The Effect of Foreign Entry on Argentina's Domestic Banking Sector

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Foreign banks entering Argentina's domestic banking sector in the mid-1990s did not merely follow their clients abroad. They exerted competitive pressure on domestic Argentine banks, especially those focused on mortgage lending or manufacturing. Overhead, profitability, and interest margins were affected least in domestic banks focused on consumer lending, an area in which foreign investors showed little interest.

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Summary findings

Clarke, Cull, D'Amato, and Molinari analyze how foreign entry affected domestic banks in Argentina during an especially intense period of entry in the mid-1990s.

Their results are consistent with the hypothesis that foreign banks enter areas where they have a competitive advantage, putting pressure on the domestic banks already focused on that type of lending.

They find that domestic banks with loan portfolios concentrated in manufacturing — an area to which foreign banks have traditionally devoted much of their lending — tended to have lower net margins and lower before-tax profits than other domestic banks. The informational advantages local banks enjoyed probably

helped ensure that foreign banks would not drive them from the market.

Domestic banks with greater consumer lending — an area in which foreign banks have not been heavily involved — had higher net margins and greater before-tax profits.

Domestic banks that focused on mortgage lending — an area foreign banks entered aggressively in the mid-1990s — experienced falling net margins and increasing overhead.

There were many domestic bank failures in the mid-1990s, but the banks that failed were not heavily concentrated in the types of lending favored by foreign banks.

This paper — a product of Regulation and Competition Policy and Finance, Development Research Group — is part of a larger effort in the group to investigate the determinants of structural change in developing countries' banking sectors. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Paulina Sintim-Aboagye, room MC3-422, telephone 202-473-8526, fax 202-522-1155, Internet address psintimaboagye@worldbank.org. Policy Research Working Papers are also posted on the Web at <http://www.worldbank.org/html/dec/Publications/Workpapers/home.html>. The authors may be contacted at gclarke@worldbank.org, rcull@worldbank.org, amolinari@worldbank.org, or investig.monetar@bcra.gov.ar (attention: Laura D'Amato). August 1999. (30 pages)

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THE EFFECT OF FOREIGN ENTRY ON ARGENTINA'S DOMESTIC BANKING SECTOR

by

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I. INTRODUCTION

Despite increased globalization in the provision of financial services, economists have found it difficult to present policymakers with a compelling empirical assessment of the effect of foreign entry on domestic banking. This stems largely from a lack of comparable cross-country data and the modest level of foreign entry that had occurred in many countries until recently.¹ Over the past several years, however, the assets of foreign banks have grown to exceed 30 percent in countries such as Argentina, Greece, Hungary, and New Zealand. This paper uses data from one of these countries, Argentina, to study the effect of foreign entry on the health and stability of domestic banking.

Levine (1996) argues that the benefits of entry in terms of improved financial services and regulation should outweigh potential costs (cream skimming, foreign market dominance, destabilizingly rapid outflows of capital). Recent cross-country analysis supports these arguments. Controlling for other relevant factors, foreign presence is tied to lower profitability and lower overhead expenses for domestic banks (Claessens, Demirgüç-Kunt, and Huizinga, (1997)), which implies increasingly competitive provision of financial services.² In addition, Demirgüç-Kunt, Levine, and Min (1998) find that increased foreign bank presence reduces the probability of systemic banking crises. These cross-country results are an important step in understanding the effects of international entry on the health of the domestic banking sectors in developing countries. In this paper, we aim to extend this work by providing detailed answers on whether foreign bank entry produces new financial services, greater competition, or cream skimming. The detailed data used in this study allows us to study the effect of foreign bank entry on different types of domestic banks.

¹ Gelb and Sagari (1990) calculate that the median share of total banking assets owned by foreign banks in a sample of twenty countries was about 6 percent. Levine (1996) suggests that the share typically does not exceed 10 percent. Pigott (1986) offers data on shares of loans and deposits held by foreign banks for a sample of Pacific Basin nations that provide additional support for Levine's estimate.

² They use bank-level data for 80 countries from 1988-95.

Argentina is, in many respects, an ideal case study of the effects of foreign entry on domestic banks. First, it provides a focussed period of entry and general structural change (1994-97) in one legal and regulatory setting, thus mitigating comparability and identification problems inherent in cross-country work. Second, regulatory authorities were committed to ensuring a level playing field between domestic and foreign banks, which eliminates the need to disentangle the effects of foreign entry from differential regulatory treatment. Finally, the quality of data available from Argentina's Central Bank is exceptional. We have data for all domestic and foreign banks, giving us a complete picture of the effect of foreign entry on smaller, more marginal banks.³ We also have very detailed data for individual banks regarding the types of loans issued (mortgage, personal, property) and the composition of their portfolios by productive sector and by recipient province. The loan portfolio data enable us to trace the strategies of individual foreign and domestic banks to predict which domestic banks were most likely to feel competitive pressure associated with entry.

The paper is organized as follows. Section II discusses the related literature and the hypotheses that stem from it. Section III provides an overview of the recent structural changes in Argentina's banking sector and compares the lending strategies and performance of domestic and foreign banks. Section IV estimates the effect of foreign entry on individual domestic banks, and Section V concludes.

II. RELATED LITERATURE/HYPOTHESES

There are two views of the role of foreign banks in developing countries. The first, referred to in Aliber's (1984) survey of international banking as the traditional view, is that foreign banks follow their domestic clients to finance their trade and service their needs in other countries. The view is reminiscent of the Joan Robinson's remark that,

³ These banks were not included in the database used to conduct cross-country research. Those studies used the BankScope database produced by IBCA. BankScope includes enough banks to cover, on average, 90% of the banking assets of each country. In Argentina's case, however, only nine banks were included, less than would be necessary to account for 90% of banking assets.

