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Are Foreign Banks a 'Safe Haven'? Evidence from Past Banking Crises

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Abstract

The presence of foreign banks in emerging markets has increased markedly over the last two decades, raising questions about their potentially stabilizing or destabilizing role during times of financial distress. Most studies on this subject have focused on banks' asset side (i.e., their lending behavior). This paper focuses on their liability side, studying the behavior of depositors vis-à-vis foreign banks. We rely on data from the banking crises in Argentina and Uruguay over the period 1994-2002 to conduct the study. The paper focuses on three questions; (i) are foreign banks perceived as a *safe haven* during bank runs?; (ii) does their legal structure (branch versus subsidiary) matter?; (iii) do perceptions depend on the nature of the crisis? Contrary to the commonly held view that foreign banks play a stabilizing role during domestic banking crises, we do not find robust evidence in this regard. Only in one (large) bank run episode, out of five studied, there is evidence of safe haven perceptions towards foreign branches.

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I. INTRODUCTION

Over the last two decades, foreign banks have markedly increased their participation in emerging markets, raising questions about their potentially stabilizing or destabilizing role during times of financial distress.[1] Most empirical studies in this area have focused on the foreign banks' asset side (i.e., their lending behavior)[2] but little attention has been paid to their liability side. From this perspective, foreign banks could play a stabilizing role in host countries during domestic crises if depositors perceived them as a "safe haven" (i.e., for "flying to quality" within the country's banking system). Various reasons are behind such usual perceptions: foreign banks may be backstopped by their parent banks or suffer less from liquidity shortages as they may have (more stable) internationally diversified funding bases. Foreign banks, however, could also play a destabilizing role as they could provide avenues for capital flight through facilitating access to the foreign bank's international network, or could be more predisposed to pull out from emerging markets in times of distress. Foreign banks' legal structure (branch versus subsidiary) along with the nature of the banking crisis (systemic versus non-systemic) could also determine their stabilizing or destabilizing role, as these factors could affect the degree of parent banks' support as well the depositors desire to fly out of the banking system.

A few papers have analyzed depositors' behavior towards foreign banks, with overall inconclusive results. Barajas et al (2007) find that, after controlling for bank fundamentals and macroeconomic variables, foreign banks actually lost proportionally more deposits than domestic banks during the 2001 bank runs in Argentina. The study, however, focuses only on the 2001 crisis, disregarding other previous banking crisis episodes, and overlooks the legal structure (branch, subsidiary) of foreign banks. Similarly McCandless et al (2003) study the determinants of bank runs during the 2001 Argentine crisis, but pay little or no attention to the role of foreign banks, and their legal form. Goday et al (2005) study depositors' role in exerting market discipline on Uruguayan banks during the 2002 crisis, and find little evidence to support the safe haven hypothesis.[3] For other countries, Kraft and Galac (2006) find that foreign banks were perceived by Croatian depositors as safe havens during the 1998-99 banking crisis. In a more comprehensive cross-country study, Arena et al (2007)

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[1] See, for example, Claessens and Van Horen (2013) for a recent comprehensive survey.

[2] This literature includes recent studies on the transmission of global shocks into the domestic lending activities of foreign banks. These empirical studies on the lending side have found that foreign banks respond to shocks from their home countries (Goldberg 2002 and Martinez Peria et al 2005) but, at the same time, they tend to be more stable lenders than domestic banks of host countries, in particular during periods of financial distress (De Haas and Van Lelyveld 2010 and Cetorelli and Goldberg 2012). See also Goldberg et al (2000); Detragiache and Gupta (2006); De Haas and van Lelyveld (2006, 2010) and Arena et al (2007).

