Foreign Bank Entry and Entrepreneurship

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Abstract: Using unique firm-level data across 48 developing countries and 36 manufacturing industries we gauge the importance of international banks' presence for promoting entrepreneurship, as measured by business formation. Our results suggest that greater foreign bank presence fosters greater business formation, especially in industries with higher needs for external finance. The effect is particularly strong when the foreign banks present are headquartered in other developing countries. We also investigate how an industry's use of relatively standardized inputs affects the advantages it reaps from foreign bank entry. In developing countries, the effect on business formation of foreign bank presence is greater in industries with more standardized inputs, especially when the foreign banks present are from other developing countries. The effects of foreign bank presence on business formation are greater in economies with stronger legal enforcement, and foreign bank entrants from developed economies are especially dependent on stronger legal frameworks; banks entrants from developing countries have larger effects on business formation in developing countries where legal protections are relatively weak.

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1. Introduction

The effects of foreign bank entry have been controversial in both theory and empirical research. On the one hand, removing entry barriers that limit foreign bank entry should reduce the costs of external finance for bank-dependent borrowers by allowing banks to diversify, and allowing banks with low costs of raising capital in one country to redeploy that capital in countries with higher indigenous costs of capital. This logic suggests that countries that impose barriers on foreign bank entry should see lower rates of business formation for small and medium-sized enterprises. On the other hand, some observers worry that foreign banks focus mostly on incumbent and wealthy firms and may push domestic banks out of the market as the result of their superior efficiency. According to that view, removing barriers to foreign bank entry might undermine entrepreneurship by depriving unseasoned young firms of needed funds. This paper addresses that concern directly by focusing on how foreign bank presence affects entrepreneurship, measured by new business formation.

From a public policy standpoint it is also crucial to recognize that there is more to foreign bank entry barriers than legal prohibitions on entry or severe charter restrictions that apply only to foreign banks. Foreign entry can also be impeded when political and legal environments favor local bankers, such as when the legal system fails to protect the rights of arms-length creditors, which favors bank lending to "insiders." If the legal system provides little protection to arms-length lenders, then domestic banks linked to firms through crony networks that control both the firms and the banks may be advantaged in their ability to lend.

The last three decades have seen a rapid but unequal increase in foreign bank entry across the globe. The former transition economies of Central and Eastern Europe have experienced some of the biggest changes, with foreign bank participation rising as high as 90 percent, while Western Europe has seen a much slower increase, which occurred only after the

establishment of the Euro. Several Latin American countries, including Mexico, lowered entry barriers and saw rapid increases in foreign bank participation. At the same time, many Asian countries continue to show a relatively small share of international bank lending. One of the most interesting new twists in foreign banking has been the increased diversity of foreign banks' countries of origin. In recent years, partly in response to troubles at home, banks from the U.S. and Western Europe have shrunk in importance in many developing countries. At the same time, multi-national banks from emerging market countries (especially those headquartered nearby) have increased their role. In Sub-Saharan Africa, for example, banks from South Africa, Nigeria, Morocco and Kenya have increased their participation across the African continent.

Theory and empirical evidence have been ambiguous on the effects of foreign bank entry on entrepreneurship. In theory, foreign bank entry could significantly reduce the cost of credit by bringing capital, technical skills, and product innovation to host countries, which increases competition and leads to improvements in the efficiency of the banking sector, ultimately benefitting customers of the banking system, including small and new enterprises. It is conceivable, however, that fierce competition with foreign banks for funding or relationships could threaten the survival of local banks and thus lead to reduced access to finance for many borrowers, especially if foreign banks concentrate on the top and selected segments of the market. Empirical research examining the effects of foreign bank entry on the cost of funds has generally supported the view that foreign bank entry lowers the cost of credit and improves access to credit for less politically connected borrowers (Clarke et al. 2006, Giannetti and Ongena 2009, 2012, Bruno and Hauswald 2013, Claessens and van Horen 2014). Some studies, however, find negative associations between foreign bank presence and financial system performance (Detragiache, Gupta and Tressel 2008, Beck and Martinez Peria 2010, Gormley 2010, Mian, 2006) although this may be attributable to omitted variables bias. For

example, Cull and Martinez Peria (2008) show that the negative association between the foreign bank market share and the level of financial depth can result from the fact that countries relax bank entry barriers after financial crises.

The nexus among foreign bank entry, entrepreneurship, and economic growth has received relatively little attention. Voluminous theoretical and empirical work has shown the importance of firm entry and entrepreneurship for economic development, and also the importance of well-developed and efficient financial systems for promoting entrepreneurship (Kerr and Nanda, 2009). It follows that foreign bank entry could be highly relevant for economic development through its effects in promoting entrepreneurship.

