a share of total banking system assets on its own and interacted again with our sectoral characteristics. We find (column 3) that bilateral foreign bank presence adds, in addition to general presence, to bilateral exports performance, especially for financially dependent and tangible-intense sectors (for the latter, the coefficient for the interaction has the expected negative sign, but its significance is only 12 percent). Also, the coefficients for the key other (interaction) variables hardly change in significance or size. These regression results are the most direct evidence of an information channel associated with bilateral foreign bank presence, as we already control for the effects of general financial sector development and overall foreign bank presence, i.e., accounting for general external financing and overall technology and know-how channels.

Effects are also economically significant: an increase in general foreign bank presence by one standard deviation means exports in the sector at the 75th percentile of the distribution of external financing dependency are 7 percentage points higher than in the sector at the 25th percentile of the distribution. Similarly, exports in sectors at the 25th percentile of the distribution of asset tangibility are 6 percentage points higher compared to sectors at the 75th percentile of the distribution. The presence of a foreign bank from the importing country increases this effect even further: 2 percentage points in the case of external financing dependency and 2 percentage points for asset tangibility.
We subsequently run the same regression using the share of foreign bank presence in terms of numbers rather than assets, first using the 2005-2007 sample (column 4) and then the full, 1995-2007 period (column 5). As can be seen, and focusing only on effects of the interactions of general and bilateral foreign bank presence with financial dependence, regression results for the same 2005-2007 sample are similar to those using asset shares, albeit the coefficient sizes change somewhat. An increase in general foreign bank presence in terms of numbers by one standard deviation means exports in the sector at the 75th percentile of the distribution of external financing dependency are 3 percentage points higher than in the sector at the 25th percentile of the distribution. The presence of a foreign bank from the importing country raises this effect by an additional 3 percentage points. These findings indicate that on the bilateral side the presence of a foreign bank seems to be as important as its size, while the impact of general foreign bank presence depends more on the share of foreign banks in terms of assets and less on their share in terms of numbers.

Redoing the same regression for the longer times series, 1995-2007, provides very consistent results on the role of bilateral foreign bank presence (column 5). The economic impact of bilateral presence through the external financial dependence channel is very similar and of equal significance to the previous regressions. The coefficient for the interaction between bilateral foreign banks and tangibles intensity has the right sign, but remains insignificant. General foreign bank presence appears to have no impact for financially dependent firms, but this may reflect the difference between the number and asset shares (the foreign banking literature has found that the impact of general foreign bank presence varies by its asset market share, not so much by its number share).

B. Robustness tests

We conduct a number of robustness tests in which we include various other country variables that may affect exports, possibly also through interactions with sectoral financial vulnerabilities. Results (reported in Table 2, where column 1 repeats the base regression results of Table 1, column 3) show in general that adding these additional control variables does not change much the statistical significance or size of the coefficients on either general or bilateral foreign bank presence, either directly or interacted with sectoral characteristics.

Specifically, we include in the first robustness regression the CPI in the home country, directly and interacted with the sectoral dummies to control for (sectoral) differences in competitiveness that may affect export performance. The regression result (column 2) shows that CPI itself is not statistically significant. And the statistical significance and size of the coefficients of all variables remain very much the same, and are again supportive of the special role of bilateral foreign bank presence through an information channel.

Next we include, besides the general fixed effects, importer-sector fixed effects, i.e., a full matrix of all 134 importers times 28 sectors. This way we control for any demand and price effects that may vary by importer and sector. Regression results (column 3) remain largely unchanged and we still find the special effect of bilateral foreign bank presence for external financially dependent sectors.

We furthermore explore the role of other country differences that may, similar to financial sector development, also affect export performance and especially that of sectors with greater financial vulnerabilities. We include, in line with the general law and finance literature, the exporter's GDP per capita and an index of the prevalence of the rule of law in the country as two key (institutional) development factors, and interact these variables with the two sectoral characteristics. We find (column 4) that the export performance of more developed countries is indeed higher and that this comes about in part through easier access to external financing associated with both higher general economic development and better rule of law. Importantly, the results for the role of (bilateral) foreign bank presence are not affected. While the size of the coefficients on general presence is somewhat smaller, perhaps as the other two country variables assume some of its beneficial effects, the coefficients on the role of bilateral foreign bank presence and its interactions with the two sectoral measures are of the same magnitudes.

Since the effects of bilateral foreign bank presence on export performance can come about through overcoming information asymmetries and contracting problems in part related to how far the exporting and importing countries are from each other, we next directly explore the role of bilateral country differences by including three additional distance measures: common border; common language; and past colonial links. (Note that we always already include physical distance, as is commonly done in gravity models.) We find (column 5) these distance measures to be all statistically significant positive, i.e., "closer" countries have more bilateral trade with each other, consistent with the presence of fewer information asymmetries and contracting problems. Importantly, adding these variables largely reconfirms the additional role of bilateral foreign bank presence for trade. While the coefficients are somewhat smaller, as the distance measures absorb some of the effects, there remains a strong independent role of foreign banks in promoting exports through the financing and information channels.

Lastly, countries differ in various other ways that can affect their export performance. While the fixed effects we use already control for any time-invariant country characteristics, there

could be country characteristics that interact with sectoral characteristics to affect exports. For example, a country rich in human capital may due to a comparative advantage have more exports in a sector that relies naturally more on human capital. Similar to Manova (2013), we use the following three country factor endowments: physical capital intensity, human capital intensity, and natural resource intensity. We also interact these with the corresponding sectoral intensities, where the benchmarks are again obtained from US corporate data in the same way as the financial vulnerability measures. Regression results (column 6) show indeed that more capital and natural resource intensive sectors export more in countries that are more endowed with capital and natural resources. Importantly, even with these extensive controls and interactions, the effects of (bilateral) foreign bank presence on export performance are reconfirmed, with the same set of coefficients being statistically significant as in the base regression (column 1), except for general financial sector development.

C. Exporting country heterogeneity and institutional distance

We could expect some effects of (bilateral) foreign bank presence to be stronger for certain types of countries, notably those economically and institutionally less developed. This is because in those markets one can expect firms, especially those with large external financing needs, to find it more difficult to raise external financing, get trade finance and thus export. Foreign bank presence could then be especially useful to promote exports. To examine whether this is the case we split our sample of exporting countries across different dimensions, with results reported in Table 3, with regression specifications the same as in Table 1, column 3.

We start with the split high-income vs. emerging markets and developing countries. Comparing regression results in column 1 for the group of high-income countries only with those in column 2 for emerging markets and developing countries only, we confirm that general foreign bank presence helps promote exports of external financially dependent and intangible intensive sectors in both groups of countries. Importantly, however, the coefficients of bilateral foreign bank presence and its interaction with external financial dependency are only statistically significant (and of the right sign) for the emerging markets and developing countries group and not for the high-income group. Furthermore, the interaction with asset tangibility now becomes significant at the 1 percent level for the emerging markets and developing countries group. In other words, especially in less developed countries do firms in sectors with limited tangible assets benefit substantially from having a foreign bank from the importing country present in their countries. The coefficients are also economically much larger for this subgroup than for the full sample. These findings are consistent with the idea that by overcoming information asymmetries, bilateral foreign bank presence can aid with increasing exports.

We explore the role of country differences more by splitting the sample of exporters in other ways. Specifically, we create “strong” and “weak” groups along the following three exporter country dimensions: depth of creditor information; strength of investor protection; and quality

of regulation. For these classifications, regression results (columns 3-8) are generally again consistent with (bilateral) foreign bank presence being more important to promote exports for those countries that are institutionally weaker. Importantly, bilateral foreign bank presence has greater effects in all the three "weak" group countries for those sectors with high intangibles intensity, suggestive of an information channel.

