Bank Lending to Small Businesses in Latin America:

Does Bank Origin Matter?

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Abstract:

In recent years, foreign bank participation has increased tremendously in Latin America. While some argue that foreign bank entry will benefit Latin American banking systems by lowering loan and deposit volatility and increasing efficiency, others are concerned that foreign banks might choose to extend credit only to certain customers, leaving some sectors - like small businesses - unattended. This paper examines this last issue. In particular, using bank level data for Argentina, Chile, Colombia, and Peru during the mid-1990s, this study empirically investigates whether bank origin affects the share and growth rate of bank lending to small businesses.

Introduction

The increasing participation of foreign banks has been one of the most striking structural changes experienced by banking systems in developing countries over the past decade. In Central Europe the percentage of assets controlled by foreign banks increased from 8 percent in 1994 to 56 percent in 1999. As of December 2000, foreign financial institutions controlled 38 percent of loans in the major countries of Latin America, up from 15 percent in 1996. In Asia, the numbers are less striking, but the trend is definitely visible. Foreign control in this region has increased from 2 to 13 percent.[1]

Whether foreign bank entry will be beneficial for developing countries is an issue of controversy. Proponents of this process argue that foreign banks bring new capital, improve management expertise, and promote efficient and competitive banking practices. Also, because foreign banks have access to alternative sources of funding other than local deposits, many argue that foreign entry may lead to lower volatility and higher growth of lending. In contrast, those opposing opening up financial systems to foreign ownership argue that foreign banks may decrease the stability of aggregate domestic bank credit by facilitating capital flight during crises and simultaneously increasing countries' exposure to regional contagion and to shocks in the home countries of foreign banks.

Another common argument against foreign bank entry is that these institutions might tend to "cherry pick" the most profitable customers, reducing financing to some sectors, increasing the risk exposure of local banks, and thus, affecting the overall distribution of credit. In particular, the main area of concern is the availability of credit to small businesses. In many developing countries, small businesses account for a very significant share of total value added and generate a large fraction of the total jobs in the economy. Banks are perceived as having a comparative advantage over other lending institutions in small business lending. This role is likely to be more important in less developed countries that are generally more heavily dependent on bank financing. In Argentina, for example, 79 percent of small industrial firms have bank debt (Lloréns, van der Host, and Isusi, 1999). Moreover, small businesses tend to have exclusive dealings with a single bank with which they have a strong relationship. Given the paucity of information about small businesses, these relationships enable banks to generate information

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on the risk characteristics of small firms.   Therefore, access to credit by small businesses would be reduced if foreign banks were to neglect small businesses and/or drive domestic banks from the market, destroying the information generated through bank-borrower relationships.

A number of recent studies have shown that foreign entry seems to improve banking system efficiency and to contribute to overall banking stability in developing countries (see Demirgüç-Kunt, Levine, and Min (1998), Levine (1999), Barajas *et al.* (2000), Claessens *et al.* (2000), Clarke *et al.* (2000), and Dages *et al.* (2000)). On the other hand, the effect of foreign bank participation on access to credit in developing countries remains largely unexplored.

Evidence from the United States indicates that large and organizationally complex institutions find it difficult to lend to informationally opaque small and medium-sized enterprises (see Berger and Udell (1995), Berger *et al.* (1995), Keeton (1995), Levonian and Soller (1995), Berger and Udell (1996), Peek and Rosengren (1996), and Strahan and Weston (1996)).   These organizational diseconomies might explain why a number of studies have found that foreign banks, which as shown by Focarelli and Pozzolo are typically large, appear to allocate greater shares of their lending to activities and sectors dominated by large firms (see Goldberg (1992), Cho *et al.* (1987), and Clarke *et al.* (2000))

While large foreign banks are unlikely to replicate the lending methods of small domestic banks, technological innovation could offer them an avenue for increasing small business lending. Mester (1997) argues that advances in credit scoring methodologies, coupled with enhanced computer power and increased data availability, are likely to change the nature of small business lending. This suggests that there could be a nonlinear, and, in particular, U-shaped relation between bank size and lending to small businesses. On the left-hand side would be small domestic banks engaged in relationship lending for services not amenable to scoring. On the right-hand side would be large banks, many or most of them foreign owned, offering more standard products to small businesses based on credit scoring (Mester (1997) and Peek and Rosengren (1998)).

The literature for the U.S. also suggests that the type of foreign entry may affect lending patterns. For example, the evidence from the U.S. indicates that *de novo* entrants seem to devote larger shares of

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their assets to small businesses than other banks (See Goldberg and White (1998), DeYoung *et al.* (1999), and Jenkins (2000)).

Foreign entry through merger and acquisitions (M&As) might have different effects on small business lending. Some studies find that M&As among small banks led to increased propensity to lend to small businesses following their consolidation (Peek and Rosengren (1998), Walraven, (1997), Strahan and Weston (1998), Berger *et al.* (1998)). However, when medium-sized and large banks are involved, a number of recent papers have reached conflicting conclusions. Keeton (1996) and Berger *et al.* (1998) uncovered that M&As tend to result in a reduction in small business lending when large banks are involved, but Strahan and Weston (1998) found no significant change in the ratio of small business loans to assets following large M&As.

There is, however, very little literature that deals directly with the implications of foreign entry for lending to small businesses in developing countries. Argentina is the only country for which we found such studies. Bleger and Rozenwurcel (2000) indicate that foreign bank participation in Argentina is associated with a reduction of bank lending to small businesses from around 20 to 16 percent of total lending between 1996 and 1998. In contrast, Escudé et al. (2001) find that despite their lower tendency to lend to small businesses, foreign banks have increased both their propensity and their market share of lending to the sector between 1998 and 2000. Finally, using a rich data set on Argentinean business debtors in December 1998, Berger, Klapper, and Udell (2000) find that large banks and foreign owned banks are less inclined to extend credit to smaller firms, which are likely to be informationally opaque.

Given the paucity of research on the impact of foreign bank entry on access to credit and the importance of this issue from a policy standpoint, further investigation is clearly warranted. Using bank level data for Argentina, Chile, Colombia, and Peru during the mid-1990s, this study empirically investigates whether bank origin affects the share and growth rate of bank lending to small businesses. After Eastern Europe, Latin America has been the region that most rapidly and widely allowed foreign bank entry. In our study, we focus on four of the most important countries in the region that have witnessed the largest increase in foreign entry into their banking sectors. Having bank-level time series

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data allows us to investigate the evolution of lending to small businesses over time, in particular, as foreign penetration increases. Because we analyze this question for a number of countries, we are able to examine whether foreign entry has a uniform impact on lending to small businesses across countries.

This paper is organized as follows. Section II presents a brief overview of the Argentinean, Chilean, Colombian, and Peruvian banking sectors. Section III discusses the data used in this paper. Section IV presents descriptive statistics on the extent to which foreign banks lend to small businesses, relative to their domestic counterparts. Section V explains the econometric methodology, while section VI presents the empirical results. In Section VII we conduct a preliminary exploration of the cross-country differences in our results. Finally, section VIII concludes.

II. Banks in Argentina, Chile, Colombia, and Peru: An Overview

Both the number of banks and the distribution of their sizes vary across the four countries, and this could have implications for lending to small businesses (see Figure 1). Colombia with a population of 41.6 million had the second lowest number of banks (27) in 2000. Chile, which has a population of 15.0 million, or just over one-third that of Colombia, had 28 banks. Peru resembles Colombia more than Chile. Its 25.2 million residents are served by 19 banks. Finally, Argentina had the highest number of banks per resident – 91 banks serve a population of 36.6 million.

Not only are there more banks per capita in Argentina and Chile, but also they are larger than those in Colombia and Peru. In both Chile and Argentina, the largest banks have between 15 and 20 billion dollars in assets. In Colombia, the largest banks have 3 to 4 billion dollars in assets. In Peru, this figure ranges between 4 to 6 billion dollars. Relatively small banks comprise an inordinate share of the total in all four countries. However, small banks in Chile are larger than those in Peru and Colombia.

In Argentina, there are still a large number of very small banks. This is likely to diminish as the process of consolidation continues there. In the early 1990s, Argentina had more than 200 financial institutions. Less than half that number are now in operation, and some of the current banks are new entrants. While several banks have failed, many have been acquired by or merged with other entities. In the period covered by our data (June 1998 to March 2000), there were eighteen mergers or acquisitions,

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ten of which involved foreign banks. The period between the Tequila Crisis in late 1994 and the beginning of our sample witnessed even greater consolidation (see World Bank 1998).

Argentina experienced the most mergers and acquisitions in the late 1990s. However, Chile, Colombia, and Peru have also undergone a process of consolidation. In Colombia and Peru, there were seven mergers or acquisitions, four of which involved foreign banks. Chile had six such transactions, half involving foreign banks. Argentina also led the way with seven *de novo* entrants, compared to two for Peru and none in either Chile or Colombia. In our empirical analysis, we control for the effects of mergers, acquisitions, and *de novo* entry on the share and growth rate of lending to small businesses.

The ratio of banking sector assets to GDP provides another indication that Colombia and Peru have a lower level of financial intermediation than Argentina and Chile (see Figure 2). Both for Colombia and Peru that ratio hovered near forty percent, and was declining at the end of our sample period. To some extent, these dips were due to Colombia's internal conflict and banking crisis and to Peru's scandals at the end of the Fujimori administration. By way of comparison, in Argentina the ratio of banking sector assets to GDP went from 48 percent in 1998 to 56 percent in 2000. Owing to the hyperinflation of the late 1980s, Argentina started the 1990s with a very low ratio of banking sector assets to GDP. However, with the exception of the Tequila Crisis, that ratio has grown relatively steadily since the adoption of the Convertibility Plan in 1991, which brought about price stability. Chile's banking development occurred earlier. By 1996, banking sector assets were nearly 140 percent of GDP, and that figure had grown to over 180 percent by 2000. It is true that much of the Chilean banks' assets are in assets other than loans, and that banking assets relative to GDP may overstate their relative level of development. However, Chile holds a sizable advantage over the other three countries on other measures of financial development such as the ratio of private credit to GDP.[2]

The evidence on foreign penetration also indicates that Chile and Argentina differ from Colombia and Peru (see Figure 3). In Colombia, foreign banks comprise forty percent of the total number, but they account for only a quarter of banking sector loans. In Peru, over half the banks are foreign-owned, but they are responsible for forty percent of total system loans. There is a key difference between the two

countries. In Peru, the share of loans held by foreign banks grew throughout the late 1990s, while in Colombia it declined slightly. Still, foreign banks held only about a quarter of total loans in both countries throughout most of the period.

