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# FOREIGN AND DOMESTIC BANK PARTICIPATION IN EMERGING MARKETS: LESSONS FROM MEXICO AND ARGENTINA

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## ABSTRACT

The Asian Crisis has highlighted the importance of strong domestic financial systems in overall economic development and stabilization. Less agreement is evident on the role of foreign banks in achieving this goal. We explore this issue by studying bank-specific data on lending by domestically- and foreign-owned banks in Argentina and Mexico. We find that foreign banks generally have had higher loan growth rates than their domestically-owned counterparts, with lower volatility of lending, contributing to lower overall volatility of credit. Additionally, in both countries, foreign banks show notable credit growth during crisis periods. In Argentina, the loan portfolios of foreign and domestic privately-owned banks are similar, and lending rates analogously respond to aggregate demand fluctuations. In Mexico, foreign and domestic banks with lower levels of impaired assets have similar loan responsiveness and portfolios. State-owned banks (Argentina) and banks with high levels of impaired assets (Mexico) have more stagnant loan growth and weak responsiveness to market signals. Overall, these findings suggest that bank health, and not ownership per se, is the critical element in the growth, volatility, and cyclicality of bank credit. Diversity in ownership appears to contribute to greater stability of credit in times of crisis and domestic financial system weakness.

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## 1. Introduction

During the past decade, numerous financial systems have opened up to direct foreign participation through the ownership of local financial institutions, frequently as a direct consequence of -- and a perceived solution to -- financial crises. Significant increases in foreign participation in domestic financial systems have characterized the transition experience of Eastern Europe, and the post-Tequila period in Latin America. The experience in Crisis Asia has been markedly different to date, however, and is more notable for the limited nature of majority investments by foreign banks, despite the need for large-scale recapitalization of the region's troubled financial systems.

Arguments supporting a policy of openness to foreign participation are far from universally accepted. The benefits for emerging markets of foreign participation in domestic financial systems are widely exposited and argued to be broad-based. These arguments are, however, mirrored by a set of concerns over the potentially adverse effects of opening to foreign participation (or at least opening too quickly). There is a shortage of hard evidence to support either side.

This paper attempts to contribute factually to the debate over the role of financial openness in emerging markets by exploring the experiences of Argentina and Mexico – two of the emerging markets that exhibit a significant degree and duration of foreign bank activity. Our first steps are to recap the opposing arguments regarding the role of foreign-owned banks in emerging markets. Next, we argue that ownership per se is not a reason to expect differences in the lending patterns of domestic and foreign banks: instead, differences would arise because of lending objectives, funding patterns, market access, and health.

We then review recent liberalization efforts in both Argentina and Mexico, and examine patterns in local lending by foreign-owned and domestically-owned local banks, including state-owned banks.[1] Our goal is to document the relative stability in lending by these banks to different client bases and to examine the cyclical properties of such lending. Throughout, we base our analysis on published quarterly loan data for individual banks in Mexico and in Argentina in the 1990s. We examine total lending, personal/consumer lending,

[1] We define "foreign-owned" to reflect majority control; this definition does not necessarily imply majority share ownership.

mortgage lending, and the broad remaining group that includes commercial, government, and other loans.

Econometrically, we show that in Mexico and Argentina differences in behavior are apparent across some types of banks. The differences are related to whether or not a bank is public or private, potentially reflecting the role of different lending motives across these institutions. Bank responsiveness also is significantly related to the asset quality of the bank portfolio. In response to some types of economic fluctuations, domestic privately-owned banks with low impaired-loan shares can have more volatile lending than their foreign bank counterparts. We argue that these differences are plausible and to be expected, especially if these banks rely on different sources of funds.

Overall, based on bank lending patterns from 1994 through the middle of 1999, we do not find any support for the view that foreign banks contribute to instability or are excessively volatile in their responses to market signals. In Argentina, the extensive and rapid reforms in banking have led to a system where both foreign and domestic privately-owned banks are responsive to market signals, but where behavior is now consistent with a more diversified funding base. In Mexico, despite reform efforts in the second half of the 1990s, many domestic banks continue to face significant asset quality problems. We find that these banks have had shrinking loan portfolios in the post-crisis period. Healthy foreign banks have emerged as an important engine of growth for funding local investment and growth opportunities, without raising lending volatility in comparison to their local counterparts.

## 2. Foreign Ownership of Emerging Market Financial Institutions

### *Arguments in Favor of Foreign Bank Participation*

Arguments in favor of opening domestic financial sectors to foreign ownership have been primarily threefold. First, consistent with traditional arguments in support of capital account liberalization, foreign bank presence is argued to increase the amount of funding available to domestic projects by facilitating capital inflows. Foreign bank presence may also increase the stability of available lending, by diversifying the capital and funding bases

supporting the supply of domestic credit, an argument that appears especially persuasive for small and/or volatile economies.[2]

Second, foreign banks are argued to improve the quality, pricing, and availability of financial services, both directly as providers of such enhanced services and indirectly through competition with domestic financial institutions (Levine 1996). Finally, foreign bank presence is argued to improve financial system infrastructure, including accounting and transparency, financial regulation, and through stimulating the increased presence of such supporting agents as rating agencies, auditors, and credit bureaus (Glaessner and Oks 1994). A foreign presence may also enhance the ability of financial institutions to effectively measure and manage risk. Foreign bank presence may import financial system supervision and supervisory skills from home country regulators. While many of these goals may ultimately be achievable without foreign financial institutions, increased foreign presence may meaningfully accelerate the process.

While there is a sizeable body of research exploring the potential benefits of financial liberalization broadly defined, few studies have focused specifically on the potential benefits of increased foreign participation in banking and finance.[3] For the most part, these studies focus on bank efficiency spillovers, but not lending behaviors. For example, a recent cross-country study shows that foreign bank presence has been associated with lower profitability and lower overhead expenses for domestic banks, hence with enhanced domestic bank efficiency (Claessens, Demirguc-Kunt, and Huizinga 1998)[4]. Findings of increased domestic bank efficiency and heightened competition also are supported in the Argentine experience in the mid-1990s (Clarke, Cull, D'Amato, and Molinari 1999). Increased foreign competition in corporate loan markets reduced associated net margins and before-tax profits; margins and profits remained higher in the consumer sector that had not attracted comparable foreign

[2] Some of these arguments parallel those supporting the recent repeal in the United States of the McFadden Act, which restricted interstate bank branching and limited diversification of U.S. bank loan portfolios. Meltzer (1998), for example, emphasizes the importance of risk diversification as an argument for removing legal and regulatory obstacles to bank branching internationally.

[3] Other work considers the post-liberalization dynamics of deposit taking and its responsiveness to bank riskiness in Mexico, Argentina, Chile, and Canada (Peria and Schmukler, 1999; Gruben, Koo, and Moore, 1999).

[4] Demirguc-Kunt, Asli, Ross Levine, and Hong-Ghi Min (1998) present similar results.

entry.[5] Evidence on behavioral comparisons between foreign and domestically-owned banks remains largely undocumented.

*Arguments Against Foreign Bank Participation*

Arguments against opening domestic financial systems to foreign ownership in part mirror the arguments presented above. One strand of concern argues that foreign-owned financial institutions will in fact decrease the stability of aggregate domestic bank credit, by providing additional avenues for capital flight, or by more rapidly withdrawing from local markets in the face of crisis (either in the host or home country). A second argument relates to concerns that foreign financial institutions "cherry pick" the most lucrative domestic markets or customers, leaving less competitive domestic institutions to serve other (more risky) customers and increasing the risk borne by domestic institutions. Independent of the effect on aggregate credit generally or during crisis, the distribution of credit may be impacted, resulting in redistribution and potential crowding out of some segments of local borrowers.

These concerns blur into similar arguments centered on the principle that financial services represent a strategic industry that is best controlled by domestic interests, especially in the context of a state-directed development model in which domestic banks serve identified development interests. Such arguments, however, are especially likely to be voiced by domestic concerns that will be most negatively affected by financial sector opening – whereas any benefits are likely to accrue across broader segments of the economy.