Finally, we investigate the role of bilateral country differences by splitting our observations in "high" and "low" similarity groups along the median of the absolute differences for the same three country dimensions as in Table 3: depth of creditor information; strength of investor protection; and quality of regulation. As an example, the "Similar creditor information" category includes those exporter-importer pairs where the absolute difference in the quality of creditor information is below the median difference for all exporter-importer pairs. Conversely, in the "Different creditor information" group those pairs are included where the absolute difference between exporter and importer quality of creditor information is above the median. We also report regression results when we split observations within the emerging markets and developing countries groups only as we expect stronger results for these groups. (We do not report splits for the high income group as institutional differences within this group are small).

Regression results, reported in Table 4, generally show that for those countries that are more dissimilar, bilateral foreign bank presence makes for a greater impact on export for those sectors with greater external financial dependence and less tangible assets, again consistent with the existence of a channel of greater access to finance due to lower information asymmetries. For example, for those pairs of countries that do not share similar creditor information and investor protection (columns [2] and [4]), the impacts of bilateral foreign bank presence interacted with our vulnerability measures are statistically significant and with the correct sign, while they are not significant for those exporting-importing pairs that have similar creditor information and investor protection. Similar, for pairs that are more different in regulation, the impacts of bilateral foreign bank presence are larger.

Regression results are generally stronger for the group of emerging markets and developing countries (columns [7]-[12]) than for the general sample. This suggests that foreign bank presence in general and especially the presence of a foreign bank headquartered in the importing country facilitates trade between institutionally less developed countries and high-income countries (that is, the exporting-importing pairs where institutional differences are the highest). Given the importance of trade for economic development and the potential large demand for products in high-income countries, this finding points towards an important beneficial effect of foreign owned banks in emerging market and developing countries.

V. FOREIGN BANKS AND TRADE DURING THE GLOBAL FINANCIAL CRISIS

In the previous section we showed that foreign banks facilitate trade in tranquil times. In this section, we examine the role of foreign banks in facilitating (or not) trade during the global financial crisis. To this end we study the growth in bilateral, sectoral exports between 2007 and 2009. We again exploit industry differences with respect to external financial dependence and the availability of tangible assets, by allowing the impact of (bilateral) foreign ownership to differ between sectors. If (bilateral) foreign banks facilitate trade during the global financial crisis, then firms in financially vulnerable sectors should have experienced relatively stronger growth (less severe collapse) in exports between 2007 and 2009. If foreign banks impeded trade during the crisis, we should find the opposite effect.

The use of growth of exports before and after the crisis as our dependent variable implies that we directly control for any time-invariant sources of comparative advantage that may affect the level of a country's exports across sectors. To reduce residual concerns that our results are driven by omitted variables, and consequently alternative explanations, we use again a set of fixed effects and additional controls. Note also that, while there were also shocks to importers' demand over this period, we control for these since by using bilateral export data.

First, we control again for the general level of financial development in the exporting country which we interact with our sector measures for external financial dependency and asset tangibility. The use of sector data enables us to include exporting country fixed effects, which allows us to directly control for shocks to aggregate production and credit conditions in the exporting country. In addition, we add importer-industry fixed effects to control for fluctuations in sector specific import demand in the importing country. Importantly, we include a dummy variable that is one if the exporting country experienced a banking crisis during the global crisis (based on the banking crisis database of Laeven and Valencia, 2013), which we also interact with our sector measures for external financial dependency and asset tangibility. This way we control for the possibility that firms in financially vulnerable sectors might be more affected by a change in local credit conditions than the average firm. Finally, we include the distance between importer and exporter country to allow for the fact that exports might decline more when the distance between the two countries is large (e.g., as information asymmetries in general are likely to have risen during the global crisis).

Our crisis model is then specified as follows:

$$gE_{ijs} = \beta_1 FD_i \cdot extfin_s + \beta_2 FD_i \cdot tang_s + \gamma_1 FB_i \cdot extfin_s + \gamma_2 FB_i \cdot tang_s + \delta_1 BFB_{ij} \cdot extfin_s + \delta_2 BFB_{ij} \cdot tang_s + \kappa' X + \epsilon_i + \mu_{js} + \eta_{ijs},$$

where subscripts *i* and *j* denote exporting and importing country respectively, and *s* denotes industry; gE_{ijs} captures the growth (log change) in exports from country *i* to country *j* in sector *s* between 2007 and 2009 (winsorized at the 1th and 99th percentile), FD_i captures financial

development in the exporting country *i* in 2007, and $extfin_s$ and $tang_s$ measure the external financing dependency and asset tangibility of the sector *s*; FB_i captures the share of foreign banks in the exporting country *i* in 2007; BFB_{ij} captures the bilateral share of foreign banks from the importing country *j* active in the exporting country *i* in 2007; k' is a coefficient vector and *X* is a matrix of control variables which includes the interaction of a dummy capturing whether the exporting country experienced a banking crisis with $extfin_s$ and $tang_s$, and the (log of) the distance between the two; ϵ_i and μ_{js} are vectors of exporter- and importer-industry fixed effect coefficients, respectively; and η_{ijs} is the error term. Regressions use OLS and standard errors are clustered by exporting-importing pairs.[11]

A. Results

Table 5 provides the regression results. When we focus on all exporting countries, the results indicate that in countries with a higher share of foreign banks, firms in sectors more dependent on external finance and with less tangible assets to pledge as collateral experience a lower drop in exports during the global financial crisis. This result is especially strong for high-income exporting countries and much weaker for emerging markets and developing countries. The presence of a foreign bank from the importing country, on the other hand, does not seem to have an (additional) beneficial impact on trade. If anything, the sign of the coefficient (albeit not statistically significant) indicates that firms in financially more vulnerable sectors tend to export relatively less to an importing country whose banks have a local presence in the exporting country. But these regressions do not yet control for the presence of a banking crisis.

In Table 6 we therefore further investigate this finding by differentiating between importing countries that experienced a banking crisis themselves between 2007 and 2009 and those that did not. As can be seen in the first two columns, we continue to find a positive impact of general foreign bank presence on export growth of financially vulnerable sectors (albeit a bit less precisely estimated). The results regarding bilateral foreign bank presence and the occurrence of crises are quite striking. As one might expect, having a foreign bank present from an importing country when this country itself is hit by a banking crisis has a negative impact on exports for those financially more vulnerable sectors (column [2]; note that this is not due to the crisis-affected importing country having a lower general demand). When there is no banking crisis in the foreign banks' home (importing) country, however, this effect disappears (column [1]) and even reverses and becomes significant when we only look at high-income importing countries (column [3]).

[11] We use here a cross-sectional instead of a panel approach consistent with the notion of testing how an (largely) unexpected shock, the global financial crisis, affects differentially countries and sectors. Furthermore, estimating this as a panel is computationally very challenging given the large number of fixed effects needed to adequately control for any other factors explaining trade flows (importer-sector-year, exporter-year and exporter-sector).

As seen from the remainder of the table, this effect is mainly driven by emerging markets and developing countries that are exporting to high-income countries (columns [11] and [12]). For these countries, general foreign bank presence helps to stabilize trade during a financial crisis. With a foreign bank headquartered in the importing country present, this effect strengthens in general, but weakens when there is a banking crisis in the importing country. These findings suggest that foreign banks, when they themselves are not facing a funding shock at home, can help stabilizing trade during a global financial crisis, both through a financing and an informational channel. The last channel, as we saw in the previous section, is especially important for those exporting countries that are less developed, likely as they have fewer alternative sources, face greater costs switching banks for trade finance, and have worse contracting environments.

VI. CONCLUSION

Investigating the role of foreign banks and using a unique dataset of bilateral foreign bank presence combined with data on bilateral sector exports for 107 exporting countries. Controlling for the beneficial impact that domestic financial development has on trade, we find that foreign bank presence facilitates trade both through a financing channel and an information channel. We show that in tranquil times sectors that have greater natural external financial dependence and less tangible assets tend to export more when a larger share of the banking sector is foreign owned and even more so when foreign banks headquartered in the importing country are present in the exporting country. The positive impact of bilateral foreign bank presence on trade is especially large in less developed economies and when the institutional difference between the importing and exporting country is large, providing further evidence that foreign banks facilitate trade by overcoming information barriers. Furthermore, during the global financial crisis foreign banks continue to facilitate trade, except when headquartered in a country experiencing a banking crisis itself.