“where enterprise leads finance follows.”⁴ Empirical support comes from a number of papers that find a positive relationship between the presence of banks from a given country and the level of trade between that country and the host country.⁵

The second view envisions a more active role for foreign banks in the development of the host country's banking sector. Drawing on the theory of comparative advantage, Grubel (1977) and Kindleberger (1983) posit that banks use management technology and marketing know-how developed for domestic uses at very low marginal cost abroad. Effects on domestic banks depend, therefore, on whether they provide services in an area where foreign entrants have a comparative advantage. Levine (1996) suggests that in developing countries potential overlaps may not be great. He predicts that foreign banks will typically provide more sophisticated financial services than domestic banks and that, as in any business, they may initially attempt to service particular market segments.⁶

While individual papers emphasize one view over the other, most recognize that leader-follower and comparative advantage both play a role in explaining developments in a given banking sector. Kindleberger (1983) and Levine (1996) both emphasize that banks will sometimes follow and other times lead companies from their country of origin into a new market. Within the same econometric models, Goldberg and Saunders (1981b) find statistically significant relationships between foreign bank presence in the U.S. and measures of bilateral trade (support for the leader-follower view), and between foreign presence and U.S. business prospects (support for the comparative advantage

⁴ We owe the quote to Levine (1997), an excellent survey of the literature linking financial development and economic growth.

⁵ Studies in this category include Feileke (1977) and Goldberg and Johnson (1990) which examined the determinants of U.S. bank presence in other countries, and Goldberg and Saunders (1981) and Grosse and Goldberg (1991) which analyzed foreign bank entry into the U.S. More recent studies that come to similar conclusions regarding the links between trade and foreign bank presence include Ursacki and Vertinsky (1992) for Korea and Japan, and Hondroyannis and Papapetrou (1996) for Greece.

⁶ Citing McFadden (1994) on foreign banks' strategies in Australia, Levine notes, however, that the evidence regarding foreign banks serving market niches is anecdotal and difficult to interpret.

view). Sorting out which view is more important in a given case is, therefore, an empirical issue.

Each view leads to distinct sets of hypotheses that can be addressed by our data. For example, under the leader-follower view, one would expect foreign entrants to focus on clients from their country of origin to the exclusion of potential Argentine clients. Such entry should exert little competitive pressure on domestic banks and should do little to improve financial services offered to Argentine consumers. However, foreign firms may function better if bankers from their homeland are in close physical proximity, and this may benefit consumers. Domestic non-financial firms, moreover, may be hurt by better capitalized, more efficient foreign entrants. If this were the case, policymakers would have to weigh the political benefits of more satisfied consumers against the costs imposed by disgruntled local entrepreneurs. If the leader-follower view is correct, we expect that most of the economic effects of foreign bank entry are felt in the real sector, and thus will not be as evident in our data for domestic banks.

A lack of competitive pressure on domestic banks is necessary but not sufficient to conclude that the leader-follower view is more appropriate than the one based on comparative advantage. Foreign banks may provide new services that do not compete directly with those offered by domestic banks. If so, we would expect little change in domestic banks' lending spreads, cost profiles, and profits. We would, however, expect that foreign banks' asset composition would differ from that of the domestic banks, and that the foreign banks' share of total service provision to domestic consumers would increase.⁷ Policymakers in developing countries should have even fewer qualms about permitting entry under these circumstances as domestic consumers receive some benefits while domestic banks suffer no loss.

⁷ For the leader-follower view to be appropriate we would require evidence of increased foreign presence, little additional competitive pressure on domestic banks, and few new services being offered to domestic consumers.

Difficulties likely arise for policymakers when competition from foreign interests negatively affects domestic banks. Under this scenario, we expect that lending spreads and profits would come down most at those domestic banks whose lines of business are similar to those of the foreign entrants. Direct competitive pressure may or may not coincide with introduction of new services. If foreign entry implies consumer benefits from stiffer competition but no new services, policy makers must weigh only those benefits against the costs that they impose on domestic banks.

Our simple taxonomy thus admits four possible characterizations of competition from foreign banks. The first, that foreign entry has little effect on domestic banks and introduces no new services argues in favor of the leader-follower view. The other three -- no effect on domestic banking coupled with the introduction of new services; some competitive effects on domestic banks coupled with new services; and some competitive effects but no new services -- all argue in favor of some role for comparative advantage. The remaining sections of the paper describe the direct competitive effects of foreign entry on private domestic banks in Argentina, and the resulting benefits to consumers.

III. THE BANKING SECTOR IN ARGENTINA IN THE 1990s

III.1 Sector Growth.

The Argentine financial system has undergone a series of fundamental changes since the enactment of the 1991 Convertibility Law, which pegged the peso to the dollar. Although hyperinflation in the 1980s meant that the financial system had become less developed than in many lower income countries, once credibility of the Convertibility Law was established, inflation decelerated and the re-intermediation of the financial system began in earnest. As Figure 1 shows, total credit, credit to the private sector and financial depth (the ratio of M3 to GDP) have grown significantly in recent years. However, compared to other countries at comparable levels of per capita income, all

remain relatively low.⁸ Memories of past crises have no doubt contributed to the effective policies of recent years, which have created a more robust financial system.

Over this same period, bank deposits grew substantially.⁹ Although deposit growth in 1995 was slow, primarily due to the Tequila crisis, total deposits have been increasing at a relatively steady pace in real terms since the end of 1995. Between the first quarter of 1995 and the second quarter of quarter of 1997, deposits grew from 42 billion (1996) pesos to over 65 billion (1996) pesos (see Figure 2). This increase coincided with a shift in bank ownership. Although deposits in domestically owned private and public banks did not increase greatly in real terms, deposits in foreign-owned banks have grown considerably. As noted, this rapid growth in foreign ownership makes Argentina an ideal case study of how internationalization affects the efficiency of the domestic banking sector.