[3] Their study, however, overlooks the exposure of some regional banks operating in Uruguay to Argentina (the neighbor in crisis), which is a key aspect of banks' fundamentals that needs to be controlled for. In addition, the study does not distinguish between resident and non-resident depositors. The latter is also important to avoid a foreign bank bias, as Argentines participating in the Uruguayan system held their deposits mainly with foreign banks, and their withdrawal was mainly a response to home-grown liquidity problems. Levy Yeyati et al (2004) also study market discipline and systemic risk during both the 2001 Argentine and 2002 Uruguayan crises. However, they do not analyze the role of foreign banks, and do not distinguish between resident and non-resident depositors.

indirectly conclude that foreign banks have an advantage over domestic banks in attracting deposits, as their deposit and lending rates tend to be smoother during crisis periods. However, by focusing on annual data, the study overlooks the dynamics of deposits and is not suitable for capturing short-lived bank runs.

This paper sheds light on some of these gaps in the literature, focusing on three relatively un-explored questions related the role of foreign banks from the perspective of the liability side of their balance sheet:

i. Are foreign banks perceived as *safe havens* in host countries during banking crises? That is, do they outperform domestic banks in attracting/retaining deposits, above and beyond what can be explained by differences in bank fundamentals and compensation for risk (i.e., interest paid)?;

ii. Does the legal form (branch versus subsidiary) matter? In theory, foreign branches offer more protection to depositors than foreign-owned subsidiaries since a parent bank is under no legal obligation to honor subsidiary liabilities in excess of the capital invested.

iii. Does the nature of the crisis matter? The attitude of depositors towards foreign banks could be different during systemic and non-systemic banking crises, since the former are more likely to happen together with macroeconomic and political crises, increasing the parent bank's cost of rescuing affiliates, and triggering ring fencing provisions.[4]

We address these questions by studying the behavior of depositors vis-à-vis foreign banks during episodes of financial distress in Argentina over the period 1994-2002, and Uruguay over the period 1999-2002. We have chosen these two countries and periods because of their large foreign bank participation, the local/regional characteristic of the banking crises, and the availability of public bank-level monthly balance sheet data. Another important advantage for our analysis is the fact that parent banks of the foreign banks under study were not significantly affected during the crises under study, with the exception of some foreign regional banks, which we identify and separate from non-regional foreign banks. Moreover, the focus on the Argentinean banking sector during much of the 1990s allows us to study multiple episodes of both systemic and non-systemic bank runs, as well as to compare the performance of domestic- versus dollar-denominated deposits in the context of a currency board.[5] The case of Uruguay is of additional interest, as it allows us to distinguish between the behavior of resident and non-resident depositors (e.g. non-resident deposits represented 40 percent of total deposits at the time of the crisis).

Our results indicate that, although foreign banks may sometimes be perceived as safe havens during domestic bank runs, this is not a general pattern, including after controlling for bank fundamentals and interest rate responses. In fact, we find that only in one out of the five

[5] Argentina introduced a currency board in April 1991, establishing the full convertibility of the domestic currency (pesos) into U.S. dollars and legally precluding the creation of pesos not backed by international reserves, except within a very limited range. The regime was abandoned in January 2002.

cases studied (Argentina, 1995), there is evidence of safe haven perceptions, and only towards foreign branches. At the same time, there is one other episode (Argentina, 2001), when foreign branches actually faced larger deposit withdrawals, even controlling for fundamentals and interest rate responses, possibly indicating different expectations regarding the possible triggering of ring-fencing provisions. Foreign subsidiaries, in turn, do not appear to have been perceived differently in any of the cases.

The structure of the paper is as follows: Section II briefly describes the structure and evolution of the Argentinean and Uruguayan banking systems, the behavior of depositors, and the main macroeconomic developments, during the periods under consideration. Section III presents the econometric methodology and results. Section IV discusses the key conclusions.

II. BACKGROUND

A. Argentina's Banking System

During the period 1994-2001, Argentina's banking sector underwent numerous transformations, consolidating the number of institutions and making considerable improvements in the regulatory framework. Along with these changes, there was a marked increase in the market share of foreign banks. Most of the reforms took place following the 1995 banking crisis and meant that, by late 1998, the Argentine banking industry had been catapulted to a rank of second (after Singapore, and tied with Hong Kong) in terms of the quality of its regulatory environment, according to the World Bank.[6]

During this seven year period, the total number of institutions decreased by about half, from 168 to 83, mostly as a result of numerous merger and acquisitions of cooperative banks and the privatization of several small provincial banks (see Table 1).[7] Simultaneously, the number of foreign-owned institutions increased from 31 banks in November 1994 to 36 banks in November 2001, driven by the rise in the number of foreign-owned subsidiaries. As a result, the increase in market share of foreign banks was substantial, controlling approximately half of the assets of the system towards the last years of the sample.[8]

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[6] See The World Bank 'Argentina. Financial Sector Review'; Report 17864-AR; September 28, 1998.