Given the importance of trade in economic development, our findings indicate that both in tranquil and crises periods foreign banks can have a positive impact on a country’s economic growth above and beyond their impact on lowering the cost and increasing the quality of financial intermediation, especially for economically and institutionally underdeveloped countries. Our findings also suggest that it can matter for trade from which country the foreign banks come, an aspect of foreign bank presence also found to be relevant for financial stability. In light of ongoing transformations in the global banking system, including changes in the pattern of (bilateral) foreign bank presence, these findings are of much policy relevance. They also indicate the need for further research on the role of foreign banks.

References

Ahn, JaeBin, 2011, "A Theory of Domestic and International Trade Finance," IMF Working Paper 11/262.

Ahn, JaeBin, Mary Amiti, and David E. Weinstein, 2011, "Trade Finance and the Great Trade Collapse," *American Economic Review*, 101(3): 298-302.

Amiti, Mary, and David E. Weinstein, 2011, "Exports and Financial Shocks," *Quarterly Journal of Economics* 126(4): 1841-1877.

Antràs, Pol, and Fritz C. Foley, forthcoming, "Poultry in Motion: A Study of International Trade Finance Practices," *Journal of Political Economy.*

Beck, Thorsten, 2002, "Financial Development and International Trade. Is there a Link?" *Journal of International Economics*, 57(1): 107-131.

_____, 2003, "Financial Dependence and International Trade," *Review of International Economics*, 11(2): 296-316.

Beck, Thorsten, and María Soledad Martinez Peria, 2008, "Foreign bank acquisitions and outreach: Evidence from Mexico," World Bank Policy Research Working Paper, No. 4467.

Becker, Bo, Jinzhu Chen, and David Greenberg, 2013, "Financial development, fixed costs, and international trade," *Review of Corporate Finance Studies* 2(1): 1-28.

Berman, Nicolas, and Jerome Hericourt, 2010, "Financial Factors and the Margins of Trade: Evidence from Cross-Country Firm-Level Data," *Journal of Development Economics*, 93(2): 206-217.

Berman, Nicolas, and Philippe Martin, 2012, "The vulnerability of sub-Saharan Africa to financial crises: the case of trade," *IMF Economic Review*, 60(3): 329-364.

Braun, Matias, 2003, "Financial Contractibility and Assets' Hardness," Mimeo: University of California – Los Angeles.

Bricongne, Jean-Charles, Lionel Fontagné, Guillaume Gaulier, Daria Taglioni, and Vincent Vicard, 2012, "Firms and the global crisis: French exports in the turmoil," *Journal of International Economics*, 87(1): 134-146.

Cetorelli, Nicola, and Linda Goldberg, 2012a, "Liquidity Management of US Global Banks: Internal Capital Markets in the Great Recession," *Journal of International Economics*, 88(2): 299-311.

_____, 2012b, "Follow the Money: Quantifying Domestic Effects of Foreign Bank Shocks in the Great Recession," *American Economic Review*, 102(3): 213-18.

Chor, Davin and Kalina Manova, 2013, "Off the Cliff and Back: Credit Conditions and International Trade during the Global Financial Crisis," *Journal of International Economics*, 87(1): 117-133.

Claessens, Stijn, 2006, "Competitive implications of cross-border banking," in *Cross-Border Banking: Regulatory Challenges*, Gerard Caprio, Douglas D. Evanoff and George G. Kaufman (Eds.), New Jersey: World Scientific Publishing, 151-182.

Claessens, Stijn, Asli Demirgüç-Kunt, and Harry Huizinga, 2001, "How does foreign entry affect the domestic banking market?," *Journal of Banking and Finance*, 25(5): 891–911.

Claessens, Stijn, and Luc Laeven, 2003, "Financial Development, Property Rights, and Growth," *Journal of Finance*, 58(6): 2401-2436.

Claessens, Stijn, and Neeltje van Horen, 2013, "Impact of Foreign Banks," *Journal of Financial Perspectives*, 1(1): 1-18.

_____, 2014, "Foreign Banks: Trends and Impact," *Journal of Money, Credit and Banking*, 46(1): 295-326.

Clarke, George, Robert Cull, María Soledad Martínez Peria, and Susana Sánchez, 2003, "Foreign bank entry: Experience, implications for developing countries, and agenda for further research," *World Bank Research Observer*, 18(1): 25-59.

De Haas, Ralph, and Iman Van Lelyveld, 2014, "Multinational banks and the global financial crisis: weathering the perfect storm," *Journal of Money, Credit and Banking*, 46(1): 333-364.

Demirguc-Kunt, Asli, Luc Laeven, and Ross Levine, 2004, "Regulations, market structure, institutions, and the cost of financial intermediation," *Journal of Money, Credit, and Banking*, 36(3): 593-622.

Detragiache, Enrica, Thierry Tressel, and Poonam Gupta, 2008, "Foreign banks in poor countries: Theory and evidence," *Journal of Finance*, 63(5): 2123-2160.

Greenaway, David, Alessandra Guariglia, and Richard Kneller, 2007, "Financial Factors and Exporting Decisions," *Journal of International Economics*, 73(2): 377-395.

Hur, Jung, Manoj Raj and Yohanes E. Riyanto, 2006, "Finance and Trade: A Cross-Country Empirical Analysis on the Impact of Financial Development and Asset Tangibility on International Trade," *World Development*, 34(10): 1728-1741.

Iacovone, Leonardo, and Veronika Zavacka, 2009, "Banking crises and exports: Lessons from the past," World Bank Policy Research Working Paper Series, No. 5016.

Ju, Jiandong and Shang-Jin Wei, 2011, "When is Quality of Financial System a Source of Comparative Advantage?" *Journal of International Economics*, 84(2): 178-187.

Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi, 2009, "Governance Matters VIII: Aggregate and Individual Governance Indicators, 1996-2008," World Bank Policy Research Working Paper Series, No. 4978.

Kletzer, Kenneth and Pranab Bardhan, 1987, "Credit Markets and Patterns of International Trade," *Journal of Development Economics*, 27(1): 57-70.

Laeven, Luc, and Fabian Valencia, 2013, "Systemic Banking Crises Database," *IMF Economic Review*, 61(2): 225-270.

Levchenko, Andrei A., Logan T. Lewis, and Linda L. Tesar, 2010, "The collapse of international trade during the 2008–09 crisis: in search of the smoking gun." *IMF Economic Review*, 58(2): 214-253.

Manova, Kalina, 2013, "Credit constraints, heterogeneous firms, and international trade," *Review of Economic Studies*, 80(2): 711-744.

Manova, Kalina, Shang-Jin Wei, and Zhiwei Zhang, forthcoming, "Firm Exports and Multinational Activity under Credit Constraints," *Review of Economics and Statistics.*

Martínez Pería, Maria Soledad, and Ashoka Mody, 2004, "How Foreign Participation and Market Concentration Impact Bank Spreads: Evidence from Latin America," *Journal of Money, Credit and Banking*, 36(3): 511-537.

Matsuyama, Kiminori, 2005, "Credit Market Imperfections and Patterns of International Trade and Capital Flows," *Journal of the European Economic Association*, 3(2-3): 714-723.

Minetti, Raoul and Susan Chun Zhu, 2011, "Credit Constraints and Firm Export: Microeconomic Evidence from Italy," *Journal of International Economics*, 83(2): 109-125.

Muuls, Mirabelle, 2008, "Exporters and Credit Constraints. A Firm Level Approach," National Bank of Belgium, Working Paper No. 139.