By the end of the period, foreign banks held over 50 percent of Argentina's banking sector loans, and almost 45 percent of Chile's. Chile's foreign bank share climbed throughout our sample period. In Argentina, most of that growth occurred prior to our sample period. However, data on lending to small businesses for Argentina was only available since 1998, and thus our sample period is shorter than that for Chile. The key point, however, is that foreign banks comprised a substantially larger share of bank loans in Argentina and Chile than in Colombia or Peru.

Judging from the U.S. empirical evidence one might expect that small borrowers would fare relatively worse in Argentina and Chile. Those countries experienced greater foreign penetration and had much larger banks than in Colombia or Peru. Moreover, in Argentina, foreign entry coincided with a massive consolidation in which many small banks left the market either through merger or failure. Section V tests these conjectures explicitly.

III. The Data

To analyze domestic and foreign bank lending to small businesses, we assembled a comprehensive bank level database for Argentina, Chile, Colombia, and Peru during the 1990s. These countries' central banks and bank superintendencies were our main sources of data. We gathered information on the origin (foreign or domestic) of each bank in these countries throughout the sample. Moreover, we identified whether foreign banks entered into the banking system through a process of mergers and acquisitions with previously existing institutions or by creating a new institution or *de novo* bank. In general, the first type of entry is likely to result in higher bank concentration, especially if foreign banks acquire large domestic institutions. Second, we gathered data on the distribution of bank lending by size. When information about small business loans was not available as a separate category, small business loans were defined by the size of the loan, instead of borrower size. Finally, we collected

balance sheets and income statements for all the financial institutions to control for the performance and health of domestic and foreign banks when comparing lending patterns across these institutions.

Argentina

According to a recent study on small business lending conducted by the central bank of Argentina, loans to this sector go to businesses with total debt between 50,000 and 2.5 million dollars (see Escudé *et al.* (2001)). Since we do not have information on borrowers' total debt, we use bank level information on total lending stratified by loan size for the period 1998-2000. According to the aforementioned study, a small business with up to 2.5 million dollars in debt, on average borrows up to 1 million dollars from any individual bank. Thus, we define as loans to small businesses all loans up to this amount.

Chile

For Chile small business loans are identified based on the total debt of the business rather than the size of individual loans. Total debt is measured by the Chilean Banking Superintendency in 'unidades de fomento' (UF), which are equal to a fixed quantity of Chilean pesos indexed to inflation. Following the guidelines provided by the Superintendency, we define as small business lending all loans to borrowers with less than UF50,000 in total debt, which is roughly equal to 1.5 million dollars.[3]

Colombia

The Superintendency of Banks in Colombia requires banks to keep a separate record of the amount of loans they give to small firms registered with the Superintendency of Businesses. According to Colombian regulations, small businesses are those with assets up to 1.7 million dollars. For each bank in Colombia, we obtained quarterly information on the loans to the 4,067 small businesses registered with the Superintendency of Businesses over the period 1997-1999. Because this might be a partial list of all small businesses in Colombia, we should be careful in trying to draw conclusions across countries.

Peru

Officials from the Peruvian Banking Superintendency estimate that small business loans range between $20,000 and $500,000. Thus, using a breakdown of bank lending by size for loans to businesses

prepared by the Peruvian Banking Superintendency, we defined small business loans as loans to businesses up to $500,000.

IV. Profile of Small Business Lending in Latin America

Table 1 and 2 provide some summary statistics on the share and growth rate of small business lending by domestic and foreign banks in Argentina, Chile, Colombia, and Peru during 1997-2000. Also, within these tables we distinguish between large and small, foreign and domestic banks. We consider large banks to be those in the top 5 percentile of the distribution of banks assets.

According to Table 1, comparing all domestic banks with all foreign banks (i.e., without any regard for size), we find that foreign banks in all four countries in our sample devote a lower share of their total lending to small businesses. However, these shares are not significantly different in the case of Colombia. In fact, Colombia looks very different from the other countries not only because the shares of small business lending by domestic and foreign banks are not significantly different from each other, but also because the shares of lending to small businesses in Colombia are several orders of magnitude smaller than what we find for other countries. While for the other three countries the share of lending to small businesses ranges between 18 and 30 percent depending on the country and the origin of the bank, for Colombia this share does not exceed 2 percent. Again, this might be due to the fact that data on small business lending is available only for the 4,067 firms registered with the Superintendency of Businesses. Thus, while it seems acceptable to compare the share of small business loans for foreign and domestic banks in Colombia, it might not be fair to make comparisons between small business lending shares in Colombia and the remaining countries.

If we separate banks according to size and origin, we find that regardless of bank origin small banks lend more to small businesses than large banks. Further, in all four countries, small foreign banks devote a lower share of their total lending to small businesses than small domestic banks. The difference between small foreign and domestic banks is statistically significant in all countries except Colombia. In contrast, the picture for large banks is quite different. Although large foreign banks appear to lend less to

small businesses than large domestic banks in Argentina and Peru, the reverse seems true in Chile and Colombia. This suggests that large and small foreign banks might behave differently in some countries.

If lending to small businesses grows at a slower pace than other types of lending it is possible that the share of lending to this sector could be dropping, while the growth rate of the level could still be positive. Thus, to distinguish between the behavior of the share and the level of small business lending, Table 2 present tests of differences in mean growth rates of small business lending across domestic and foreign banks for all four countries. Table 2 shows that in Argentina, Chile, and Colombia, the annual small business lending growth is lower for foreign banks relative to domestic banks. For Argentina and Colombia, this result is coming from the behavior of small foreign banks, since the large foreign banks seem to outperform the large domestic banks. Peru is the one case where the growth rate of small business lending by foreign banks is positive and significantly different from that observed for domestic banks.[4]

V. Empirical Methodology

Differences in the mean share or in the growth rate of lending to small businesses between domestic and foreign banks might be driven by factors other than bank origin that we are not controlling for. Thus, we turn to regression analysis to study the impact of bank origin on small business lending.

For each country, we estimate equations (1a) and (1b) below in order to examine the impact of bank origin on the share of bank lending to small businesses, controlling for other factors that might influence this ratio.

$$
\left(\ln(\frac{P_{i,t}}{1-P_{i,t}}) \right)^{j}_{i,t} = a^{j}_{0} + a^{j}_{1}{}'SIZE^{j}_{i,t-1} + a^{j}_{3}{}'FCIAL^{j}_{i,t-1} + a^{j}_{4}{}'PUBLIC^{j}_{i,t} + a^{j}_{5}{}'ORIGIN^{j}_{i,t}
$$

$$
+ a^{j}_{6}{}'TREND^{j}_{i,t} + a^{j}_{7}{}'TREND*ORIGIN^{j}_{i,t} + a^{j}_{8}{}'FDENOVO^{J}_{i,t} + a^{j}_{9}{}'FDACQUIRER^{j}_{i,t} + a^{j}_{10}{}'AGEFDENOVO^{j}_{i,t}
$$

$$
+ a^{j}_{11}{}'AGEFACQUIRER^{j}_{i,t} + a^{j}_{12}{}'MERGERS + a^{j}_{13}{}'AGEMERGERS + e^{j}_{i,t} \qquad (1a)
$$

$$
\left(\ln(\frac{P_{i,t}}{1-P_{i,t}}) \right)^{j}_{i,t} = a^{j}_{0} + a^{j}_{1}{}'SIZE^{j}_{i,t-1} + a^{j}_{2}{}'SIZE^{2j}_{i,t-1} + a^{j}_{3}{}'SIZE*ORIGIN^{j}_{i,t-1} + a^{j}_{4}{}'SIZE^{2}*ORIGIN^{j}_{i,t-1} +
$$

$$
a^{j}_{5}{}'FCIAL^{j}_{i,t-1} + a^{j}_{6}{}'PUBLIC^{j}_{i,t} + a^{j}_{7}{}'ORIGIN^{j}_{i,t} + a^{j}_{8}{}'TREND^{j}_{i,t} + a^{j}_{9}{}'TREND*ORIGIN^{j}_{i,t} + a^{j}_{10}{}'FDENOVO^{J}_{i,t} +
$$

$$
+ a^{j}_{11}{}'FDACQUIRER^{j}_{i,t} + a^{j}_{12}{}'AGEFDENOVO^{j}_{i,t} + a^{j}_{13}{}'AGEFACQUIRER^{j}_{i,t} + a^{j}_{14}{}'MERGERS + a^{j}_{15}{}'AGEMERGERS + e^{j}_{i,t} \quad (1b)
$$

Equations (1a) and (1b) are estimated in log-odds logit form where j=1...X represents the country identifier, i=1...N captures each individual bank within a country, and t=1...T refers to the time periods considered. P_{it} is the proportion of loans made by banks to small businesses. Focusing on the log odds ratio rather than the share gets around the problem that shares are by definition bounded between 0 and 1.

Equation (1a) and (1b) model the ratio of small business loans to total loans as a function of a number of bank indicators, including bank origin. We also include a general time trend (TREND) in the estimations to control for changes in the share of lending to small businesses associated with macroeconomic variables or any other factors that are common among banks over time.

ORIGIN is a dummy variable for whether the bank is owned by domestic or foreign interests. This variable takes a value of one for foreign banks. The ORIGIN dummy is also interacted with the yearly trend to capture changes in foreign banks' share of lending to small businesses. By focusing on the sign and significance of the coefficients on ORIGIN and the interaction term, we can study whether we observe different lending patterns for foreign and domestic banks.

In most countries in our sample, there are three kinds of foreign banks, namely, those that had been operating in the country for a number of years before our sample starts (e.g. Citibank in all four countries), *de novo* foreign banks that started operating at some point in the sample, and banks that within our sample acquired other domestic or foreign banks. As noted in the literature, there are reasons to expect that these types of banks might behave differently towards small businesses. In the U.S. literature for example, *de novo* banks, in particular, have been found to be more apt to lend to small businesses than other foreign entrants, while mergers among large banks have resulted in lower shares of small business lending. To allow for differences in the impact that the mode of entry by foreign banks has on the share of lending to small businesses, we include separate dummies for foreign *de novo* banks (FDENOVO) and for those foreign banks that either entered the system or increased in size by acquiring domestic institutions (FDACQUIRER). Both of these dummy variables are also interacted with a variable measuring the time since entry or acquisition ("AGE") to capture changes in their small business lending as they became better established in the market.

