The Role of Foreign Banks in Trade

by

Stijn Claessens, Omar Hassib, and Neeltje van Horen*

March, 2015

Abstract

This paper provides evidence that internationally active banks through their "brick and mortar" foreign operations play an important role in facilitating trade. Combining data on bilateral, sectoral trade with bilateral data on foreign bank presence for 95 exporting and 122 importing countries for the period 1995-2007, we show that the local presence of foreign banks, especially from the importing country, is associated with higher exports in sectors more dependent on external finance, even when controlling for the impact of general financial development. Also, after the entry of a bank from an importing country, bilateral exports increase disproportionately more in external finance dependent sectors, with this effect especially pronounced when banks from large, global banking systems invest in countries with relative low financial development. Our findings are consistent with foreign banks facilitating trade over and beyond what domestic banks can do through (transfer of) specialized knowledge and technology, and suggest that they have important benefits for the real economy.

JEL Classification Codes: F10, F14, F21, F23, G21

Keywords: Foreign banks, entry, international trade, credit constraints, financial development

---

* Stijn Claessens is at the Board of Governors of the Federal Reserve System, University of Amsterdam and CEPR; Omar Hassib is at Maastricht University; and Neeltje van Horen is at De Nederlandsche Bank and CEPR. We are grateful to JaeBin Ahn, Jaap Bos, Cagatay Bircan, Frederic Lambert, Luc Laeven, Raoul Minetti, Frederieke Niepmann (discussant), Alex Popov, Alberto Pozzolo and seminar participants at the IMF/WB/WTO Trade Workshop, BoE/CEPR/CfM Workshop on "International Trade, Finance and Macroeconomics," Frankfurt School of Finance and Business, De Nederlandsche Bank, EBRD, Aalto University and Maastricht University for useful comments, and to Yangfan Sun for help with the trade and UNIDO data. Much of the work for this paper was done while the first author was at the IMF. The views expressed in this paper are those of the authors and not necessarily those of the institutions they are curently or have been affiliated with. E-mail addresses: stijn.claessens@frb.gov; o.hassib@maastrichtuniversity.nl; n.van.horen@dnb.nl.

1. Introduction

The global financial crisis has shown how internationally active banks can transmit financial shocks across borders (e.g., Cetorelli and Goldberg, 2011; Ongena, Peydro, Van Horen, 2013). This has led to a lively debate in both academic and policy circles on the risks and benefits of financial globalization (e.g., Obstfeld, 2015, IMF, 2015 and IIF, 2014). Much analysis, however, has focused on understanding the risks associated with financial globalization, while the benefits have received much less attention. In this paper we focus on one potentially important benefit: the role internationally active banks through their "brick and mortar" foreign operations can play in facilitating trade.

We show that the local presence of foreign banks, especially from the importing country, is associated with higher exports in sectors more dependent on external finance, with effects over and above those of general financial development. And we show that the entry of a foreign bank from the importing country boosts bilateral exports disproportionally in external finance dependent sectors, especially when banks from large, global banking systems invest in financially less developed countries. As trade is an important engine for economic growth, especially for developing countries (e.g., Dollar and Kraay, 2004), our findings indiate that foreign banks can have important benefits for the real economy of many countries.

The local presence of a foreign bank can be argued to benefit trade in several ways. First, foreign banks might directly enhance the availability of external finance for firms that engage in trade, including by providing trade-related financial products. Access to external funds is important for domestic production in general, but can be especially important for firms that trade.[1] Indeed, the literature has found that greater financial development helps increase trade (for a review, see Foley and Manova, 2014). Furthermore, financing trade often requires specialized products, like letters of credit, and the need to hedge currency risk. Since providing these type of financial products is a relatively specialized business, it is mostly done by large banks in

[1] First, there are substantial upfront sunk and fixed costs 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 international transactions take on average between 30 and 90 days longer than domestic transactions. Finally, the added risk of selling products overseas makes insurance and other financial guarantees more necessary. While some of these factors also apply to (the financing of) imports, the literature has found overall effects to be stronger for exports as they require greater upfront investments.

advanced countries.[2] As such, given the size, global focus and reach of many of their parents, we can expect that their local affiliates are able to provide these types of products better than most domestic banks can. This may be especially so when banks from countries with well-developed banking systems operate in less-developed countries with small and not so sophisticated banking systems. Related, foreign banks have (under certain circumstances) been found to introduce new and better technologies and to increase competition in the local banking system, resulting in an increase in the quality and a reduction in the costs of financial intermediation (for a review, see Claessens and Van Horen, 2013). Through this indirect effect foreign banks might further increase access to finance for firms that trade, again especially in countries with still underdeveloped systems.

Second, foreign banks might be better able to reduce risks specific to exporting firms that arise due to the existence of contracting and enforcement problems and information asymmetries. Shipping goods internationally takes time while the enforcement of international contracts and payments tends to be more difficult than that of domestic ones. To deal with these risks, various forms of financing of trade – open account, cash in advance or letter of credit – are utilized, with the specific form used found to importantly depend on the contracting environment and financial market characteristics in both the exporting and importing country (Antras and Foley, forthcoming; Schmidt-Eisenlohr, 2013). Foreign banks present in the exporting country may help overcome some of these problems and provide a substitute commitment technology if needed (e.g., provide (additional) insurance through guarantees). Indeed, in a theoretical model Olsen (2013) shows that when reputation mechanisms are not strong enough to overcome weaknesses in cross-border contract enforcement, bank linkages can help guarantee payments and enforce contracts.

In addition to reducing contracting and enforcement problems, foreign banks might also reduce risks by overcoming information asymmetries. In the theoretical model of (domestic) interregional trade of Michalski and Ors (2010), for example, a bank charges a lower premium for trade-related projects when present in both regions compared to projects involving trade between regions when not present in both, since presence in both regions enables the bank to better assess risks through collecting and sharing information. This same argument applies to

[2] See further Niepmann and Schmidt-Eisenlohr (2013) and Del Prete and Federico (2014) for a description of the market structure for trade finance in the US and Italy respectively.

foreign banks. When assessing a request for financing from an exporting firm, a bank also needs to assess the risk of the borrower's trading partner. A foreign bank, through its international network, can likely better than a domestic bank collect information related to the importing side of the transaction and use this to evaluate the risks involved.[3] As such, foreign banks may have better means to assess the riskiness of international transactions and thus be able to extend more external financing and help increase exports, especially to the home country of the bank itself.

If the abovementioned channels contribute to reducing the cost and increasing the availability of external finance for exporting firms, then the presence of foreign banks, especially those from the importing country, should have a positive impact on exports over and above general financial sector development. To examine this, we combine detailed data on bilateral, sectoral trade with bilateral data on foreign bank presence for 95 exporting and 122 importing countries for the period 1995-2007. As foreign bank presence varies importantly among exporting countries and within a country over time, we can exploit both cross-section and time-series variations in our dataset. Furthermore, there is little relationship 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 (Figure 1).[4] This allows us to examine the impact of foreign bank presence over and beyond financial sector development.

We present two sets of evidence demonstrating that foreign banks facilitate trade. First, we document the existence of a positive relationship between exports in sectors more dependent on external finance and foreign bank presence and show that this relationship is particularly strong when a foreign bank from the importing country is present. We build here on the earlier literature on the role of financial development in firm growth and trade and utilize differences across sectors in the expected impact of increased external finance availability.[5] The availability of outside funding is shown to be more important for the performance of industries that are naturally more dependent on external finance (Rajan and Zingales, 1998). As such, if foreign

[3] Ahn (2011) argues that, as a letter of credit allows the bank of the exporter to transfer the risk of non-payment by the importer to the importer's bank, the exporter's bank replaces its inferior screening technology over the importer with the superior technology of the importer's bank, thereby reducing the overall effect of information asymmetry. A foreign bank from the importing country can effectively do this similarly.

[4] 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.

[5] See, for example, Braun (2003), Fisman and Love (2007), Bruno and Hauswald (2013, and Manova (2013).

banks facilitate trade through greater availability of external financing, and especially of the type specific to trade, then their presence should disproportionately increase exports in those sectors more dependent on external finance. Using sectoral exports for 28 sectors also allows us to control for all (time-varying) country factors that might simultaneously influence foreign bank presence and exports.

Our results show that, controlling for domestic financial development, foreign bank presence is associated with greater exports in those sectors naturally more intensive in external financing needs and that this effect is stronger when a foreign bank from the importing country is present, both at the intensive and extensive margin. An increase in general foreign bank presence in terms of asset shares by one standard deviation means exports in sectors at the 75^{th} percentile of the distribution of external financing dependency are 7.3 percentage points higher than in sectors at the 25^{th} percentile. A similar increase in the presence of foreign banks from the importing country implies an increase of 9.1 percentage points. These results are robust to adding various control variables, including other forms of financial integration, and using different estimation techniques.

While exploiting cross-sectoral variation in external financing needs importantly reduces the risk that our results are biased due to endogeneity, some concerns might remain. For example, foreign banks may enter a country in which demand for loans is higher due to growth in exports by firms in external finance dependent industries. In this case, foreign banks do not "cause" the export growth. Therefore, we conduct an event study, an approach similar to Trefler (2004) and Manova (2008), to provide an additional test on the causal relationship between foreign banks and subsequent trade developments. Specifically, we estimate the change in sectoral exports from exporting country *i* to importing country *j* between the years before and after a bank from importing country *j* for the first time enters exporting country *i*. Again, we exploit the idea that bilateral exports in sectors more dependent on external finance should be especially sensitive to the entry of a bank from the importing country. This procedure also effectively controls for all variations in initial conditions at the country pair-sector level at the time of entry.