For most of the period, about 20 billion (1996) pesos of deposits were held by public banks (see Figure 2). Because deposits in private domestic banks fell more quickly than deposits in public banks in 1995, the share of deposits in public banks actually increased through 1995, despite a slight decrease in real deposits (see Figure 4). After an increase in early 1996, deposits began to decline due to the privatization of the public provincial banks.¹⁰ Although the share of deposits in public banks fell from 38.7% of deposits in early 1995 to 34.8% by late 1996, the share of deposits in privatized banks increased from 0.4% to 3.1% over the same period (see Figure 4).¹¹ It, therefore, appears that the decline in deposits in public banks was primarily due to privatization, rather than

⁸ Using data from 116 countries, King and Levine (1993) find that, among those ranked in the highest quartile in real per capita income, the average ratio of gross claims on the private sector to GDP is .53. Those in the second quartile have a ratio of .31. Throughout the late 80s and 90s Argentina would appear to rank near the dividing line between these quartiles in the King-Levine sample, yet its private credit to GDP ratio is now only .16, in between the average figures for the third and fourth quartiles (.20 and .13).

⁹ Similar results obtain for the share of total assets or total loans attributable to foreign-owned banks (Cull, 1998).

¹⁰ See Clarke and Cull (1998 and 1999b) for a description of the privatization process in these banks.

¹¹ Although the share of privatized banks remains small, this should not imply that privatization of the provincial banks is unimportant. Although the public provincial banks were small on the national level – typically accounting for less than 1% of national lending – they tended to be very large at the provincial level. In most cases, they accounted for between 40 and 70% of lending in their home province (Clarke and Cull, 1999a).

increased competition from foreign banks. This is consistent with Clarke and Cull (1999a), which finds that the public provincial banks did not compete with (domestic and foreign) private banks as directly as the privatized provincial banks do.

The increase in the share of deposits in foreign-owned banks, therefore, was primarily at the expense of private domestic banks, which lost deposits, in both real terms and as a share of total deposits (see Figure 2 and Figure 4). Although determining whether the drop was attributable to closures and to takeovers by foreign-owned banks or to a shift in depositors' preferences is difficult, some tentative conclusions can be reached. Mergers and closures following the Tequila Crisis appear to account for the decline in deposits in private banks in 1995. Over this period, the number of private domestic banks fell from 136 to only 92 (see Figure 5). Of these, eight banks were actually closed, with the remainder being merged with other domestic banks. Because of this, and because the closed banks were small, the share of deposits in private banks declined by only 5% between the end of 1994 and the end of 1995, despite the large decline in the number of banks.

In 1996, the number of private domestic banks decreased more slowly, falling to 82, and their share of total deposits increased. This suggests that depositors did not perceive the surviving private domestic banks as especially risky. The declining number of private domestic banks in late 1996 and 1997 was primarily due to foreign acquisitions of existing banks. Between the third quarter of 1996 and the second quarter of 1997, six domestic banks were acquired by foreign interests and the share of deposits in private domestic banks fell steeply from 43% to 33% of total deposits. While the post-Tequila shakeout in 1995 affected banks that were both smaller and weaker than the average private domestic bank (see Table 1), the later decline was very different. The banks acquired in foreign acquisitions were considerably larger, were more profitable and had higher quality loan portfolios than the average private domestic bank (see Table 1).

The growth in deposits at foreign-owned banks is due almost exclusively to increased deposits at existing foreign banks and to foreign purchases of existing domestic

banks (see Figure 3). Very little was due to direct entry – only one small foreign bank entered Argentina between the first quarter of 1995 and the second quarter of 1997, with total deposits of less than 14 million (1996) pesos in June 1997. Deposits in existing foreign banks increased steadily from 7.8 billion (1996) pesos to 12.3 billion (1996) pesos over the same period.

Between the end of 1994 and the third quarter of 1996, growth was relatively slow and was almost exclusively due to existing foreign banks increasing market share (see Figure 3). Over this period, deposits in foreign banks increased from 15.6% to 19.4% of total deposits (see Figure 5). This was probably due to a flight towards quality during the Tequila crisis. Although deposits continued to grow in real terms in 1996, the share of deposits did not increase until foreign purchasers started to buy existing domestic banks in late 1996. As noted earlier, growth due to purchases of domestic banks occurred exclusively in the last year. Between September 1996 and June 1997, this increased deposits at foreign banks by close to 6 billion pesos (see Figure 4) and increased the share of total deposits in foreign banks to 27.5%.

III.2 Bank performance and credit allocation.

Foreign banks in Argentina are clearly different from domestic banks. They tend to be larger and to have better quality loan portfolios, higher net worth and higher ratios of operating income to costs (see Table 2). Over the sample period, the null hypotheses that the average levels of each variable are the same for private domestic and foreign banks are rejected at conventional levels for most variables. Foreign banks seem to also perform better than private banks on most measures when the sample is sub-divided by year, although the differences are statistically significant less often. This implies that these disparities are not merely due to some foreign banks arriving late in the period (1997) when banking conditions may have been better. In contrast, public banks tend to perform less well on all measures than private domestic banks (see Table 2).