Contrary to the argument that increased foreign ownership imports improved financial supervision, others have voiced concern over the multiple challenges to supervision raised by complex financial institutions active in a number of jurisdictions. These concerns are accentuated by asymmetries in information between home and host country supervisors.

Even among those who support increased foreign ownership, many argue that the sequencing of such opening is critical, and that it should follow the consolidation and strengthening of the domestic financial system and/or the development of necessary financial infrastructure, including supervision. Most of these concerns are generally unsupported by empirical evidence. However, recent research into the sources of financial crises has fueled an

[5] Burdisso, D'Amato and Molinari (1998) also show that bank privatization increased Argentine bank efficiency, and that consolidation of retail banking led to scale efficiency gains. Privatization led to reduced portfolio risk and more efficient allocation of credit.

additional concern by establishing a pattern in which financial crises tend to be preceded by financial liberalization (Kaminsky and Reinhart 1999, Rojas-Suarez 1997). Such studies, however, generally have not focused specifically on, or identified the role of, foreign-owned financial institutions in contributing to or mitigating crises. The exception is Demirguc-Kunt, Levine and Min (1998): over the 1988 to 1995 period and for a large sample of countries, foreign bank entry was generally associated with a lower incidence of local banking crises.

The need for an understanding of the implications of increased foreign bank presence is especially compelling in the wake of financial crises. In this context, foreign institutions may represent important sources of equity capital for domestic financial systems, especially in post-crisis recapitalization efforts like those currently underway in Asia. In addition to serving as a means towards accomplishing the goal of having an active and efficient private banking network, foreign institutions may bring important attributes not present in domestic financial institutions.

*Conceptualizing Differences Among Banks in Loan Supply and Volatility*

The crux of some of the arguments for and against foreign bank participation could be better understood within the context of a conceptual framework of bank lending volatility and funding availability. Specifically, we expect that lending patterns will vary among state-owned, private domestically-owned and private foreign-owned banks to the extent that there are corresponding differences in bank motives or goals, in balance-sheet health, and in funding sources.[6] These differences in motives, health, and funding diversity would influence the interest-rate sensitivity of loan supply by any bank, and the extent to which a bank expands or contracts lending in response to various market signals.

Some of the points raised in the aforementioned debate on credit volatility hinge on the idea that interest rate sensitivity of lending is likely to be greatest for banks with closer ties to international capital markets, all else equal, given a wider access to profitable investment opportunities. In emerging markets, banks with foreign affiliates are likely to have such ties, potentially leading them to have more interest-rate elastic loan supply than private domestically-owned banks. Moreover, if profitability is more of a motive for private domestic

[6] The exposition in this section closely follows from Goldberg (2000). In a domestic banking system, arguments about lending sensitivity to fluctuations follows the tradition of Peek and Rosengren (1997 and forthcoming) and Hancock and Wilcox (1998).

banks than for state-owned banks, the latter would be expected to have the lowest interest-rate sensitivity among this group.

However, despite such presumed differences across banks, it is inappropriate to conclude that foreign banks will necessarily have more volatile lending patterns. Loan supply and demand may differ across banks for numerous reasons. One reason is that banks may be distinct from each other in terms of *lending motives* with respect to the clients they serve. Under "transactions-based" lending, improved economic conditions generate opportunities for expanding production and investment. Bank loans expand to accommodate part of this demand. Alternatively, under "relationship lending" motives, bank lending helps established customers smooth over the effects of cyclical fluctuations or consumption smooth. In adverse economic conditions, lending expands to offset some of the revenue shortfall of clients; in good economic conditions, net lending by banks declines as borrowers pay back prior loans. Under these stylized conditions, relationship lending is counter-cyclical, while transactions-based lending is pro-cyclical.

The *quality of bank balance sheets* also can influence bank responsiveness to any types of market signals. Banks focussed on balance sheet repair will concentrate less on expanding loan availability when aggregate demand conditions improve, leaving profitable local investment opportunities under-funded. Thus, poor health of banks could be associated with reduced loan variability, lower sensitivity to market signals, and missed opportunities for profitable and efficient investment. An alternative and potentially more dangerous scenario arises when less healthy banks, instead of undertaking balance sheet repair, focus on lending expansion in a gamble for redemption. Overall, if the local banking system health is compromised, the presence of healthy foreign banks should reduce some of the negative current and future externalities attributable to unhealthy local lenders. In this scenario, foreign bank presence fills a domestic vacuum by providing finance for worthy local projects.

Lending sensitivity across banks will also depend on the *bank's sources of loanable funds*. If domestically-owned banks rely more heavily on local demand deposits and cyclically-sensitive sources of funds,[7] basic aggregate demand shocks should generally lead to more volatile lending by private domestic banks than from their foreign-owned counterparts. In the

[7] As argued by Peek and Rosengren (1997) and Hancock and Wilcox (1998), local demand deposits are positively correlated with the local business cycle.

same vein, smaller domestic banks with more narrow funding bases are likely to demonstrate the greatest degree of credit cyclicality, all else equal.

## 3. Case Studies: Foreign versus Domestic Banks in Argentina and Mexico

As we turn to the specific experiences of Mexico and Argentina, our goal is to document some patterns in lending activity and provide factual evidence on two main questions. First, did foreign bank participation in local markets deepen or diversify local financial markets and improve the stability of bank lending? And, second, did foreign bank participation increase the sensitivity of lending to market signals? Our conceptual discussion leads us to expect that (healthy) foreign banks will be more sensitive to market signals than unhealthy banks or state-owned banks with different lending goals. On the other hand, some types of aggregate fluctuations --- such as those arising from local GDP cycles --- may lead to more lending fluctuation by healthy local banks than by healthy foreign banks, especially if domestic banks have less diversified funding bases.

Argentina and Mexico are both instructive case studies for examining the implications of broader foreign bank participation in domestic markets. Over the course of the last decade, both countries implemented reforms facilitating foreign bank entry and then experienced a substantive internationalization of domestic financial markets, with the pace of foreign entry sharply accelerating in the wake of severe financial crises. However, their experiences have also contrasted markedly with regard to the pace, depth and nature of foreign bank penetration. In Argentina, foreign banks now participate on an equal footing with domestic institutions and are active in all broad segments of the loan market. In Mexico, foreign banks face a competitive landscape dominated by large domestic banks. Furthermore, the financial sector as a whole remains in fragile condition with real loan growth yet to recover from the 1994 Tequila Crisis. We briefly outline the experiences of each country, focusing on enabling financial sector reforms and the evolution of the foreign bank presence before turning to the data analysis.

***Argentina: Financial Reforms and Foreign Entry***

Introduction of the Convertibility Plan in 1991 marked a turning point in Argentine financial history – heralding profound monetary and fiscal reform, broad deregulation of domestic markets, privatization of a majority of government-owned entities, trade liberalization, elimination of capital controls and, more generally, a macroeconomic environment conducive to foreign investment.

The Convertibility Plan succeeded in stemming hyperinflationary pressures and restoring economic growth relatively quickly. Within the financial sector, this contributed to enhanced intermediation: credit to the private sector almost doubled, to 19% of GDP by year-end 1994, up from close to 10% of GDP in 1990. Following the removal of restrictions on foreign direct investment and capital repatriation, the number of foreign banks operating in Argentina increased, but remained under 20% of system assets through year-end 1994 (Table 1).

**Table 1: Penetration of Foreign Banks into Argentine Lending Markets**
(as percentage of total lending in each category)

| Type of Loan | 1994 | 1997 | 1999 |
|---|---|---|---|
| Personal | 25.4 | 48.5 | 45.8 |
| Mortgage | 10.3 | 20.4 | 31.9 |
| Commercial, Government, & Other | 19.0 | 37.4 | 53.2 |
| Total Loans | 18.0 | 35.0 | 48.1 |

Source: Author's calculations using data from *Información de Entidades Financieras*, Banco Central de la Republica Argentina, various issues.