Studying the impact of 193 entries by banks from 66 importing countries in 77 exporting countries that took place between 1995 and 2004, we show that exports increase disproportionately more in sectors more dependent on external finance when a bank from the importing country enters the exporting country, both at the intensive and extensive margin. If

one moves from a sector in the 25th percentile of external finance dependency distribution to one in the 75th percentile, export growth after the entry of a bank from the importing country is 8.1 percentage points larger. Furthermore, we find that this effect is especially pronounced when a large global bank enters an exporting country with a relative low level of financial development. This suggests that (transfer of) specialized knowledge and technology for trade financing is an important reason why globally active foreign banks facilitate trade over and beyond what domestic banks can do.

Our paper adds to several strands of the literature. First, it adds to the literature on the domestic impact of foreign banks. Foreign banks have in general been found to lower the overall costs and increase the quality of financial intermediation, both directly and through competitive effects on domestic banks (Claessens, Demirguc-Kunt and Huizinga, 2001; Claessens, 2006, reviews). Foreign banks also help increase access to financial services of households and firms and enhance the financial and economic performance of their borrowers (Clarke, Cull, Martinez Peria and Sanchez, 2003, Martinez-Peria and Mody, 2004). In terms of overall impact, Bruno and Hauswald (2013) find that foreign bank presence increases real economic growth.

The magnitude of these effects of foreign bank presence though are found to depend on a number of factors. For one, the overall economic and institutional development of the host country and the foreign banks' market share matter (Demirguc-Kunt, Laeven and Levine, 2004; Beck and Martinez Peria, 2008; Claessens and Van Horen, 2014a). And foreign bank presence seems to benefit especially external financing of firms that are larger and informationally less opaque (Mian 2006). Indeed, in countries at very low levels of economic development, foreign bank presence has been found to actually reduce overall credit because of adverse selection effects (Detragiache, Gupta and Tressel, 2008; Gormley, 2010). At the same time, Giannetti and Ongena (2009) find that in Central and Eastern Europe, having a relationship with a foreign bank stimulates firm-level sales and asset growth of young, unlisted firms, especially larger ones. We add to this literature by showing that the presence of foreign banks has a beneficial impact on the real economy by facilitating international trade, but that these effects vary by the characteristics of the country in which the bank invests and of the country in which the foreign bank is headquartered.

Second, our paper relates to the growing literature on the relationship between finance and trade. Several theoretical papers show that better developed financial systems imply a

comparative advantage in trade for industries that rely more on external finance (Kletzer and Bardhan, 1987; Beck, 2002; Matsuyama, 2005; and Wynne, 2005). And substantial empirical evidence indicates that domestic financial development importantly facilitates trade, both at the country- (Beck, 2002, 2003; Svaleryd and Vlachos, 2005; Hur, Raj and Riyanto, 2006; Manova, 2013; Becker, Chen and Greenberg, 2013) and firm-level (Greenaway, Guariglia and Kneller, 2007; Muuls, 2008; Manova, Wei and Zhang, forthcoming; Berman and Hericourt, 2010; Minetti and Zhu, 2011).[6]

The role of globally active banks in facilitating trade, however, has so far received little attention. Hale, Candelaria, Caballero and Borisov (2013) find that new connections between banks established through participation in syndicated lending in a given country-pair lead to an increase in trade in the following year. And Bronzini and D'Ignazio (2013) find that Italian firms are more likely to export to a country if its bank has an affiliate in that country.[7] We add to this literature by showing for a large number of countries that "brick and mortar" presence of globally active banks can promote trade, and that effects go beyond FDI and cross-border lending linkages.

Finally, our paper relates to the broader literature on the nexus between finance and growth. Following the seminal work of King and Levine (1993a, b) a number of papers have shown that financial development furthers economic growth (Demirguc-Kunt and Maksimovic, 1998, Levine and Zervos, 1998; Rajan and Zingales, 1998; Beck, Levine and Loayza, 2000; see Levine, 2005 for a review). Studying mainly US data, a number of studies highlight different channels through which this growth can take place. These include: increased competition among banks (Jayaratne and Strahan, 1996), growth in entrepreneurial activity among firms (Black and Strahan, 2002), increased entry of new firms (Cetorelli and Strahan, 2006; Kerr and Nanda, 2009), and promoting labor participation of minorities (Black and Strahan, 2001; Levine, Rubinstein, and Levkov, 2014). Building on this literature, Michalski and Ors (2012), studying

[6] Some papers (Do and Levchenko, 2007; Braun and Raddatz, 2008), however, point out the possibility of reverse causality: higher export demand could translate into higher observed levels of private credit.

[7] While not explicitly studying the role of globally active banks, Niepmann and Schmidt-Eisenlohr (2014) find that a shock to the supply of letters of credit has a larger impact on US exports to countries where fewer US banks are active. In addition, Manova (2008) shows that after equity market liberalization exports increase disproportionately in external finance dependent industries, which suggests that foreign equity financing also has a positive impact on trade.

inter-state trade patterns and financial deregulation in the US, show that when a financial system becomes more integrated this has a positive impact on (domestic) trade. They argue that this is due to the comparative advantage that multiregional banks have in collecting and sharing information internally. Our study adds to this literature by documenting that global financial integration in the form of local presence of foreign banks can generate economic growth by facilitating international trade.

The remainder of the paper is structured as follows. The next section describes the different data sources we use and combine. Section 3 and 4 present the methodology and discuss our empirical findings related to our panel analysis and event-study respectively. Section 5 explores the channels through which foreign bank presences might facilitate trade. Section 6 concludes.

2. Data

We want to examine to what extent the presence of foreign banks facilitates firms' exports and what mechanisms may play a role. 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 dependency. We describe these data in detail here, leaving the description of the control variables we use to the next section.

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 1995-2007. We purposely end our sample period in 2007 as to avoid our results being influenced by the global financial crisis. As expected, 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 as of 2007).

To measure foreign bank presence we use the bank ownership database constructed by Claessens and Van Horen (2014a). The database contains ownership information of 5,324 banks that were active for at least one year between 1995 and 2009 and that reported financial statements to Bankscope. It covers 137 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.[8] To determine the importance of foreign banks in financial intermediation, we match ownership data with balance sheet data provided by Bankscope.

The bank ownership database has two important features that are crucial to our analysis. First, the ownership information is captured at each point in time. This means we can determine the importance of foreign banks in financial intermediation in the exporting country for each year in our sample period, a feature that we will exploit in our panel regression approach (Section 3). Second, for each foreign bank and for each year, we know the country in which its parent is headquartered. This not only allows us to determine the importance of foreign banks from each importing country in financial intermediation in the exporting country for each year (something we also exploit in Section 3), but it also allows us to pinpoint the exact year in which a bank from a particular importing country entered a particular exporting country for the first time. We exploit this specific feature of the data in our event study (Section 4). We furthermore know which banks are from large, global banking systems, i.e., are present in many countries, which we use, along with differences in exporting countries characteristics, when examining the channels through which foreign banks facilitate trade (Section 5).

We exclude a number of countries from our sample: offshore centers, as very specific factors may drive a bank's decision to enter those;[9] 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.[10] This leaves us with a final sample of 95 exporting and 122 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, 1,043 foreign banks headquartered in 77 different home countries were active in our sample of exporting countries. The importance of foreign banks in that year varies greatly by exporting country and ranges from a zero (e.g., Ethiopia) up to 100 percent share, as for some

[8] 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 most cases, however, a foreign bank is majority owned by one parent bank. For further details see Claessens and Van Horen (2014).

[9] 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.

[10] Including these countries does not affect our main results.

other African countries. On average, 11 foreign banks from six different home countries are present in an exporting country. In most countries where foreign banks are present, banks from several different home countries are active and only in very few countries (only 11, or just 10 percent of the countries in our sample) are only foreign banks from one country present. In 78 percent of the 11,590 possible exporting-importing combinations in our sample is at least one foreign bank present, yet in only six percent of these pairs is it a bank headquartered in the importing country. The number of foreign bank entries that take place over the sample period ranges by exporting country from 0 to 39 with an average of 7 entries.

Both our panel as well as our event study importantly rely on exploiting industry differences with respect to dependency on external finance, as done in much prior literature, also that studying the role of finance in promoting exports (e.g., Manova, 2013). For technological reasons innate to the manufacturing process, producers in certain industries incur higher up-front financing needs that cannot be generated internally, thus typically requiring more external finance (Rajan and Zingales, 1998). This industry characteristic is widely viewed as a sector-specific, technologically-determined characteristic innate to the manufacturing process and unlikely to be determined by financial development or the presence of foreign banks. At the same time, if foreign banks play a role in boosting exports through providing external financing, then this should affect firms in those sectors highly dependent on external finance more.

We follow this literature and define external financial dependency as the fraction of total capital expenditure not financed by internal cash flows from operations. Even though these sector characteristics could differ across countries, the measure is typically constructed using US data.[11] We use the values as provided by Manova (2013) who uses 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 the ratios used for external finance dependency. Table 1 provides some summary statistics on the key dependent and independent variables, while Appendix Table 4 provides the detailed description and the sources of the variables used in our analysis.