[7] There were 38 cooperative banks in November 1994 and only 2 in November 2001. The greatest contraction in the number of cooperative banks happened after the 1995 banking crises, mainly through numerous mergers and acquisitions. At end-1995, there were only 10 cooperative banks.

[8] The ownership classification of banks in this paper is based on the nationality of the controlling group (i.e., group with 50 percent or more stock share).

Table 1. Argentina: Structure of the Banking System, November 1994 and November 2001.

	Domestic Institutions				Foreign Institutions						Banking System	
	Public		Private		Branches		Subsidiaries		Regional 3/			
	Nov-94	Nov-01	Nov-94	Nov-01	Nov-94	Nov-01	Nov-94	Nov-01	Nov-94	Nov-01	Nov-94	Nov-01
Number of Banks	33	13	104	34	13	13	11	18	7	5	168	83
Market share												
Share of assets	40.5	30.9	41.4	20.8	10.2	16.5	6.1	31.1	1.8	0.7	100.0	100.0
Share of deposits 1/	31.7	29.6	50.2	19.2	10.3	14.6	6.7	35.9	1.2	0.7	100.0	100.0
Depositor base 1/ 2/												
Residents	97.4	100.0	95.6	97.4	89.3	99.0	97.0	95.9	78.8	99.1	95.4	97.9
Non-residents	2.6	0.0	4.4	2.6	10.7	1.0	3.0	4.1	21.2	0.9	4.6	2.1
Deposit denomination 1/ 2/												
Local-currency	50.5	27.1	43.1	28.7	34.0	32.1	37.3	22.9	36.0	33.9	44.0	26.7
Foreign-currency	49.5	72.9	56.9	71.3	66.0	67.9	62.7	77.1	64.0	66.1	56.0	73.3

Source: Central bank of Argentina and IMF staff estimates.

1/ Based on non-financial private sector deposits.

2/ Percentage of deposits within the same bank group.

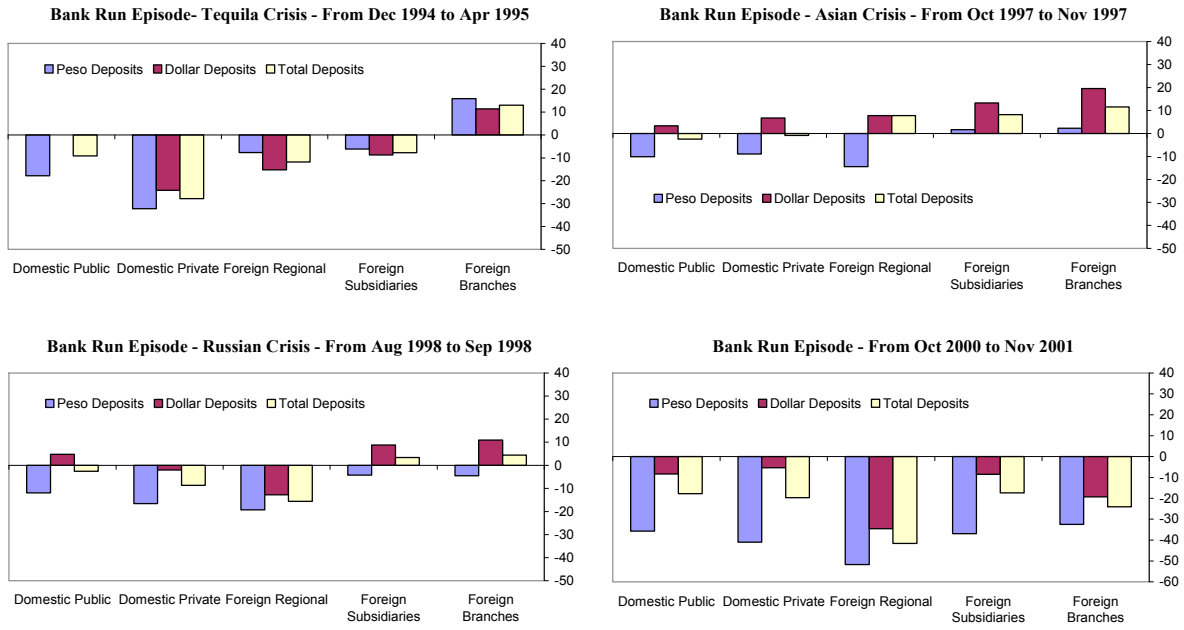
3/ Included both branches and subsidiaries of regional public and private banks.