Olsen, Morten, 2012, "How Firms Overcome Weak International Contract Enforcement: Repeated Interaction, Collective Punishment and Trade Finance," IESE Business School, University of Navarra Working Paper.

Ongena, Steven, Jose Luis Peydro, and Neeltje van Horen, 2013, "Shocks Abroad, Pain at Home? Bank-firm Level Evidence on Financial Contagion During the 2007-2009 Crisis," De Nederlandsche Bank, Working Paper 385.

Rajan, Raghuran G. and Luigi Zingales, 1998, "Financial Dependence and Growth," *American Economic Review*, 88(3): 559-586.

Schmidt-Eisenlohr , Tim, 2013, "Towards a Theory of Trade Finance," *Journal of International Economics*, 91(1): 96–112.

Svaleryd, Helena and Jonas Vlachos, 2005, "Financial Markets, the Pattern of Industrial Specialization and Comparative Advantage: Evidence from OECD Countries," *European Economic Review*, 49(1): 113-144.

Wynne, José, 2005, "Wealth as a determinant of comparative advantage," *American Economic Review*, 95(1): 226-254.

Table 1. Foreign Banks and Trade in Tranquil Times

This table shows regressions to estimate the impact of general and bilateral foreign bank presence on export. The dependent variable is (log) exports from country i to country j in a 3-digit ISIC sector s and year t. In the first three columns the share of (bilateral) foreign banks in based on assets and in the last two columns it is based on numbers. The sample period is 2005-2007 except for the last column where the sample period is 1995-2007. All regressions are estimated using OLS and robust standard errors are clustered by exporter-importer pair. ***, **, * correspond to the 1%, 5%, and 10% level of significance, respectively. Table A4 in the Appendix contains all variable definitions.

	Asset share			Number share	
	2005-2007			2005-2007	1995-2007
	[1]	[2]	[3]	[4]	[5]
Fin dev	-0.226***	-0.201***	-0.202***	-0.225***	0.051
	(0.000)	(0.001)	(0.001)	(0.000)	(0.150)
Fin dev * extfin	1.519***	1.643***	1.641***	1.554***	1.680***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Fin dev * tang	-1.584***	-1.777***	-1.774***	-1.620***	-1.998***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
For banks		-0.034	-0.107	-0.045	-0.479***
		(0.754)	(0.331)	(0.762)	(0.000)
For banks * extfin		0.673***	0.668***	0.328***	0.059
		(0.000)	(0.000)	(0.000)	(0.366)
For banks * tang		-0.958***	-0.886***	-0.297	-0.455**
		(0.000)	(0.000)	(0.160)	(0.022)
Bil for banks			2.882***	5.586***	4.835***
			(0.000)	(0.000)	(0.000)
Bil for banks * extfin			1.221***	2.651***	2.645***
			(0.002)	(0.000)	(0.000)
Bil for banks * tang			-1.883	-1.343	-1.667
			(0.124)	(0.433)	(0.330)
Real GDP export	-0.450***	-0.432***	-0.411***	-0.459***	0.582***
	(0.003)	(0.005)	(0.009)	(0.003)	(0.000)
Real GDP import	0.889***	0.888***	0.916***	0.915***	1.167***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Distance	-1.836***	-1.837***	-1.820***	-1.797***	-1.682***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Fixed effects	Exporter, importer, industry and year				
Adjusted R2	0.571	0.571	0.571	0.572	0.560
Nr. obs	500,901	500,901	497,491	500,901	1,797,505
Nr. exporters	107	107	107	107	107
Nr. exporter -importer pairs	12,815	12,815	12,815	12,815	12,815

Table 2. Robustness Tests

This table examines the robustness of the impact of general and bilateral foreign bank presence on export. The dependent variable is (log) exports from country i to country j in a 3-digit ISIC sector s and year t, 2005-2007. Regression [1] is our baseline model (regression [3] in Table 1). Regression [2] includes the importers' CPI and its interactions wiht sector dummies. Regression [3] includes Importer*sector fixed effects. Regression [4] includes measures of institutional development interacted with external finance and asset tangibility. Regression [5] includes variables capturing distance between importer and exporter country and regression [6] includes exporters' factor endowments. All regressions are estimated using OLS and robust standard errors are clustered by exporter-importer pair. ***, **, * correspond to the 1%, 5%, and 10% level of significance, respectively. Table A4 in the Appendix contains all variable definitions.

	Base	CPI and CPI * sector FE	Importer * sector FE	Institutions	Distance	Factor endowments
	[1]	[2]	[3]	[4]	[5]	[6]
Fin dev	-0.202***	-0.223***	-0.172***	0.319***	-0.202***	-0.093
	(0.001)	(0.000)	(0.004)	(0.000)	(0.001)	(0.130)
Fin dev * extfin	1.641***	1.657***	1.620***	0.277***	1.624***	1.418***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Fin dev * tang	-1.774***	-1.753***	-1.823***	-2.117***	-1.770***	-2.016***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
For banks	-0.107	-0.050	-0.165	0.009	-0.048	-0.183*
	(0.331)	(0.664)	(0.130)	(0.936)	(0.661)	(0.098)
For banks * extfin	0.668***	0.684***	0.716***	0.159***	0.648***	0.488***
	(0.000)	(0.000)	(0.000)	(0.008)	(0.000)	(0.000)
For banks * tang	-0.886***	-0.945***	-0.773***	-0.881***	-0.899***	-0.367*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.069)
Bil for banks	2.882***	2.806***	2.552***	2.632***	1.180*	2.149***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.056)	(0.001)
Bil for banks * extfin	1.221***	1.236***	0.947**	1.703***	1.083***	1.181***
	(0.002)	(0.002)	(0.014)	(0.000)	(0.008)	(0.004)
Bil for banks * tang	-1.883	-1.721	-0.311	-1.470	-1.795	-0.659
	(0.124)	(0.161)	(0.795)	(0.214)	(0.146)	(0.596)
CPI		-0.001				
		(0.698)				
Real GDP/cap				0.547*		
				(0.072)		
Real GDP/cap * extfin				0.280***		
				(0.000)		
Real GDP/cap * tang				0.877***		
				(0.000)		
Rule of law				0.036		
				(0.634)		
Rule of law * extfin				0.555***		
				(0.000)		
Rule of law * tang				-1.006***		
				(0.000)		
Border					1.214***	
					(0.000)	
Common language					0.846***	
					(0.000)	
Colonial links					1.001***	
					(0.000)	
Human capital (H)						-1.778***
						(0.000)
Physical capital (K)						1.645***
						(0.000)
Natural resources (N)						0.886***
						(0.000)
H * industry H intensity						1.438***
						(0.000)
K * industry K intensity						0.003
						(0.516)
N * industry N intensity						0.028***
						(0.000)
Controls	Real GDP in exporter and importer country, distance, and exporter, importer, industry (or importer*industry) and year fixed effects					
Adjusted R2	0.571	0.574	0.591	0.575	0.585	0.579
Nr. obs	497,491	471,374	497,491	495,097	497,184	479,604

Table 3. Exporting Country Heterogeneity

This table shows regressions to estimate the role that host country characteristics play in the way foreign banks facilitate trade. The dependent variable is (log) exports from country *i* to country *j* in a 3-digit ISIC sector *s* and year *t*, 2005-2007. Exporting countries are split across four dimenstions: *Economic development* based on World Bank country classification in 2005, *Creditor information* which captures the creditor information index (Doing Business), *Investor protection* which captures the investor protection index (Doing Business) and *Regulation* which captures the difference in regulatory quaility (KKM governance indicators). A country is included in the *Strong* column when the value of that indicator is above the sample median and in the *Weak* column when it is below the sample median. All regressions are estimated using OLS and robust standard errors are clustered by exporter-importer pair. ***, **, * correspond to the 1%, 5%, and 10% level of significance, respectively. Table A4 in the Appendix contains all variable definitions.