Beginning in early 1995, contagion from Mexico's Tequila Crisis severely tested the Argentine financial sector – sparking an outflow of almost 20% of system deposits. It was in the wake of the Tequila Crisis that the transformation of the Argentine financial sector accelerated. Efforts undertaken to re-establish confidence in the banking sector included the introduction of deposit insurance, a renewed commitment to privatizing inefficient public

sector banks, the liquidation and/or consolidation of nonviable entities, and the dedication of substantial resources to strengthening supervisory oversight and the regulatory framework. Within this context, foreign banks were permitted to play an important role in recapitalizing the Argentine banking system.

Prior to the 1990's, very few foreign banks were present in Argentina, with U.S.- based institutions – primarily Citibank and BankBoston – among the more active. Subsequent entry occurred mainly via the acquisition of existing operations, with foreign shareholders acquiring stakes in private institutions with a national or regional franchise – generally in better condition and with stronger distribution networks than privatized provincial and municipal banks. Such acquisitions accelerated dramatically beginning in 1996 with foreign banks acquiring controlling stakes in a majority of Argentina's largest private banks. [8] By 1999, roughly half of banking sector assets were under foreign control (with foreign shareholders holding significant minority stakes in a number of other financial institutions).

The growing foreign bank presence dramatically altered the competitive landscape of Argentina's banking sector and catalyzed aggressive competition for market share, primarily via retail expansion. As is evident in Table 1, foreign-controlled banks have been particularly successful in penetrating commercial, government, interbank and personal loan markets. While they still appear to lag domestic counterparts in mortgage lending, this may change in the wake of the January 1999 privatization of a controlling stake in the national mortgage bank.

Overall, foreign and domestic banks in Argentina appear to compete aggressively in all segments of the local loan market. Details of foreign and domestic bank loan portfolios are provided in Table 2.[9] It is striking that foreign banks generally engage in the same types of broad lending activities as domestic banks, but are more heavily weighted toward relatively lower-risk commercial, government and other lending.[10] Overall, the recent growth in foreign

[8] This distribution is documented in Appendix Table 1. The timing of acquisitions of domestic banks is documented in Appendix Table 2.

[9] Our sample of Argentine bank data was constructed by identifying and including all data for all banks that were among the largest 25 in any sample year. This resulted in a total sample of 37 institutions, with as few as 25 institutions and as many as 32 in any given quarter. All loan data that we discuss are measured in real terms, constructed using CPI deflators. Loan data come from various editions of the *Informacion de Entidades Financieras*, a publication of the Banco Central de La Republica Argentina. This publication was formerly entitled "Estados Contables de las Entidades Financieras." Other data: Argentina Real GDP (source: Board of Governors, in thousands of 1986 pesos); Real interest rate was calculated using Nominal Interest Rate (period average) and CPI series from the *International Financial Statistics*.

[10] These findings are consistent with the observations of Burdisso, D'Amato, and Molinari (1999).

bank presence and in commercial and government lending share imply that foreign banks play an increasingly important role in this aspect of local financing. In addition, Argentine private lending patterns appear to be much more similar to those of foreign banks than to the lending patterns of state-owned banks. Like foreign bank portfolios, Argentine private banks tend to have lower mortgage shares and higher shares of commercial, government, and other lending.

**Table 2 Argentine Bank Loan Portfolio Composition**

(as percentage of Total Loans)

| | Domestically-Owned Banks | | | | | | Foreign-owned Banks | | |
|---|---|---|---|---|---|---|---|---|---|
| | State-Owned | | | Privately-Owned | | | | | |
| Type of Loan | 1994 | 1997 | 1999 | 1994 | 1997 | 1999 | 1994 | 1997 | 1999 |
| Personal | 5.2 | 5.8 | 5.9 | 13.2 | 10.4 | 6.1 | 14.1 | 13.3 | 5.5 |
| Mortgage | 32.1 | 32.2 | 35.1 | 9.4 | 13.2 | 15.0 | 11.0 | 11.7 | 14.7 |
| Commercial, Government, & Other | 62.7 | 62.0 | 59.0 | 77.4 | 76.4 | 78.9 | 74.8 | 75.0 | 79.8 |

Source: Authors' calculations using data from *Información de Entidades Financieras*, Banco de Central la Republica Argentina, various issues.

***The foreign bank effect on loan supply patterns in Argentina***

One key issue in the ongoing policy debate is whether patterns in loan issuance by banks have become more stable over time, as foreign banks have become more entrenched. Using lending data from individual banks operating in Argentina, we compute weighted and unweighted averages of quarterly bank loan growth rates. We report the mean of these growth rates over time. We also compute the standard deviations of the loan growth rates, normalized by mean levels of loan growth. These normalized standard deviations are an indicator of average volatility per unit of loan growth. The unweighted numbers reflect averages across banks, regardless of their importance in various lending markets. The weighted numbers reflect implications for overall availability of loans by the respective classes of lenders (state-owned, domestic private, foreign private banks).[11]

[11] For computing the reported statistics, we first calculate the percentage change in current loan volumes for each individual bank within each period. Then, unweighted and weighted averages of these loan growth rates are

Among domestically-owned banks, the state-owned banks exhibit relatively low average loan portfolio growth.[12] The loan growth and volatility figures for these banks are quite striking in the crisis period, with average loan expansion close to zero and average normalized volatility at a very high level. In all periods, private foreign banks had both the highest quarterly loan growth and the lowest normalized variability of this growth. In the crisis and post-crisis periods, domestic private and foreign private banks had higher loan growth and lower normalized volatility than did domestic state-owned banks.

**Table 3: Argentina Average Quarterly Bank Loan Growth Rates**

(in percent, with normalized standard deviations reported in parentheses)

| Time Period | All Banks | State-Owned Banks | Private Domestic Banks | Private Foreign Banks |
|---|---|---|---|---|
| | Panel A: Unweighted Average Across Individual Banks | | | |
| Pre-Crisis | 3.6 | 3.8 | 2.4 | 5.0 |
| Crisis | 2.0<br>(0.7) | 0.3<br>(14.3) | 2.1<br>(1.9) | 3.0<br>(1.1) |
| Post-Crisis | 3.2<br>(0.9) | 1.5<br>(2.4) | 3.2<br>(1.0) | 4.3<br>(0.8) |
| | Panel B: Weighted Average Across Individual Banks | | | |
| Pre-Crisis | 2.2 | 1.4 | 1.4 | 5.9 |
| Crisis | 2.5<br>(0.7) | 2.4<br>(2.0) | 2.6<br>(1.9) | 2.8<br>(1.3) |
| Post-Crisis | 4.0<br>(0.7) | 1.9<br>(1.2) | 4.6<br>(0.8) | 5.6<br>(0.8) |

Source: Authors' calculations using data from *Información de Entidades Financieras*, Banco de Central la Republica Argentina, various issues. For single missing observations, we use data averaged across prior and following periods. Calculations use real balances of outstanding loans of individual banks. The pre-crisis period for which data is available is 1994:2-94:3, too short for standard deviations on the average loan growth rates. The Tequila crisis period for Argentina is 1994:4-95:4. The post-crisis period ends 1999:2.

constructed by period. The mean and normalized standard deviations of these series over respective periods of time and for respective samples of banks are reported in the Table 3 for Argentina and in Table 8 for Mexico.

[12] State-owned banks include Banco de la Provincia de Buenos Aires, Banco de la Nacion Argentina, Banco Hipotecario, Banco de la Ciudad de Buenos Aires, Banco de las Provincia de Cordoba, Banco de la Pampa, Bice, Caja Ahorro, and Banco Social de Cordoba.

When we consider the implications for lending volumes weighted by bank size (Table 3, Panel B), the crisis and post-crisis periods register generally higher growth for all types of banks. These findings, in comparison with those of panel A, imply that among all banks the larger banks grew faster than the smaller banks. Larger foreign banks have greater average loan growth and equal or lower average volatility per unit of loan growth than their public and private domestic counterparts.