Argentina's banking system faced four distinct bank run episodes during this period: *December 1994-April 1995* (associated with the Mexican crisis); *October-November 1997* (Asian crisis); *August-September 1998* (Russian crisis); and *October 2000-November 2001* (Argentina's own crisis).[9]

These events had a noticeably different impact on foreign banks compared to domestic banks (see aggregate and bank-level figures in Figure 1 and Annex 1's Figure A, respectively).

Figure 1. Argentina: Deposit Evolution During Bank Runs [a/]

(Private resident non-financial sector's deposits; percent change during selected periods)



Note: a/ Figures are corrected from merger and adquisitions among banks belonging to different ownership groups during each bank run episode.

[9] The methodology section contains more details about the selection of the bank runs episodes. The general rule for identifying a bank run is two or more months when more than one-half of banks are experiencing deposit losses.

The December 1994-April 1995 bank run episode was triggered by agents' fears that Argentina would exit the currency board after Mexico's currency devaluation on December 20, 1994.[10] The run started on peso denominated deposits but spread to dollar deposits soon after. Within four months, resident deposits had fallen by about 16 percent, with almost 90 percent of the banks losing deposits at the peak of the crisis. Interestingly, most foreign branches, especially the largest ones, were able to increase both peso and dollar denominated deposits during this time. Not even a higher increase in interest rates was able to stop the deposit losses of small domestic private banks.

The October-November 1997 and August-September 1998 bank runs followed the Asian crisis—more specifically the first attack on Hong Kong's currency board—and the Russian default, respectively. In the aggregate, both episodes were essentially a run on peso denominated deposits without systemic characteristics, in the sense that the bank system as a whole did not experience a significant change in the level of total deposits. There was only a 1 percent deposit loss during the 1998 bank run, and even a small 2 percent increase in 1997. However, there was again an important redistribution of deposits across banks, with most foreign branches and subsidiaries gaining deposits, at the expense of domestic institutions.

Finally, the more pronounced bank run occurred during October 2000-November 2001. This was a long episode in relative terms, mostly driven by concerns about the sustainability of the currency board. The run was triggered by the resignation of the Argentinean vice-president on October 6, 2000, and ended with the deposit freeze on December 1, 2001.[11] During this period, resident deposits fell by about 20 percent, with more than 80 percent of the banks facing deposit loses. Unlike previous bank runs, foreign banks, especially branches, experienced proportionally higher deposit withdrawals than domestic banks, reaching close to 25 percent of their deposits. Finally, foreign regional banks lost more deposits than any other group, but their market share was very small (less than 1 percent).

B. Uruguay's Banking System

During much of the 1990s and up to the 2002 financial crisis, Uruguay's banking system was perceived as a safe financial hub in Latin America, partly reflecting an implicit and unrestricted government guarantee, a major presence of foreign banks in the system and a strong institutional framework (Uruguay was one of a few Latin American countries with investment grade status). Despite being composed of only 22 banks and 6 cooperatives, the domestic financial system was relatively large, with assets representing about 110 percent of GDP by end-2001.[12] Both foreign banks and public domestic banks had a strong presence in

[10] See Appendix 2 for a more detailed description of the events during each bank run episode.