Nevertheless, we know little about how recent shifts in foreign bank entry have affected access to credit for new entrepreneurs, especially in developing economies. Some research has suggested that foreign banks tend to "skim the cream" of the credit markets into which they enter, focusing mainly on wealthy consumers and established firms (Clarke, Cull, Martinez Peria, and Sanchez 2005, Beck and Martinez Peria 2010, Beck and Brown 2015). Foreign banks may do so because they have an advantage in the cost of raising capital, but may suffer a disadvantage in their ability to understand the nuances of local laws and production methods, which may make it harder for them to fund small and medium-sized enterprises (SMEs). Even if they have trouble competing in lending to SMEs, foreign bank entry still may benefit SMEs by competing for the business of large firms, and thereby encouraging domestic banks to shift more of their lending to SMEs. That is especially possible if foreign entry is associated with greater competition and a reduction in "connected" lending (domestic lending to connected borrowers), as Mian (2006) and Giannetti and Ongena (2009, 2012) find is true. Furthermore, Clarke et al. (2006) find that the self-reported financing obstacles of 3,000 firms in 35 developing and transition economies decline with foreign banks' share of the banking system, and this holds for all size categories of firms.

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Evidence of past challenges for foreign bank lending to SMEs may be less relevant today, given the recent improvements in institutions that protect creditors' rights, and given the recent importance of foreign bank entrants from other developing economies. Several countries have improved their legal frameworks for lending by improving laws governing collateralization of assets, or by adding or improving new credit registries that make it easier to monitor the pledging of assets as collateral (Campello and Larrain 2015, Calomiris et al. 2015). New foreign bank entrants from nearby countries may behave differently in their lending to SMEs than foreign lenders from developed economies. Banks headquartered in nearby economies with similar economic, legal, and political profiles may be better able to overcome the challenges that normally limit SME lending by foreign banks headquartered in developed economies (Mian, 2006; Claessens and van Horen, 2014).

This study gauges the role of foreign banks in fostering new business formation (our measure of entrepreneurship) using a unique firm-level database covering 36 manufacturing industries around the world. Importantly, by focusing on the differential effects of foreign bank entry for business formation across different industries we are able to mitigate identification concerns that arise in cross-country regressions. Cross-country regressions assessing the effect of foreign bank entry on business formation suffer from endogeneity biases associated with omitted variables (country characteristics that happen to be correlated with both foreign bank entry and domestic business formation) and reverse causality (an economy experiencing widespread new business formation may attract new bank entrants).

To address these biases, we explore the differential effect that foreign bank entry has on entry rates across different industries, making use of theories that predict differential sensitivities of business formation to foreign bank credit supply increases across different industries. Specifically, we gauge the differential effect of foreign bank entry on business formation rates across industries either with (a) different needs for external finance or with (b)

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input structures that are more differentiated, therefore, giving rise to more complex production processes and supplier-buyer relationships dominated by asymmetric information and agency problems.

If foreign bank entry reduces the cost of credit for all borrowers, including bank-dependent SMEs (either directly or indirectly, through endogenous shifts in the lending behavior of domestic banks), then in countries where foreign bank entry is greater, industries with a higher exogenous dependence on external finance should exhibit greater rates of new business formation than other industries. On the other hand, if foreign banks cherry-pick or cream-skim the lowest risk borrowers, and if domestic banks are so harmed by this practice that they are unable to shift credit supply to other SME borrowers, then we could observe the opposite effect: greater foreign bank entry could produce lower business formation rates in industries that rely more on external finance.

Similarly, foreign bank entry may differentially affect SMEs operating in industries with different production processes. Foreign banks may find it easier to lend to SMEs when production processes and supply chains are simpler, or where there is less reason for concerns about supplier-buyer agency problems, as this might require less investment in costly relationship building with borrowers. If foreign banks are more effective in overcoming information asymmetries for SMEs operating in industries with lower agency conflicts, then greater foreign bank entry should result in lower business formation rates in industries with less standardized inputs. Alternatively, if foreign banks are more effective in overcoming information asymmetries in industries with higher potential agency conflicts, we should see that greater foreign bank entry results in higher business formation rates in industries with less standardized inputs.

With respect to both of these industry-specific interaction effects for foreign bank entry – associated either with differences in external finance dependence, or with differences in input specificity – we also allow for differences that relate to the destination country and the country of origin for the bank entrant. First, because developing countries suffer higher costs of external finance, foreign bank entry should have a much greater effect on business formation in those countries than in developed economies.

Second, we allow for the possibility that banks headquartered in other developing economies may have be more effective as SME lenders in the developing countries that they enter. Specifically, we consider whether developing country bank entrants differ with respect to their effects on business formation, both in finance-dependent industries and in industries with greater input specificity. Several authors have shown critical differences in the ability of "South-South" foreign bank entrants, as opposed to "North-South" foreign bank entrants, in lending "down-market" to smaller and more opaque firms (Mian, 2006). We will therefore test for the differential effects of "South-South" foreign bank entrants on business formation rates across industries with different needs for external and reliance on standardized inputs.

Finally, we consider how the legal and institutional environment of destination countries affect the impact of foreign bank entry. Specifically, we consider how the enforcement of contracts (a variable found to be important for creditors in several studies, including Calomiris et al. 2015) affect the effectiveness of foreign bank entry in reducing the cost of external finance for SMEs, measured by increases in business formation.

Using data across 48 countries and 36 manufacturing industries for the year 2004, we find that foreign bank presence as of 2003 has important effects on business formation, and that these effects vary by industry, as well as according to whether destination and host countries of the bank entrants are developed or developing. In developing countries, but not in

developed ones, a larger share of foreign banks' assets in a country's banking system is associated with a higher share of entry in industries with an exogenously higher need for external finance, as measured by Rajan and Zingales (1998). That effect is especially strong for South-South bank entry, suggesting that this specific category of foreign bank entry creates an especially large and beneficial impact on the financing costs of young firms.