As we discussed in section 2, another metric of lending stability controls for whether changes in loan volumes arise because of differing responses to market signals; alternatively, changing loan volumes can be more random and unrelated to macroeconomic fundamentals. Using time-series data from individual bank balance sheets, we perform pooled time-series regressions to test for differences across domestic, foreign, and state-owned banks in loan responsiveness with respect to real GDP and real interest rates.[13] This responsiveness is estimated using both weighted and unweighted regressions: weighted regressions measure the responsiveness of total lending by a class of banks, and unweighted regressions measure the responsiveness of an average bank regardless of its size. The difference across these types of regressions can be interpreted as suggesting differences across larger versus smaller banks (or across total lending volumes versus average bank behavior) in the respective specific lending areas, i.e., in total lending, mortgage lending, personal lending, and commercial and other lending. The results for 1996Q2 through 1999Q2 are summarized in Table 4, below.[14]

In the post Tequila-Crisis period, total lending by Argentine state-owned banks was largely insensitive to GDP and interest rate fluctuations, attributable to a lack of responsiveness

[13] Specifically, we perform ordinary least squares regressions over the time-series panels of individual bank data. The percentage change in real loans (nominal loans deflated by the CPI) is regressed against the percentage change in real GDP, and levels of real interest differentials vis-à-vis the United States, and bank-specific fixed effects. Regressions test for differences in estimated responses across banks in relationship to public, private domestic, or foreign ownership. "Gaps" in loan series, defined as missing observations with nonmissing observations for the time periods immediately before and after them, are filled in by taking the mean of the surrounding observations. We also have generated results (available from the authors) based on an alternative methodology, using clustering of errors by quarter across all banks. This approach specifies that the observations are independent over time (clusters) but not necessarily independent within a period. The error correction algorithm affects the estimated standard errors and variance-covariance matrix of the estimators, but not the estimated coefficients. In general, as implemented this approach provides a more conservative view of the statistical significance of the estimated elasticities with respect to GDP and other time-series variables. The terms that are marginally significant at the 10 percent level sometimes lose statistical significance at this level.

[14] In the regression results presented for Argentina and for Mexico, we do not report coefficients on interest rate terms. In all regressions, the estimated coefficients are small, so that a 1 percentage point increase in the interest rate differential is associated with a 0.01 to 0.03 percent change in loan volumes. These estimated effects often are

of both mortgage lending and commercial and related lending.[15] Personal lending, which only accounts for about 6 percent of the portfolio of state-owned banks, has been counter-cyclical. A 1 percent rise in GDP is associated with a 7.7 percent contraction in personal lending by the average state-owned bank, with a slightly higher contraction by larger banks.

**Table 4: Bank Loan Sensitivity to GDP, Argentina 1996 Q2-1999 Q2**

Panel A: Unweighted Elasticities

| Type of Bank | Total Loans | Personal Loans | Mortgage Loans | Commercial, Government &Other Loans |
|---|---|---|---|---|
| State-Owned | 0.37<br>(0.58) | **-7.73*****<br>**(1.66)** | -5.56<br>(7.83) | 0.08<br>(0.77) |
| # observations | 90 | 73 | 73 | 73 |
| Domestic Privately Owned | **1.44****<br>**(0.61)** | **-4.56*****<br>**(1.53)** | -0.04<br>(7.17) | **1.71****<br>**(0.70)** |
| # observations | 104 | 101 | 101 | 101 |
| Foreign Privately Owned | **0.90***<br>**(0.46)** | **-6.28*****<br>**(1.32)** | 2.87<br>(5.52) | **1.31****<br>**(0.54)** |
| # observations | 143 | 140 | 140 | 140 |
| Domestic Private = Foreign Private? | Yes | Yes | Yes | Yes |

Panel B: Elasticities, Weighted by Bank Size

| | | | | |
|---|---|---|---|---|
| State-Owned | 0.15<br>(0.47) | **-8.25*****<br>**(1.66)** | 0.28<br>(1.72) | 0.15<br>(0.60) |
| Domestic Privately Owned | **1.26***<br>**(0.66)** | **-4.59*****<br>**(1.75)** | 1.06<br>(3.64) | 1.12<br>(0.74) |
| Foreign Privately Owned | **1.00****<br>**(0.46)** | **-7.44*****<br>**(1.44)** | 0.52<br>(2.73) | **1.63*****<br>**(0.52)** |
| Domestic Private = Foreign Private? | Yes | Yes | Yes | Yes |

*, **, *** indicate statistical significance at 10%, 5%, and 1% levels, respectively. Standard errors are reported beneath the average elasticities drawn from OLS regressions over the percent change in real loans against bank fixed effects, the percent change in real GDP, and local real interest rate differentials vis-à-vis the United States. The equality test rows ask whether statistically the coefficients on private domestic and foreign banks may be equal to each other. Some outlier observations were omitted from the regression analysis.

not statistically significant. Generally, we cannot reject equality of interest rate coefficients on lending by domestic and foreign banks.

[15] This general insensitivity to market signals also characterized the loan volumes of public banks in the pre-crisis and crisis period for which we have data (1994Q2 to 1996Q1: see Appendix Table 3, Panels A and B.)

In stark contrast to the state-owned banks, private banks in Argentina -- both domestically owned and foreign owned -- have been significantly more responsive to economic signals in the post-crisis period. Total lending tends to be pro-cyclical for both domestic and foreign banks, driven by the highly procyclical nature of lending to "commercial, government, and other" clients. This type of lending is consistent with transactions-based or arms-length activity. The point estimate of the cyclical response by domestic private banks (at 1.44) is stronger than the response by foreign banks (at 0.90), as would arise with domestic private banks more heavily reliant on local sources of funds. Yet, despite consistent patterns in the size of point estimates, statistically we cannot reject that both private domestic banks and private foreign banks have identical proportionate responses to cyclical forces in Argentina.

Both types of privately-owned banks also have strong countercyclical patterns of personal lending. When GDP expands by 1 percent, personal lending contracts by 4.6 percent for the average domestic privately-owned banks and by 6.3 percent for their average foreign-owned counterparts. Finally, a comparison of elasticities from the unweighted and weighted regressions suggests that smaller domestic banks have greater credit cyclicality compared with the larger domestic banks, which may lend additional support to the funding composition hypothesis.

Overall, the evidence on loan activity in Argentina supports a claim of differences in behavior across state-owned banks and private banks. However, domestic and foreign private banks exhibit comparable loan behavior, coexist in the distribution of larger and smaller banks within the top 25 banks nationally, and have similar composition of loan portfolios. The banks respond similarly to market signals, including real GDP growth and real interest rates. Overall, foreign-owned banks appear to have provided greater loan growth than observed among domestic-owned banks, while reducing the volatility of loan growth for the financial system as a whole. Foreign banks also exhibited notable loan growth during the crisis period, suggesting that foreign banks may be important stabilizers of credit during such episodes. It also is notable that state-owned banks had higher variability of lending, as well as having a smaller portion of this variability explained by macroeconomic fundamentals.

***Mexico: Financial Reforms and Foreign Entry***

In Mexico, recent efforts at financial liberalization began in the early 1990s with the re-privatization of the financial sector, following a decade of nationalization and government-orchestrated bank consolidation.[16] Following several years of rapid expansion by the newly privatized banks, however, Mexico's financial crisis -- triggered by the 1994 peso devaluation -- both revealed and exacerbated significant weaknesses in a large number of institutions. Since the crisis, authorities have responded with an array of support programs for financial institutions and their borrowers intended to bolster the health of the financial sector, and have also opened to foreign investment beyond the schedules that had been originally negotiated under NAFTA.[17] Pressures on bank condition, however, remain significant and widespread, and continue to be an important driver for Mexican bank behavior.