Table 3 and Table 4 show the portfolio distribution of foreign banks, public banks, private domestic banks that survived, private domestic banks that were merged or

closed, and private domestic banks that were bought by foreign interests. The tables show that foreign banks have tended to focus on different areas than domestic banks have. In the first quarter of 1995, foreign banks tended to be less involved in consumer lending than domestic banks were (16.3% and 3.3% for private domestic and foreign banks respectively). The pattern was broadly similar in the second quarter of 1997 – consumer lending accounted for 18.9% of lending by private domestic banks and only 4% of lending by foreign banks. In contrast, although mortgage and property lending accounted for only a small part of the portfolios of foreign banks in the first quarter of 1995 (6.3%), this had increased greatly by the second quarter of 1997 (13.3%). Over the same period, mortgage and property lending fell from 17.1% to 13.0% of total financing for private domestic banks.¹² Foreign banks also had more of their portfolio concentrated in Buenos Aires in the first quarter of 1995. On average, nearly 95% of their lending was in the federal capital district, compared to only 55% for private domestic banks. This remained true in the second quarter of 1997. Neither foreign banks nor private domestic banks lent significant amounts to the public sector (0.1% and 1.0% respectively). Table 3 and Table 4 also show differences in credit allocation across productive sectors. For both periods, foreign banks appeared to lend significantly more to the manufacturing and utility sub-sectors and significantly less to retail trade.

Interestingly, the portfolios of private domestic banks that were closed or were merged with other private domestic banks were quite different from the portfolios of foreign banks. In fact, they lent even less than surviving private domestic banks in several areas where foreign banks concentrated their lending (e.g., manufacturing and Buenos Aires) and lent considerably more to the retail trade sector. This strongly suggests that direct competition with foreign banks was not the source of these banks' problems. This might indicate that these banks were competing more with other private domestic banks than with the foreign banks. In contrast, the large banks bought by

¹² In practice, changes in portfolio shares are not statistically significant at conventional levels for any variable for either foreign or domestic banks. However, at least for foreign banks, this might simply reflect that there are relatively few observations (generally less than 30).

foreign interests appear more similar to the foreign banks. They concentrated less on consumer, property and mortgage lending and more on manufacturing and the Federal Capital district.¹³ This suggests that foreign banks entering through the purchase of existing domestic banks were looking for banks similar to existing foreign banks.

IV. EMPIRICAL RESULTS.

IV.1 Empirical Modeling.

In cross-country analyses, researchers have used the share of foreign banks as a measure of foreign presence.¹⁴ This approach, however, can not be used to describe cross-sectional variation in a single country, since all domestic banks face the same number of competitors at a given point in time.¹⁵ However, in Argentina, the detailed portfolio data means that it is possible to test the effect of foreign competition more directly, by looking at each domestic bank's exposure in areas where foreign banks already had, or were gaining, influence. As noted in the previous section, foreign banks do not appear to have had a significant effect on the performance of public banks and, therefore, these banks are omitted from the analysis.

Some judgment is involved in determining what variables to use as measures of foreign exposure. For the purpose of this analysis, we focus on those areas where there is a statistically significant difference between the portfolios of foreign and domestic banks (see Table 3 and Table 4). For example, foreign banks devoted much more of their credit to manufacturing than domestic banks consistently throughout the period. All else being equal, it may be that those domestic banks that concentrated their lending activity in manufacturing, therefore, faced greater competitive pressure from foreign banks. These

¹³ Although these differences are not statistically significant, this is probably primarily because there were very few private banks (only six) that were bought by foreign interests over this period.

¹⁴ Claessens, Demirgüç-Kunt, and Huizinga (1997) also tried the share of total banking assets owned by foreign banks as a measure of foreign presence. In those models, foreign asset share was not as strongly associated with lower operating costs and lower profits for domestic banks.

¹⁵ Further, since we include time dummies in the panel data analysis used in this paper, these measures, which do not vary across banks, are collinear with the time dummies.

banks, therefore, might have had relatively low interest margins, relatively low before-tax profits, and relatively high overheads. We assume that higher overheads come from the increased work associated with finding good lending opportunities in environments that are more competitive. The sectors that we focus on are, therefore, lending in Buenos Aires, lending to the manufacturing and utility sub-sectors, lending to retail trade, mortgage and property lending, and consumer lending (see Table 3 and Table 4).

Between the first quarter of 1995 and the second quarter of 1997, none of the changes in portfolio distribution were statistically significant (at a 5% level) for either surviving foreign banks or surviving private domestic banks.¹⁶ However, as noted in the previous section, it appears that mortgage and property lending by foreign banks increased, while mortgage and property lending by domestic banks decreased. For this reason, the effect of this variable on interest margins, profits and overheads over time is of particular interest.

Factors other than international entry also affect cross-bank variation in performance. Following the analysis by Claessens, Demirgüç-Kunt, and Huizinga (1997), we include four control variables that capture either the incentives of bank managers or the composition of a bank's business. The first is the ratio of lagged equity over lagged total assets (*lagged equity/assets*). Bankers whose institutions have a high capitalization ratio ("franchise value") have incentives to lend prudently and thus remain well-capitalized (Caprio and Summers, 1993). Empirical evidence for the U.S. confirms a positive relationship between bank profitability and capitalization (Berger, 1995). For Argentine banks, we also expect a positive relationship between *lagged equity/assets* and performance (higher net interest income and profits). One would expect banks that behave prudently to expend the resources necessary to evaluate lending opportunities

¹⁶ Even when the domestic banks bought by foreign banks are included in the figures for foreign banks for the second quarter of 1997, the changes are statistically insignificant for all variables except for lending to wholesale trade. This variable, however, does not account for much lending for either foreign or domestic banks. Further, the variable and its interaction with a time trend are not statistically significant (both singly and jointly) in any equation. Most importantly, including these variables does not affect results greatly. The only change is that the interaction between the time trend and the share of lending in manufacturing becomes statistically insignificant in the net margin equation.

well, and thus we expect a positive relationship between *overheads/assets* and *lagged equity/assets*.¹⁷

The second control variable, *overheads/total assets* – the ratio of administrative costs to total assets – captures “differences in bank business and product mix, as well as the variation in the range and quality of services” (Demirgüç-Kunt, and Huizinga, (1997)). In the regressions that follow, *overhead/total assets* should be negatively linked to profits. For net interest margins, cross-country analysis reveals that overheads are positively linked to net interest margins, an indication that “higher overhead costs are in part passed on to depositors and lenders” (Claessens, Demirgüç-Kunt, and Huizinga (1997), p. 19). We might expect the same to hold in Argentina.