With respect to the differential effects of foreign bank entry on business formation in industries with more differentiated (less standardized) inputs, we find that foreign bank entry into developing economies is associated with higher business formation rates in industries with more standardized inputs. With respect to this effect, we find that South-South banks' influence on business formation in industries with less standardized inputs is lower than developed countries' bank entrants.

With respect to the effect of the extent of legal enforcement, we find that the tendency of foreign banks as a whole to promote business formation in financially dependent industries is harder when legal enforcement is poor. *South-South* banks' effectiveness in spurring business formation in those sectors, however, is not as dependent on the quality of legal enforcement.

Our study contributes to two literatures. First, we add to the recent empirical literature on the effects of foreign bank entry on the real economy. Most closely related to our work, Bruno and Hauswald (2013) show that foreign bank entry helps industries more dependent on external finance to grow faster. While their paper focuses on industry aggregates and growth, our underlying data is on firm-level business formation in manufacturing industries. Second, we contribute to the literature on the factors affecting business formation (our measure of entrepreneurship). Most closely related to our work, Klapper, Laeven and Rajan (2007) show that industries with exogenously higher business entry rates grow faster in countries with less burdensome entry regulation and better credit information sharing. Our paper adds to that list

the ability of foreign banks to enter, and we further show that the size of that influence depends on the nature of the industry in which business formation is occurring (i.e., its degree of external finance dependence, and its input specificity), on the legal environment of the host country, and on the country of origin of the foreign banks that actually enter.

The remainder of the paper is structured as follows. Section 2 defines the variables we use and our data sources, and provides descriptive statistics. Section 3 describes the econometric methodology. Section 4 discusses empirical results. Section 5 concludes.

2. Data

To gauge the importance of foreign bank entrants on business formation (our measure of entrepreneurship) across industries with different characteristics, we need data on (i) the presence of foreign banks in each countries' banking system, (ii) a measure of business formation, by industry, (iii) industry characteristics associated with external finance dependence and input specificity, and (iv) the legal system's quality of enforcement for creditors. We will discuss each in turn. Table 1 presents descriptive statistics.

2.1. Foreign Banks' Share of Banking Systems

We rely on a recent data compilation effort by Claessens and van Horen (2014) to compute the share of foreign-owned banks across countries. These data focus on banks operating within the host country (so-called "brick and mortar" lending, as opposed to "cross-border" lending by foreign banks that is booked offshore). Specifically, using and carefully double-checking information from Bankscope and bank-specific sources, Claessens and van Horen (2014) track the ownership of most banks across 139 countries between 1995 and 2009, thus allowing them to compute the share of foreign banks in each country's banking system,

but also the home country for each of the banks in each country. In our empirical work, which focuses on the 48 developing countries in their sample, we use the foreign bank asset share for 2003 as main country-level variable of interest to proxy for the importance of multinational banks in countries' banking systems. Our measure of foreign bank presence is the ratio of foreign banks' assets to total bank assets, as computed by Claessens and van Horen (2014). We also construct what we label South-South foreign bank presence, which we define as the ratio of the assets of foreign banks from developing economies relative to the total assets of banks in the host developing country.

Figure 1 shows the variation in the market share of foreign banks across countries. The share of foreign banks ranges from 0 in Vietnam to 100% in Barbados, with a mean of 32.94 (in the worldwide sample of 139 countries). In developing countries (which include what are commonly called both "low-income" countries and emerging markets), the average foreign bank share is 42%, while the share of South-South banking is 21%.

As a control measure for each country's preexisting domestic financial sector depth, we also include the ratio of private bank credit to GDP from the World Bank's database. In order to control for the domestic banking system's financial depth, while separating out the effect of foreign bank entry – which we need to do when measuring the effect of foreign bank presence on business formation – we orthogonalize the standard World Bank measure of private credit to GDP (regressing that measure on our two measures of foreign bank presence – the ratio of foreign bank assets to total bank assets, and the South-South measure) and include the residual from that orthogonalization as a control variable in our regressions. We thus isolate the component of financial development that is not related to foreign bank entry (be it the general effect or the effect from entry of South-South banks). This allows us to focus more clearly on the effect of foreign bank entry while at the same time controlling for the effect of financial deepening.

2.2. Business Formation

To measure business formation we construct industry-level data on firm age. We use data from WorldBase compiled by Dun and Bradstreet, a database of public and private companies in more than 200 countries and territories.[1] The leading U.S. source of commercial credit and marketing information since approximately 1845, D&B presently operates across countries and territories either directly or through affiliates, agents, and associated business partners. The data, compiled from a number of sources including partner firms in dozens of countries, telephone directory records, web-sites, and self-registration, are meant to provide clients with contact details and basic operating information about potential customers, competitors, and suppliers. Information from local insolvency authorities and merger and acquisition records are used to track changes in ownership and operations.