Only one foreign bank, Citibank, was permitted to conduct local banking operations in the early 1990's, accounting for less than 1 percent of total loans. With the initiation of NAFTA in 1994, restrictions on foreign bank participation were gradually eased. Initial entrants generally established very small *de novo* subsidiaries engaged in wholesale, non-loan banking activities. On average, these foreign bank operations consisted of a single branch office with fewer than 100 employees and captured about 0.1 percent of loan market share. As Table 5 shows, in 1995 foreign banks cumulatively represented about 1 percent of the consumer and commercial, government, and interbank loans.

Similar to the Argentina experience, it was in the aftermath of the 1994-1995 Tequila crisis that foreign banks began establishing a significant local retail presence (see Appendix Table 5) Despite a variety of support programs, 12 Mexican banks (accounting for roughly 20 percent of total loans) failed outright and were intervened by the authorities. The subsequent sale of these franchises (or portions thereof) provided an avenue for foreign bank entry into, and partial recapitalization of, the Mexican retail banking sector. As outlined in Appendix Table 5, there have been six foreign bank acquisitions of domestic retail operations since mid-1995, with Spanish banks among the most active. There were 6 additional mergers of domestic banks with other domestic banks.

[16] During the nationalization of the Mexican banking system, only two banks remained independent: Citibank, which had been active in Mexico since 1929, and domestically- owned Banco Obrero.
[17] See Graf (1999), among others, for an extensive discussion of these reforms.

| Table 5: Penetration of Foreign Banks into Mexican Lending Markets (as percent of Current Loans in each category) | | | |
|---|---|---|---|
| Type of Lending Activity | 1992 | 1995 | 1998 |
| Consumer | 0.0 | 0.9 | 11.1 |
| Mortgage | 0.0 | 0.0 | 6.4 |
| Commercial, Government, & Interbank | 0.2 | 1.0 | 19.7 |
| Total Loans | 0.2 | 0.7 | 17.8 |

Source: Authors' calculations based on data from Comision Nacional Bancaria y de Valores.

By 1998, foreign bank participation in the local loan market had grown from less than 1 percent prior to the crisis, to 18 percent (Table 5). Foreign banks controlled 2 of the 6 largest banks (Santander Mexicano and BBV), held minority stakes in 3 more, and operated 19 fully-owned local subsidiaries.[18] However, restrictions on foreign ownership remained in place until December 1998, prohibiting foreign control of Mexico's three largest banks (in aggregate, almost 60% of loan market share).

As is evident in Table 5, foreign bank lending is concentrated in the commercial, government and interbank sectors, with much lower penetration of consumer and mortgage markets. This concentration may be less a function of strategic considerations than of pervasive weaknesses in Mexico's credit environment – characterized by high real interest rates, a reportedly reduced pool of creditworthy borrowers and breakdown in borrower discipline, and a legal environment which provides little creditor protection. This pattern is supported by a noticeable shift in domestic bank loan portfolios away from consumer and mortgage lending over this same time period, in part due to the government acquisition of a large portion of these loans in the wake of the crisis.

As shown in Table 6, pre-crisis domestic lending to the consumer and mortgage sectors comprised about 30 percent of the lending portfolios of banks, a ratio that is very similar to

[18] See Appendix Table 4.

ratios observed in Argentina.[19] However, by 1998 consumer and mortgage loans accounted for less than 18 percent of domestic bank loan portfolios, and only 6 percent of foreign lending. Foreign bank activity remained concentrated (93.6 percent) in the Consumer, Government, and Interbank market.

**Table 6: Mexican Bank Loan Portfolio Composition**

(as percentage of Total Current Loans)

| | Domestically-Owned Banks | | | Foreign -owned Banks | | |
|---|---|---|---|---|---|---|
| Type of Loan | 1992 | 1995 | 1998 | 1992 | 1995 | 1998 |
| Consumer | 12.0 | 5.6 | 3.3 | 0.3 | 6.9 | 1.9 |
| Mortgage | 16.0 | 22.4 | 14.3 | 2.0 | 0.3 | 4.5 |
| Commercial, Government, & Interbank | 72.0 | 72.0 | 82.4 | 97.7 | 92.8 | 93.6 |

Source: Authors' calculations based on data from Comision Nacional Bancaria y Valores.

In addition to the factors noted above, the condition of Mexico's banks over this time period has also played a significant role in influencing loan behavior. While objective measurement of Mexican bank condition is impeded by a lack of full transparency (e.g., not all banks publicly release financial statements) and changes in accounting standards over the sample period, a measure of impaired loans as a proportion of total loans can be used as a relative indicator of the depth of asset quality problems on bank balance sheets. Impaired loans are here defined as the sum of reported non-performing loans, restructured loans, and the full amount of loans sold to the government.

The vast majority of domestic banks (88 percent), representing the bulk of domestic-bank lending in Mexico, had impaired loan ratios (ILRs) under 10 percent at the beginning of 1994 (Table 7). By 1998, in part due to improved accounting and reporting conditions, 41

[19] Our sample of Mexican banks includes all banks active within Mexico each year, where data are provided by the CNBV. This sample comprises a universe of 59 banks over the 1990s, although the number of banks active in any given quarter varies due to bank closures, mergers, and acquisitions, as well as the establishment of *de novo*

percent of the banks (representing 93 percent of total lending by domestic banks) had impaired loan ratios exceeding 30 percent. While the bulk of foreign-owned banks (90 percent) remained relatively healthy, the larger foreign-owned retail franchises (accounting for 76 percent for foreign bank lending) also had impaired loan ratios in excess of 30 percent at year-end 1998 – largely reflective of post-crisis acquisitions of troubled domestic banks by foreign banks.

**Table 7: Impaired Loan Ratios of Banks in Mexico**

| Nationality of Banks | Date | ILR: 0-10 percent | | ILR: 10-30 percent | | ILR: 30 percent or more | |
|---|---|---|---|---|---|---|---|
| | | % Banks | % Current Loans | % Banks | % Current Loans | % Banks | % Current Loans |
| Domestic | 1994 Q1 | 86.4 | 94.4 | 13.6 | 5.5 | 0.0 | 0.0 |
| | 1998 Q4 | 58.8 | 7.2 | 0.0 | 0.0 | 41.2 | 92.8 |
| Foreign | 1994 Q1 | 100.0 | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 1998 Q4 | 90.0 | 24.1 | 0.0 | 0.0 | 10.0 | 75.9 |

Source: Authors' calculations based on data from Comision Nacional Bancaria y Valores. Impaired loans are the sum of reported non-performing loans, restructured loans, and the full amount of loans sold to the government.

***The foreign bank effect on loan supply patterns in Mexico***

The data presented thus far show that foreign banks operating in Mexico have focussed their efforts mainly on commercial, government and interbank lending. Given the condition of the Mexican banking sector, the potential for a broad and positive role for healthy foreign banks therefore seems substantial. Foreign banks could be an important absolute and diversified source of credit to firms, especially in an economy where government-operated and domestic banks are heavily focused on balance sheet repair, instead of new lending. In this environment, funds provided by foreign banks can be a source of much needed capital for local profitable growth opportunities.

operations. The number of banks included in the analysis ranges from a low of 20 in 1991 and 1992 to a high of 43 in 1996, and 37 at year-end 1998.

Our conceptualization of differences across banks which can lead to distinct lending behavior (section 2) emphasized bank health as a potentially important issue. Given the preponderance of impaired loans in Mexican banking in the second half of the 1990s, we consider the extent to which distinctions among banks in lending behavior are evident according to broad indicators of bank health. We use the ILR previously defined as an indicator of financial condition, whereby banks with an ILR in excess of 10 percent are considered to be in relatively poor financial health.

The loan growth activity and associated volatility by banks are documented in Table 8. Sorting banks each period according to whether their ILR falls below or exceed 10 percent, we observe significant differences in loan growth and the volatility of this growth across healthier versus less healthy banks. These differences pertain to both domestically-owned and foreign-owned banks. In general, banks with higher impaired loan ratios had more volatile loan growth rates and lower (or negative) rates of loan portfolio expansion than the banks with less problematic portfolios. In terms of average quarterly growth, both domestic and foreign banks with low ILRs continued to extend credit fairly steadily in the post-crisis period. In this healthier group, smaller foreign and domestic banks grew at a quicker pace than their larger counterparts, without increasing measured volatility per unit of loan growth.