	Economic development		Creditor information		Investor protection		Regulation	
	High-income	Emerging markets and developing countries	Strong	Weak	Strong	Weak	Strong	Weak
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Fin dev	0.146**	-0.854***	-0.244***	-0.372***	-0.178**	-0.253***	0.086	-0.635**
	(0.039)	(0.000)	(0.001)	(0.003)	(0.032)	(0.003)	(0.200)	(0.045)
Fin dev * extfin	0.409***	2.283***	1.291***	2.351***	1.585***	1.675***	0.885***	2.509***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Fin dev * tang	-1.349***	-1.238***	-1.106***	-2.429***	-1.397***	-2.005***	-1.702***	-4.748***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
For banks	0.763***	-0.400***	0.012	-0.371**	-0.127	-0.018	0.260**	0.272
	(0.000)	(0.003)	(0.942)	(0.015)	(0.378)	(0.912)	(0.042)	(0.163)
For banks * extfin	0.759***	0.963***	0.931***	0.192**	0.238***	1.022***	0.368***	-0.395***
	(0.000)	(0.000)	(0.000)	(0.021)	(0.004)	(0.000)	(0.000)	(0.003)
For banks * tang	-2.514***	-0.508**	-0.917***	-0.293	-0.434	-1.399***	-0.874***	-2.133***
	(0.000)	(0.026)	(0.005)	(0.233)	(0.153)	(0.000)	(0.000)	(0.000)
Bil for banks	1.225	3.397***	1.613	3.760***	3.195***	2.840***	2.846***	2.525**
	(0.484)	(0.000)	(0.102)	(0.000)	(0.008)	(0.000)	(0.002)	(0.011)
Bil for banks * extfin	-1.297	1.886***	1.083**	1.853***	1.354***	1.141*	0.705	3.427***
	(0.159)	(0.000)	(0.043)	(0.000)	(0.003)	(0.058)	(0.120)	(0.000)
Bil for banks * tang	4.895	-2.990***	-1.662	-2.858*	-0.754	-3.072**	-1.221	-3.291*
	(0.337)	(0.008)	(0.400)	(0.081)	(0.721)	(0.039)	(0.450)	(0.084)
Controls	Real GDP in exporter and importer country, distance, and exporter, importer, industry and year fixed effects							
Adjusted R2	0.622	0.540	0.586	0.573	0.616	0.538	0.536	0.465
Nr. obs	218,243	276,193	246,660	247,776	249,401	248,090	126,972	160,683

Table 4. Role of Institutional Distance

This table shows regressions to estimate the role that institutional differences play in the way foreign banks facilitate trade. The dependent variable is (log) exports from country *i* to country *j* in a 3-digit ISIC sector *s* and year *t*, 2005-2007. In the first six columns all countries are included and in the last six columns only emerging markets and developing countries. Countries are split across three dimenstions: *Creditor information* which captures the difference between exporting and importing country in their creditor information index, *Investor protection* which captures the difference in the investor protection index (Doing Business) and *Regulatio*n which captures the difference in regulatory quaility (KKM governance indicators). Absolute differences are used and a country is included in the *Similar* column when the difference is below the sample median and in the *Different* column when it is above the sample median. All regressions are estimated using OLS and robust standard errors are clustered by exporter-importer pair. ***, **, * correspond to the 1%, 5%, and 10% level of significance, respectively. Table A4 in the Appendix contains all variable definitions.

	All countries						Emerging markets and developing countries					
	Creditor information		Investor protection		Regulation		Creditor information		Investor protection		Regulation	
	Similar	Different	Similar	Different	Similar	Different	Similar	Different	Similar	Different	Similar	Different
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Fin dev	-0.304***	-0.186*	-0.399***	-0.119	-0.002	-0.465***	-1.401***	-0.748**	-0.741***	-1.060***	-0.276	-1.135***
	(0.005)	(0.073)	(0.000)	(0.142)	(0.980)	(0.000)	(0.000)	(0.019)	(0.005)	(0.000)	(0.342)	(0.000)
Fin dev * extfin	1.661***	1.659***	1.795***	1.559***	1.736***	1.689***	2.465***	2.163***	3.207***	1.817***	2.325***	2.220***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Fin dev * tang	-1.651***	-1.867***	-1.430***	-2.004***	-2.221***	-1.201***	-1.112***	-1.272***	-2.789***	-0.353	-2.455***	-0.171
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.220)	(0.000)	(0.609)
For banks	0.038	-0.102	-0.366**	0.231	-0.146	-0.133	-0.392*	-0.301	-0.411**	-0.330	-0.238	-0.608***
	(0.834)	(0.600)	(0.011)	(0.193)	(0.360)	(0.468)	(0.059)	(0.212)	(0.023)	(0.106)	(0.224)	(0.005)
For banks * extfin	0.927***	0.496***	0.835***	0.566***	0.883***	0.464***	1.282***	0.726***	1.080***	0.905***	1.212***	0.722***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
For banks * tang	-1.241***	-0.663***	0.215	-2.106***	-1.053***	-0.904***	-0.058	-0.846***	-0.425	-0.618*	-1.191***	-0.079
	(0.000)	(0.006)	(0.390)	(0.000)	(0.000)	(0.002)	(0.849)	(0.004)	(0.180)	(0.055)	(0.000)	(0.812)
Bil for banks	2.529***	3.514***	2.308***	3.972***	2.691***	3.537***	2.906***	3.808***	2.781***	3.879***	2.786**	3.952***
	(0.005)	(0.000)	(0.010)	(0.000)	(0.004)	(0.000)	(0.002)	(0.000)	(0.006)	(0.000)	(0.011)	(0.000)
Bil for banks * extfin	0.194	1.963***	0.560	1.711***	0.927*	1.349**	0.703	2.719***	0.776	2.509***	1.715***	1.938***
	(0.727)	(0.001)	(0.348)	(0.001)	(0.079)	(0.026)	(0.247)	(0.000)	(0.310)	(0.000)	(0.008)	(0.001)
Bil for banks * tang	0.181	-4.504**	-1.205	-2.937*	-0.812	-2.887*	-1.047	-5.276***	-1.387	-4.102***	-0.914	-4.029**
	(0.908)	(0.012)	(0.505)	(0.054)	(0.623)	(0.091)	(0.364)	(0.005)	(0.397)	(0.005)	(0.451)	(0.024)
Controls	Real GDP in exporter and importer country, distance, and exporter, importer, industry and year fixed effects											
Adjusted R2	0.622	0.540	0.586	0.573	0.616	0.538	0.536	0.465	0.511	0.483	0.501	0.494
Nr. obs	218,243	276,193	246,660	247,776	249,401	248,090	126,972	160,683	141,076	146,579	146,139	143,293

Table 5. Foreign Banks and Trade in Crisis Times

This table shows regressions to estimate the impact of general and bilateral foreign bank presence on expor growth between 2007 and 2009. The dependent variable is the growth (log difference) in exports fron country i to country j in a 3-digit ISIC sector s between 2007 and 2009. In column [1] all exporting countries in our sample are included, in column [2] only high-income countries and in column [3] only emerging markets and developing countries. In all regressions the share of (bilateral) foreign banks in based on assets All regressions are estimated using OLS and robust standard errors are clustered by exporter-importer pair ***, **, * correspond to the 1%, 5%, and 10% level of significance, respectively. Table A4 in the Appendix contains all variable definitions.