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Because consolidation by domestic banks or between two foreign banks could have an impact on the share of small business lending, we include a dummy for mergers that did not involve a foreign bank merging with or acquiring a domestic institution (MERGER). We also interact this variable with a trend to control for the dynamic impact of bank consolidation (independent of ownership) and lending to small businesses.

SIZE refers to the log of real total assets.[5] In equation (1b), we include a size-squared term $(SIZE^2)$ to account for the possible non-linearity in the relation between bank size and lending to small businesses. Also, by interacting size and size squared with a dummy for bank origin, this equation allows for the possibility that the impact of size on the share of bank lending to small businesses is different between domestic and foreign banks.

Publicly owned banks operate in three out of the four countries in our sample (Argentina, Chile, and Colombia). Because public bank lending decisions could be affected by politics and not by commercial factors, we include a dummy (PUBLIC) to control for this type of banks in our estimations.[6]

FCIAL refers to two financial health and performance indicators, return on assets and the ratio of administrative expenses to total assets. It is unclear what is the expected sign on these variables. On the one hand, banks with positive return on assets might be more able to grow over time and to expand into areas where it takes time and effort to acquire the know-how of the business, like lending to small borrowers. On the other hand, banks with low return on assets might be more willing to "gamble for resurrection" by venturing into higher risk segments, like lending to small businesses. Banks with higher ratios of administrative expenses to assets might be better suited to lend to small businesses, if their high expenses are associated with a more extensive branch network and a larger labor force that can provide the personalized attention and monitoring that is needed when lending to small businesses. On the other hand, banks with high administrative expenses might be at a disadvantage to compete with other banks in lending to small businesses.

The share regressions provide important information about the impact of foreign entry on lending to small businesses, but they cannot tell us for certain whether such lending increased or decreased during

this period. For example, those regressions could indicate that the share of lending to small businesses by foreign banks was falling relative to shares at domestic banks while, at the same time, foreign banks' total lending to small businesses was actually increasing. The decline in the share of small business lending would occur because that line of business was not growing as fast as other lines of business at foreign banks, but there would be real growth in small business lending nonetheless. For these reasons, we also run regressions in which the dependent variable is the growth rate in real lending to small businesses.

Both equations (2a) and (2b) examine the impact of bank origin on the growth rate of real lending to small businesses (SBLGROWTH). Equation (2b) allows for the possibility that the impact of size on lending to small businesses might depend on bank origin.

$$SBLGROWTH_{i,t}^j = a_0^j + a_1^j{}' SIZE_{i,t-1}^j + a_2^j{}' FCIAL_{i,t-1}^j + a_3^j{}' ORIGIN_{i,t}^j + a_4^j{}' PUBLIC_{i,t}^j + a_5^j{}' FDENOVO_{i,t}^j$$
$$+ a_6^j{}' FDACQUIRER_{i,t}^j + a_7^j{}' MERGERS_{i,t}^j e^j{}_{i,t} \ (2a)$$

$$SBLGROWTH_{i,t}^j = a_0^j + a_1^j{}' SIZE_{i,t-1}^j + a_2^j{}' SIZE*ORIGIN_{i,t-1}^j + a_3^j{}' FCIAL_{i,t-1}^j + a_4^j{}' ORIGIN_{i,t}^j$$
$$+ a_5^j{}' PUBLIC_{i,t}^j + a_6^j{}' FDENOVO_{i,t}^j + a_7^j{}' FDACQUIRER_{i,t}^j + a_8^j{}' MERGERS_{i,t}^j + e^j{}_{i,t} \ (2b)$$

Once again, j=1...X represents the country identifier, i=1...N captures each individual bank within a country, and t=1...T refers to the time periods considered. All regressors are defined above. The lending growth specifications differ from those for shares of small business lending in one sense. Because the dependent variable already captures dynamic effects, there is no need to include interaction terms to measure trends over time.[7]

VI. Empirical Results

As described above, we estimate two types of regressions, one for shares of total lending devoted to small businesses (share regressions) and one for real growth rates in small business lending (growth regressions). In some of the share and growth regressions, we interact foreign ownership with bank size to explore whether large foreign banks behaved differently towards small businesses than did other banks. We discuss each of these four estimations in turn.

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Share regressions – No bank size interactions

Table 3 reports the results from equation (1a) assuming the impact of size on the share of lending to small businesses is linear and is restricted to be the same for domestic and foreign banks. For our purposes, the key variable from this base regression is the foreign ownership dummy, which is negative in most cases, but significant only in the case of Chile. Therefore, controlling for other factors, a typical foreign bank did not devote a significantly lower share of its lending to small businesses in Argentina, Colombia, and Peru.

In all countries except Argentina, the coefficient on the time trend is negative and statistically significant, indicating that lending to small businesses as a share of total lending was falling over time for domestically owned banks. The coefficient is positive and statistically insignificant in the regression for Argentina. The coefficient on the interaction between the time trend and the foreign ownership dummy is negative in the regressions for all four countries, but it is statistically significant at conventional levels only for Peru. Thus, except for the case of Peru, there is no consistent indication that the share of lending grew at a slower rate (or fell at a faster rate) for foreign banks vis-à-vis domestic institutions.

In this specification, size has a negative impact on lending to small businesses. This effect is significant only in the case of Argentina and Peru. Private domestic banks generally appear to lend more to small businesses (as a share of total lending) than state-owned banks, after controlling for other factors that might affect lending. The coefficient on the dummy indicating government ownership is negative and statistically significant in the regressions for all three countries with state-owned banks (Argentina, Chile and Colombia). One frequently heard justification for state banks is that they resolve credit market failures by emphasizing lending to small businesses. These results appear to undercut that justification.

Finally, the regressions also include a series of dummies to control for the effects of mergers, acquisitions, purchases of existing foreign banks by new foreign entrants, and *de novo* entry by foreign banks. These variables are included to control for the possibility that banks recently involved in mergers and banks that have only recently entered might take some time to reach their desired portfolio allocations. To allow banks to slowly adjust their portfolio allocations, variables representing the time

since the merger or entry occurred are also included. In Argentina, where the largest number of transactions took place, we are able to include more dummies than in the other countries. However, since there were very few mergers during our sample period in most of the countries, and because some observations are lost due to missing or incomplete data, the coefficient estimates are often based on only a few merger/entry observations. Consequently, these variables might best be thought of as controlling for temporary disequilibria following mergers and new entry, which thus enables us to estimate more reliably the coefficients for the banks not involved in such transactions.

Given the limited number of observations, it is not surprising that the merger/entry variables do not tell a very consistent story across countries. We briefly mention only a couple of the results from those variables. The very limited evidence on *de novo* entry, which comes only from the share regressions for Argentina, appears to indicate that contrary to the U.S. experience, foreign *de novo* entrants do not concentrate on small business financing. Results for the rest of the merger/entry variables show little consistency across types of regression or across countries. For example, in equation (1), the impact of foreign acquisitions (i.e., existing foreign banks acquiring domestic banks) on lending to small businesses is negative and significant for Argentina, positive and significant for Chile, and insignificant in Colombia and Peru. Similar inconsistencies across countries are found for all the regression types discussed below. The effect of the mode of entry on the lending behavior of foreign banks is an important topic. We simply lack the number of observations necessary to provide consistent evidence on this issue.[8]

B. Share regressions – large vs. small banks

Equation (1b) allows for non-linearities in the relationship between size and the share of small business lending and for interactions between size and size squared with origin, in order to explore whether bank size changes the impact of foreign ownership on lending to small businesses. Table 4 reports the results from this specification. The null hypothesis that the two coefficients on the interaction terms are jointly zero can be rejected at a 10 percent level or higher in the regressions for all four countries.[9] Similarly, the null hypothesis that the two coefficients on the squared terms are jointly zero

can also be rejected at similar levels.[10] This strongly suggests that it is appropriate to include these additional terms.

Once the interaction and squared terms are included, it becomes more difficult to see how foreign ownership affects the share of lending to small businesses based simply upon the coefficient values. To make it easier to interpret the results, Figures 4-7 show estimated lending to small businesses (as a share of total lending) for foreign and domestic banks.[11] Estimated shares are calculated for banks of different sizes using coefficients from Table 4 in the final period for each country, using median values of continuous variables (other than size) for banks of that type and assuming that the bank was not involved in any mergers or acquisitions.

Although medium and large domestic banks generally lend less to small businesses (as a share of total lending) than small domestic banks, lending shares generally decline slowly for medium and large banks as size increases in some countries. In fact, in the two cases with the largest banks, Chile and Argentina, lending to small businesses appears to actually increase as size increases for medium and large domestic banks (see figures 4 and 5). In contrast to the results for the other three countries, lending to small businesses in Colombia increases as a share of total lending for very small banks before slowly declining (see figure 6).

The pattern for foreign-owned banks appears quite different from the pattern for domestic banks. Although small foreign banks lend considerably less to small businesses than small domestic banks in all four countries, medium to large foreign banks generally appear similar to medium to large domestic banks. In fact, in two of the four countries, Chile and Colombia, estimated shares of small business lending for large foreign banks are larger than for large domestic banks (see Figures 5 and 6). In the other two countries, Argentina and Peru, although foreign banks of all sizes lend lower shares than similar domestic banks, the difference is smaller for large banks than it is for small banks (see Figures 4 and 7).[12] These results, and especially those for Chile, are consistent with the notion that large foreign banks, using credit scoring methodologies, enhanced computer power, and improved data availability, will increasingly enter small business lending. We seek further confirmation in the growth rate regressions below.

C. Growth rate regressions

Table 5 includes regressions with the annual growth of small business lending as the dependent variable. [13] As noted previously, although dummy variables in the growth regressions might have a similar interpretation to the trend variables in the share regressions, their coefficients could differ. However, in the regressions following equation (2a) that omit the interaction between size and foreign ownership, the results for the foreign ownership dummy are broadly consistent with those for the interaction between the time trend variables and bank origin in the share regressions.

The coefficient on the dummy indicating foreign ownership is negative and statistically significant in the regressions for Argentina and Colombia; positive and statistically significant in the regression for Peru; and positive and statistically insignificant in the regression for Chile (see columns (5.1), (5.3), (5.5) and (5.7)). The results for Argentina and Colombia are consistent with the results from the share regressions, with lending shares by foreign banks increasing more slowly than for similar domestically owned banks. The coefficients for Chile are statistically insignificant in both types of regressions. The one exception is Peru, where the coefficient on the origin dummy is positive and statistically significant in the growth regression, while the coefficient on the interaction between the trend term and the origin dummy in the share regressions is negative and statistically significant. Although this might seem contradictory, given the rapid growth of total assets held by foreign banks, from about 15 percent of total assets in December 1996 to nearly 40 percent of assets in March 2000, the two results might not be surprising – small business lending by foreign banks was growing, just not as fast as other types of lending by foreign banks.