Lending by banks with low ILRs grew at high rates, leaving these banks to play an expanding role in mainly commercial finance, even as they remained a small part of the Mexican banking system (about 30 percent of the total current loans at the end of 1998). While the full financial system continues to show small average contraction in the post-crisis period, it is evident that the extent of this loan contraction has been reduced by the presence of foreign banks, and by healthy banks in general. As we observed in Argentina, the more extensive role played by foreign banks in Mexico does not appear to have come at the expense of larger lending volatility.

**Table 8: Mexico Average Quarterly Loan Growth Rates**

(in percent, with normalized standard deviations reported in parentheses)

| Time Period | All Banks | ILR < 10 percent | | ILR > 10 percent | |
|---|---|---|---|---|---|
| | | domestic | foreign | domestic | foreign |
| | Panel A: Unweighted Average Across Individual Banks | | | | |
| Pre-Crisis | 9.6 (0.5) | 9.5 (0.6) | 26.9 (1.8) | 1.3 (8.7) | -- |
| Crisis | 16.0 (1.1) | 20.1 (0.8) | 15.5 (0.3) | 1.7 (9.9) | -- |
| Post-Crisis | 9.6 (1.1) | 11.7 (1.5) | 18.2 (1.2) | -1.1 (5.7) | 7.4 (3.1) |
| | Panel B: Weighted Average across Banks | | | | |
| Pre-Crisis | 4.5 (0.8) | 4.4 (0.8) | 26.9 (1.8) | 2.0 (6.1) | -- |
| Crisis | 8.1 (1.7) | 8.5 (1.6) | 15.5 (0.3) | 5.9 (2.2) | -- |
| Post-Crisis | -0.3 (21.6) | 9.1 (1.7) | 12.6 (1.3) | -1.5 (4.5) | 7.4 (3.1) |

For these calculations, we drop from our data sample the observations for individual new banks that represent their initial periods of entry and expansion. Inclusion of these initial data points would otherwise artificially show a sharp increase in the loan growth of foreign banks especially, along with higher variability of this loan growth.

Next, we consider these lending fluctuations in the context of Mexican real demand growth and real interest rate differentials vis-à-vis the United States.[20] Since a small number of very large banks have dominated lending activity in Mexico, we anticipate large distinctions between our results presented as averages across individual banks and averages over all lending, even when bank condition is considered. In general, however, the domestic banks with sounder reported asset quality ratios are smaller banks engaged in limited retail lending.

In the post Tequila-crisis period (1995Q2 through 1998Q4), our sorting of banks according to domestic versus foreign ownership, and according to ILRs, is highly revealing

[20] Raw Mexican loan data exhibit many extreme observations related to new bank entry, government intervention, mergers and acquisitions. We eliminate extreme single quarter changes from our sample.

(Table 9).[21][22] In Mexico, on an un-weighted basis the most responsive banks to cyclical fluctuations were the domestically-owned banks with low non-performing loan shares (particularly smaller banks). Indeed, behavior by these banks is strikingly similar to the behaviors reported for the private banks in Argentina. Lending to Commercial (et al.) clients is strongly pro-cyclical as consistent with transactions-based or arms-length lending, and as also observed in Argentina. Lending to Consumer and Mortgage clients is generally statistically insignificantly correlated with real GDP growth in Mexico. Our conceptual framework of section 2 anticipated the findings here that the banks with lower impaired loan ratios are more responsive to fluctuations and market signals than are banks with more problematic loan portfolios.

Among the foreign banks operating in Mexico, there appears to be a strong behavioral distinction among banks with lower ILRs versus the few observations of banks with higher ILRs. The foreign banks with low ILRs appear to behave similarly to domestically-owned banks with low ILRs. As anticipated, and as observed in the Argentine case, the point estimates on responses are higher for the domestic banks in this group of banks with low impaired loan ratios. Their larger response elasticities to GDP stimuli are consistent with domestic banks having heavier reliance on domestic sources of funds. Still, also as we observed for Argentine private banks, we cannot reject similar behavior by these banks with low ILRs but different nationalities of owners. The foreign banks with high ILRs behave differently from all categories of banks in our sample, with procyclical consumer lending and counter-cyclical commercial and other lending.

[21] We present results using ILRs > 10 percent. Broadly similar results also arose using higher ratios (20, 30, 50 percent). The main difference is that the higher the ILRs of domestic banks, the lower their estimated responsiveness to cyclical fluctuations. Our regression results for domestic unhealthy banks are potentially biased by the fact that, once a bank is intervened by the Mexican government, data for that bank generally becomes unavailable. We have a total of 17 banks in our sample which were intervened; if we had data for all of the intervened banks going through the end of the sample period we would have an additional 100 observations on unhealthy banks to use in the regressions. If one assumes that intervened banks would on average be less responsive to market signals than nonintervened banks, then we would expect to see less responsiveness for this bank class as a whole if we had access to a more complete dataset for Mexico.

[22] We also have generated results (available from the authors) based on an alternative methodology, using clustering of errors by quarter across all banks. This approach specifies that the observations are independent over time (clusters) but not necessarily independent within a period. The error correction algorithm affects the estimated standard errors and variance-covariance matrix of the estimators, but not the estimated coefficients. In general, as implemented this approach provides a more conservative view of the statistical significance of the estimated elasticities with respect to GDP and other time-series variables. The terms that are marginally significant at the 10 percent level sometimes lose statistical significance at this level.

**Table 9: Bank Loan Sensitivity to GDP, Mexico 1995 Q2-1998 Q4**

Panel A: Unweighted Elasticities

| | Total Loans | Consumer Loans | Mortgage Loans | Commercial, Government & Interbank Loans |
|---|---|---|---|---|
| | ***Banks with ILR < 10 percent*** | | | |
| ***Domestic Banks*** | **1.67*** (0.56)** | -0.62 (0.69) | **-2.02** (0.97)** | **1.67*** (0.57)** |
| *# observations* | 153 | 78 | 50 | 153 |
| ***Foreign Banks*** | **0.93* (0.51)** | -0.04 (1.11) | 0.29 (1.40) | **1.02** (0.53)** |
| *# observations* | 190 | 28 | 20 | 182 |
| Domestic = Foreign? | Yes | Yes | Yes | Yes |
| | ***Banks with ILR > 10 percent*** | | | |
| ***Domestic Banks*** | **0.85* (0.49)** | 0.09 (0.44) | 0.26 (0.48) | **1.35*** (0.50)** |
| *# observations* | 178 | 165 | 159 | 178 |
| ***Foreign Banks*** | -1.51 (1.81) | **2.94* (1.55)** | -0.08 (1.72) | -1.58 (1.85) |
| # observations | 16 | 16 | 15 | 16 |

Panel B: Elasticities Weighted by Bank Size

| | | | | |
|---|---|---|---|---|
| | ***Banks with ILR < 10 percent*** | | | |
| ***Domestic Banks*** | **1.55*** (0.49)** | -0.43 (4.14) | -1.11 (2.26) | **1.52** (0.65)** |
| *# observations* | 153 | 72 | 46 | 152 |
| ***Foreign Banks*** | 0.92 (0.71) | 0.40 (1.42) | 0.31 (17.7) | 0.93 (0.94) |
| *# observations* | 190 | 26 | 20 | 181 |
| Domestic = Foreign? | Yes | Yes | Yes | Yes |
| | ***Banks with ILR > 10 percent*** | | | |
| ***Domestic Banks*** | **0.97*** (0.10)** | 0.15 (0.22) | **-0.73*** (0.23)** | **1.76*** (0.15)** |
| *# observations* | 178 | 165 | 158 | 178 |
| ***Foreign Banks*** | **-1.26*** (0.44)** | 2.81 (1.73) | 0.26 (1.67) | **-1.37** (0.59)** |
| # observations | 16 | 16 | 15 | 16 |

*, **, *** indicate statistical significance at 10%, 5%, and 1% levels, respectively. Standard errors are reported beneath the average elasticities drawn from OLS regressions over the percent change in real loans against bank fixed effects, the percent change in real GDP, and local real interest rate differentials vis-à-vis the United States. The equality test rows ask whether statistically the coefficients on private domestic and foreign banks may be equal to each other. For these calculations, we drop from our data sample the observations for individual new banks that represent their initial periods of entry and expansion.