The third control variable is *non-interest assets/total assets*, the ratio of non-interest earning assets to total assets. To the extent that the best new profit opportunities are in lending, one might expect domestic banks with a high share of non-interest assets to have lower net interest margins and lower profits. If new lending opportunities were relatively costly to pursue, we would expect a negative relationship between overheads and *non-interest assets/total assets*. However, Claessens, Demirgüç-Kunt, and Huizinga (1997) find a positive relationship between overheads and non-interest-earning assets in their cross-country analysis.

The final control variable is *customer funding/total assets* – customer and short term funding including demand, savings and time deposits as a share of total assets. Demirgüç-Kunt and Huizinga (1997) suggest that this type of funding may carry a low interest cost but be quite costly in terms of the required branching network. They expect it, therefore, to be positively related to overhead costs. Hypotheses regarding net interest margins and before tax profits are less obvious. Although relatively costly, one would not expect the costs associated with these branching networks to be incurred unless they

¹⁷ Claessens, Demirgüç-Kunt, and Huizinga, (1997) find a positive significant relationship between these two variables in their cross-country analysis.

were economically rational. We would not expect, therefore, a negative relationship between *customer funding/total assets* and either profits or net margins.¹⁸ In fact, in Argentina, we know that there was substantial depositor flight to quality early in the period, especially prior to the adoption of deposit insurance.¹⁹ A high share of customer funding, therefore, may be a proxy for a “high-quality” bank, and thus positively related to subsequent profitability. At the least, the variable will enable us to summarize how domestic banks that were better able to attract deposits fared during this period of international entry.

Before discussing the results, a few words should be devoted to the construction of the dependent variables used in the analysis. Following Claessens, Demirgüç-Kunt, and Huizinga (1997) and Demirgüç-Kunt and Huizinga (1997), we define three performance measures – *net margin/total assets*, *before tax profit/total assets*, and *overhead/total assets*. *Net margin/assets* is a measure of bank efficiency equal to the accounting value of a bank’s net interest income over total assets. *Before tax profit/total assets*, our profitability measure, is taken from the bank’s income statement and satisfies the following equation:

$$\text{Before tax profit/total assets} = (\text{net margin} + \text{non-interest income} - \text{overheads} - \text{loan loss provisioning})/\text{total assets}$$

Non-interest income is included to account for banks’ non-lending activities; *loan loss provisioning* measures actual provisioning for bad debts during the period in question. The last performance measure, *overhead*, is constructed as described above. It serves as either an explanatory or a dependent variable in the analysis that follows.

¹⁸ Claessens, Demirgüç-Kunt, and Huizinga, (1997) finds a positive relationship between customer funding and profits.

¹⁹ See Guidotti, Powell, Kaufman, and Broda (1996) and Clarke and Cull (1999b).

IV.2 Control Variables

Columns (1)-(3) of Table 5 present results from fixed effects regressions of the bank and portfolio variables on net margins, profits, and overheads (all over assets).²⁰ *Overheads/assets* is strongly negatively correlated with profits, but positively correlated with net margins. The point estimates of the elasticities on this variable are quite large – 0.49 for net margins and –3.4 for profits (see Table 6).²¹ This is consistent with cross-country results, which find that high overheads are borne by both lenders and borrowers. The elasticity for net margins suggests that a 1% decline in operating overheads implies a 0.5% reduction in the net interest margin. This suggests that a significant portion of the reductions in operating overheads is passed onto consumers in the form of lower interest margins. If foreign banks have lower overheads in certain lines of business, then this could have a large beneficial impact on borrowers.²²

Customer funding/assets is positively associated with both *overheads/assets* and *net margin/assets*. A plausible explanation for this is that having a large branch network can attract customer deposits, resulting in relatively high overheads for the bank, but allows the bank to charge high interest margins. *Non-interest income/assets* is not significantly associated with net margins or before tax profits. However, it is positively correlated with *overheads/assets*. This is consistent with cross-country work by Claessens, Demirgüç-Kunt, and Huizinga (1997) that also finds a positive relationship. The correlations between *lagged equity/assets* and net margins, profits, and overheads are positive, but statistically insignificant.

²⁰ Based on Wu-Hausman tests, we reject the null hypothesis that random (rather than fixed) effects are appropriate at less than a 1% level for all regressions in Table 5.

²¹ Point estimates of elasticities are computed at sample means for domestic banks.

²² The Central Bank reports the total loans of the Argentine financial system to be 69 billion pesos/dollars as of October, 1997. The implied interest rates based on the annualized interest payments in 1997 were 18.3% for peso-denominated loans and 12.0% for dollar-denominated loans. Total interest paid was, therefore, near 11 billion dollars (B.C.R.A., 1997). If we assume gross interest income responds to reductions in overheads like our model implies that net interest income does, a ten percent reduction would be associated with about a \$0.5 billion dollar reduction in interest payments per year. The potential benefits associated with increased competition in banking are not, therefore, trivial.

IV.3 Foreign Entry

To assess the effect of foreign competition on domestic bank performance, we include portfolio orientation variables for all areas where there appears to be a statistically significant difference between the portfolios of foreign and domestic banks. If foreign banks directly compete with private domestic banks, all else being equal, net margins and profits (relative to assets) should be lower in sectors where foreign entrants compete with domestic banks and higher in sectors where they do not.