	All	High-income	Emerging market and developing countries
	[1]	[2]	[3]
Fin dev * extfin	0.077**	0.064	0.118*
	(0.024)	(0.127)	(0.069)
Fin dev * tang	-0.008	-0.115	0.107
	(0.923)	(0.277)	(0.541)
For banks * extfin	0.130**	0.245***	0.070
	(0.037)	(0.002)	(0.437)
For banks * tang	-0.290*	-0.464**	-0.105
	(0.075)	(0.029)	(0.660)
Bil for banks * extfin	-0.396	-0.726	-0.223
	(0.310)	(0.103)	(0.646)
Bil for banks * tang	0.368	0.780	0.104
	(0.530)	(0.185)	(0.885)
Banking crisis * extfin	-0.054	-0.019	-0.028
	(0.200)	(0.711)	(0.846)
Banking crisis * tang	-0.046	-0.146	0.088
	(0.657)	(0.266)	(0.789)
Distance	-0.068***	-0.029***	-0.097***
	(0.000)	(0.009)	(0.000)
Fixed effects		Exporter, importer- industry	
R2	0.051	0.091	0.074
Nr. obs	147,199	63,043	84,156

Table 6. Impact of Banking Crisis in the Importing Country

This table shows regressions to estimate how foreign banks facilitate trade during a crisis taking the occurrence of a banking crisis in the importing country into account. The dependent variable is the growth (log difference) in exports from country i to country j in a 3-digit ISIC sector s between 2007 and 2009. In column [1]-[4] all exporting countries in our sample are included, in column [5]-[8] only high-income countries and in column [9]-[12] only emerging markets and developing countries. Each group we the split in all importing countries and only high-income importing countries and these are again split in importing countries that did and did no experience a banking crisis during the global financial crisis. In all regressions the share of (bilateral) foreign banks in based on assets. All regressions are estimated using OLS and robust standard errors are clustered by exporter-importer pair. ***, **, * correspond to the 1%, 5%, and 10% level of significance, respectively. Table A4 in the Appendix contains all variable definitions.

	All exporting countries				High-income exporting countries				Emerging markets and developing exporting			
	All importing countries		High-income importing countries		All importing countries		High-income importing countries		All importing countries		High-income importing countries	
	Banking crisis in importing country		Banking crisis in importing country		Banking crisis in importing country		Banking crisis in importing country		Banking crisis in importing country		Banking crisis in importing country	
	no	yes	no	yes	no	yes	no	yes	no	yes	no	yes
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
For banks * extfin	0.112	0.224**	0.254	0.261**	0.289***	0.154	-0.024	0.090	0.023	0.230	0.412*	0.304*
	(0.140)	(0.041)	(0.137)	(0.037)	(0.003)	(0.248)	(0.891)	(0.527)	(0.839)	(0.131)	(0.093)	(0.077)
For banks * tang	-0.254	-0.408	-0.976**	-0.321	-0.351	-0.859**	-1.372**	-0.650	-0.107	-0.169	-0.743	-0.204
	(0.193)	(0.168)	(0.036)	(0.332)	(0.158)	(0.029)	(0.020)	(0.107)	(0.716)	(0.683)	(0.253)	(0.664)
Bil for banks * extfin	1.023	-0.947***	5.107**	-0.939***	-1.963**	-0.561	-6.056	-0.410	1.671	-1.015**	5.680***	-1.024**
	(0.407)	(0.004)	(0.016)	(0.005)	(0.043)	(0.191)	(0.496)	(0.296)	(0.194)	(0.015)	(0.003)	(0.016)
Bil for banks * tang	-1.122	0.711	-4.650	0.776	-0.214	0.685	3.967	0.535	-1.987	0.842	-4.547	1.000
	(0.523)	(0.186)	(0.242)	(0.177)	(0.886)	(0.250)	(0.617)	(0.328)	(0.269)	(0.233)	(0.238)	(0.187)
Controls	Banking crisis * ext fin/tang, distance, and exporter and importer-industry fixed effects											
R2	0.052	0.050	0.048	0.051	0.090	0.092	0.075	0.094	0.079	0.064	0.067	0.064
Nr. obs	111,667	35,532	17,989	27,744	49,475	13,568	7,152	9,998	62,192	21,964	10,837	17,746

Appendix Table 1. Overview of Exporting Countries' Trade Activity, 2007

This table lists all 107 exporting countries in our sample. *Total exports* equals the sum of all exports to all destination countries in all 28 manufacturing secotrs (in billion USD). *Nr. sectors* equals the number of different sectors the country exports in and *Nr. trading partners* equals the number of different destination country the exporting country trades with. All variables are measured in 2007.

Country	Total export	Nr. sectors	Nr. trading partners
Algeria	10.94	28	79
Argentina	41.65	28	131
Armenia	0.95	28	77
Austria	147.96	28	132
Azerbaijan	2.30	28	77
Bangladesh	12.76	28	126
Belgium	416.53	28	132
Benin	0.22	26	54
Bolivia	1.20	26	73
Bosnia Herzegovina	3.49	28	97
Botswana	4.79	28	74
Brazil	123.71	28	131
Bulgaria	16.58	28	131
Burkina Faso	0.35	27	49
Burundi	0.03	27	39
Cambodia	3.45	27	100
Cameroon	1.40	27	86
Canada	312.69	28	132
China	1,238.78	28	132
Colombia	15.85	28	121
Costa Rica	6.67	28	95
Croatia	10.32	28	124
Czech Rep.	122.09	28	132
Denmark	83.11	28	132
Dominican Republic	4.93	28	96
Ecuador	4.45	28	105
Egypt	7.54	28	128
El Salvador	3.93	28	82
Estonia	11.09	28	122
Ethiopia	0.24	26	101
Finland	88.01	28	132
France	516.46	28	132
Georgia	0.76	28	79
Germany	1,285.57	28	132
Greece	20.51	28	131
Guatemala	4.82	28	91
Honduras	1.39	28	81
Hong Kong	346.20	28	131
Hungary	85.26	28	132
Iceland	4.63	28	106
India	133.74	28	132
Indonesia	77.99	28	132
Ireland	118.38	28	132
Israel	42.50	28	127
Italy	511.89	28	132
Japan	684.25	28	132
Jordan	3.48	28	116
Kazakhstan	14.20	28	99
Kenya	1.93	28	115
Korea (South)	360.82	28	132

Appendix Table 1 - cont'd

Country	Total export	Nr. sectors	Nr. trading partners
Kuwait	3.14	28	114
Latvia	7.16	28	125
Libya	6.09	14	43
Lithuania	15.76	28	118
Luxembourg	15.56	28	131
Macedonia	2.52	28	87
Madagascar	1.15	28	91
Malawi	0.63	28	92
Malaysia	154.45	28	131
Mali	0.25	27	60
Mauritania	0.04	1	9
Mexico	223.62	28	127
Moldova	1.16	28	77
Mongolia	0.28	28	57
Mozambique	0.38	28	73
Namibia	3.16	28	104
Netherlands	396.93	28	133
Niger	0.04	27	57
Nigeria	2.25	28	87
Norway	53.91	28	133
Oman	3.10	28	94
Pakistan	16.74	28	131
Paraguay	1.48	28	99
Peru	12.96	28	117
Philippines	46.60	28	126
Poland	137.35	28	133
Portugal	46.69	28	133
Qatar	6.42	28	99
Romania	38.45	28	131
Russian Federation	147.26	28	126
Rwanda	0.02	27	45
Saudi Arabia	49.04	28	123
Senegal	1.17	28	99
Slovakia	57.46	28	131
Slovenia	26.31	28	126
South Africa	50.04	28	129
Spain	234.73	28	132
Sri Lanka	6.27	28	128
Swaziland	1.28	28	27
Sweden	163.33	28	133
Switzerland	170.60	28	132
Tanzania	0.89	28	101
Thailand	140.41	28	132
Trinidad and Tobago	5.88	28	88
Tunisia	12.54	28	117
Uganda	0.57	28	90
United Arab Emirates	32.04	28	130
United Kingdom	386.87	28	132
United States	1,069.23	28	133
Uruguay	3.64	28	123
Yemen	1.09	28	79
Zambia	4.32	28	78

Appendix Table 2. Overview of Exporting Countries' Foreign Bank Presence, 2007

This table lists all 107 exporting countries in our sample. *Share foreign banks (assets)* equals the assets of all foreign banks active in the exporting country as a share of all banking assets in the exporting country. *Share foreign banks (number)* equals the total number of foreign banks active in the exporting country as a share of the total number of banks active in the exporting country. *Nr. foreign banks* is the total nr of foreign banks active in the exporting country. *Nr. home countries* reflects the number of different countries the parent banks of foreign banks active in the exporting country are headquartered in. All variables are measured in 2007.