D&B uses the United States Government Department of Commerce, Office of Management and Budget, Standard Industrial Classification Manual 1987 edition to classify business establishments. In fact, Dun & Bradstreet is a government-approved source for assigning SIC codes to companies. In 1963, the firm introduced the Data Universal Numbering System (the D&B D-U-N-S® Number), which it uses to identify businesses numerically for data-processing purposes. The system supports the linking of plants and firms across countries and tracking of the history of plant and name (including potential) changes. The D&B D-U-N-

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[1] Early uses of the D&B data include Caves' (1975) size and diversification pattern comparisons between Canadian and U.S. domestic plants as well as subsidiaries of U.S. multinationals in Canada, and Lipsey's (1978) observations regarding the reliability of the data for U.S. More recently, Harrison, Love, and McMillian (2004) use D&B's cross-country foreign ownership information. Other research that has used D&B data includes Black and Strahan's (2002) study of entrepreneurial activity in the United States, and Acemoglu, Johnson, and Mitton's (2008) and Alfaro, Conconi, Halfinger and Newman's (2015) studies of vertical integration, Alfaro and Charlton (2009), Alfaro and Chen (2014), and Fajgelbaum, Grossman and Helpman (2015) analysis of multinational activity and Alfaro, Antràs, Chor and Conconi (2015) analysis of firm boundaries.

S Number has become a standard business identifier for the United Nations, European Commission, and U.S. Government.

WorldBase reports establishment age, number of employees, and the four-digit SIC-1987 code of the primary industry in which a firm operates and the SIC codes of up to five secondary industries, listed in descending order of importance, as well as sales and exports, albeit with much less extensive coverage of the latter two. We exclude establishments missing primary industry and year started information, and government related firms.

We use data for 2004 and 2000 in our analysis. Our measure of business formation is the firm entry rate, measured as the share of businesses in the industry that are less than two years old. Firm entry rates in an industry vary between zero and 50 percent, with an average of 3.5 percent.

2.3 Industry characteristics

We use two different industry characteristics to gauge the differential effect of foreign bank entrants on business formation across industries. First, the industry-level data on external dependence are from Rajan and Zingales (1998, henceforth RZ) gauge the variation in the "natural" need for external financial resources across firms in different industries. The underlying assumption in RZ is that for technological reasons some industries depend more heavily on external finance than others. Scale economies, gestation period, or intermediate product intensity might constitute some of those technological reasons. Of course, one can only observe the actual use of external finance, not the demand for it. If financial markets were relatively frictionless (as in the United States), the actual use of external finance would represent the equilibrium of supply and demand. For countries with very well-developed financial systems, RZ note that external funds will be supplied very elastically to large firms,

so that the actual use of external finance would primarily reflect the demand for external finance. Assuming that the variance of the need for external finance across industries is common across countries we can thus use the actual external dependence of industries as observed in a country with a very well developed financial system as a proxy for the "natural" dependence of industries on external finance.

As in RZ, we use the United States to compute the natural external dependence for each industry. Our calculations are based on U.S. data for 1987-96. External dependence ranges from -2.8 in Tobacco Products (SIC 21) to 1.4 in Chemical and Allied Products (SIC 28).[2]

Second, we also consider differences across industries in the degree of standardization of inputs. Specifically, we follow Rauch (1999) and classify traded commodities into goods traded on organized commodity exchanges, goods that are reference priced (such as in trade journals) and differentiated products. Following Nunn (2007) we conjecture that differentiated goods that have no quoted prices require more intensive relationships between buyer and seller, and we expect that they generally will entail more complications for lenders. Using the US input-output tables (with a similar argument as in the case of RZ), Rauch and Nunn determine which inputs are used in which proportion for each final product across industries.

We posit that industries with greater input specificity – that is, those that rely more on relationship-intensive inputs – will present more complex problems for creditors due to their greater sensitivity to information asymmetries and agency conflicts. We focus on manufacturing industries in our analysis. The variable ranges from 0.04 in Petroleum and Related Industries (SIC 29) to 0.86 in Transportation Equipment (SIC 37).

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[2] We also calculated external dependence for the period 1999-2003 obtaining similar results.

2.4 The Legal Environment and Creditor Protections

To capture potentially important differences in the legal environment, which may affect the impact of foreign bank presence on business formation, we use two specific sets of indicators. First, we use an indicator of legal system quality from Gwartney and Lawson (2004), taken from Nunn (2007). We also experimented with indicators for the existence and quality of the legal system's ability to secure loans with movables collateral. Calomiris et al. (2015) develop an index to capture the quality of the system of collateralizing with movables collateral using the World Bank's *Doing Business* survey, and they also identify a component of their index that is particularly important determinants of the score (the existence of a credit registry for movables). However, we found that the number of observations for this sub-sample of industry-country observations (roughly one-sixth the sample size of our other regression results) was too small to be reliable.