Several findings stand out from this empirical analysis. First, bank health appears to be a key factor distinguishing the responsiveness to market signals among both domestically-owned and foreign-owned banks in Mexico. Second, point estimates show more volatile lending with respect to GDP by domestically-owned banks, a finding that is consistent with our conceptualization in section 2. Specifically, if healthy domestically-owned banks (all else equal) rely more heavily on domestic sources of funding (particularly smaller banks), lending by these banks will be more sensitive to local cyclical conditions than will be the lending by their foreign-owned counterparts. In Mexico, we observe that foreign banks with low non-performing loan shares have facilitated more overall responsiveness of the financial system to market forces, and were important providers of credit during the crisis period and beyond, in the context of financial system weakness. These results would appear to confirm that foreign banks thus far have had a stabilizing impact on domestic financial system credit in both countries.

## 4. Concluding Remarks

The Asian Crisis amply demonstrated a range of deficiencies in local financial systems, and has precipitated calls for reform in accounting and disclosure practices, bank corporate governance, and home country supervision and regulation. It is often argued that opening domestic financial sectors to increased foreign ownership can meaningfully accelerate improvements in all three areas, and should be (and historically has been) a key element of reform efforts in the aftermath of financial crisis. At the same time, various arguments emphasize the potential adverse effects of foreign ownership. To date, the post-crisis financial landscape in Crisis Asia has been characterized by only limited examples of majority foreign ownership of domestic financial institutions.

We have sought to contribute to the debate on financial sector openness in emerging markets by reviewing the experiences of Mexico and Argentina with foreign bank local lending. We conclude that in both Mexico and Argentina, foreign banks exhibited stronger loan growth compared to all domestic-owned banks, with lower associated volatility, contributing to greater stability in overall financial system credit. Additionally, in both countries, foreign banks showed notable credit growth during recent crisis periods and

thereafter. In Argentina, there have been striking similarities in the portfolio composition of lending and the volatility of lending by private foreign and private domestic banks. In Mexico, there are behavioral similarities in terms of cyclical fluctuations and loan portfolios among banks with similar low impaired loan ratios but different ownership. Both domestically-owned and foreign-owned banks with low problem loan ratios behaved similarly, and we find no evidence that the foreign banks were more volatile lenders than their domestic counterparts. The ranking of banks according to their responses to cyclical fluctuations is consistent with an outcome that arises when foreign banks bring to the emerging market a broader, more diversified supply of funds.

Overall, these findings suggest that bank health, and not ownership per se, has been the critical element in the growth, volatility, and cyclicality of bank credit. Diversity in ownership has contributed to greater stability of credit in recent times of crisis and financial system weakness. The positive first lessons from the Argentine and Mexican experiences are broadly instructive for other emerging markets as they contemplate more extensive foreign bank participation in their local economies.

Of course, further analysis of these issues is essential. Additional country analysis, particularly of the Eastern European experience with opening domestic financial sectors to foreign ownership, would be useful. Moreover, this analysis is based on the relatively recent experience with significant foreign ownership, and will need to be reviewed over a longer time frame, given a range of variables, including ongoing evolution of competition between foreign and domestic banks. The role of diversification of bank funding sources can also be further explored, as could the importance of parent-subsidiary relationships internationally, and the relationship between local and cross-border lending activities. Moreover, if local governments seek to maintain certain wholesale or retail services that would not survive the test of the market, there are broad policy questions to consider about the types of agencies that should be involved in these transactions, and the scope and methodologies for their implementation. Overall though, recent experience in Argentina and Mexico underscores the importance of healthy banks, both foreign- and domestic-owned to market-based, private sector lending in emerging markets. .

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**Appendix Table 1 Top 25 Argentine Financial Institutions: Credit Market Share**

| Rank | Bank | Total Loans | Market Share | Foreign Ownership | Voting Share/ Date |
|---|---|---|---|---|---|
| 1 | Banco de la Nacion Argentina[s] | 10,113 | 12% | | |
| 2 | Banco de la Provincia de Buenos Aires*[s] | 8,932 | 11% | | |
| 3 | Banco de Galicia y Buenos Aires | 6,744 | 8% | O'Higgins Central Hispanoamericano | 10.0%/ 98:4 |
| 4 | Banco Rio de la Plata | 5,530 | 7% | Banco Santander Central Hispano | 64.3%/97:2 |
| 5 | BankBoston National Association | 5,259 | 6% | BankBoston | 100.0%/Before 94:2 |
| 6 | Banco Frances | 5,151 | 6% | Banco Bilbao Vizcaya | 58.8%/96:4 |
| 7 | Citibank | 4,524 | 5% | Citibank | 100.0%/Before 94:2 |
| 8 | Banco Hipotecario[s] | 4,122 | 5% | | |
| 9 | HSBC Banco Roberts | 2,706 | 3% | HSBC | 100.0%/1Q98 |
| 10 | Banca Nazionale del Lavoro | 2,326 | 3% | Banca Nazionale del Lavoro | 100.0%/Before 94:2 |
| 11 | Banco Bansud | 2,077 | 3% | Banamex | 60.0%/95:4 |
| 12 | Banco Quilmes | 1,506 | 2% | Bank of Nova Scotia | 70.0%/95:1 |
| 13 | Banco de la Ciudad de Buenos Aires[s] | 1,470 | 2% | | |
| 14 | Banco Credicoop cooperativo Limitado | 1,264 | 2% | | |
| 15 | Banco del Suquia | 1,122 | 1% | | |
| 16 | Banco de la Provincia de Cordoba[s] | 948 | 1% | | |
| 17 | Banco Bisel | 842 | 1% | Caisse Nationale de Credito Agricole | 30.0%/96:1 |
| 18 | Banco Tornquist | 794 | 1% | O'Higgins Central Hispanoamericano | 100.0%/95:4 |
| 19 | Banco Sudameris Argentina | 757 | 1% | Banque Sudameris | 99.9%/Before 94:2 |
| 20 | Banco de la Pampa[s] | 700 | 1% | | |
| 21 | ABN Amro Bank | 674 | 1% | ABN Amro | 100.0%/95:2 |
| 22 | Lloyds Bank | 666 | 1% | Lloyds Bank | 100.0%/Before 94:2 |
| 23 | Banco de Inversion y Comercio Exterior | 649 | 1% | | |
| 24 | Banco Mercantil Argentino | 636 | 1% | | |
| 25 | Banco Supervielle Societe Generale | 616 | 1% | Societe Generale | 75.4%/Before 94:2 |
| | Loan Subtotal of Top 25 Banks | 70,128 | 85% | Foreign Share of Top 25 | 46.4 % |
| | Total System Loans | 82,544 | 100% | | |

*Data at November 1998. Source: Estados Contables de las Entidades Financieras, Banco de la Republica Argentina
[s] indicates state-owned through end of 1998.

| Appendix Table 2<br>Summary of Argentina Bank Mergers | | |
|---|---|---|
| **Bank Name** | **Acquiring Bank** | **Date of Acquisition** |
| ***Foreign Banks Acquiring Domestic Banks:*** | | |
| Banesto Shaw | Banamex, via Bansud | Q495 |
| Del Sud | Banamex, via Bansud | Q495 |
| Credito Argentino | Bilbao Vizcaya | Q397 |
| Quilmes* | Bank of Nova Scotia | Q497 |
| Roberts | HSBC | Q198 |
| Rio de la Plata | Santander | Q297 |
| Frances | Bilbao Vizcaya | Q496 |
| ***Foreign Banks Acquiring Foreign Banks:*** | | |
| Credit Lyonnais (formerly Tornquist) | O'Higgins Central Hispano | Q196 |
| Deutsche Bank | BankBoston | Q197 |

Quilmes was effectively controlled by Bank of Nova Scotia by Q195, although a majority stake was not acquired until Q397.