There is also broad consistency between the share regressions and the growth rate regressions with respect to state-owned banks. The coefficient on the dummy variable for state ownership in the growth regressions is negative and statistically significant in two of the countries with state-owned banks, Chile and Colombia, indicating that lending to small businesses by state-owned banks was growing slower than lending by private domestically owned banks. For the final country with state-owned banks, Argentina, the coefficient on the dummy variable indicating state ownership is positive, but statistically

insignificant. These results are robust to including the interaction between size and foreign ownership. The results provide further indication that small business lending might not be a primary objective of state-owned banks.

D. Growth rate regressions – Large vs. small banks

In the regressions omitting the interaction term between size and foreign ownership, the correlation between size and growth in small business lending is positive for Argentina and Chile (see columns (5.1) and (5.3)). This appears to be largely because growth was faster for large foreign banks than it was for small foreign banks. In the growth regressions that include the interaction between size and foreign ownership, the coefficient on size becomes smaller but remains positive for Argentina, and becomes negative and statistically insignificant for Chile. In contrast, the coefficients on the interaction term between size and origin are large, positive, and statistically significant in the regressions for both countries (see columns (5.2) and (5.4)).

This suggests that lending to small businesses was growing considerably faster for large foreign-owned banks than it was for small foreign-owned banks, while the differences between large and small domestic banks were smaller. Figures 8 and 9 show estimated growth of lending to small businesses for foreign and domestically owned banks of different sizes for these two countries. In both Argentina and Chile, although lending to small businesses was growing more slowly for small foreign-owned banks than it was for small domestically owned banks, the reverse was true for large banks. This is our strongest evidence that large foreign banks were increasingly lending to small businesses. In the next section, we discuss why this occurred in Argentina and Chile, but not in Colombia or Peru.

The statistically insignificant coefficient on the interaction term for both Colombia and Peru suggests that size affected growth of small business lending similarly for foreign and domestically owned banks in these countries. However, this does *not* imply that loan growth rates for foreign banks were less than those for domestic banks. The coefficient on the dummy variable indicating foreign ownership is also statistically insignificant in Colombia, which suggests that growth in lending was similar for similarly-sized foreign and domestically owned banks.[14] Moreover, when the interaction term is omitted

for Peru, the coefficient on the origin dummy variable becomes positive and statistically significant suggesting that lending to small businesses was growing faster there for both large and small foreign-owned banks than it was for similar domestic banks.

The small business lending by foreign banks in Colombia and Peru may have been qualitatively different than that undertaken by large foreign banks in Argentina and Chile, but we do find evidence from the loan growth regressions from all four countries that suggests that foreign banks (or a subset of them) were expanding such lending at least as fast as both private domestic and state-owned banks during this period. [15] These results appear to undercut claims that foreign banks are unable or unwilling to enter the small business lending niche in developing countries.

VII. Explaining differences in small business lending across countries: a preliminary exploration

Our empirical results suggest that large foreign banks are more inclined to lending to small businesses in Argentina and Chile than in Colombia and Peru. The growth rate regressions for Argentina and Chile show that large foreign banks increased their lending at faster rates than large domestic banks. In Argentina, the large foreign banks had the highest estimated growth rates among all banks. In Chile, but not Argentina, large foreign banks devoted higher shares of their portfolios to small business lending than all banks, but the smallest domestic ones. Although many explanations might be consistent with these results, we briefly explore three possible causal factors: the quality of the contracting environment, the structure of the banking sector, and the macroeconomic environment.

A. Contracting Environment

Table 6 compares the countries using four indices that capture somewhat different aspects of the quality of the contracting environment. Figures for the United Kingdom and the United States are also included as reference points. These indices, whose constructions and sources are described in detail in the notes attached to Table 6, have become standard tools in cross-country empirical studies of financial development and economic growth. For three of the indices – the Index of Freedom's measure of the security of property rights, BERI's measure of contract enforcement, and the ICRG measure of the Rule of Law – the rankings are almost identical. Chile finishes first, followed relatively closely by Argentina.

Colombia and Peru finish third or fourth depending on the index. The gap between Argentina and Chile is typically much smaller than that between Argentina and either Colombia or Peru.

The remaining index, developed by La Porta, Lopez-de-Silanes, Shleifer, and Vishny (LLSV), measures the strength of the legal rights afforded to creditors in the event of bankruptcy or firm reorganization. It summarizes the types of laws that are on the books rather than the quality of the enforcement of those laws. In that sense, the index differs from the other three, although, like the others, it indicates that laws in Chile and Argentina protect creditors better than in Colombia or Peru. In short, on a number of indicators, Chile and Argentina provide better contracting environments than either Colombia or Peru, and this could partially explain why large foreign banks are more inclined to lend to small businesses in those countries. We speculate that large foreign banks that use scoring methodologies to deliver relatively standardized loan products to a high number of small businesses or individuals need assurances that, in the event of default, recoveries can be made in a timely fashion.

These indices might also help resolve why both the share and the growth rate regressions indicated that large foreign banks in Chile were emphasizing small business lending, while only the growth rate regressions provided similar evidence for Argentina. As noted, Chile held a slight edge over Argentina on these indices, which suggests that they enjoyed an adequate contracting environment for a longer period. Large foreign banks in Chile may have had enough time to reach their equilibrium shares of lending to small business. In Argentina, an adequate contracting environment arrived later than in Chile, and thus large foreign banks likely had still not achieved equilibrium shares of small business lending by the end of the period.

B. *Structure of Banking Sector*

The number and size of the banks in each country can also help explain the pattern of results. In Peru, for example, there were no foreign banks that approached the size of the largest domestic ones (refer to Figure 1). As a result, the type of small business lending undertaken by large foreign banks in Argentina and Chile was not a possibility in Peru. Of course, the fact that no large banks operated in Peru during this period is itself telling. It seems plausible that the weak contracting environment discouraged

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their entry. Although some foreign banks were among the largest in Colombia, none of them compared to the largest banks in Chile or Argentina. Colombia's foreign banks, too, might have been too small to engage in small business lending through credit scoring.

C. Macroeconomic environment

The top panel in Figure 10 provides real growth rates for each of the four countries over this period. Because they exhibit almost the same growth patterns, it is unlikely that this factor can account for the differences in results across countries. One exception to the pattern is Argentina in 1995 and 1996, which, while recovering from the Tequila Crisis, was experiencing slower, but increasing growth, while the others were generally experiencing faster, but declining growth. However, our sample for Argentina starts in 1998. The bottom panel in Figure 10 does indicate, however, that Argentina and Chile both enjoyed lower inflation than either Colombia or Peru during this period. This, too, might have made it easier for large foreign banks to lend to small businesses. In short, it seems plausible that the contracting environment, the structure of the banking sector, and price stability all might have made it easier for large foreign banks in Argentina and Chile to lend to small businesses. However, further work is probably needed to confirm these suppositions.

VIII. Conclusions

As foreign participation increases in the banking sectors of developing countries, many questions remain unanswered. Key among them is the issue of whether foreign banks tend to shy away from lending to small businesses. Using bank level data for Argentina, Chile, Colombia, and Peru over the mid-1990s, this paper examines the impact of foreign bank entry on the share and growth rate of lending to small businesses, while controlling for other factors that might affect lending to this sector.

Consistent with evidence from the U.S., we find that medium and large domestic banks in the four countries we study devote less of their lending (as share of total lending) to small businesses than small domestic banks. Also, in most countries, the share of lending devoted to small businesses by domestic banks was dropping in the late 1990s, as evidenced by the negative and significant trend in the share estimations.

Contrary to popular belief, public banks do not appear to surpass private banks in the extent to which they lend to small businesses. This would seem to indicate that the argument that privatization of public banks would hurt small businesses is, at best, weak.

Regarding the impact of foreign bank entry on lending to small businesses we find, consistent with conventional wisdom, that, on average, foreign banks in the four countries generally lent less to small businesses (as share of total lending) than private domestic banks (at least by end of period). However, the difference appears to be primarily due to the behavior of small foreign banks. In all four cases, small foreign banks lent considerably less to small businesses than small domestic banks. In contrast, the difference was considerably smaller for large and medium-sized banks. In fact, after controlling for other factors that might affect lending, large foreign banks actually appear to lend more to small businesses (as share of total lending) than large domestic banks in two of the four case study countries, Chile and Colombia.

Finally, in Argentina and Chile, the two cases where the ratio of banking sector assets to GDP consistently grew over the sample period, lending to small businesses by medium and large foreign banks was positive and was growing more quickly than for similar domestic banks. In contrast, lending by small foreign banks was shrinking and was growing far more slowly than for similar domestic banks.