3. Methodology

To gauge the importance of foreign bank entrants for business formation, we extend the methodology first used by Rajan and Zingales (1998), which allows us to avoid, or at least mitigate, many of the biases associated with cross-country estimations. Specifically, we employ the interaction of foreign bank presence (a country characteristic) and an industry characteristic (e.g., external finance dependence) to assess the relationship between foreign bank presence and the rate of business formation across industries with different characteristics (in the case of the external finance dependence, the characteristic measures differential needs for external finance). Subsequently, we also allow for additional interactions that gauge the effects of legal enforcement (where legal enforcement will enter as an interaction with all other regressors, which for the sake of algebraic simplicity we do not write out in full here). Econometrically, we use the following basic regression specification:

$$Entry_{i,k} = \sum_{j} \alpha_j Country_j + \sum_{l} \beta_l Industry_l + \delta \ (Industrychar_k * Foreign_i) +$$

$$\mu(Industrychar * Orthogonalized \Pr ivateCredit) + \varepsilon_{i,k}, \tag{1}$$

where our measure of business formation is $Entry_{i,k}$ which is defined as the share of firms less than two year old in industry k and country i for the year 2004. *Country* and *Industry* are country and industry fixed effects, respectively, and *OrthogonalizedPrivateCredit* is the orthogonalized ratio of private credit to GDP in the country.

Industrychar_k is a characteristic of the industry, which will sometimes be the variable *External* (our measure of dependence on external finance for industry k as measured for a sample of U.S. companies over the period 1987 to 1996), and sometimes will be the variable *Specificity* (our industry-level measure of input specificity). We do not include the share of foreign banking on its own or the industry characteristics, which are already spanned by country and industry fixed effects. The fixed effects for industries and countries capture country- and industry-specific characteristics that might determine business formation patterns. We thereby isolate the effect that the interaction of external dependence and foreign banking share has on industry entry relative to country and industry means.

We estimate regression (1) as a tobit regression to account for the censored nature of the dependent variable. Specifically, a large number of industries and countries show zero entry rates. The foreign bank share variable gauges the importance of foreign banking at the end of the respective year, while firm entry rates are flow data computed over a given year. We regress entry rates for 2004 on the interaction of each country's foreign 2003 bank share with each industry's characteristic. We cluster standard errors on the country-level to take account of possible unobservable common shocks across different industries in the same country.

We ran tobit regressions using the levels of foreign bank presence measured in 2003 (the year before our 2004 business formation measure) to predict business formation in country-industry observations. We also report some regressions using differences, where we compute business formation in 2004 less business formation in 2000, and use the change in foreign bank presence from 1999 to 2003. The difference specification has the advantage of further mitigating any remaining omitted variables bias associated with country-industry combinations – variables that might matter for the levels of those interactions, but presumably not for the differences. However, as Claessens and van Horen (2014) note, the quality of their data diminish the farther back in time they are observed. If the 1999 data are noisy, as Claessens and van Horen (2014) say they are, then that noise will be amplified when foreign bank presence is interacted with other variables. For that reason, we generally do not rely on differenced results (although generally those results are stronger), and we believe that differenced results are particularly unreliable in specifications that include triple interactions (e.g., the interaction of an industry characteristic, legal enforcement, and foreign bank presence).

4. Results

This section reports our empirical findings. We only report results for a sample of developing host countries; we began with a broad sample of developed and developing host countries, but unsurprisingly, foreign bank entry into developed economies seems to have no effect on business formation, so we dropped those observations. As discussed before, we employ two measures of foreign bank presence: *Foreign banks,* which measures the asset share of all foreign banks, and *South-South,* which captures the asset share of foreign banks headquartered in other developing countries.

We begin by reporting regressions that focus on variation in external finance dependence (*External*). Next, we estimate regressions that interact *Foreign banks* and *South-South* with the industry characteristic measuring input specificity (*Specificity*). Finally, we report results that interact the two sets of industry characteristics (*External* and *Specificity*) with the quality of legal enforcement (*Legal*).

The positive significance of the first coefficient in column (1) of Table 2 implies that higher business formation occurs in industries that are both more reliant on more external finance and located in countries with higher shares of foreign banking. This suggests that a more prominent role of foreign banks in a country's banking system eases financing constraints for new firms and thus enables higher rates of business formation.[3]

The results in columns (1) and (3) of Table 2 show that the average effect estimated in column (1) is higher (and more statistically significant) when foreign banks are from other developing countries (as captured by the *South-South* measure of foreign bank share). The results in column (3) are not only statistically significant but are also economically significant. To gauge the economic effect, we compute the difference in firm entry between the countries at the 25th and the 75th percentile of foreign bank share (2.55 in Turkey and 60.03 in Panama, respectively) and the industries at the 25th and 75th percentiles of external dependence (-1.13 in Fabricate Metal Products, SIC34 and -0.46 in Paper and Allied Products, SIC 26, respectively). The coefficient marginal estimate suggests a growth difference of 0.3 percentage points, which is relative to an average rate of 2.8% in our sample of developing economies and implies close to a 10% change associated with greater presence of *South-South* banks.[4] In column (4) we

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[3] As we are using a non-linear model, the economic effect of our regression result cannot be computed in a linear way, but is rather computed at the mean value for all other variables. This economic effect has two component, referring to the extensive (zero or positive value) and intensive margins (variation within positive values).

[4] The effect for a move from the 25-75th percentiles of external finance and *foreign* banks implied close to 2% increase relative to the mean.

show that coefficients are larger and more statistically significant when we employ the differences specification rather than the levels specification.