[11] 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.

3. The role of foreign banks in trade: panel analysis

Our empirical analysis proceeds in two steps. In this section we establish that, controlling for a number of country characteristics including domestic financial sector development, a positive relation exists between the presence of foreign banks in the exporting country and the relative magnitude of its exports in sectors dependent on external finance. In Section 4, we then proceed using an event-study of the impact of foreign banks' entry on changes in trade which allows for a causal interpretation of the role of foreign banks, while in section 5 we explore the heterogeneity in home banking systems and exporting countries to try to detect specific channels.

3.1 Empirical methodology

We start our analysis by examining whether a higher presence of foreign banks is associated with a higher level of exports in sectors more dependent on external finance. To this end, we regress the log of the value of exports from country *i* to country *j* in 3-digit ISIC sector *s* at year *t*, on a measure of foreign bank presence interacted with the industry measure of external finance dependency. Our identification therefore rest on allowing the impact of foreign bank presence to vary by sectors that differ with respect to the dependency on external finance. If foreign banks facilitate trade through greater availability of external finance, then their presence should disproportionally benefit exports in those sectors more dependent on external finance. Our focus is mainly on the intensive margin, however, we show that our results also hold when studying the extensive margin only or when combining the two margins together.

We define foreign bank presence (FB_{it}) as the share of the assets of all foreign banks active in exporting country *i* in total bank assets in exporting country *i* at time *t*. The asset share is our preferred measure as it captures the importance of foreign banks in financial intermediation in an exporting country (i.e., there can be many foreign banks present in a country, but if they are small, niche players then their role in financial intermediation is more marginal). Unfortunately, asset information is only reliable available from 2005 onwards, reducing our sample period to only 2005-2007. Therefore, we also use two alternative ways to define FB_{it}. The first is a dummy which is one if at least one foreign bank is present in exporting country *i* at time *t*. The second is the share of all foreign banks present out of total banks active in exporting country *i* at time *t*. Both these variables are calculated for the full sample period, 1995-2007. In order to examine whether the presence of foreign banks from importing country *j* has an additional effect over and

above general foreign bank presence we also include a variable capturing the importance of importing country foreign banks (IFB_{ijt}). This variable is defined the same way as FB_{it}, except that now only foreign banks from the importing country are taken into consideration.

As Manova (2013) and others have shown, countries with a higher level of financial development tend to export relatively more in sectors that require more outside capital. We control for this by interacting the level of financial development, captured by private credit to GDP (as is standard in the literature), with the sector's measure of external finance dependency. Our specification therefore allows us to examine the role of foreign banks in facilitating trade over and above the impact of financial development.

Our baseline model is as follows:

$$lnE_{ijst} = \beta_1 FB_{it} \cdot extfin_s + \gamma_1 IFB_{ijt} \cdot extfin_s + \gamma_2 IFB_{ijt} + \delta_1 FD_{it} \cdot extfin_s + \kappa' X_t + \epsilon_{it} + \mu_{jt} + \varphi_s + \eta_{ijst},$$

where subscripts *i* and *j* denote exporting and importing country respectively, and *s* and *t* denote sector and year respectively. The dependent variable E_{ijst} equals the (log of) exports from country *i* to country *j* in sector *s* in year *t* ; FB_{it} is either a dummy if at least one foreign bank is present in the exporting country at time *t*, or the share of foreign banks in the exporting country *i* at time *t* in terms of numbers or assets; IFB_{ijt} is defined the same way as FB_{it} except that only foreign banks from importing country *j* are taken into account; FD_{it} captures financial development in the exporting country *i* at time *t;* $extfin_s$ measures the external financing dependency of sector *s;* k' is a coefficient vector, and X_t is a matrix of control variables which, in the base line specification, includes (the log of) the distance between the exporting and importing country; ϵ_{it}, μ_{jt} and φ_s are vectors of exporter-year, importer-year and industry-fixed effect coefficients, respectively; and η_{ijst} is the error term. All regressions are estimated using OLS and standard errors are clustered by exporting-importing pairs.

The inclusion of exporter-year and importer-year fixed effects allows us to control for all (time-varying) exporting country factors that might simultaneously influence foreign bank presence (or financial development) and the level of exports, including through (time-varying) changes in demand at the importer side. Real GDP in both exporting and importing country, variables commonly used in the empirical trade literature, are subsumed in these fixed effects.

Industry fixed effects allow us to control for other (time-invariant) sector characteristics that might affect trade patterns. Altogether, the inclusion of this extensive set of fixed effects should importantly reduce concerns that our results are driven by omitted variables or reversed causality. In our robustness tests, however, we address possible remaining concerns more formally.

3.2 Baseline results

In Table 2 we provide the results based on our baseline regression model. Using the full, 1995-2007 period, we find (column 1 and 2) that countries with foreign bank presence, either captured using a dummy for the presence of at least one foreign bank or the share of foreign banks in terms of numbers, export relatively more in sectors more dependent on external finance. When we use the share of foreign bank presence in terms of assets for the 2005-2007 period (column 3), we find the same result. These effects are clearly in addition to the effects of general financial sector development, which itself also increases exports for those sectors more financially dependent (with the coefficients for those variables not differing much from those obtained by Manova, 2013).

In the next three regressions (columns 4-6), we allow the impact of foreign banks from the importing country to differ from that of general foreign bank presence. In each of the three specifications we find that the positive relationship between the presence of foreign banks and exports in sectors more dependent on external finance is more pronounced when the foreign banks are headquartered in the importing country. (Note that the coefficients on general foreign bank presence do not change in magnitudes, so this is an additional effect.) In the next two sections we will further examine the impact of these foreign banks, both to establish a causal relationship between foreign bank presence and trade and to provide more insights in how foreign banks facilitate trade.

The results so far suggest that the presence of foreign banks provides for additional financing to firms more dependent on external finance, which allows them to increase their exports. Effects are economically significant: an increase in foreign bank presence in terms of assets by one standard deviation means exports in the sector at the 75^{th} percentile of the distribution of external financing dependency are 7.3 percentage points higher than in the sector at the 25^{th} percentile of the distribution. An increase in the presence of a foreign bank from the importing country with one standard deviation implies an increase of 9.1 percentage points.

While economically a smaller effect compared to general financial development (29.4 percentage points for one standard deviation), these increases are by no means marginal.

3.3 Robustness tests

We next conduct a number of robustness tests in which we include various other country variables that may affect exports through interactions with the industry measure of external finance dependency, consider also the extensive margin and use alternative estimate techniques. Results are reported in Table 3, where column 1 repeats the base regression results of Table 2, column 6. In general, the results show that our findings are robust to adding additional fixed effects and control variables, to different ways of clustering, , to varying the dependent variable and to using alternative estimation methods.

In the first robustness regression (column 2) we include, besides the exporter-year fixed effects, importer-year-industry fixed effects, i.e., a full matrix of all 122 importers times 28 sectors times the three years. This way we control for any demand and price effects that may vary by importer and by sector. The statistical significance and size of the coefficient of the interaction of external financial dependence with foreign bank presence remains largely unchanged, while the coefficient of the interaction with the presence of foreign banks from the importing country becomes somewhat smaller. Results thus remain supportive of a positive role that foreign bank presence play in facilitating trade.

Countries differ, besides in financial sector development and the presence of foreign banks, in various other ways that can affect their export performance. While the various fixed effects we use already control for any time-invariant and time-varying country characteristics, there could still be exporting country characteristics that interact with sectoral characteristics to affect exports. Therefore we include, in line with the general law and finance literature, the exporter's country's level of corruption and the prevalence of the rule of law in the country as key (institutional) development indicators and interact these two variables with the sectoral measure of external finance dependency. We find (column 3) that the better export performance also comes about in part through easier access to external financing in general (i.e., not necessarily from the formal banking system) associated with a better rule of law. Importantly, the results on the role of foreign bank presence are not affected. While the coefficient for the interactions of foreign bank presence and financial development with external finance

dependency becomes somewhat smaller than in the base regression, this is likely the result of the other two country variables assuming some of the beneficial effects of financial development.

Countries might also differ in their natural endowments which can affect their export patterns. For example, a country rich in human capital may have a comparative advantage to export more in a sector that relies naturally more on human capital. Similar to Manova (2013), we therefore use the following three country factor endowments: human capital intensity, physical capital intensity, and natural resource intensity. We interact these with the corresponding sectoral intensities, where the benchmarks are, similar to the external finance dependency measure, obtained from US corporate data. Regression results (column 4) show indeed that more human capital and natural resource intensive sectors export more in countries that are more endowed with capital and natural resources. Most importantly, however, even with these extensive controls and interactions, the positive relationship between foreign bank presence on export performance in sectors more dependent on external finance are reconfirmed, with the two interaction coefficients equally statistically significant, albeit somewhat smaller compared to the base regression.

Next, we address the concern that our main result might be driven by other financial linkages that also help firms export more. To this end, we include the stock of general FDI in and cross-border bank loans to the exporting country (both as a share of GDP) and interact them with our sectoral measures of external financial dependency. Results (column 5) show that in countries with greater FDI, exports are indeed larger in sectors more dependent on external finance. The effects of foreign bank presence on export performance, however, are reconfirmed.[12] Interestingly, the ratio of cross-border loans to GDP interacted with sectoral external finance dependency is not positive. It suggests either that cross-border loans are not used as much for trade finance or that foreign banks play an important additional role by being locally present (or both).