There are two areas where foreign banks lend significantly less than domestic banks – consumer loans and loans to the retail commerce sector. We would expect, therefore, domestic banks in these areas to have higher profits and higher net margins. Consistent with this, the coefficient on consumer loans is statistically significant and positive in both equations (see Table 5). The point estimates of the elasticities are also quite large (0.55 and 2.86 for net margins and profits respectively). Interestingly, the coefficient on this variable for overheads/assets is also statistically significant and positive. This suggests that consumer lending is relatively more costly than other types of lending. The coefficients on lending to retail commerce are statistically insignificant in all regressions.

In addition, foreign banks have consistently lent significantly more than domestic banks in three areas– lending to manufacturing, to utilities and in the federal capital district. We would expect domestic banks concentrated in these areas to have lower profits and lower net margins. Further, if foreign competition increases the cost of finding good lending opportunities, we might expect it to be correlated with higher overheads. The coefficients on the share of lending to utilities are statistically insignificant at conventional levels. This is not surprising since, on average, less than 1% of loans by domestic banks are in this sector. Any decrease of net margins or profits in this area would, therefore, be difficult to observe. The coefficients on lending in the Federal Capital are also insignificant throughout the analysis. Finally, the coefficients on lending to manufacturing are statistically significant and negative for both profits and net

margins, consistent with the hypothesis that foreign lending in this sector has led to increased competition. The point estimates of the elasticities are quite large – -0.38 and -2.68 for net margin and profits respectively (see Table 6).

The final variable, mortgage and property lending, is harder to interpret. Although foreign banks were lending less in this area at the beginning of the period, by the end of the period, they were lending a similar share to domestic banks (see Table 4). Therefore, it is not clear whether we would expect a positive or negative coefficient on this variable (i.e., whether the change or level of foreign participation will drive the point estimate of the coefficient). In practice, the coefficient is statistically insignificant at conventional levels, suggesting that, on average, it had little effect in this formulation of the model. In summary, the results from this static model are, in general, consistent with the hypothesis that foreign banks enter niches and introduce new services to exploit profit opportunities and, in so doing, increase competition for domestic banks (Levine, 1996). Net margins and profits were lower in manufacturing – a sector where foreign banks had entered aggressively – and higher in consumer lending where foreign banks did not have a significant presence.

Although the results from this estimation are, in general, consistent with this story, the model is essentially static. In the formulation in columns (1)-(3), we are essentially assuming that profits and net margins are constant across time for each individual sector. This ignores the effect of increased presence of foreign banks over the period and increased entry into particular sectors by foreign banks (most notably into mortgage and property lending). In general, we would expect that increased market share for foreign banks would reduce profits and net margins in those areas where foreign banks tend to specialize. That is, since there was significant foreign entry in this period, we would expect the areas where foreign banks tend to focus to become more competitive over time. In columns (4)-(6) of Table 5, we test this by adding interaction terms between the portfolio variables and time trends. This allows us to test whether profits and net margins were falling in the areas that foreign banks tended to focus their lending.

Of particular interest is the interaction term for mortgage and property lending, since foreign banks appear to have aggressively entered this area.

The coefficients on the control variables (i.e., overheads, lagged equity, etc.) are similar to coefficients in the previous models. Similarly, the coefficients on consumer loans remain the same. Since foreign banks did not have a significant presence in consumer lending, and did not enter this area over the period studied, it is not surprising that the substantial foreign entry had little effect on this type of lending. The coefficients on the independent variables in the before-tax profit equation are similar to the coefficients in the static model (see Columns (5) and (2) respectively).

However, the results in columns (4) and (6) are quite different. First, net margins appear to have fallen, and overhead costs appear to have increased, for banks involved in lending to manufacturing.²³ This is consistent with the hypothesis that the foreign entry observed over this period increased competition in this sector. The positive and significant coefficient on the interaction term on lending to electricity, gas and water in the regression on overheads is also consistent with this hypothesis. The negative coefficient on the trend term for lending to retail commerce is more puzzling. Since foreign banks were not active in this area, and did not enter it aggressively, we would expect the coefficient to be statistically insignificant. The most likely explanation is that net margins in lending to retail trade decreased for cyclical reasons. This is consistent with the observation that all types of banks appear to have reduced their exposure in this sector between 1995 and 1997 (see Table 3 and Table 4).

The coefficients on the mortgage and property lending interaction term follow the same pattern – this suggests that the entry of foreign banks into this sector squeezed net margins and increased overhead costs for those banks already involved in this sector.

²³ The increase in overheads might appear to be troubling, but it is not clear from this analysis whether it is a short- or long-term phenomenon. In particular, the increased costs for banks in these areas could be due to the short-run cost of shifting to areas of lending where local banks have a comparative advantage or a long-run cost associated with increased search costs for good lending opportunities.

Further, the coefficient on the percent of mortgage and property lending is statistically significant and negative in the regression on overheads. Together these results suggest that initially, when foreign banks had little presence in the sector, overheads were relatively low. The entry of foreign banks into this sector led to increased overheads (and lower net margins), directly pressuring the domestic banks already in this sector. In summary, these dynamic results provide more support for the hypothesis that competition is greatest in those areas that foreign banks concentrate. This last result is particularly interesting because it seems unlikely that net margins were falling for exogenous reasons. That is, if net margins were falling in mortgage and property lending (relative to other sectors) for other reasons, we would not expect to see foreign entry into the sector at this time.