Country	Share foreign banks (assets)	Share foreign banks (number)	Nr. foreign banks	Nr. home countries
Algeria	0.07	0.60	9	4
Argentina	0.27	0.32	22	11
Armenia	0.60	0.64	9	5
Austria	0.27	0.11	11	8
Azerbaijan	0.01	0.09	2	1
Bangladesh	0.03	0.03	1	1
Belgium	0.13	0.39	12	6
Benin	0.92	0.78	7	4
Bolivia	0.18	0.40	4	4
Bosnia Herzegovina	0.91	0.63	15	5
Botswana	0.94	0.56	5	3
Brazil	0.24	0.36	51	16
Bulgaria	0.79	0.69	18	11
Burkina Faso	0.76	0.89	8	3
Burundi	0.58	0.25	1	1
Cambodia	0.61	0.46	6	6
Cameroon	0.71	0.64	7	5
Canada	0.04	0.40	21	9
China	0.02	0.15	21	10
Colombia	0.14	0.29	5	4
Costa Rica	0.37	0.21	10	5
Croatia	0.90	0.46	16	5
Czech Rep.	0.85	0.64	14	6
Denmark	0.17	0.09	8	4
Dominican Republic	0.08	0.05	2	2
Ecuador	0.11	0.15	4	4
Egypt	0.25	0.52	13	9
El Salvador	0.97	0.90	9	7
Estonia	0.99	0.75	6	5
Ethiopia	0.00	0.00	0	n.a.
Finland	0.85	0.22	2	2
France	0.06	0.05	5	4
Georgia	0.66	0.58	7	7
Germany	0.11	0.14	14	10
Greece	0.14	0.28	5	4
Guatemala	0.13	0.42	8	6
Honduras	0.44	0.56	10	8
Hong Kong	0.91	0.71	27	10
Hungary	0.64	0.87	27	9
Iceland	0.00	0.00	0	n.a.
India	0.05	0.11	8	4
Indonesia	0.24	0.46	31	15
Ireland	0.40	0.86	25	9
Israel	0.00	0.00	0	n.a.
Italy	0.07	0.10	10	6
Japan	0.01	0.02	2	1
Jordan	0.17	0.30	3	3
Kazakhstan	0.13	0.40	12	8
Kenya	0.39	0.25	9	7
Korea (South)	0.12	0.19	3	2

Appendix Table 2 - cont'd

Country	Share foreign banks (assets)	Share foreign banks (number)	Nr. foreign banks	Nr. home countries
Kuwait	0.08	0.11	1	1
Latvia	0.65	0.62	13	8
Libya	0.00	0.00	0	n.a.
Lithuania	0.92	0.70	7	6
Luxembourg	0.95	0.96	71	16
Macedonia	0.63	0.64	9	7
Madagascar	1.00	1.00	6	2
Malawi	0.29	0.29	2	1
Malaysia	0.18	0.34	14	10
Mali	0.40	0.44	4	1
Mauritania	0.04	0.25	2	1
Mexico	0.78	0.39	18	8
Moldova	0.37	0.41	7	4
Mongolia	0.07	0.10	1	1
Mozambique	1.00	0.90	9	7
Namibia	0.58	0.43	3	1
Netherlands	0.10	0.44	14	9
Niger	0.69	0.86	6	4
Nigeria	0.03	0.15	3	3
Norway	0.17	0.02	2	2
Oman	0.00	0.00	0	n.a.
Pakistan	0.51	0.35	9	7
Paraguay	0.55	0.62	8	7
Peru	0.49	0.64	9	7
Philippines	0.01	0.15	7	4
Poland	0.76	0.75	36	15
Portugal	0.24	0.33	9	6
Qatar	0.00	0.00	0	n.a.
Romania	0.89	0.81	21	10
Russian Federation	0.11	0.17	39	17
Rwanda	0.39	0.38	3	2
Saudi Arabia	0.00	0.00	0	n.a.
Senegal	0.93	0.85	11	5
Slovakia	0.89	0.75	12	6
Slovenia	0.24	0.33	7	3
South Africa	0.27	0.22	6	6
Spain	0.02	0.07	7	7
Sri Lanka	0.00	0.00	0	n.a.
Swaziland	0.83	0.80	4	2
Sweden	0.00	0.01	1	1
Switzerland	0.05	0.23	22	12
Tanzania	0.87	0.62	16	11
Thailand	0.05	0.14	3	2
Trinidad and Tobago	0.13	0.56	5	3
Tunisia	0.26	0.50	8	5
Uganda	0.95	0.79	11	8
United Arab Emirates	0.01	0.18	3	3
United Kingdom	0.13	0.56	50	23
United States	0.22	0.26	18	8
Uruguay	0.47	0.80	24	10
Yemen	0.00	0.00	0	n.a.
Zambia	0.88	0.80	8	7

Appendix Table 3. Industry Characteristics

This table lists all 27 sectors used in our empirical analysis and their measures of external finance dependence and asset tangibility as provided by Manova (2013) Table A2.

ISIC code	Industry	External finance dependence	Asset tangibility
311	Food products	0.1368	0.3777
313	Beverages	0.0772	0.2794
314	Tobacco	-0.4512	0.2208
321	Textiles	0.4005	0.3730
322	Wearing apparel, except footwear	0.0286	0.1317
323	Leather products	-0.1400	0.0906
324	Footwear, except rubber or plastic	-0.0779	0.1167
331	Wood products, except furniture	0.2840	0.3796
332	Furniture, except metal	0.2357	0.2630
341	Paper and products	0.1756	0.5579
342	Printing and publishing	0.2038	0.3007
351	Industrial chemicals	0.2050	0.4116
352	Other chemicals	0.2187	0.1973
353	Petroleum refineries	0.0420	0.6708
354	Misc. petroleum and coal products	0.3341	0.3038
355	Rubber products	0.2265	0.3790
356	Plastic products	1.1401	0.3448
361	Pottery, china, earthenware	-0.1459	0.0745
362	Glass and products	0.5285	0.3313
369	Other non-metallic products	0.0620	0.4200
371	Iron and steel	0.0871	0.4581
372	Non-ferrous metals	0.0055	0.3832
381	Fabricated metal products	0.2371	0.2812
382	Machinery, except electrical	0.4453	0.1825
383	Machinery, electric	0.7675	0.2133
384	Transport equipment	0.3069	0.2548
385	Prof and scient equipment	0.9610	0.1511
390	Other manufactured products	0.4702	0.1882

Appendix Table 4. Variable Definitions and Sources

This table shows variables definitions and data sources for all all variables used in the empirical analysis.