Somewhat surprisingly, the coefficient on the interaction of orthogonalized (domestically based) credit-to-GDP and external finance dependence enters negatively, and the coefficient is statistically significant in column (4) of Table 2. This indicates that business formation rates are lower in financially dependent industries when the share domestically based credit depth, not explained by foreign bank entry, is higher.

The regression results in Table 3 – which are analogous in structure to those in Table 2 – show a negative average relationship between input specificity and foreign banking in regressions explaining new business formation in developing countries (column 2). As shown in columns (2)-(4) the difficulty of foreign banks to spur business formation in highly input specific industries is even lower for *South-South* banks, although that difference is only statistically significant in the first-difference specification in column (4). The sign on the interaction of domestically based credit-to-GDP and specificity, however, is positive and statistically significant in all four columns of Table 3, indicating that when domestically based credit is deeper, high-specificity industries exhibit great rates of business formation.

Previous work has shown the importance of an effective institutional framework for a positive effect of foreign banks on the real economy (e.g. Claessens and van Horen, 2014). Next, we therefore introduce triple interaction terms to gauge whether the positive effect of foreign banking on business formation rates in industries with higher need for external finance, and lower input specificity, vary across countries with different levels of institutional development to protect creditors' rights. We also investigate whether those legal-industry characteristic interactions vary according to the country of origin of the foreign bank. We report results for these triple interaction specifications in Tables 4 and 5.

Table 4 investigates the interactions among legal enforcement, foreign bank presence (by type of foreign bank), and external finance dependence. The positive coefficient at the top of each column indicates that foreign bank presence has its greatest average effect on business formation in finance-dependent industries when legal enforcement is good. The negative significant coefficient on the triple interaction of *South-South* with *External dependence* and *Legal* in column (2) indicates that South-South foreign presence is less dependent on good legal enforcement to generate new business formation.

Interestingly, and perhaps surprisingly, the triple interaction of *Legal* with domestically based credit depth and external finance dependence is negative, but the simple interaction of domestically based credit depth with external finance dependence switches sign (compared to the results in Table 2), and is now positive. This indicates that the negative effect of domestically based finance depth on business formation in financially dependent industries is confined to countries with sufficiently high quality of legal enforcement. That is a surprising result, as we would have expected business start-ups in high external finance dependent industries to be especially advantaged in environments of greater domestically based financial depth and superior legal enforcement.

Table 5 is analogous to Table 4, but now we investigate the triple interaction of *Specificity, Foreign banks*, and *Legal*, and also the triple interaction of *Specificity*, *South-South* and *Legal*. The negative significant coefficients reported in the first row of both columns in Table 5 indicate that, in relatively good legal environments, foreign bank presence is associated with an even greater bias in favor of promoting business formation in low-specificity industries. The negative significant coefficient on South-South*Specificity*Legal in column (2) of Table 5 means that the bias in favor of business formation effects in low-specificity industries located in good legal environments is even greater for *South-South* bank presence.

The interaction of domestically based credit depth with specificity is positive, as in Table 3, but surprisingly its interaction with *Legal* is negative, indicating that the positive effect of domestically based credit abundance on business formation occurs only in sufficiently poor legal environments.

We interpret this combination of findings as follows: (1) Foreign bank presence, on average, promotes business formation in developing countries, especially when the foreign bank is a *South-South* bank, and when the industry of interest is characterized by greater external finance dependence or by more standardized inputs. (2) These effects are larger in developing countries with good legal enforcement of contracts. (3) *South-South* banks have a comparative advantage (relative to other foreign banks) in dealing with poor legal enforcement environments, and so their influence on business formation rates in finance-dependent industries is less dependent on the quality of legal enforcement in the host country. (4) Foreign banks headquartered in developed economies have a comparative advantage (relative to *South-South* banks) in lending to more complex industries (those with high input specificity). (5) For reasons we do not understand, and contrary to our expectations, better legal environments do not increase the effects of domestically based financial depth on business formation in external financial dependent industries or in high-specificity industries.

5. Conclusions

This paper assesses the effect of foreign bank entry on business formation. We find that, on average, foreign bank entry into developing economies is associated with higher business formation in industries that rely more on external finance and on more standardized inputs. These effects are stronger in countries with better legal enforcement. However, our results also point to important differences across different types of foreign banks. Specifically, the effect in developing countries on business formation in industries with a higher reliance on external

finance is stronger for when foreign bank presence is coming from other developing countries (*South-South* banks). At the same time, the effect of *South-South* bank presence on business formation is weaker for industries that rely more on high-specificity inputs. The impact of *South-South* entrants on business formation is not as dependent on a high quality level of contract enforcement.

Our differential findings on foreign banks from developed and developing countries are in line with some findings in previous studies, but also provide new insights. Specifically, our findings suggest that, on the one hand, developed country foreign banks enjoy a comparative advantage as entrants into developing economies from their ability to deal with relatively complex industries. Developing country foreign banks, on the other hand, have a different comparative advantage; specifically, they seem better able to address enforcement problems typical for developing country borrowers, especially if those borrowers operate in industries with standardized input use.

Our findings have important repercussions for the policy debates both on institutional reform and foreign bank entry in developing countries and the interaction between the two. In general, foreign bank entry can only maximize its benefits in the presence of an effective institutional framework; entry of foreign banks from other developing markets, however, may be relatively helpful when the institutional environment is not idea.