V. CONCLUSIONS

Our goal is to analyze the effect of foreign entry on the domestic banking sector of one country to provide guidance to policy makers contemplating entry liberalization. Data from Argentine banks from 1995-1997, a period of intense entry, lead us to reject the view that foreign banks merely follow their domestic clients abroad. Some following no doubt occurred, but foreign banks did exert competitive pressure on domestic banks. Throughout the period, foreign banks devoted a much higher share of credit to manufacturing, and the regression results indicate that profit and interest margins were lower for domestic banks focussed in this area. The dynamic effects of foreign entry are best understood by looking at mortgage lending, which increased steadily at foreign banks. Over time, domestic banks focussed in that area experienced declining net margins and increasing overheads. Finally, there were a number of sectors that foreign banks did not enter forcefully (e.g., consumer lending) and domestic banks with portfolios concentrated in those areas experienced little change in their profitability, interest margins, or overheads.

The results provide partial support for several of the hypotheses about foreign entry discussed in the introduction. Foreign banks had long been lending to

manufacturing firms and they entered mortgage lending, but they stayed away from other types. This suggests that they focussed their efforts on areas where they had a comparative advantage. Domestic banks concentrating in those areas were affected, but there were sectors available to them that foreign banks did not enter. This suggests that, at least in the short run, the informational advantages enjoyed by local banks in some sectors ensure that foreign banks will not drive them from the market. Although there were a large number of domestic bank failures over this period, the banks that failed were not heavily concentrated in the types of lending favored by foreign banks. Therefore, it appears that direct foreign competition was not the main reason for their problems.

We recognize that our analysis cannot address all concerns regarding foreign entry. For example, we have not analyzed whether foreign entry has had an adverse effect on credit allocation to small and medium-sized enterprises. Yet, provided any adverse effects are not too severe, our results may provide policy makers in developing countries with information regarding the benefits of liberalizing entry into their banking sectors. We also recognize that Argentina could be a unique case, and that research on additional countries is necessary to better identify which of our results apply in other settings. We hope, however, that our work provides a useful starting point for country case studies of the effects of foreign entry.

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VII. FIGURES AND TABLES

Figure 3: Deposits in 1996 pesos at foreign banks, by type. Q1 95 - Q2 97
Source: BCRA

Figure 4: Share of total deposits by bank type. Q1 95- Q2 97.

Figure 5: Number of banks by type. Q1 95 - Q2 97.

Table 1: Performance of private domestic banks in Q1 1995 by type of bank.

	Private banks that survived	Private banks that were closed	Private banks that were merged	Private banks bought by foreign banks
Deposits (in pesos)	149,894	69,859	60,386	450,702
Operating revenues over costs	1.49	0.84	1.20	1.36
Before tax profits over total assets	-0.0043	-0.0275	-0.0077	-0.0004
Performing loans (as % of loans)	85.5%	80.4%	81.2%	90.9%

Table 2: Average size and performance by type of bank.

Initial Type	Private Domestic	Foreign	Public
1995-1997			
Total deposits	217,170	336,075*	735,280*
Net worth over liabilities	0.23	0.25	0.11*
Operating income over costs	1.28	1.40*	1.01*
Normal loans (% of total)	0.79	0.89*	0.57*
1995			
Total deposits	162,904	258,821*	545,079*
Net worth over liabilities	0.25	0.27	0.12*
Operating income over costs	1.26	1.41	0.94*
Normal loans (% of total)	0.80	0.91*	0.59*
1996			
Total deposits	260,221	328,119	834,394*
Net worth over liabilities	0.20	0.25*	0.06*
Operating income over costs	1.28	1.38	0.99*
Normal loans (% of total)	0.77	0.88*	0.54*
1997			
Total deposits	278,601	488,462*	1,065,749*
Net worth over liabilities	0.21	0.22	0.16
Operating income over costs	1.35	1.43	1.29
Normal loans (% of total)	0.78	0.88*	0.59*

* Significantly different from private domestic at 5% level

Table 3: Average portfolio distribution of foreign, private domestic and public banks in Q1 1995.

Initial Type	Private Domestic	Foreign	Private Domestic	Private Domestic	Public
Action over period.	Remained Private	Remained Foreign	License Revoked or merged with other private domestic	Bought by foreign bank	Remained Public
Portfolio Distribution (% of financing)					
Consumer Lending	16.3%	3.3%*	19.4%	11.8%	14.9%
Property Lending and Mortgages	17.1%	6.3%*	11.8%	13.0%	22.1%
Lending to Public Sector	1.0%	0.1%	0.4%	0.4%	13.0%*
Lending in Federal Capital District	55.2%	95.2%*	28.9%*	77.3%	19.6%*
Portfolio Distribution by sector (% of financing)+					
Lending to manufacturing	18.2%	36.4%*	11.8%*	28.3%	10.6%*
Lending to primary production	6.7%	6.0%	10.3%	8.5%	12.3%*
Lending to electricity, gas and water	0.0%	2.8%*	0.0%	2.7%*	0.0%
Lending to construction	4.4%	3.9%	3.7%	3.5%	5.0%
Lending to wholesale trade	5.0%	7.7%	7.1%*	5.6%	2.9%
Lending to retail trade	11.0%	3.4%*	20.5%*	9.7%	16.9%
Lending to service (including government and finance)	17.9%	14.4%	13.5%	13.7%	25.4%*
Lending to 'other'	3.2%	6.8%	3.9%	7.6%*	4.5%
Lending to families	32.3%	16.2%	27.3%	19.6%	19.1%

* Significantly different from banks that remained private domestic at a 5% level

+ Omits final category 'other financing'.