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Table 1: Means Tests on Small Business Lending Shares

	Argentina	**Chile**	**Colombia**	**Peru**
	Mean (in %)	Mean (in %)	Mean (in %)	Mean (in %)
All Domestic Banks	25.7	29.8	1.9	23.8
All Foreign Banks	19.7	24.1	1.8	17.9
	(6.293) ***	(5.574) ***	(1.087)	(4.608) ***
Large Domestic Banks	16.9	19.3	1.0	15.8
Large Foreign Banks	9.9	24.3	1.3	10.2
	(6.451) ***	-(1.577)	-(3.783) **	(3.774) ***
Small Domestic Banks	26.4	30.5	2.0	24.6
Small Foreign Banks	21.8	24.1	1.8	18.2
	(4.324) ***	(6.132) ***	(1.065)	(4.905) ***

Null hypothesis: Mean(domestic)-Mean(foreign)=0

t-stats are in parenthesis

*, **, *** denote significance at the 10%, 5%, and 1% level, respectively

Table 2: Means Tests on Small Business Lending Growth Rates

	Argentina	**Chile**	**Colombia**	**Peru**
	Mean (in %)	Mean (in %)	Mean (in %)	Mean (in %)
All Domestic Banks	8.1	7.2	-12.9	-2.8
All Foreign Banks	-3.8	0.0	-22.9	19.5
	(3.326) ***	(2.798) ***	(1.604)	-(4.281) ***
Large Domestic Banks	14.9	13.8	-24.7	
Large Foreign Banks	27.0	-0.2	-2.1	
	-(2.142) **	(1.399)	-(1.603)	
Small Domestic Banks	7.6	6.8	-12.1	-1.9
Small Foreign Banks	-6.5	0.0	-23.8	19.5
	(3.659) ***	(2.569) **	(1.794) *	-(3.886) ***

Null hypothesis: Mean(domestic)-Mean(foreign)=0

t-stats in parenthesis

*, **, *** denote significance at the 10%, 5%, and 1% level, respectively

Table 3: Base Share of Small Business Lending Regressions

Variables	Argentina	Chile	Colombia	Peru
Log of real assets	-0.115 ***	-0.017	-0.040	-0.233 ***
(Lagged 1 period)	(-4.73)	(-0.58)	(-0.29)	(-6.02)
Return on assets	-0.026	-6.255	-5.674	11.794
(Lagged 1 period)	(-0.61)	(-0.89)	(-0.84)	(0.88)
Administrative expenses/assets	0.422 ***	-5.519	-5.934	-41.651 ***
(Lagged 1 period)	-2.79	(-0.79)	(-1.65)	(-4.88)
Public bank dummy	-0.606 ***	-0.857 ***	-0.466 **	
	(-8.21)	(-7.95)	(-1.97)	
Time trend	0.063	-0.044 *	-0.248 **	-0.160 ***
	(0.96)	(-1.8)	(-2.29)	(-3.80)
Foreign bank dummy	-0.129	-0.461 ***	0.390	-0.150
	(-0.86)	(-2.99)	(1.25)	(-0.7)
(Time trend)*(Foreign bank)	-0.149	-0.025	-0.362	-0.207 **
	(-1.42)	(-0.65)	(-1.59)	(-2.27)
Mergers dummy	-0.265 ***	-0.226 *	-0.207	0.292
	(-2.66)	(-1.86)	(-0.6)	(1.48)
Mergers* Age	0.255 ***	-0.063	0.651	0.377
	-3.11	(-1.21)	(1.58)	(0.96)
Foreign M&A dummy	-0.200 ***	0.392 ***	-0.037	-0.010
	(-2.61)	(2.61)	(-0.14)	(-0.08)
Foreign M&A*Age	0.111	-0.061	0.160	0.344 ***
	(1.01)	(-0.72)	(0.71)	(3.00)
De novo foreign entry dummy	-8.417 ***			
	(-69.33)			
(De novo foreign entry)*Age	-1.138 ***			
	(-3.64)			
Foreign purchase dummy	1.212 ***			
	(8.97)			
Foreign purchase*Age	0.373			
	(1.63)			
Constant	-0.018	0.038	-2.558	3.065 ***
	(-0.05)	(0.04)	(-0.93)	(4.93)
# of observations	1388	242	302	244
Adj. R-squared	0.32	0.28	0.08	0.38

Robust t-statistics within parentheses. *,**,*** significant at 10, 5, and 1 percent, respectively.

Table 4: Share Regressions with Size and Foreign Interactions

Variables	Argentina	Chile	Colombia	Peru
Log of real assets *(Lagged 1 period)*	-2.276 *** (-5.29)	-9.287 *** (-9.76)	10.350 (1.52)	0.057 (0.06)
$(\text{Log of real assets})^2$ *(Lagged 1 period)*	0.080 *** (5.19)	0.166 *** (9.58)	-0.260 (-1.57)	-0.014 (-0.43)
(Log of real assets)*(Foreign bank) *(Lagged 1 period)*	2.156 *** (3.22)	2.567 ** (1.99)	-0.496 ** (-2.28)	-0.486 *** (-4.32)
$(\text{Log of real assets})^2{}_*(\text{Foreign bank})$ *(Lagged 1 period)*	-0.079 *** (-3.24)	-0.037 (-1.54)	0.024 ** (2.28)	0.034 *** (4.53)
Return on assets *(Lagged 1 period)*	-0.038 (-0.94)	-15.641 ** (-2.3)	-5.091 (-0.76)	22.794 * (1.72)
Administrative expenses/assets *(Lagged 1 period)*	0.354 ** (2.54)	-5.600 (-0.8)	-8.314 * (-1.79)	-35.268 *** (-4.20)
Public bank dummy	-0.652 *** (-8.31)	-0.966 *** (-9.28)	-0.172 (-0.74)	
Time trend	0.092 (1.43)	-0.068 *** (-3.76)	-0.151 (-1.24)	-0.103 *** (-2.62)
Foreign bank dummy	-14.611 *** (-3.2)	-43.018 ** (-2.47)	1.004 ** (1.96)	0.146 (0.518)
(Time trend)*(Foreign bank)	-0.192 * (-1.74)	-0.034 (-1.07)	-0.504 * (-1.80)	-0.307 *** (-3.33)
Mergers dummy	-0.142 (-1.3)	-0.342 *** (-6.74)	0.243 (0.42)	0.408 ** (2.41)
Mergers* Age	0.053 (0.54)	0.032 (1.26)	1.112 * (1.95)	-0.545 (-1.29)
Foreign M&A dummy	-0.250 ** (-2.37)	-0.413 ** (-1.95)	-0.504 (-1.25)	-0.195 (-1.06)
Foreign M&A*Age	0.152 (1.15)	-0.143 (-1.46)	0.166 (0.70)	0.594 (3.12)
De novo foreign entry dummy	-8.327 *** (-35.65)			
(De novo foreign entry)*Age	-1.004 *** (-3.48)			
Foreign purchase dummy	1.220 *** (8.96)			
Foreign purchase*Age	0.393 * (1.67)			
Constant	14.407 *** (4.86)	129.747 *** (9.9)	-105.999 (-1.53)	1.715 (0.23)
# of observations	1388	242	302	244
Adj. R-squared	0.34	0.55	0.16	0.47

Robust t-statistics within parentheses. *,**,*** significant at 10, 5, and 1 percent, respectively.

Table 5: Real Small Business Lending Growth Regressions

Variables	Argentina		Chile		Colombia		Peru	
	(5.1)	(5.2)	(5.3)	(5.4)	(5.5)	(5.6)	(5.7)	(5.8)
Log of real assets	0.056 ***	0.020 *	0.038 ***	-0.007	-0.039	-0.041	-0.044 **	-0.030 *
Lagged 1 year	(5.81)	(1.73)	(3.46)	(-0.54)	(-1.00)	(-1.12)	(-2.53)	(-1.81)
(Log of real assets)*(Foreign bank)		0.108 ***		0.061 ***		0.006		-0.061
Lagged 1 year		(5.36)		(2.97)		(0.07)		(-1.49)
Return on assets	0.151 ***	0.131 **	7.658 **	8.311 **	9.315 *	9.302 **	-2.769	-4.620
Lagged 1 year	(2.84)	(2.42)	(2.01)	(2.2)	(2.02)	(2.02)	(-0.58)	(-0.93)
Administrative expenses/assets	0.104 *	0.098 *	0.372	-0.221	1.218	1.207	16.644 ***	15.647 ***
Lagged 1 year	(1.81)	(1.72)	(0.23)	(-0.13)	(1.37)	(1.36)	(3.55)	(3.31)
Public bank dummy	0.004	0.048	-0.192 ***	-0.135 **	-0.147 *	-0.145 *		
	(0.1)	(1.23)	(-2.94)	(-2.04)	(-1.90)	(-1.91)		
Foreign bank dummy	-0.131 ***	-1.563 ***	0.001	-1.675 ***	-0.121 *	-0.244	0.086 *	0.928
	(-3.46)	(-5.61)	(0.04)	(-2.95)	(-1.71)	(-0.14)	(1.86)	(1.58)
Foreign M&A dummy	-0.037	-0.057	-0.086	-0.127	-0.131	-0.138	0.173	0.171 ***
	(-0.72)	(-1.51)	(-1.13)	(-1.6)	(-0.94)	(-0.85)	(2.69)	(2.65)
Mergers dummy	-0.206 ***	-0.188 ***	0.026	0.046	-0.066	-0.061		
	(-3.95)	(-4.01)	(0.38)	(0.69)	(-0.63)	(-0.62)		
Foreign purchase dummy	-0.095 ***	-0.084 **						
	(-2.74)	(-2.53)						
Constant	-0.699 ***	-0.259 *	-1.007	0.266	0.596	0.645	0.377	0.191
	(-5.68)	(-1.74)	(-3.3)	(0.65)	(0.74)	(0.83)	(1.28)	(0.68)
# observations	548	548	212	212	183	183	168	168
Adj. R-squared	0.067	0.0958	0.14	0.1657	0.0837	0.0837	0.3567	0.3627

Robust t-statistics within parentheses. *,**,*** significant at 10, 5, and 1 percent, respectively.

Table 6: Quality of Contracting Environment

	Security of Property Rights[a] (Index of Economic Freedom)	Contract Enforcement[b] (BERI)	Rule of Law[c] (ICRG)	Creditor Rights[d] (LLSV)
Argentina	4	2.07	3.21	1
Chile	5	2.42	4.21	2
Colombia	3	1.93	1.25	0
Peru	3	1.73	1.50	0
U.K.	5	3.42	5.14	4
U.S.	5	3.54	6.00	1

[a] Index from 1-5, from 1997 Index of Economic Freedom, The Heritage Foundation and the Wall Street Journal. A score of (5) indicates that "Private property guaranteed by the government, and efficient court system enforces contracts. Adequate justice system to punish those who unlawfully confiscate private property. Expropriation not likely"; (4) "Private property guaranteed by the government, but enforcement is lax. Expropriation unlikely"; (3) "Government recognizes some private property rights, such as land, but property can be nationalized. Expropriation possible"; (2) "Property Ownership is limited to personal items with little legal protection. Communal property is the rule. Expropriation likely, and government does not protect private property adequately. The legal system has collapsed"; (1) "Private property is outlawed. Everything belongs to the people or the state. Expropriation is certain, or the country is so corrupt and chaotic that property protection is nonexistent."