[12] The parameter capturing the impact of general foreign bank presence becomes somewhat smaller compared to the base regression, a sign that the share of foreign banks and the stock of general FDI are somewhat correlated. Indeed, Poelhekke (2014) shows that the presence of a foreign bank tends to attract non-financial MNEs from the same home country (i.e., firms follow their banks) and that this effect is especially strong in countries where investing is more hazardous. If these MNEs subsequently export back to their home country, this can be another channel through which foreign banks can facilitate trade. Since the impact of foreign banks from the importing country becomes slightly stronger, however, this does not appear to drive our regression results.

We also want to explicitly control for the possibility that foreign bank presence might not directly provide financing for exports (for those firms in sectors that are more dependent on external finance), but rather helps increase the general economic activity of firms, domestically- and internationally-oriented. It could for example be that the entry of a foreign bank reduces credit constraints for all firms, as found in many papers, without scaling up exports especially. We therefore include the (log of) the number of local establishments in the country by sector and year (the sample becomes somewhat smaller as we do not have this information for all countries). The results (column 6) show that the size of the interaction of overall foreign bank presence with financial dependency becomes only slightly lower (and its significance does not change), indicating that we are not just capturing cross-border sales increasing similar to domestic sales. The coefficient for the interaction of the presence of foreign banks from the importing country, while still positive, is less precisely estimated, but still significant at the 15 percent level.

So far we have clustered standard errors at the exporter-importer pair level to allow errors to be correlated within each country pair. However, one could also argue that errors might be correlated within the exporting country and more specifically within each sector in each country. To make sure our results are not affected by the specific choice of clustering, we re-estimate our baseline model and allow for clustering at the exporting-industry level. The results (column 7) show that our baseline result is not affected by the choice of clustering as all significance levels remain the same.

Up till now we have focused on the intensive margin, i.e., we examined whether the level of bilateral, sectoral exports is higher in exporting countries with a higher presence of foreign banks (from the importing country), conditional on the fact that export takes place between the two countries in that sector. However, it is also of interest to examine to what extent the presence of foreign banks affects the selection into exporting, i.e., the extensive margin. To this end, we construct a dummy variable which is one if country *i* exports to country *j* in sector *s* at time *t*. We again use exporter-year, importer-year and industry fixed effects, and cluster standard errors by exporter-importer pair. We estimate our model using Probit. The results (column 8) show that countries with a higher presence of foreign banks are more likely to enter a given market in sectors more dependent on external finance. This effect is, again, more pronounced when foreign banks from the importing country are present.

We prefer to study the intensive and the extensive margin separately as the decision to intensify exports when exports are already taking place is likely different from the decision to start exporting to a particular market in the first place. An alternative approach, however, is to estimate both decisions jointly. To this end, we do not make the log of the value of exports but its level as the dependent variable (i.e., we keep the zeros). We estimate our model using Poisson instead of OLS as Poisson is ideally suited for fixed-effect-type analysis of count panel data models (Wooldridge, 2002). The results (column 9) show again that a higher presence of foreign banks is statistically significant associated with larger exports in sectors more dependent on external finance. However, in this case the additional impact of the presence of foreign banks from the importing country is only significant at the 15 percent level.

4. The role of foreign banks in trade: event study

4.1 Empirical methodology

While exploiting the cross-country and time-series variation in foreign bank presence and the cross-sector variation in external financing needs importantly reduces the probability that our results are biased due to endogeneity, some reversed causality concerns might nevertheless remain. For example, foreign banks may enter a country in which demand for loans is higher due to growth in exports by firms in external finance dependent industries. We therefore also conduct an event study approach similar to Trefler (2004) and Manova (2008) This approach allows us to isolate the impact of foreign bank presence on trade purely from the within country changes over time and provides a test on the causal relationship between the changes in presence of foreign banks and trade.

In almost all exporting countries in our sample, at least one foreign bank was already active in 1995, the start of our sample period. Over the course of our sample period, however, banks entered in many exporting countries that were headquartered in countries from which no bank was yet present in the exporting country. As such, entry of a foreign bank means a new bilateral bank link was established. The dating of these events allows us to estimate the change in sectoral exports from the exporting country to the importing country in the years before and after a bank from the importing country for the first time enters the exporting country. Studying export growth effectively removes all sector-country pair fixed effects and controls for variations in initial conditions at the sector-country pair level at the time of entry. Using growth rates at the

sectoral level allows us to exploit again the idea that bilateral exports in sectors more dependent on external finance should be especially sensitive to the entry of a bank from the importing country. As such, this procedure provides for a clean estimate of the causal impact of foreign banks on trade.

Since it can take some time for the impact of foreign bank entry on exports to materialize, we define in our baseline regression the dependent variable as the difference in (the log of) the average values of exports from country *i* to country *j* in 3-digit ISIC over the three year window after the entry of the bank from country *j* in country *i* compared to the three year window before. By taking the three-year averages after and before the event, we assure that our results are not affected by transient movements in trade. In one of our robustness test, we also look at the difference between the value of exports four years after the event and in the year leading up to the event. To make sure our results are not affected by large outliers we winsorize the dependent variable at the 5th and 9th percentile.[13]

To assure we have sufficient years after the event and also to avoid the global trade collapse in the wake of the global financial crisis to affect our results, we only consider foreign bank entries that took place between 1995 and 2004. In our sample of exporting countries we identified 193 cases in which a new bilateral link was established. These entries took place in 77 different exporting countries and involved banks headquartered in 66 different importing countries. In Section 5 we will use differences with respect to a number of characteristics for both exporting and importing country to gather more insights regarding the channels through which foreign banks can facilitate trade.

Our baseline model for the event study is thus as follows:

$$\Delta E_{ijs} = \beta_1 extfin_s + \epsilon_t + \eta_{ijs},$$

where subscripts *i* and *j* denote exporting and importing country respectively, and *s* denotes sector. The dependent variable ΔE_{ijst} equals the difference in the (log of) average exports from country *i* to country *j* in sector *s* between *(t+1, t+3)* and *(t-1, t-3);* $extfin_s$ measures the external financing dependency of the sector *s*; and η_{ijs} is the error term. Since the foreign bank entries

[13] Results are robust to winsorizing at the 1st and 99th percentile and not winsorizing.

from the various importing country take place in different years, we also include entry-year fixed effects (ϵ_t). Unless otherwise specified, all regressions are estimated using OLS and standard errors are double clustered, at the exporter and importer country level.

4.2 Results

As Table 4 shows, the beneficial impact of foreign banks on trade is confirmed even in this econometrically demanding set-up. The constant in the base results (column 1) shows that within three years after entry of a foreign bank from the importing country, exports to the same importing country tend to grow by at least 31.6 percent in general. More importantly, as the significantly positive coefficient on the sectoral external financing variable shows, they tend to grow faster when the sector is more dependent on external finance. This additional effect is economically very significant: if one moves from a sector in the 25th percentile of external finance dependency distribution to one in the 75th percentile, export growth after the foreign bank enters is 8.1 percentage points larger, which, compared to the mean growth rate, translates into a 22 percent higher growth rate (the mean growth rate is 35 percent). The contribution of foreign banks to increasing exports thus importantly comes about through relaxing external financing constraints.

Of course, exports could be growing at a normal rate of 32 percent, so one cannot attribute the estimate for the average effect necessarily to the entry of the foreign bank (alone). Therefore, we adjust in column (2) for the possibility of a trend by making the dependent variable the difference between the growth rate during a "placebo-event" three years prior to the actual entry and the growth rate between the three years before and after the actual entry. As the constant is no longer statistically significant, this regression shows that entry of a bank from the importing country does not raise the growth rate for sectors with zero external finance dependency. The effect that runs through the external dependence channel remains, however, and is again economically large: if we move from the 25^{th} to the 75^{th} percentile of external finance dependency then the growth rate differential is 4.4 percent (which is substantial compared to the average incremental growth rates of -2.3 percent). The fact that the slope on external finance dependency is lower than without the trend correction suggests that exports in sectors more dependent on external finance were growing faster in the first place, maybe facilitated by

domestic financial sector development. Nevertheless, there remains the additional effect of foreign bank entry related to the easing of external financing constraints.

In some countries, foreign banks entered directly after a banking crisis, often as countries opened up their financial system and weak banks were sold. Therefore, it is possible that our baseline is upward biased since the banking crisis likely lowered trade in external finance dependent industries in the pre-entry, crisis period. In other words, it is possible that the increase that we observe is not due to the entry of a foreign bank from the importing country, but rather due to past problems in the domestic banking sector depressing earlier exports. Following the crisis dating of Laeven and Valencia (2013), we identify all entries which took place within three years after a crisis. When we drop these (22) entries, the significance of external financial dependence does not change and the parameter even becomes slightly larger (column 3).

Another potential driver of our results could be that the entries coincide with liberalization of the equity market in the exporting country which allows foreign capital to enter the country and which in itself has been found to have a positive impact on trade (Manova, 2008). However, if we drop those exporting countries where the equity market was liberalized in the three years before or after the entry of the foreign bank from the importing country, our baseline result still holds and even becomes stronger (column 4).