Does the impact of foreign bank presence reflect the direct actions of the foreign banks or the indirect consequences of their entry for changes in the strategies of other lenders? Because our evidence indicates systematic industry-specific effects of foreign-bank entry, the former interpretation seems more likely (indirect effects are less likely to have specific industry profiles). Still, a clear understanding of the mechanism through which foreign bank entry

affects business formation must await a micro-level study of the changes in bank-firm connections that result from foreign bank entry.

References

Alfaro, Laura and Andrew Charlton (2009). "Intra-Industry Foreign Direct Investment," American Economic Review 99, 2096–2119.

Alfaro, Laura and Maggie Chen. (2014). "The Global Agglomeration of Multinational Firms," Journal of International Economics 94, 263–276.

Alfaro, Laura and Maggie Chen (2012). "Surviving the Global Financial Crisis: Firm Ownership, Organization and Establishment Performance," American Economic Journal: Economic Policy 4, 30–55.

Alfaro, Laura, Paola Conconi, Harald Fadinger, and Andrew F. Newman. (2015) "Do Prices Determine Vertical Integration?" Review of Economic Studies, forthcoming.

Beck, Thorsten, Asli Demirguc-Kunt, and Maria Soledad Martinez Peria. (2008) "Banking Services for Everyone? Barriers to Bank Access and Use around the World." World Bank Economic Review, 22, 397–430.

Beck, Thorsten, and Maria Soledad Martinez Peria. (2010) "Foreign Bank Acquisitions and Outreach: Evidence from Mexico." Journal of Financial Intermediation, 19, 52–73.

Black, S.E., Strahan, Philip., (2002). Entrepreneurship and bank credit availability. Journal of Finance 57, 2807-2833.

Bruno, Valentina and Robert Hauswald (2014) "The Real Effects of Foreign Bank Entry". *Review of Finance* 18, 1683-1716.

Calomiris, Charles W., Mauricio Larrain, Jose Liberti, and Jason Sturgess. (2015) "How Collateral Laws Shape Lending and Sectoral Activity," Mimeo, Columbia Business School.

Campello, M., and M. Larrain. (2015) "Enlarging the Contracting Space: Collateral Menus, Access to Credit, and Economic Activity," Mimeo, Columbia Business School.

Caves, Richard (1975) "Diversification, Foreign Investment and Scale in North American Manufacturing Industries," *Canadian Public Policy* 2, 274-276.

Claessens, Stijn, and Neeltje Van Horen. (2012) "Being a Foreigner among Domestic Banks: Asset or Liability?" *Journal of Banking and Finance* 36, 1276–90.

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

Claessens, Stijn, and Neeltje Van Horen. (2014) "Foreign Banks: Trends and Impact," *Journal of Money, Credit and Banking* 46(S1), 295–326.

Clarke, George, Robert Cull, Maria Soledad Martinez Peria, and Susana Sanchez. (2003) "Foreign Bank Entry: Experience, Implications for Developing Countries, and Agenda for Further Research." World Bank Research Observer, 18, 25–40.

Clarke, George, Robert Cull, Maria Soledad Martinez Peria, and Susana Sanchez. (2005) "Bank Lending to Small Businesses in Latin America: Does Bank Origin Matter?" Journal of Money, Credit and Banking, 37, 83–118.

Cull, Robert, and Maria Soledad Martinez Peria. (2008) "Crises as Catalysts for Foreign Bank Activity in Emerging Markets." In Power and Politics after Financial Crisis: Rethinking Foreign Opportunism in Emerging Markets, edited by Justin Robertson, pp. 52–79. New York: Palgrave Macmillan.

Cull, Robert, and Maria Soledad Martinez Peria. (2013) "Foreign Bank Participation in Developing Countries: What Do We Know about the Drivers and Consequences of this Phenomenon?" In Encyclopedia of Financial Globalization, edited by Gerard Caprio, pp. 213–22. Amsterdam: Elsevier.

Dages, Gerard, Linda Goldberg, and Daniel Kinney. (2000) "Foreign and Domestic Bank Participation in Emerging Markets: Lessons from Mexico and Argentina." Economic Policy Review, 6, 17–36.

Detragiache, Enrica, Poonam Gupta, and Thierry Tressel. (2008) "Foreign Banks in Poor Countries: Theory and Evidence." Journal of Finance, 63, 2123–60.

Fajgelbaum, Pablo, Gene Grossman and Elhanan Helpman (2015) "A Linder Hypothesis for Foreign Direct Investment" *Review of Economic Studies* 82.

Giannetti, Mariassunta and Steven Ongena (2012), "Lending by Example: Direct and Indirect Effects of Foreign Bank Entry in Emerging Markets," *Journal of International Economics* 86, 167-80..

Giannetti, Mariassunta and Steven Ongena (2009), "Financial Integration and Entrepreneurial Activity: Evidence from Foreign Bank Entry in Emerging Markets", *Review of Finance*, 13: 181-223.

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

Gwartney, James, and Robert Lawson, "Economic Freedom of the World: 2003 Annual Report," Mimeograph, Fraser Institute, 2003.