[b] Index from 1-4, from Business Environmental Risk Intelligence (BERI). Measures the "relative degree to which contractual agreements are honored and complications presented by language and mentality differences." Higher scores indicate greater enforceability. Values averaged over 1980-95. As reported in Knack and Keefer (1995).
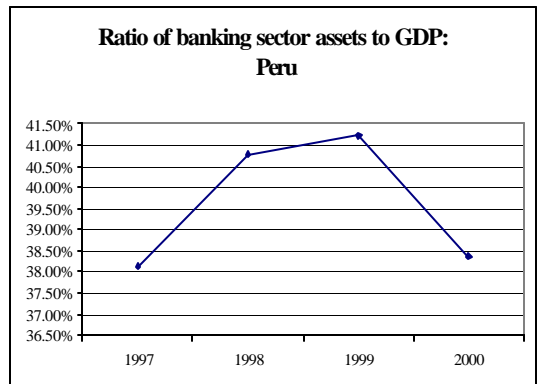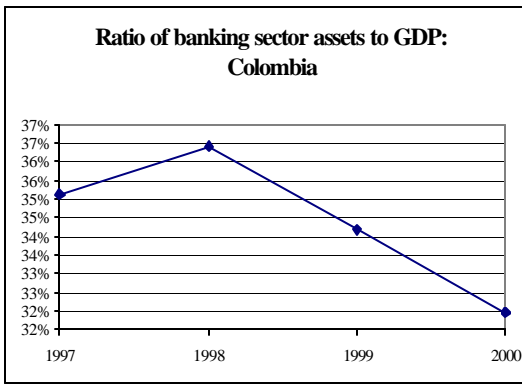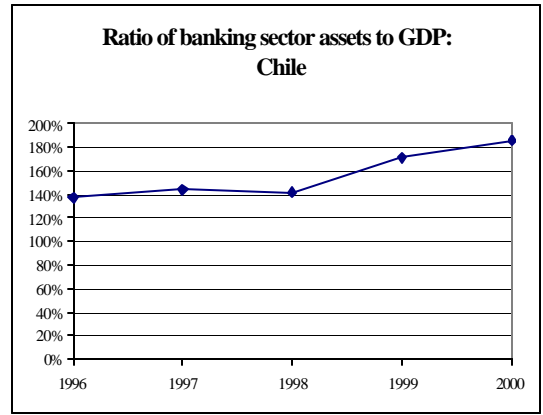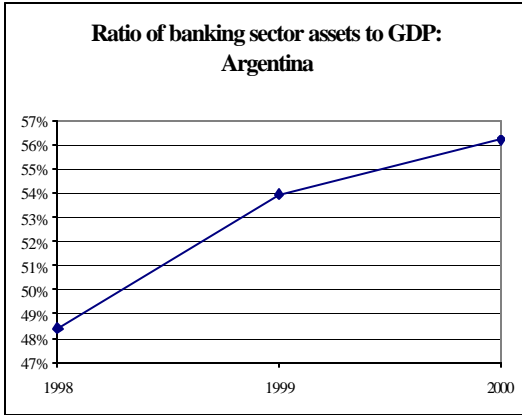
[c] Index from 1-6, from the International Country Risk Guide (ICRG), "reflects the degree to which the citizens of a country are willing to accept the established institutions to make and implement laws and adjudicate disputes." Higher scores indicate "sound political institutions, and strong court system, and provisions for an orderly succession of power." Lower scores indicate "a tradition of depending on physical force or illegal means to settle claims." Upon changes in government in countries scoring low on this measure, new leaders "may be less likely to accept the obligations of the previous regime." Values averaged over 1982-95. As reported in La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997).

[d] Index from 0-4, that aggregates various creditor rights from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998), Table 1. Index formed "by adding 1 when (1) the country imposes restrictions, such as creditors' consent or minimum dividends to file for reorganization; (2) secured creditors are able to gain possession of their security once the reorganization petition has been approved (no automatic stay); (3) secured creditors are ranked first in this distribution of the proceeds that result from the disposition of the assets of a bankrupt firm; and (4) the debtor does not retain the administration of its property pending the resolution of the reorganization."
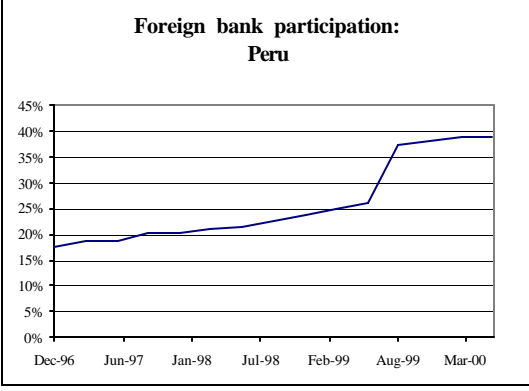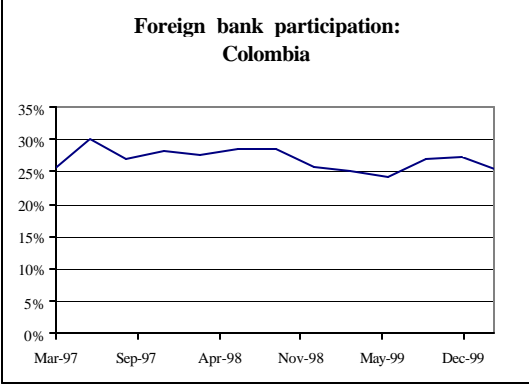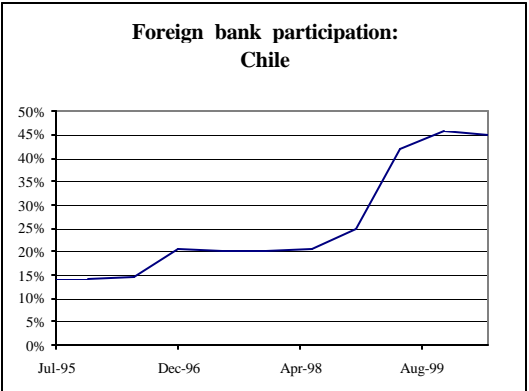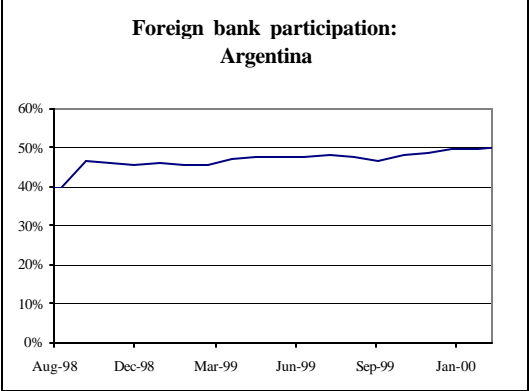
Figure 1: Bank frequency by size in 2000
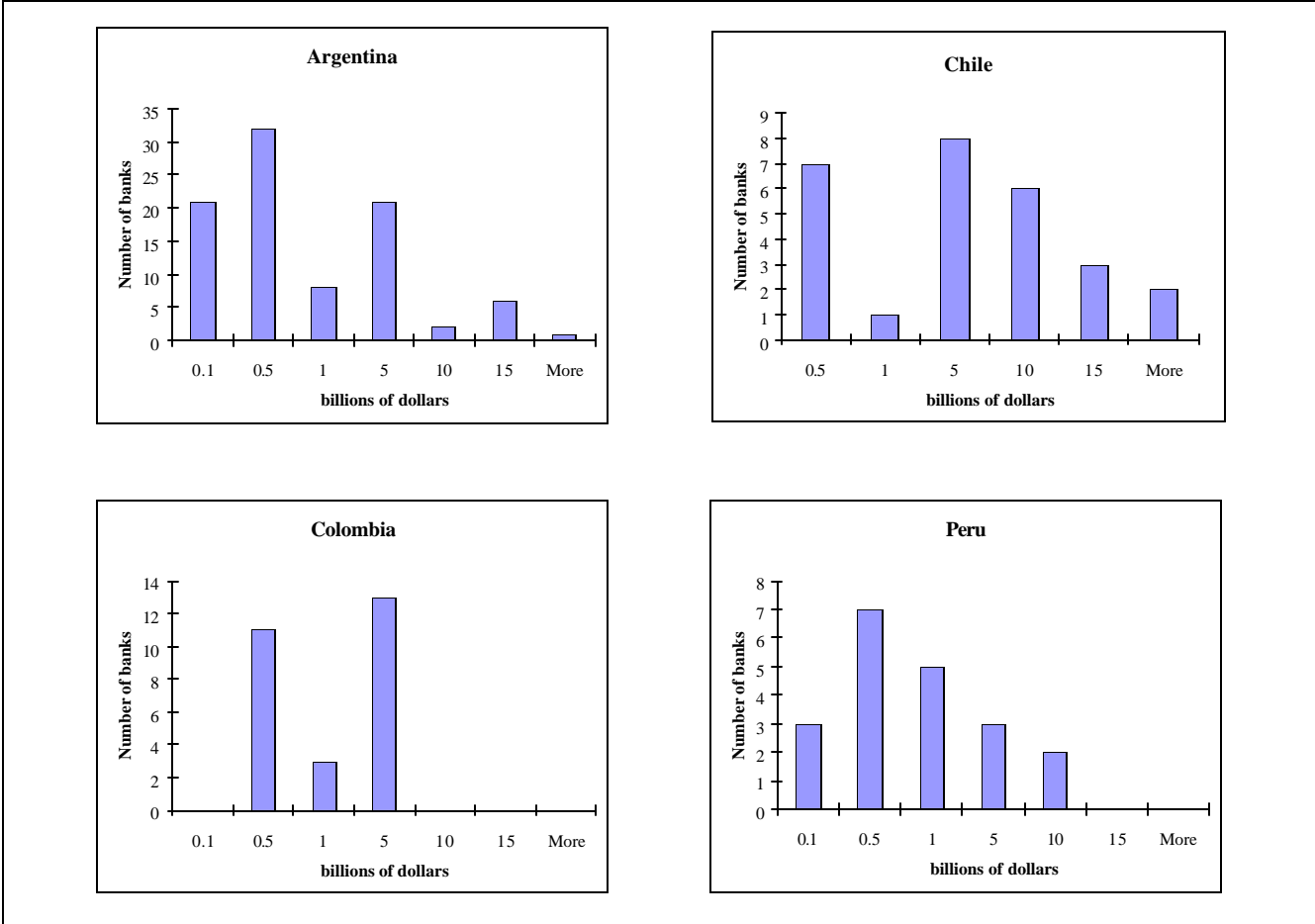
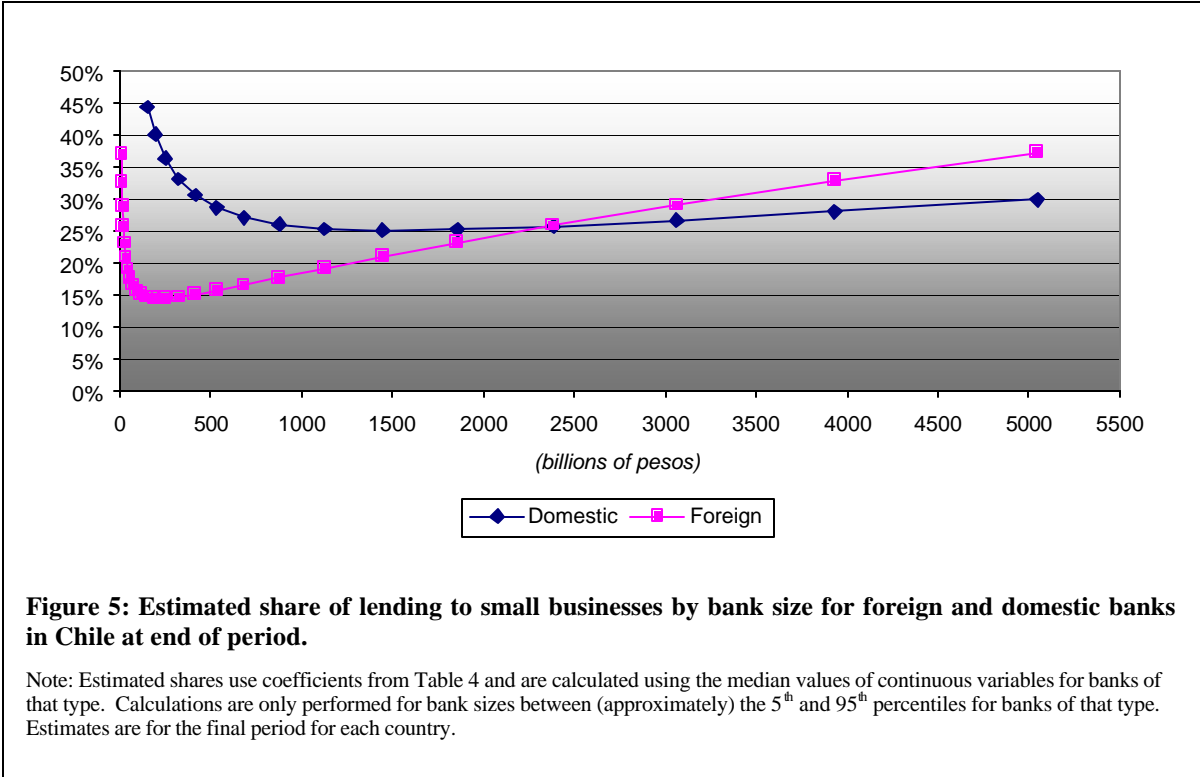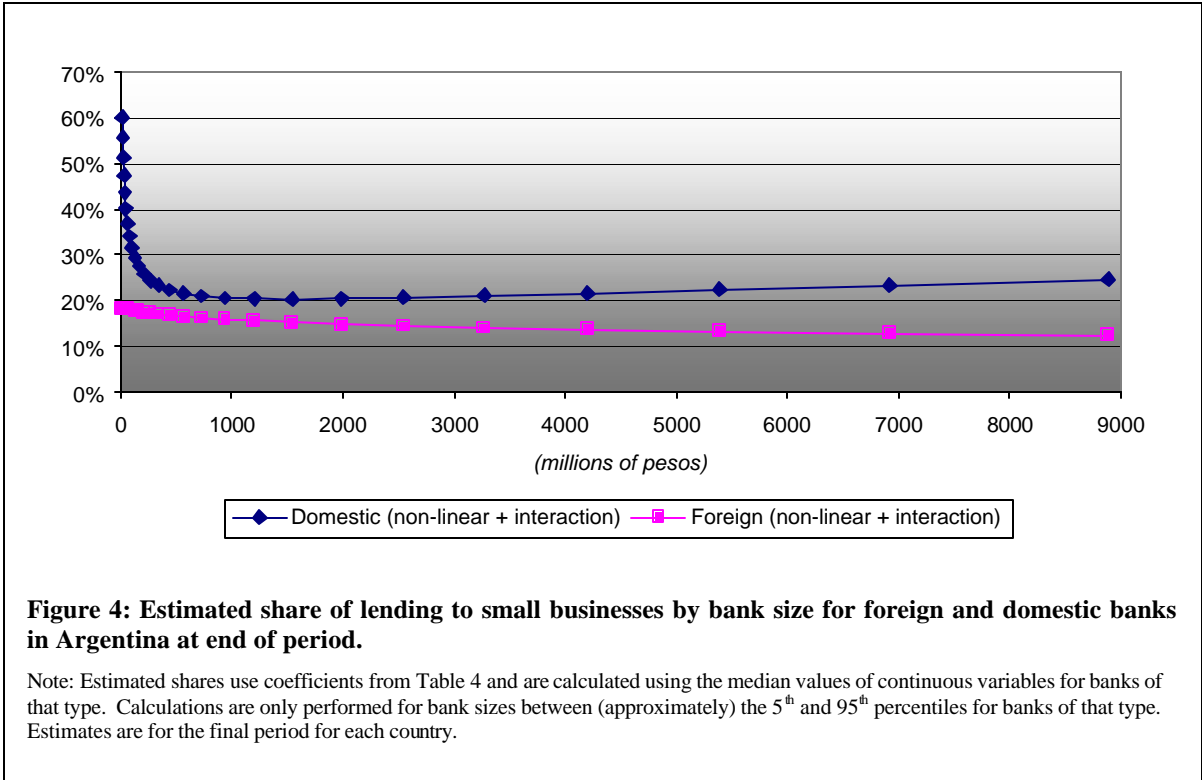**Figure 2: Bank assets in the 1990s**