An issue with any event study is that one has to take a stance on the amount of time it takes for the impact of the event to materialize. To check that our result is not dependent on this choice, we also examine the growth in sectoral, bilateral exports over a five year period (1 year before entry and 4 year after entry). Again, we find that results do not change (column 5). A move from 25th to 75th percentile external financial dependence increases growth then by 9.3 percentage points, which is 18 percent higher than the mean growth rate over those 5 years.

So far, we have focused on the impact of foreign bank entry on the intensive margin (as we used only those observations where export was already non-zero in the pre-entry period). Entry of a bank from an importing country, however, can also increase the likelihood that there are exports in the first place, i.e., it can affect the extensive margin as well, especially in external finance dependent industries. Therefore, in the last column, we examine for all sector-pairs where no trade took place before entry, whether trade occurred after entry, using a Probit regression. We define the dependent variable therefore as a dummy which is equal to one if country *i* starts exporting to country *j* in sector *s* in the three years after entry. While in the vast majority of

sector-pairs (79 percent), trade already took place before entry, our sample still contains 1,034 sector-pairs with no exports before entry. In 47 percent of these cases exports occurred after entry. And, as the result in column (6) shows, the probability of this happening is much higher the more the sectors are dependent on external finance. Specifically, a move from the 25th to 75th percentile increases the probability of exporting by 10.4 percentage points. This suggests that foreign bank entry helped especially external financing dependent firms get into exporting.

Summarizing, we obtain consistent evidence of a first-order effect of foreign bank presence on trade using two different methodologies. First, we document the existence of a positive relationship between exports in sectors more dependent on external finance and the presence of foreign banks, especially those from the importing country. Second, we show that exports increase disproportionately in sectors more dependent on external finance when a bank from the importing country enters the exporting country for the first time. In the next section we use our event-study methodology and variations along different dimensions for our exporting and importing countries to shed light on the possible channels through which foreign banks facilitate trade.

5. Channels through which foreign banks facilitate trade

As noted in the literature review, foreign banks have been found to bring various benefits to a host country, including increased external financing, competitive pressure on domestic banks, and specialized technology and know-how. In the context of enhancing exports, we can expect foreign banks to come with specialized skills in trade financing. Since the market structure for trade finance is fairly concentrated globally and since more generally we can expect such skills to be more prevalent among banks headquartered in countries with large banking systems with banks that are globally very active, we can surmise that the country of origin of the foreign banks matters for the degree to which there are beneficial effects of foreign banks (entry) on exports.

It is also likely that characteristics of the exporting country matter. In countries that are financially less developed, firms, especially those in more financially vulnerable sectors, are likely to find it more difficult to raise external financing, including trade finance, and thus to export. One can expect that in such countries the presence of foreign banks can especially help overcome some financing constraints, and thus boost exports. The effects of foreign banks (entry) in countries that have greater institutional weaknesses is more ambiguous. On one hand, foreign

banks may bring specialized skills and technology which makes it easier to overcome these institutional weaknesses and therefore help boost trade in such environments. On the other hand, foreign banks, especially those from more advanced countries, may find it harder to work in weak contracting and informational environments as they are more used to make decisions on the basis of hard information and, if needed, to enforce contracts using judicial systems.

To examine how these home banking system and exporting country differences may matter and drive the general result on the benefits of foreign bank presence for exports, we continue with our event study, but allow the impact of the sector dependency on external finance to differ across a number of country dimensions. First, we split the sample of exporting countries on the basis of their financial development, foreign bank presence, and institutional environments. For financial development, we use the ratio of private sector credit to GDP. Next, we consider the importance of foreign banks in financial intermediation in the exporting country at the time of entry as there may be economies of scale and externalities or some threshold effects at play. As we only study events that happen prior to 2005, we have to measure foreign bank presence by their share in terms of numbers. To capture differences in institutional environments, we use the cost of enforcing contracts and the availability of credit information, with both variables from the World Bank Doing Business Indicators. For these exporting country characteristics, we split our sample in three groups of exporting countries, low (bad), intermediate (weak) and high (strong), using the 33th and 66th percentile of the respective distributions as cut-off. Note that the correlations between these four variables ranges from -0.6 (between the share of foreign banks and credit information) and 0.5 (between financial development and credit information), indicating that the splits capture different groups of countries. We also consider the distance between the exporting and importing country, as a proxy for the degree of information asymmetries.

Second, in order to capture differences in the degree to which a foreign banking system is globally active and generally more developed, we split the sample of entries into two types: those by banks from large, global banking systems; and those from other countries. We include in the first group those banking systems that are in the top 10 when ranking systems by the number of

countries in which their banks are represented. The top countries include, not surprisingly, the US and the UK, with their banks present in more than 50 countries.[14]

The results in Table 5 show that the impact of foreign banks can differ in a number of ways. The first column repeats our baseline results showing that the entry of a foreign bank from the importing country leads to a disproportional increase in exports in sectors more dependent on external finance. We then examine in what type of exporting countries foreign banks may be especially beneficial or not (in the following regressions the group of high (strong) is the base case). When studying all entries (columns 2-6), results suggest that entry by foreign banks only has a beneficial impact on trade if certain conditions are met: the share of overall local financial intermediation by foreign banks cannot be too low (column 3) and the enforcement of contracts cannot be too poor (column 4). The level of financial sector development, the informational quality of the local market, and how far the exporting country is removed from the home banking system do not seem to affect the general effect of the entry of a foreign bank from the importing country (columns 2, 5, and 6). While still conducive to entry for other reasons, it appears that with a limited footprint and in weak institutional environments foreign banks in general cannot easily identify firms with profitable trade opportunities and provide trade-related financing to new and existing firms. As such, enhancing financing for trade is not a given for all foreign banks, but can depend importantly on the structure and quality of the local market.

When we split the sample and consider either only entries of global banks (column 7-12) or of non-global banks (column 13-18), however, we find some striking differences. First, when we run the base regression on the two subsamples, we see that the beneficial impact of foreign bank presence holds for both groups, but that the impact is larger for the former (columns 7 vs. 13), suggestive that banks from countries with large, global banking systems bring along specialized technology and know-how when entering foreign markets. Second, as column (8) shows, entry by globally active banks in countries that are the least financially developed drives much of the additional impact on the growth rate of exports of external finance dependent sectors, since for the overall sample the coefficient for this interaction variable was not statistically significant (column 2). This result also contrasts with the result for the non-global

[14] The other countries in the top 10 are France, Netherlands, Germany, Switzerland, Italy, Spain, Canada and Belgium.

banks, where there are no statistically significant coefficients (column 14). In other words, the documented general beneficial role of foreign banks on exports occurs importantly when banks from countries with larger, global banking systems enter those countries that are financially less developed. This suggests that globally active banks do not only provide external financing, but importantly also bring specialized technology and know-how specific to financing trade. Furthermore, these global banks also seem to play some role in overcoming information problems as their impact is especially strong when creditor information is not easy to come by (column 11).

The role of non-global banks in affecting export seems to be somewhat different. While entry of these banks also has a positive impact on exports of sectors more dependent on external finance, the results in column (15) show that this is only the case when foreign banks are quite important in financial intermediation (when more than 23 percent of the assets are held by foreigners). For the impact of entry by these non-global banks, the financial development of the exporting country (column 14) or the presence of (or lack thereof) creditor information (column 15) are irrelevant. Furthermore, while global banks seem to benefit trade even in countries with weak enforcement of contracts, this is not the case for non-global banks. Importantly however, distance does matter for these banks as the beneficial impact of the entry of a non-global bank diminishes when importing and exporting country are further apart. This qualifies the finding of Mian (2006) – that foreign banks find it easier to operate in countries that are closer, as it shows that these constraints hold less for global banks, possibly because they can exploit a large global network of affiliates (for global banks, distance does not play a role).

6. Conclusions

This paper investigates empirically whether the benefits of foreign bank presence also extend to trade. It develops a number of arguments why foreign banks may play a special role in enhancing trade and explores these using a unique dataset of bilateral foreign bank presence combined with data on bilateral sector exports for 95 exporting countries. We find that sectors with greater external financial dependency tend to export more when a larger share of the banking sector is foreign owned, and even more so when a foreign bank from the importing country is present. These effects are over and beyond the impact of general financial development. In addition, we

show that the entry of a bank from an importing country increases bilateral exports more in external finance dependent sectors.

Differentiating further, we find that the entry of a foreign bank from a country with a large, global banking system has a larger impact, especially in countries at relatively low levels of financial development, suggesting that the (transfer of) specialized knowledge and technology for financing trade is important. And in order to support trade, it helps if the foreign banks are strongly engrained in the local banking system. Entry also boosts trade through overcoming information and contracting problems more prevalent in emerging markets and developing countries, but only partly so.

Given the importance of trade for economic development, our findings indicate that 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. We also find, however, that foreign banks' benefits for the real economy importantly vary by characteristics of both the country where the bank is headquartered and the country in which the bank invests. Globally active foreign banks facilitate trade over and beyond what domestic and many other foreign banks can do. Yet, such foreign banks have also been found to more likely introduce financial instability, at least during the recent crisis, suggesting some tradeoffs. Our findings that economically and institutionally underdeveloped countries benefit less from entry by non-globally active banks suggest some tradeoffs too given ongoing changes in the pattern of (bilateral) foreign bank presence (Claessens and Van Horen, 2014b). In light of ongoing transformations in the global banking system, including greater roles for banks from emerging markets and developing countries and more intra-regional investments, these findings are of much policy relevance. Yet, they also indicate the need for further research on the role of foreign banks and the channels through which they may affect the real economy.