**Appendix Table 3: Bank Loan Sensitivity to GDP, Argentina 1994 Q2-1996 Q1**

Panel A: Unweighted Elasticities

| | Total Loans | Personal Loans | Mortgage Loans | Commercial, Government & Interbank Loans |
|---|---|---|---|---|
| ***State-Owned*** | 0.10<br>(0.53) | 1.30<br>(1.63) | 2.17<br>(3.23) | -0.19<br>(0.58) |
| *# observations.* | 52 | 45 | 45 | 45 |
| ***Domestic Privately Owned*** | 0.00<br>(0.38) | **-2.50****<br>**(1.08)** | -3.41<br>(2.14) | 0.52<br>(0.39) |
| *# observations* | 99 | 99 | 98 | 99 |
| ***Foreign Privately Owned*** | 0.37<br>(0.46) | 0.74<br>(1.30) | 0.57<br>(2.74) | 0.33<br>(0.47) |
| *# observations* | 65 | 65 | 59 | 65 |
| Domestic Private = Foreign Private? | Yes | No* | Yes | Yes |

Panel B: Elasticities Weighted by Bank Size

| | | | | |
|---|---|---|---|---|
| ***State-Owned*** | 0.06<br>(0.30) | 0.87<br>(1.78) | 0.39<br>(0.32) | -0.24<br>(0.37) |
| ***Domestic Privately Owned*** | 0.16<br>(0.30) | **-2.90*****<br>**(1.09)** | -0.28<br>(0.59) | 0.31<br>(0.32) |
| ***Foreign Privately Owned*** | 0.56<br>(0.40) | 0.63<br>(1.32) | 0.79<br>(0.76) | 0.49<br>(0.44) |
| Domestic Private = Foreign Private? On GDP | Yes | No** | Yes | Yes |

*, **, *** indicate statistical significance at 10%, 5%, and 1% levels, respectively. Standard errors are reported beneath the average elasticities. These results are drawn from ordinary least squares regressions over the percent change in real loans against individual bank fixed effects, the percent change in real GDP, and local real interest rate differentials vis-à-vis the United States. The equality test rows ask whether statistically the coefficients on private domestic and foreign banks may be equal to each other. Some outlier observations were omitted from the regression analysis.

**Appendix Table 4: Mexican Financial System, Total Lending, by Institution**

(Millions of Pesos, December 1998)

| **Name of Mexican Institution** | **Total Loans** | **Share** | **Foreign Owner** (nationality) | **Stake (entry date, F if foreign controlled)** |
|---|---|---|---|---|
| Total | 872,485 | **100.0%** | (None) | |
| Banamex | 186,245 | **21.3%** | (None) | |
| Bancomer | 191,407 | **21.9%** | Bank of Montreal (Canada) | 17.0% (March 96) |
| Serfín | 115,680 | **13.3%** | HSBC, JP Morgan (US) | 29.0% (December 97) |
| Bital | 56,897 | **6.5%** | Santander, BCP (Spain) | 16.0% (September 93) |
| Santander Mexicano | 49,618 | **5.7%** | Santander (Spain) | 52.0% (September 97, F) |
| Bilbao Vizcaya | 52,899 | **6.1%** | BBV (Spain) | 67.0% (March 96, F) |
| Centro | 21,305 | **2.4%** | (None) | |
| Mercantil del Norte | 25,003 | **2.9%** | (None) | |
| Banpaís | 27,132 | **3.1%** | (None) | |
| Citibank | 16,900 | **1.9%** | Citibank (US) | 100.0% (December 91, F) |
| Interacciones | 3,145 | **0.4%** | (None) | |
| Inbursa | 21,999 | **2.5%** | (None) | |
| Mifel | 2,202 | **0.3%** | (None) | |
| Invex | 1,702 | **0.2%** | (None) | |
| Banregio | 1,358 | **0.2%** | (None) | |
| Del Bajío | 2,912 | **0.3%** | Sabadell (Spain) | 10.0% (December 98) |
| Quadrum | 1,411 | **0.2%** | (None) | |
| Ixe | 2,482 | **0.3%** | (None) | |
| J. P. Morgan | 1,327 | **0.2%** | J. P. Morgan (US) | 100.0% (September 96, F) |
| Chase Manhattan | 9 | **0.0%** | Chase Manhattan (US) | 100.0% (June 96, F) |
| Afirme | 4,991 | **0.6%** | (None) | |
| Fuji Bank | 831 | **0.1%** | Fuji Bank (Japan) | 100.0% (June 95, F) |
| Bank of Tokyo – Mitsubishi | 907 | **0.1%** | Bank of Tokyo – Mitsubishi (Japan) | 100.0% (March 95, F) |
| Bank of America | 989 | **0.1%** | Bank of America (US) | 100.0% (June 95, F) |
| ABN Amro Bank | 537 | **0.1%** | ABN Amro Bank (Netherlands) | 100.0% (September 95, F) |
| Republic National Bank | 605 | **0.1%** | Republic National (US) | 100.0% (September 95, F) |
| Banco de Boston | 518 | **0.1%** | Bank of Boston (US) | 100.0% (December 95, F) |
| B. N. P. | 1,002 | **0.1%** | B. N. P. (France) | 100.0% (December 95, F) |
| Bansi | 663 | **0.1%** | (None) | |
| Dresdner Bank | 2,414 | **0.3%** | Dresdner (Germany) | 100.0% (March 96, F) |
| Societé Generalé | 445 | **0.1%** | Societé Generalé (France) | 100.0% (March 96, F) |
| I.N.G. Bank | 1,460 | **0.2%** | I.N.G. Bank (Netherlands) | 100.0% (June 96, F) |
| First Chicago | 66 | **0.0%** | First Chicago (US) | 100.0% (September 96, F) |
| GE Capital (Alianza) | 1,005 | **0.1%** | GE Capital (Alianza) | 100.0% (December 97, F) |
| American Express | 391 | **0.0%** | American Express (US) | 100.0% (June 96, F) |
| Nations Bank | 64 | **0.0%** | Nations Bank (US) | 100.0% (December 96, F) |
| Comerica Bank | 2,410 | **0.3%** | Comerica Bank (US) | 100.0% (September 97, F) |

Source: *Boletin Estadistico de Banco Multiple*, Comision Nacional Bancaria y de Valores.

## Appendix Table 5: Summary of Mexico Bank Mergers

| Bank Name | Acquiring Bank | Date of Intervention | Date of Acquisition |
|---|---|---|---|
| The following mergers involve foreign banks buying domestic banks: | | | |
| Merprob | Bilbao Vizcaya | ------- | Q196 |
| Oriente | Bilbao Vizcaya | Q195 | Q396 |
| Cremi | Bilbao Vizcaya | Q394 | Q396 |
| Mexicano | Santander Mexicano | ------ | Q297 |
| Confia | Citibank | Q397 | Q398 |
| Alianza | GE Capital | ----- | Q497 |
| The following mergers involve domestic banks buying domestic banks: | | | |
| Union | Bancomer | Q394 | Q295 |
| Obrero | Afirme | Q295 | Q197 |
| Sureste | Internacional (BITAL) | Q296 | Q198 |
| Atlantico | Internacional (BITAL) | Q497 | Q198 |
| Centro | Mercantil Del Norte | Q395 | Q297 |
| Banpais | Mercantil Del Norte | Q195 | Q397 |
| The following mergers involve foreign banks buying foreign banks: | | | |
| Chemical | Chase | ----- | Q296 |
| Santander de Negocios | Santander Mexicano | ------ | Q497 |

Source: Effective dates of acquisitions, mergers, and interventions, compiled from press accounts and data provided by the CNBV.