Ratio of banking sector assets to GDP: Argentina

Ratio of banking sector assets to GDP: Chile

Ratio of banking sector assets to GDP: Colombia

Ratio of banking sector assets to GDP: Peru

Figure 3: Foreign bank participation in the 1990s

Foreign bank participation:
Argentina

Foreign bank participation:
Chile

Foreign bank participation:
Colombia
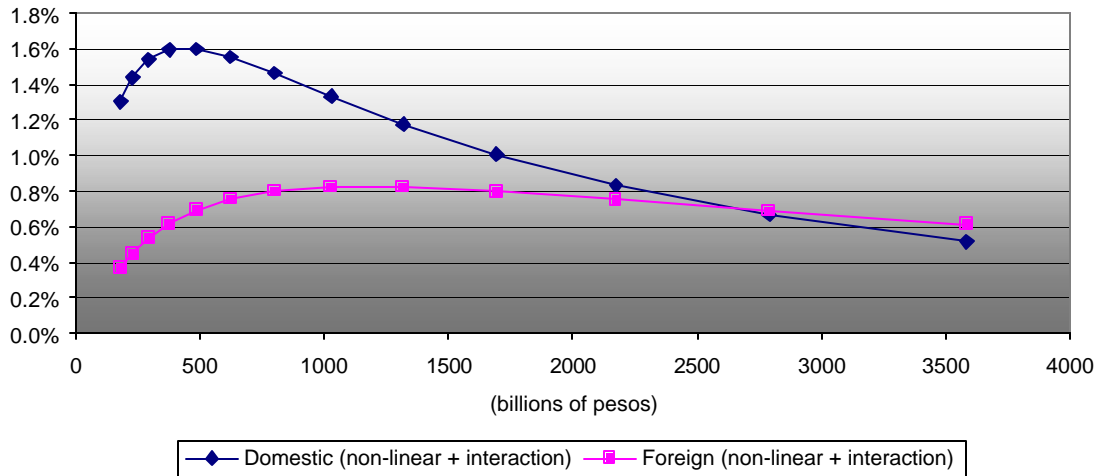
Foreign bank participation:
Peru

Figure 4: Estimated share of lending to small businesses by bank size for foreign and domestic banks in Argentina at end of period.

Note: Estimated shares use coefficients from Table 4 and are calculated using the median values of continuous variables for banks of that type. Calculations are only performed for bank sizes between (approximately) the 5th and 95th percentiles for banks of that type. Estimates are for the final period for each country.

Figure 5: Estimated share of lending to small businesses by bank size for foreign and domestic banks in Chile at end of period.

Note: Estimated shares use coefficients from Table 4 and are calculated using the median values of continuous variables for banks of that type. Calculations are only performed for bank sizes between (approximately) the 5th and 95th percentiles for banks of that type. Estimates are for the final period for each country.
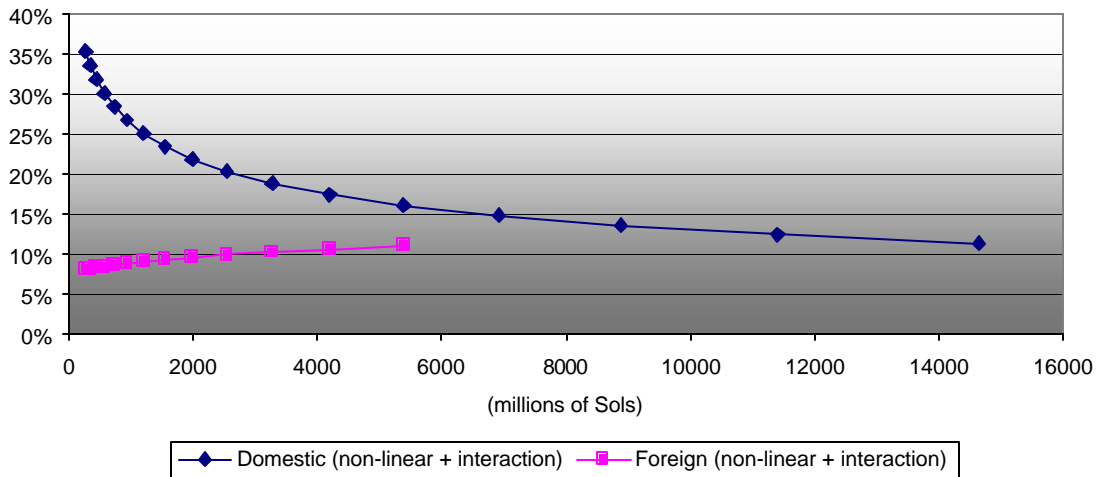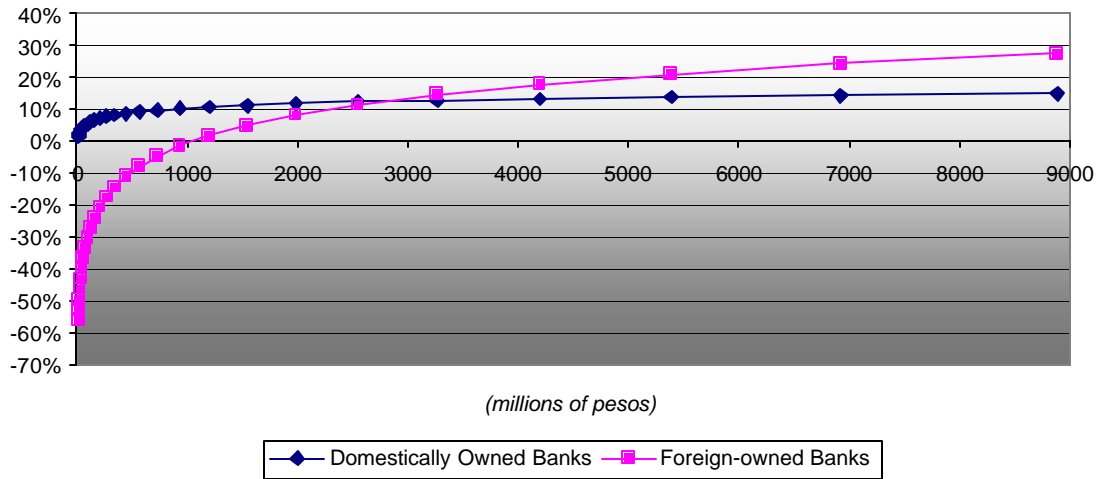
Figure 6: Estimated share of lending to small businesses by bank size for foreign and domestic banks in Colombia at end of period.