References

Ahn, JaeBin, 2011, "A Theory of Domestic and International Trade Finance," IMF Working Paper No. 11/262.

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.

Black, Sandra E., and Philip E. Strahan, 2001, "The Division of Spoils: Rent-Sharing and Discrimination in a Regulated Industry," *American Economic Review*, 91(4): 814-831.

_____, 2002, "Entrepreneurship and Bank Credit Availability," *Journal of Finance*, 57(6): 2807-2833.

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

Braun, Matias, and Claudio Raddatz, 2008, "The politics of financial development: evidence from trade liberalization," *Journal of Finance*, 63(3): 1469-1508.

Bronzini, Rafaello and Alessio D'Ignazio, 2012, "Bank Internationalization and Firm Exports: Evidence from Matched Firm-Bank Data," EFIGE Working Paper No 59.

Bruno, Valencia, and Robert Hauswald, 2013, "The Real Effects of Foreign Banks," *Review of Finance*, 18(5): 1683-1716.

Cetorelli, Nicola, and Linda Goldberg, 2011, Global Banks and International Shock Transmission: Evidence from the Crisis, *IMF Economic Review*, 59(1): 41-76.

Cetorelli, Nicola, and Philipe E. Strahan, 2006, "Finance as a Barrier to Entry: Bank Bompetition and Industry Structure in Local US Markets," *Journal of Finance*, 61(1): 437-461.

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), World Scientific Publishing, New Jersey: 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 Neeltje van Horen, 2013, "The Impact of Foreign Banks," *Journal of Financial Perspectives*, 1(1): 1-18.

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

_____, 2014b, "The Impact of the Global Financial Crisis on Banking Globalization," IMF Working Paper No 14/197.

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.

Del Prete, Silvia and Stefano Federico, 2014, "Trade and Finance: Is There More Than Just 'Trade Finance'? Evidence from Matched Bank-Firm Data," Bank of Italy Working Paper No 948,

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.

Demirgüç-Kunt, Asli, and Vojislav Maksimovic, 1998, "Law, Finance, and Firm Growth," *Journal of Finance*, 53(6): 2107-2137.

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

Do, Quy-Toan, and Andrei Levchenko, 2007, "Comparative Advantage, Demand for External Finance, and Financial Development," *Journal of Financial Economics*, 86(3): 796-834.

Dollar, David, and Aart Kraay, 2004, "Trade, Growth, and Poverty," *The Economic Journal*, 114(493): 22-49.

Fisman, Raymond, and Inessa Love, 2007, "Financial Development and Growth Revisited," *Journal of the European Economic Association*, 5(2-3): 470-479.

Foley, C. Fritz, and Kalina Manova, 2014, "International Trade, Multinational Activity, and Corporate Finance," NBER Working Paper No 20634.

Giannetti, Mariassunta, and Steven Ongena, 2009, "Financial Integration and Firm Performance: Evidence from Foreign Bank Entry in Emerging Markets," *Review of Finance*, 13(2): 181-233.

Gormley, Todd A., 2010, "The Impact of Foreign Bank Entry in Emerging Markets: Evidence from India," *Journal of Financial Intermediation*, 19(1): 26-51.

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

Hale, Galina, Christopher Candelaria, Julian Caballero, and Sergey Borisov, 2013, "Bank linkages and international trade," Federal Reserve Bank of San Francisco Working Paper No 2013-14.

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.

International Monetary Fund, 2015, "International Banking After the Crisis—Increasingly Local and Safer?" *Global Financial Stability Report*, April, Chapter 2.

Institute of International Finance, 2014, *Financial Globalization: Maximizing Benefits, Containing Risks*, December, Washington, D.C.

Jayaratne, Jith and Philip E. Strahan, 1996, "The Finance-Growth Nexus: Evidence from Bank/Branch Deregulation," *Quarterly Journal of Economics*, 111(3): 639-670.

Kerr, William R., and Ramana Nanda, 2009, "Democratizing Entry: Banking Deregulations, Financing Constraints, and Entrepreneurship," *Journal of Financial Economics*, 94(1): 124-149.

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

King, Robert G., and Ross Levine, 1993a, "Finance, Entrepreneurship and Growth," *Journal of Monetary Economics*, 32(3): 513-542.

_____, 1993b, "Finance and Growth: Schumpeter might be Right," *The Quarterly Journal of Economics*, 108(3): 717-737.

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

Levine, Ross, 2005, "Finance and Growth: Theory and Evidence," in: Philippe Aghion and Steven Durlauf (eds.), *Handbook of Economic Growth*, 1(1): 865-934.

Levine, Ross, Norman Loayza, and Thorsten Beck, 2000, "Financial Intermediation and Growth: Causality and Causes," *Journal of Monetary Economics*, 46(1): 31-77.

Levine, Ross, Yona Rubinstein, and Alexey Levkov, 2014, "Bank Deregulation and Racial Inequality in America," *Critical Finance Review*, 3(1): 1-48.

Levine, Ross, and Sara Zervos, 1998, "Stock Markets, Banks, and Economic Growth," *The American Economic Review*, 88(3): 537-558.

Manova, Kalina, 2008, "Credit Constraints, Equity Market Liberalizations and International Trade," *Journal of International Economics*, 76(1): 33-47.

_____, 2013, "Credit Constraints, Heterogeneous Firms, and International Trade," *The 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.

Mian, Atif, 2006, "Distance Constraints: The Limits of Foreign Lending in Poor Countries," *Journal of Finance*, 61(3): 1465–1505.

Michalski, Tomasz, and Evren Ors, 2010, "(Interstate) Banking and Interstate) Trade: Does Real Integration Follow Financial Integration?" CEPR Discussion Paper No 7963. (An early and different version of the JFE paper).

_____, 2012, "(Interstate) Banking and (Interstate) Trade: Does Real Integration Follow Financial Integration?" *Journal of Financial Economics*, 104(1): 89-117.

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.

Niepmann, Friederike, and Tim Schmidt-Eisenlohr, 2013, "No Guarantees, No Trade: How Banks Affect Export Patterns," Federal Reserve Bank Staff Report No 659.

_____, 2014, “International Trade, Risk and the Role of Banks,” CESifo Working Paper Series No 4761

Obstfeld, Maurice, 2015, “Trilemmas and Trade-offs: Living with Financial Globalization,” BIS Working Papers No 480.

Olsen, Morten, 2013, “How Firms Overcome Weak International Contract Enforcement: Repeated Interaction, Collective Punishment and Trade Finance,” Mimeo, University of Navarra.

Ongena, Steven, Jose-Luis Peydro, and Neeltje van Horen, 2013, “Shocks Abroad, Pain at Home? Bank-Firm Level Evidence on the International Transmission of Financial Shocks,” DNB Working Paper No 385.

Poelhekke, Steven, 2014, "Do Global Banks Facilitate Foreign Direct Investment?," Mimeo, VU University Amsterdam.

Rajan, Raghuram 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.

Trefler, Daniel, 2004, “The Long and Short of the Canada-U.S. Free Trade Agreement,” *American Economic Review*, 94(4): 870-895.

United Nations Industrial Development Organization, 2006, *UNIDO* Industrial Statistics Database at the 4-digit level of ISIC (Rev. 3). Vienna, Austria.

Wooldridge, J., 2002, *Econometric Analysis of Cross Section and Panel Data*, MIT Press, Cambridge, MA.

Wynne, José, 2005, “Wealth as a Determinant of Comparative Advantage,” *American Economic Review*, 95(1): 226-254.

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.