	Definition	Source
Export	Value of bilateral exports in US dollars. Converted to 3-digit ISIC sectors.	Comtrade
Fin dev	Private credit by deposit money banks and other financial institutions as a percentage of GDP.	Global Financial Development Data, World Bank
For banks	Share of foreign banks in all banks operating in the exporting country (in assets or numbers)	Claessens and Van Horen (2014)/Bankscope
Bil for banks	Share of foreign banks headquartered in the importing country in all banks operating in the exporting country (in assets or numbers)	Claessens and Van Horen (2014)/Bankscope
Findep	Sector reliance on external financing, measured as: share of capital expenditures not financed with cash flows from operations. Calculated for US-based companies using Compustat, during	Manova (2013), based on: Braun (2003)
Tang	Share of net property, plant and equipment in total book-value assets. Calculated for US-based companies using Compustat, during the period: 1986-1995	Manova (2013), based on: Braun (2003)
Real GDP	Gross domestic product measured at constant 2005 USDs.	World Development Indicators, World Bank
Distance	Distance in km between home country i and host country j according to the great circle distance formula (in log)	CIA World Factbook (2005)
CPI	Annual percentage change in consumer price index.	World Development Indicators, World Bank
Real GDP/cap	Gross domestic product per capita in constant 2005 USD.	World Development Indicators, World Bank
Rule of law	Quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	Kaufmann, Kraay and Mastruzzi (2009)
Border	Dummy variable that is one if the exporting and importing country share a border.	CIA World Factbook (2005)
Common language	Dummy variable that is one if the exporting and importing country share the same language.	CIA World Factbook (2005)
Colonial links	Dummy variable that is one when the exporter and importer share a colonial relationship.	CIA World Factbook (2005)
Human capital (H)	Human capital index based on years of schooling.	Penn World Tables 8.0
Physical capital (K)	Physical Capital Stock per worker. Calculated by dividing capital stock in 2005 USD by population size.	Penn World Tables 8.0
Natural resources (N)	Natural resources rents as measured by the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents (as percentage of GDP)	World Development Indicators, World Bank
Industry H intensity	Sector human capital intensity	Manova (2013), based on: Braun (2003)
Industry K intensity	Sector physical capital intensity	Manova (2013), based on: Braun (2003)
Industry N intensity	Sector natural resource intensity	Manova (2013), based on: Braun (2003)
Creditor Information	Creditor information index	Doing Business indicators
Investor protection	Investor protection index	Doing Business indicators
Regulation	Regulatory quality	Kaufmann, Kraay and Mastruzzi (2009)

Figure 1

Financial Development and Exporting Countries' Foreign Bank Presence

This figure plots private credit to gdp in the exporting country against share of foreign banks active in the exporting country in 2007.

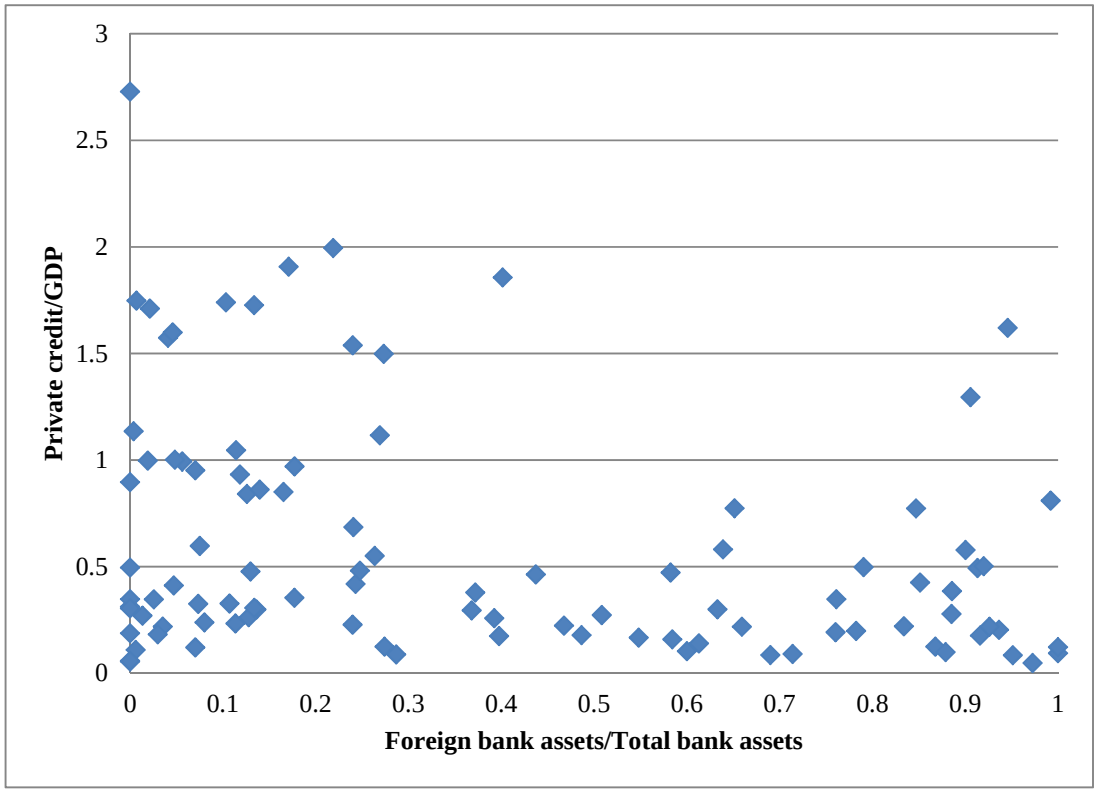

Figure 2

Exports and Exporting Countries' Foreign Bank Presence

This figure plots exporters' average (log) bilateral exports across destination country against share of foreign banks active in the exporting country in 2007.

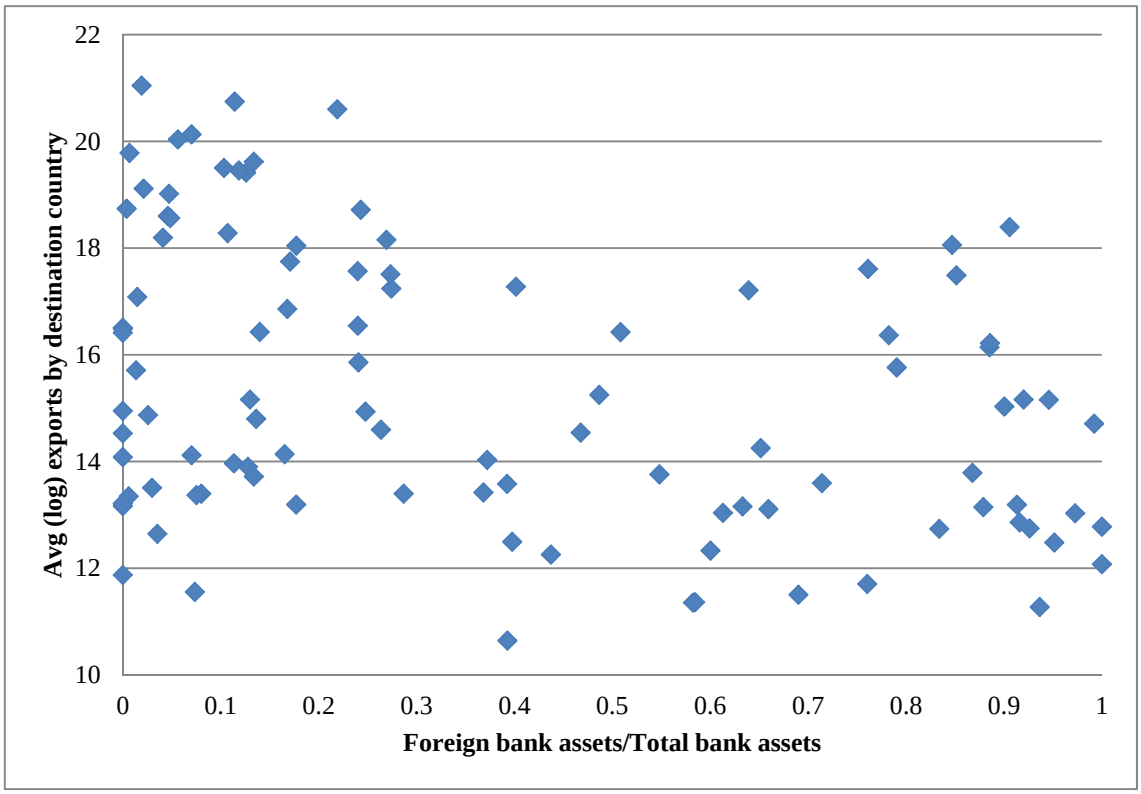

Figure 3

Bilateral Exports and Bilateral Foreign Bank Presence

This figure plots exports between exporting country *i* and importing country *j* the share of foreign banks headquartered in importing country *i* active in the exporting country in 2007.