Note: Estimated shares use coefficients from Table 4 and are calculated using the median values of continuous variables for banks of that type. Calculations are only performed for bank sizes between (approximately) the 5th and 95th percentiles for banks of that type. Estimates are for the final period for each country.
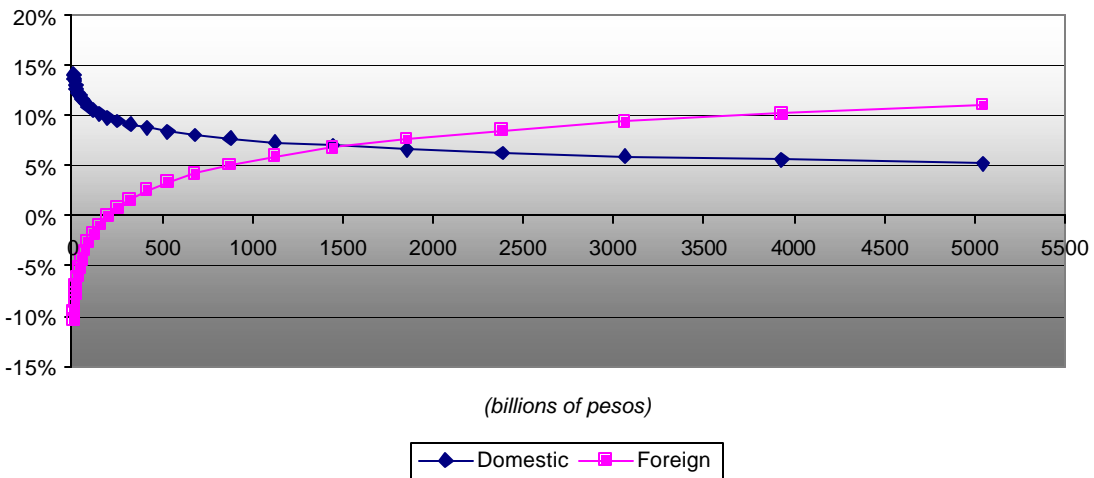

Figure 7: Estimated share of lending to small businesses by bank size for foreign and domestic banks in Peru at end of period.

Note: Estimated shares use coefficients from Table 4 and are calculated using the median values of continuous variables for banks of that type. Calculations are only performed for bank sizes between (approximately) the 5th and 95th percentiles for banks of that type. Estimates are for the final period for each country.

Figure 8: Estimated growth of lending to small businesses by bank size for foreign and domestic banks in Argentina.

Note: Estimated growth rates use coefficients from Table 5 and are calculated using the median values of continuous variables for banks of that type. Calculations are only performed for bank sizes between (approximately) the 5th and 95th percentiles for banks of that type.

Figure 9: Estimated growth of lending to small businesses by bank size for foreign and domestic banks in Chile.

Note: Estimated growth rates use coefficients from Table 5 and are calculated using the median values of continuous variables for banks of that type. Calculations are only performed for bank sizes between (approximately) the 5th and 95th percentiles for banks of that type.

Figure 10: Macroeconomic conditions in Argentina, Chile, Colombia, and Peru

Inflation (Annual %)

GDP Growth (Annual %)
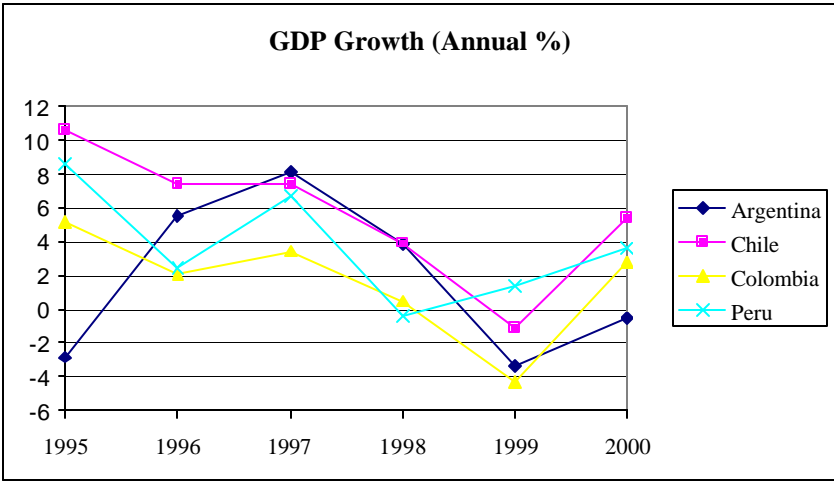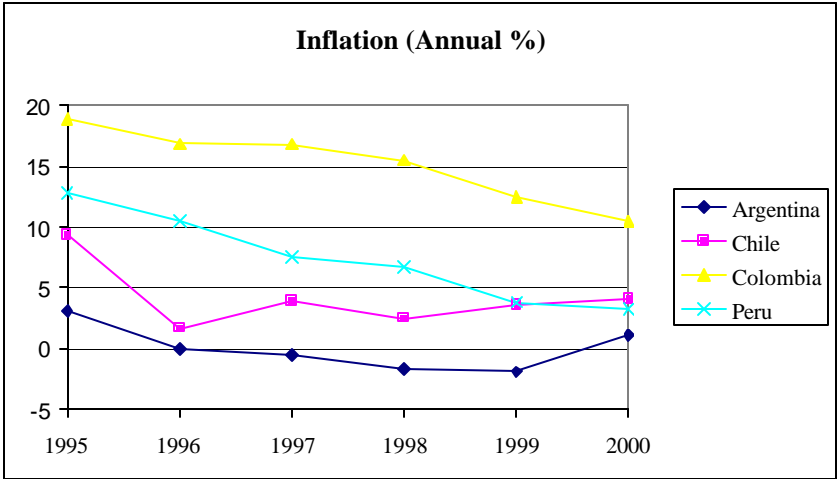
Endnotes

[1] All figures on foreign control come from IMF (2000).

[2] In 2000, Chile's ratio of private sector credit to GDP was 66 percent. This figure was 26 percent for Peru, 23 percent for Argentina, and 19 percent for Colombia.

[3] We also have data on lending to borrowers with less than UF10,000 (roughly $300,000) and less than UF200,000 (roughly $6 million) in total debt. Empirical results are robust to alternative definitions of small business lending.

[4] In the growth equations, we have no observations for large foreign banks in Peru because we lose data when computing annual growth rates.

[5] In regressions not report here, we included each bank's market share and number of branches. These variables were highly collinear with SIZE, making it difficult to interpret our results. DeYoung *et al*. (1998) also find that the number of branches is not a significant determinant of small business lending when also controlling for size.

[6] Public banks in Argentina, Colombia, and Chile account for 30, 25, and 10 percent of banking assets, respectively.

[7] We have no reason to expect that growth rates varied systematically over time. We compute growth rates relative to small business lending twelve months before. This process purges the growth rates of any seasonal trend.

[8] Again, part of this stems from the short time period covered and the low number of banks, and part stems from our inability to merge the respective country datasets as described above.

[9] The F statistics for the tests that the coefficients on the two interaction terms for Argentina, Chile, Colombia and Peru are jointly zero are: $F_{(2,1369)} = 13.49$; $F_{(2,227)} = 90.19$; $F_{(2,287)} = 2.61$; and $F_{(2,230)} = 11.46$

[10] The F statistics for the tests that the coefficients on the two squared terms for Argentina, Chile, Colombia and Peru are jointly zero are: $F_{(2,1369)} = 5.26$; $F_{(2,227)} = 75.90$; $F_{(2,287)} = 2.61$; and $F_{(2,230)} = 16.13$.

[11] Estimated shares are calculated for banks between the 5th and 95th percentile based upon size.

[12] The dummy for public ownership remains negative for all three countries once we include size squared and we interact both size measures by bank origin. However, this variable becomes statistically insignificant in the regression for Colombia. The coefficient on the dummy indicating foreign ownership continues to be negative and significant in Argentina and Chile. However, this variable is now positive and significant in the case of Colombia.

[13] Since the growth rates are calculated based upon annual growth rates (i.e., growth over a full year), data are omitted for a full year following a merger or acquisition to prevent such transactions from affecting results. For example, a merger that doubles the size of a bank will result in abnormally large annual growth rates for a full year after a merger even if the merged bank makes no new loans over this period. Consequently, many observations involving mergers and new entries are dropped from the analysis and several dummies are dropped from the growth regressions entirely. For example, if a merger occurs one year before the end of the period, all post-merger information is lost from the growth regressions, whereas it would be included in the share regressions.

[14] The interaction term and the dummy are jointly insignificant for both Colombia and Peru (F statistics of $F_{(2,174)} = 0.20$ and $F_{(2,161)} = 0.14$).

[15] The only specifications in Table 5 that offer no such evidence are the ones for Argentina and Colombia that omit the interaction term between size and foreign ownership.