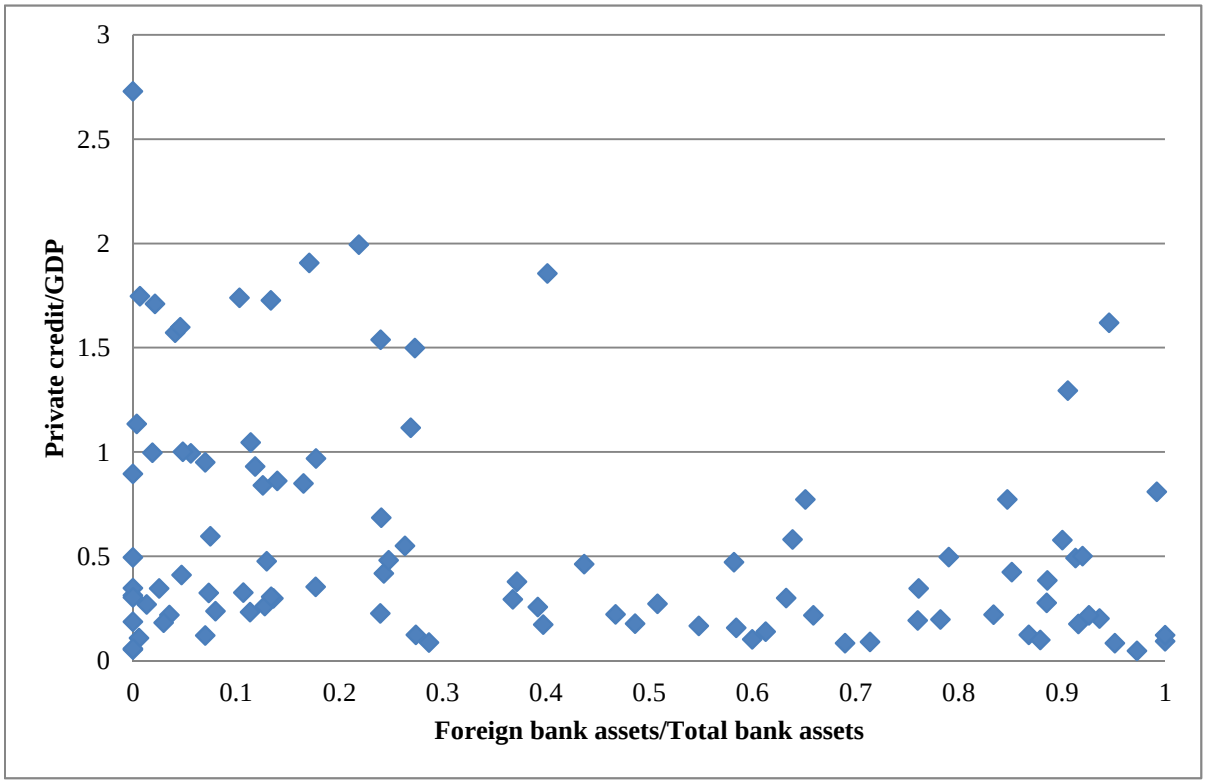


Table 1
Summary statistics

This table shows the summary statistics of the key variables used in the panel analysis (based on the 2005-2007 sample) and in the event study.

Variable	Obs	Mean	Median	St. Dev.	Min	Max
Panel analysis						
Export	491,657	12.79	12.99	3.87	0	25.13
For banks (FB) (dummy)	491,657	0.93	1	0.25	0	1
For banks (FB) (number)	491,657	0.33	0.29	0.26	0	1
For banks (FB) (asset)	491,657	0.30	0.17	0.32	0	1
Importing country for banks (IFB) (dummy)	491,657	0.08	0.00	0.28	0	1
Importing country for banks (IFB) (number)	491,657	0.01	0.00	0.02	0	0.5
Importing country for banks (IFB) (asset)	488,035	0.01	0.00	0.04	0	0.94
Fin dev (FD)	476,551	0.79	0.71	0.56	0.05	2.73
External finance (extfin)	491,657	0.28	0.23	0.32	-0.45	1.14
Distance	491,657	8.30	8.50	0.94	4.57	9.87
Corruption	491,657	0.54	0.31	1.03	-1.42	2.55
Rule of law	491,657	0.52	0.50	0.96	-1.40	2.00
Human capital index * Industry H intensity	464,179	2.77	2.70	0.88	0.59	5.95
Capital stock per capita * Industry K intensity	480,657	0.73	0.67	0.38	0.13	2.43
Resource Rent (%GDP) * Industry N intensity	491,657	1.63	0	6.91	0	68.17
FDI stock	484,873	0.44	0.31	0.61	0.08	5.80
Cross-border lending	488,879	0.23	0.10	0.55	0.00	5.82
Domestic production	346,368	6.49	6.76	2.22	-2.56	11.73
Event study						
Export growth (event study)	3,997	0.35	0.31	1.08	-2.01	2.59
External finance (extfin) (event study)	3,997	0.26	0.22	0.32	-0.45	1.14

Table 2
Foreign banks and trade - Panel analysis

This table shows regressions to estimate the impact of 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*. *FB* (foreign banks) is a dummy which is one if at least one foreign bank is present in the exporting country (column [1] and [4]) or the share of foreign banks in terms of numbers (column [2] and [5]) or in terms of assets (column [3] and [6]). *IFB* (importing country foreign banks) is a dummy which is one if at least one foreign bank headquartered in the importing country is present in the exporting country (column [4]) or equals the share of foreign banks from importing country *j* in terms of numbers (column [5]) or in terms of assets (column [6]). *FD* (financial development) is measured by private credit to GDP. External finance dependency, *extfin*, is defined in the text. The sample period in columns [1], [2], [4] and [5] is 1995-2007 and in columns [3] and [6] 2005-2007. 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.

	1995-2007		2005-2007	1995-2007		2005-2007
	dummy	number share	asset share	dummy	number share	asset share
	[1]	[2]	[3]	[4]	[5]	[6]
FB * extfin	0.181***	0.111*	0.730***	0.178***	0.098	0.724***
	(0.052)	(0.067)	(0.062)	(0.052)	(0.068)	(0.063)
IFB * extfin				0.200***	2.816***	1.298***
				(0.054)	(0.621)	(0.392)
IFB				0.520***	5.519***	2.859***
				(0.056)	(0.658)	(0.544)
FD * extfin	1.732***	1.736***	1.679***	1.733***	1.741***	1.678***
	(0.028)	(0.028)	(0.035)	(0.028)	(0.028)	(0.035)
Distance	-1.712***	-1.712***	-1.838***	-1.667***	-1.679***	-1.817***
	(0.023)	(0.023)	(0.026)	(0.023)	(0.023)	(0.026)
Fixed effects	Exporter-year, importer-year and industry					
Obs	1,726,604	1,726,604	476,551	1,726,604	1,726,604	473,162
R2	0.559	0.559	0.575	0.561	0.561	0.575

Table 3
Panel analysis - Robustness tests

This table examines the robustness of the impact of foreign bank presence on export. The dependent variable is the log of exports from country *i* to country *j* in a 3-digit ISIC sector *s* at year *t*, unless otherwise specified. Regression [1] is our baseline model (regression [6] in Table 2). Regression [2] includes importer*year*sector fixed effects. Regression [3] includes measures of institutional development interacted with external finance. Regression [4] includes exporters' factor endowments. Regression [5] includes the stock of FDI and cross-border loans in the exporting country interacted with external finance. Regression [6] controls for selection into domestic production. In regression [7] standard errors are clustered by exporter-industry instead of exporter-importer pair. In regression [8] the dependent variable is a dummy which is 1 if country *i* exports to country *j* in sector *s* at time *t*. This model is estimated using Probit. In regression [9] the dependent variable is the value of exports from country *i* to country *j* in a 3-digit ISIC sector *s* and year *t*. This model is estimated using Poisson. The sample period for all regressions is 2005-2007. All regressions are estimated using OLS and robust standard errors are clustered by exporter-importer pair, unless otherwise specified. ***, **, * correspond to the 1%, 5%, and 10% level of significance, respectively. Table A4 in the Appendix contains all variable definitions.

	Base	Importer * year * industry FE	Institutions	Factor endowments	Financial integration	Domestic production	Cluster by exporter-industry	Extensive margin	Intensive and extensive margin
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
FB * extfin	0.724***	0.776***	0.236***	0.506***	0.602***	0.488***	0.724***	0.216***	1.079***
	(0.063)	(0.062)	(0.063)	(0.064)	(0.075)	(0.068)	(0.252)	(0.0263)	(0.289)
IFB * extfin	1.298***	0.883**	1.568***	1.311***	1.369***	0.756	1.298**	1.962***	1.813
	(0.392)	(0.401)	(0.353)	(0.403)	(0.390)	(0.527)	(0.553)	(0.669)	(1.230)
IFB	2.859***	3.027***	2.783***	2.472***	2.766***	2.611***	2.859***	2.823***	0.818
	(0.544)	(0.547)	(0.523)	(0.534)	(0.545)	(0.535)	(0.241)	(0.383)	(0.510)
FD * extfin	1.678***	1.668***	0.452***	1.472***	1.596***	1.132***	1.678***	0.753***	0.854***
	(0.035)	(0.035)	(0.055)	(0.036)	(0.040)	(0.037)	(0.155)	(0.0228)	(0.151)
Distance	-1.817***	-1.835***	-1.820***	-1.820***	-1.815***	-1.844***	-1.817***	-0.962***	-0.954***
	(0.026)	(0.027)	(0.026)	(0.027)	(0.027)	(0.030)	(0.019)	(0.0169)	(0.0322)
Corruption * extfin			-0.316***						
			(0.063)						
Rule of law * extfin			1.203***						
			(0.070)						
Human capital * industry H intensity				1.857***					
				(0.074)					
Physical capital * industry K intensity				-0.371					
				(0.244)					
Natural resources * industry N intensity				0.034***					
				(0.002)					
FDI * extfin					0.178***				
					(0.000)				
Cross-border * extfin					-0.027				
					(0.032)				
Domestic production						0.417***			
						(0.010)			
Fixed effects	Exporter-year, importer-year and industry								
Obs	473,162	473,162	473,162	456,299	470,661	346,368	473,162	897,848	904,064
(Psuedo) R2	0.575	0.600	0.577	0.582	0.576	0.616	0.575	0.519	-

Table 4
Foreign banks and trade - Event study

This table examines impact of the entry of a foreign bank from the importing country in the exporting country on export growth between the two countries. The dependent variable equals the (log of) average exports from country *i* to country *j* in sector *s* between *(t+1, t+3)* and *(t-1, t-3)*, where *t* is the year in which a foreign bank from country *j* entered country *i*, unless otherwise specified. Regression [1] is the baseline model. Regression [2] controls for pre-event trend. The dependent variable in this regression equals the difference in growth rate of exports between (t-1, t-3) and (t-4, t-6) and between (t+1, t+3) and (t-1, t-3), where t indicates the year in which a bank from country *j* enters country *i*. In regression [3] exporting countries that experienced a banking crisis in the three years leading up to the entry are excluded and in regression [4] exporting countries that liberalized their equity market in the three years before and after the entry are excluded. In regression [5] the dependent variable equals the growth in sectoral exports in one year preceeding the entry and 4 years after the entry. In regression [6] only sector-country pairs are included in which no export took place in the three years leading up to the entry. The dependent variable is a dummy which is one if country *i* starts exporting to country *j* in sector *s* in the three years after the entry took place. All regressions are estimated using OLS except the last regression which is estimated using Probit. Robust standard errors are clustered by exporter and importer. ***, **, * correspond to the 1%, 5%, and 10% level of significance, respectively. Table A4 in the Appendix contains all variable definitions.