Harrison, Ann E., Inessa Love, and Margaret S. McMillian (2004), "Global Capital Flows and Financing Constraints," *Journal of Development Economics* 75, 269-301.

Kerr, William and Ramana Nanda (2009) "Democratizing Entry: Banking Deregulations, Financing Constraints, and Entrepreneurship" *Journal of Financial Economics* 94, 124-49.

Klapper, Leora, Luc Laeven and Raghuram Rajan (2006). "Entry Regulation as a Barrier to Entrepreneurship." *Journal of Financial Economics* 82, 591-629

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

Nunn, Nathan (2007)"Relationship-Specificity, Incomplete Contracts, and the Pattern of Trade." *Quarterly Journal of Economics* 122, 569-600.

Rajan, Raghuram, and Luigi Zingales. (1998) "Financial Dependence and Growth," *American Economic Review* 88, 559-86.

Rauch, James E. (1999) "Networks versus Markets in International Trade," *Journal of International Economics* 48, 7–35.

Table 1

Summary Statistics

	N	mean	sd	min	max
Entry	871	2.850	4.420	0.000	33.330
Foreign Bank Share (All_2003)	871	40.483	32.035	0.110	100.000
Foreign Bank Share (South-South, 2003)	871	20.605	26.360	0.000	100.000
Private Credit to GDP	871	38.171	28.179	3.636	126.461
External Finance	871	-0.662	0.734	-2.876	1.415
Specificity	871	0.529	0.202	0.037	0.862
Quality Legal System	755	5.410	1.040	2.850	7.600

Table 2

Foreign Banks, Business Formation, and External Dependence:

Tobit Models

	(1) Levels	(2) Levels	(3) Levels	(4) Diffs
Foreign banks*External dependence	0.0040**		0.0018	0.0143***
	(0.002)		(0.002)	(0.000351)
Orthogonalized credit*External dependence	-0.0006	-0.0011	-0.0009	-0.00262***
	(0.002)	(0.002)	(0.002)	(0.000399)
South-South banks*External dependence		0.0003***	0.0003***	0.000201***
		(0.000)	(0.000)	(0.0000184)
Constant	4.7075***	4.6644***	4.7085***	-31.29***
	(0.430)	(0.426)	(0.431)	(0.021)
Constant (Sigma)	7.1442***	7.1465***	7.1450***	6.963***
	(0.973)	(0.973)	(0.974)	(0.00801)
Observations	871	871	871	849

Table 3

Foreign Banks, Business Formation, and Input Specificity:

Tobit Models

	(1) Levels	(2) Levels	(3) Levels	(4) Diffs
Foreign banks*Specificity	-0.0160***		-0.0157***	-0.0195***
	(0.006)		(0.005)	(0.000611)
Orthogonalized credit*Specificity	0.0325***	0.0346***	0.0324***	0.0509***
	(0.006)	(0.006)	(0.006)	(0.0009)
South-South banks*Specificity		-0.0002	-0.0001	-0.00321***
				(0.000046)
		(0.000)	(0.000)	
Constant	5.3806***	5.0674***	5.3674***	-31.06***
	(0.451)	(0.448)	(0.460)	(0.0212)
Constant (Sigma)	7.1234***	7.1301***	7.1240***	6.959***
	(0.972)	(0.973)	(0.973)	(0.00794)
Observations	871	871	871	849

Table 4

Foreign Banks, Business Formation, External Dependence, and Legal Enforcement:

Tobit Models

	Levels	Levels
Foreign banks*External dependence*Legal	0.00290***	0.00507***
	6.25E-05	6.12E-05
Foreign banks*External Dependence	-0.0109***	-0.0278***
	0.000402	0.000397
Legal*External dependence	-0.232***	-0.169***
	0.00407	0.00401
South-South*External dependence*Legal		-0.000206***
		2.86E-06
South-South*External dependence		0.00148***
		1.69E-05
Orthogonalized credit*External dependence	0.00660***	-0.000831**
	0.000342	0.000337
Orthogonalized credit*External Finance*Legal	-0.000684***	0.000367***
	5.92E-05	5.80E-05
Constant	-30.29***	-29.93***
	0.0203	0.0201
Constant (Sigma)	6.560***	6.558***
	0.00845	0.00863
Observations	735	735

Table 5

Foreign Banks, Business Formation, Input Specificity, and Legal Enforcement:

Tobit Models

	Levels	Levels
Foreign banks*Specificity*Legal	-0.0176***	-0.0163***
	7.09E-05	7.09E-05
Foreign banks*Specificity	0.0961***	0.0859***
	0.000487	0.000479
Orthogonalized credit*Specificity	0.249***	0.246***
	0.000447	0.00045
Legal*Specificity	0.945***	0.986***
	0.00545	0.00528
South-South*Specificity*Legal		- 0.000124***
		5.79E-06
South-South*Specificity		0.00100***
		3.52E-05
Orthogonalized credit*Specificity*Legal	-0.0391***	- 0.0389***
	7.41E-05	7.42E-05
Constant	-30.81***	-30.97***
	0.0207	0.0199
Constant (Sigma)	6.534***	6.531***
	0.00806	0.00839
Observations	734	734

Figure 1

Foreign bank share across developing countries

Foreign bank share 2003