Table 4: Average portfolio distribution of foreign, private domestic and public banks in Q2 1997

Initial Type	Private Domestic	Foreign	Private Domestic	Private Domestic	Public
Action over period.	Remained Private	Remained Foreign	License Revoked or merged with other private domestic	Bought by foreign bank	Remained Public
Portfolio Distribution (% of financing)					
Consumer Lending	18.9%	4.0%*	---	10.7%	12.9%
Property Lending and Mortgages	13.0%	13.3%	---	17.8%	20.9%
Lending to Public Sector	1.7%	0.3%	---	3.9%	19.9%
Lending in Federal Capital District	58.7%	94.1%*	---	80.1%	19.4%*
Portfolio Distribution by sector (% of financing)+					
Lending to manufacturing	16.7%	34.1%*	---	19.2%	10.3%*
Lending to primary production	5.8%	4.7%	---	5.6%	11.2%*
Lending to electricity, gas and water	0.0%	2.9%*	---	2.9%*	0.0%
Lending to construction	5.4%	4.4%	---	4.0%	3.5%
Lending to wholesale trade	4.9%	4.9%	---	4.3%	2.7%
Lending to retail trade	9.6%	3.0%*	---	7.0%	13.8%
Lending to service (including government and finance)	19.2%	16.7%	---	17.4%	28.4%*
Lending to 'other'	2.7%	3.5%	---	6.5%	3.1%
Lending to families	34.8%	24.3%	---	29.5%	23.7%

* Significantly different from banks that remained private domestic at a 5% level

+ Omits final category 'other financing'.

Table 5: Fixed effects regression of domestic bank performance on portfolio orientation variables

Dependent Variable	(1) Net Margin/ Total Assets	(2) Before Tax Profit/ Total Assets	(3) Overhead/ Total Assets	(4) Net Margin/ Total Assets	(5) Before Tax Profit/ Total Assets	(6) Overhead/ Total Assets
Number of Observations	568	568	568	568	568	568
Bank Information						
Overheads over total assets (t-stat)	0.3686** (5.53)	-0.8239** (-6.45)		0.3925** (5.83)	-0.8110** (-6.23)	
Lagged Equity over assets (t-stat)	0.0001 (0.01)	0.0100 (0.59)	0.0057 (0.91)	0.0020 (0.22)	0.0104 (0.59)	0.0032 (0.50)
Customer funding over total assets (t-stat)	0.0143* (1.71)	-0.0533** (-3.34)	0.0207** (3.57)	0.0147* (1.71)	-0.0518** (-3.13)	0.0229** (3.88)
Non-interest bearing assets over total assets (t-stat)	-0.0232 (-1.29)	0.0115 (0.33)	0.0449** (3.59)	-0.0226 (-1.23)	0.0115 (0.32)	0.0467** (3.68)
Portfolio Orientation (% of loans)						
Consumer Loans (t-stat)	0.0667** (6.50)	0.1123** (5.72)	0.0199** (2.78)	0.0746** (4.62)	0.1069** (3.42)	0.0201* (1.78)
Mortgages and Property Loans (t-stat)	0.0011 (0.07)	-0.0046 (-0.15)	-0.0169 (-1.54)	0.0173 (1.01)	0.0029 (0.09)	-0.0247** (-2.07)
Loans in Federal Capital District (t-stat)	-0.0005 (-0.09)	-0.0004 (-0.04)	0.0026 (0.69)	-0.0022 (-0.30)	-0.0036 (-0.26)	0.0032 (0.62)
Loans to Manufacturing Sector (t-stat)	-0.0498** (-2.37)	-0.1146** (-2.84)	0.0118 (0.80)	-0.0253 (-1.07)	-0.0971** (-2.12)	0.0000 (-0.00)
Loans to Retail Commerce Sector (t-stat)	-0.0320 (-1.02)	-0.0715 (-1.19)	-0.0141 (-0.64)	-0.0271 (-0.81)	-0.0656 (-1.02)	0.0016 (0.07)
Loans to electricity, gas and water sector (t-stat)	0.0236 (0.23)	-0.0465 (-0.24)	0.0070 (0.10)	-0.0016 (-0.01)	0.0527 (0.22)	-0.0555 (-0.64)
Portfolio Orientation interacted with trend (% of loans)						
Consumer Loans * trend (t-stat)				-0.0008 (-0.56)	0.0005 (0.17)	0.0000 (-0.01)
Mortgages and Property Loans * trend (t-stat)				-0.0024* (-1.86)	-0.0007 (-0.28)	0.0019** (2.07)
Loans in Federal Capital District * trend (t-stat)				0.0004 (0.40)	0.0005 (0.27)	-0.0003 (-0.46)
Loans to Manufacturing Sector * trend (t-stat)				-0.0047* (-1.71)	0.0000 (-0.00)	0.0046** (2.42)
Loans to Retail Commerce Sector * trend (t-stat)				-0.0054* (-1.86)	-0.0045 (-0.79)	-0.0002 (-0.10)
Loans to electricity, gas and water sector * trend (t-stat)				0.0039 (0.19)	-0.0290 (-0.73)	0.0241* (1.69)
R-squared (within)	0.233	0.234	0.234	0.252	0.237	0.258

Table 6: Point estimates of elasticities for dependent variables.

			Point Estimates of Elasticities		
	Obs.	Mean	Net Margin/ Total Assets	Before Tax Profit/ Total Assets	Overhead/ Total Assets
Overheads over total assets	568	2.9%	0.49	-3.42	
Equity over lagged assets	568	17.8%	0.00	0.26	0.04
Customer funding over total assets	568	54.1%	0.36	-4.15	0.39
Non-interest bearing assets over total assets	568	7.6%	-0.08	0.13	0.12
Consumer Loans (% of financing)	568	17.7%	0.55	2.86	0.12
Mortgages and Property Loans (% of financing)	568	17.2%	0.01	-0.11	-0.10
Loans in Federal Capital District (% of financing)	568	40.7%	-0.01	-0.02	0.04
Loans to Manufacturing Sector (% of financing)	568	16.2%	-0.38	-2.68	0.07
Loans to Electricity, Water and Gas (% of financing)	568	0.5%	0.01	-0.03	0.00
Loans to Retail Commerce Sector (% of financing)	568	12.2%	-0.18	-1.26	-0.06

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