	Base	Controlling for pre-entry trend	No crisis in 3 years before entry	No equity market liberalization in 3 years before or after entry	Dependent variable is export growth between t-1 and t+4	Extensive margin
	[1]	[2]	[3]	[4]	[5]	[6]
Extfin	0.254***	0.138***	0.260***	0.293***	0.294***	0.328***
	(0.070)	(0.063)	(0.069)	(0.074)	(0.077)	(0.126)
Constant	0.316***	-0.008**	0.406***	0.307***	0.232***	0.161***
	(0.154)	(0.181)	(0.085)	(0.154)	(0.118)	(0.178)
Fixed effects			event-year fixed effects			
Obs	3,997	3,326	3,558	3,696	3,378	1,034
(Pseudo-)R2	0.045	0.038	0.047	0.051	0.071	0.020

Table 5
Channels through which foreign banks facilitate trade

This table examines the channels through which foreign banks can facilitate trade. The dependent equals the (log of) average exports from country *i* to country *j* in sector *s* between *(t+1, t+3)* and *(t-1, t-3)*, where *t* is the year in which a foreign bank from country *j* entered country *i*. In Regression [1]-[6] entries by all foreign banks are included. In Regression [7]-[12] only entries by banks from countries that have large, global banking systems are included (see main text for explanation) and in Regression [13]-[18] only banks from the other countries are included. For each group the first regression is the baseline model and in the subsequent regressions the impact of external financial dependency is allowed to vary with respect to several exporting country characteristics: financial sector development, share of foreign banks, enforcement of contracts, creditor information and distance between the two countries. For all country characteristics, except distance, the sample is split in three groups based on the 33th and 66th percentile of the respective distributions. All regressions are estimated using OLS and robust standard errors are clustered by exporter and importer. ***, **, * correspond to the 1%, 5%, and 10% level of significance, respectively. Table A4 in the Appendix contains all variable definitions.

	All entries						Entries by global banks						Entries by non-global banks					
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]
Extfin	0.254***	0.137	0.467***	0.315***	0.102	0.865**	0.301***	0.119	0.318***	0.289***	0.047	0.308	0.214***	0.172	0.559***	0.353***	0.217	1.458**
	(0.070)	(0.086)	(0.145)	(0.081)	(0.087)	(0.437)	(0.105)	(0.078)	(0.112)	(0.105)	(0.090)	(0.404)	(0.083)	(0.150)	(0.193)	(0.109)	(0.155)	(0.656)
Extfin * FD low		0.324						0.980***						-0.145				
		(0.315)						(0.225)						(0.411)				
Extfin * FD int		0.167						0.089						0.163				
		(0.184)						(0.119)						(0.265)				
Extfin * FB low			-0.348*						-0.079						-0.551*			
			(0.204)						(0.176)						(0.303)			
Extfin * FB int			-0.248						0.073						-0.528**			
			(0.193)						(0.159)						(0.261)			
Extfin * Enf bad				-0.347*						0.006						-0.677***		
				(0.211)						(0.254)						(0.221)		
Extfin * Enf weak				0.083						0.043						0.085		
				(0.171)						(0.165)						(0.223)		
Extfin * Info bad					0.250						0.622***						-0.109	
					(0.216)						(0.238)						(0.297)	
Extfin * Info weak					0.228						0.327***						0.069	
					(0.191)						(0.093)						(0.298)	
Extfin * Distance						-0.081						-0.001						-0.173*
						(0.058)						(0.052)						(0.091)
Fixed effects	event-year fixed effects																	
Obs	3,997	3,997	3,997	3,997	3,997	3,997	1,777	1,777	1,777	1,777	1,777	1,777	2,220	2,220	2,220	2,220	2,220	2,220
R2	0.045	0.047	0.048	0.049	0.047	0.046	0.043	0.064	0.043	0.053	0.043	0.046	0.056	0.058	0.068	0.057	0.060	0.058

Appendix Table A1
Overview of exporting countries' trade activity (2007)

This table lists all 95 exporting countries in our sample. *Total exports* equals the sum of all exports to all destination countries in all 28 manufacturing sectors (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 countries 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
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
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
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

Appendix Table A1 - cont'd

Country	Total export	Nr. sectors	Nr. trading partners
Macedonia	2.52	28	87
Madagascar	1.15	28	91
Malawi	0.63	28	92
Malaysia	154.45	28	131
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
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
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 A2
Overview of exporting countries' foreign bank presence (2007)

This table lists all 95 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
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
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
Kuwait	0.08	0.11	1	1
Latvia	0.65	0.62	13	8
Libya	0.00	0.00	0	n.a.

Appendix Table A2 - cont'd

Country	Share foreign banks (assets)	Share foreign banks (number)	Nr. foreign banks	Nr. home countries
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
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
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
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 A3
Industry characteristics

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

ISIC code	Industry	External finance dependence
311	Food products	0.1368
313	Beverages	0.0772
314	Tobacco	-0.4512
321	Textiles	0.4005
322	Wearing apparel, except footwear	0.0286
323	Leather products	-0.1400
324	Footwear, except rubber or plastic	-0.0779
331	Wood products, except furniture	0.2840
332	Furniture, except metal	0.2357
341	Paper and products	0.1756
342	Printing and publishing	0.2038
351	Industrial chemicals	0.2050
352	Other chemicals	0.2187
353	Petroleum refineries	0.0420
354	Misc. petroleum and coal products	0.3341
355	Rubber products	0.2265
356	Plastic products	1.1401
361	Pottery, china, earthenware	-0.1459
362	Glass and products	0.5285
369	Other non-metallic products	0.0620
371	Iron and steel	0.0871
372	Non-ferrous metals	0.0055
381	Fabricated metal products	0.2371
382	Machinery, except electrical	0.4453
383	Machinery, electric	0.7675
384	Transport equipment	0.3069
385	Prof and scient equipment	0.9610
390	Other manufactured products	0.4702

Table A4
Variable Definitions and Sources

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

Variable	Definition	Source
Export	The (log of) exports from country i to country j in sector s at year *t* in US dollars. Converted to 3-digit ISIC sectors.	Comtrade
Export (dummy)	Dummy variable that is one when country *i* exports to country *j* in sector *s* at year *t.* Converted to 3-digit ISIC sectors.	Comtrade
Export growth	The (log of) average exports from country i to country j in sector s between (t+1, t+3) and (t-1, t-3), where t indicates the year in which a bank from country j enters country i.	Comtrade
Export growth (trend corrected)	The difference in growth rate of exports between (t-1, t-3) and (t-4, t-6) and between (t+1, t+3) and (t-1, t-3), where t indicates the year in which a bank from country j enters country i.	Comtrade
Export growth (dummy)	Dummy variable that is equal to one if country *i* starts exporting to country *j* in sectors *s* in the three years after entry of a bank from country *j* in country *i* .	Comtrade
External finance (extfin)	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 over the period: 1986-1995.	Manova (2013), based on: Braun (2003)
For banks (FB) dummy	Dummy variable that is one if there is at least one foreign bank active in the exporting country.	Claessens and Van Horen (2014)
For banks (FB)	Share of foreign banks in all banks operating in the exporting country (in assets or numbers).	Claessens and Van Horen (2014)/Bankscope
Importing country for banks (IFB) dummy	Dummy variable that is one if there is at least one foreign bank from the importing country active in the exporting country.	Claessens and Van Horen (2014)
Importing country for bank (IFB)	Share of foreign banks from the importing country in all banks operating in the exporting country (in assets or numbers).	Claessens and Van Horen (2014)/Bankscope
Fin dev (FD)	Private credit by deposit money banks and other financial institutions as a percentage of GDP.	Global Financial Development, World Bank
Distance	Distance in km between exporting and importing country according to the great circle distance formula (in log).	CIA World Factbook (2005)
Corruption	The extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.	Kaufmann, Kraay and Mastruzzi (2009)
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)
Human capital (H)	Human capital index based on years of schooling.	Penn World Tables 8.0
Physical capital (K)	Capital stock measured in 2005 US dollars divided 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

Table A4 - cont'd

Variable	Definition	Source
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)
FDI stock	Inward stock of FDI as percentage of GDP.	UNCTAD
Cross-border lending	Total cross-border liabilities as percentage of GDP, ultimate risk basis.	BIS consolidated statistics
Domestic production	Number of establishments by sector (log).	UNIDO
Global bank	Foreign bank owned by parent company headquartered in a country with large, global banking system (see main text for list of countries).	Claessens and Van Horen (2014)
Enforcement contracts	Cost of enforcing contracts (% per claim).	Doing Business indicators
Credit information	Credit information index which captures rules affecting scope, access, and quality of credit.	Doing Business indicators