[11] The banking system continued loosing deposits after November 2001, but this phase is not covered in our analysis given the important distortions introduced by the deposit freeze. Together with the abandonment of the currency board, the Argentine authorities declared a moratorium on payments on their public debts and determined that dollar-denominated loans and deposits would be exchanged into pesos at different rates (1:1 and 1:1.4, respectively). These and other policy responses created large losses in the Argentine banking system. As a result, some foreign banks decided to abandon the countries while other remain in the country, including through injecting new funds to their affiliates.

[12] The offshore system, with 11 banks, accounted for an additional 8 percent of GDP in assets.

the system (Table 2), in the first case reaching about 58 percent market share, including a 10 percent participation of regional banks; and in the second case reaching a 39 percent market share. Unlike Argentina, Uruguay's banking system had a large participation of non-resident depositors—mainly Argentines—accounting for about 40 percent of total deposits at end-2001.[13] Notably, deposits from non-residents were largely concentrated in foreign banks. Indeed, non-residents using the Uruguayan banking system, invested about 77 percent of their funds in foreign banks, 10 percent in local private banks and 13 percent in local public banks; compared to 21 percent, 18 percent and 57 percent respectively for resident depositors. As a result, non-resident deposits accounted for about 60 percent of the depositor base of foreign banks, while accounting for only 5 percent of the depositor base of domestic banks and cooperatives. Another remarkable aspect of the Uruguayan banking system at the time of the crisis was the high degree of dollarization, evidenced in the 91 percent share of foreign currency deposits.

Table 2. Uruguay: Structure of the Banking System 1/

	Domestic Institutions				Foreign Institutions							
	Public		Private		Branches		Subsid.		Regional 2/		Banking System	
	Dec-99	Dec-01	Dec-99	Dec-01	Dec-99	Dec-01	Dec-99	Dec-01	Dec-99	Dec-01	Dec-99	Dec-01
Number of Banks	4	3	8	6	5	5	10	9	6	5	33	28
Market share												
Share of assets	48.7	39.2	1.9	2.3	12.9	15.4	23.1	27.1	13.3	16.0	100.0	100.0
Share of deposits 3/	46.5	39.4	2.4	2.3	14.4	15.0	21.3	26.6	15.4	16.8	100.0	100.0
Depositor base 3/ 4/												
Residents	91.8	86.4	99.8	95.5	47.5	43.3	59.4	43.7	25.8	30.7	68.6	59.5
Non-residents	8.2	13.6	0.2	4.5	52.5	56.9	40.5	56.4	74.4	69.2	31.3	40.5
Deposit currency structure 3/ 4/												
Local-currency	17.0	12.5	33.2	28.3	9.2	7.1	11.2	6.6	4.9	4.1	13.1	9.0
Foreign-currency	83.0	87.5	66.8	71.7	90.8	92.9	88.8	93.4	95.1	95.9	86.9	91.0

Source: Central bank of Uruguay and IMF staff estimates.

1/ Excluding offshore and non-bank financial institutions.

2/ Includes both branches and subsidiaries of regional private and public banks.

3/ Based on non-financial private sector deposits.

4/ Percentage of deposits within the same bank group.

Starting in 1999, a number of adverse shocks—including the devaluation of Brazil's real, the recession in Argentina and an outbreak of foot-and-mouth disease—brought the economy to a recession. Still, up until 2001, confidence in the Uruguayan banking system remained stable. Furthermore, as the crisis in Argentina developed, Uruguay was able to attract a large volume of deposits from Argentines. In the first quarter of 2002, however, public confidence in the Uruguayan banking system began to erode at the time that cash-strapped Argentine depositors, unable to access their accounts in Argentine banks (following a deposit freeze in December 2001 and pesification in early 2002), started withdrawing their funds from Uruguay. Soon after, the crisis spread to Uruguayan residents.[14]

The 2002 financial crisis that followed had an enormous impact on the Uruguayan financial system, leading to the bankruptcy of many institutions and an unprecedented bank run, which

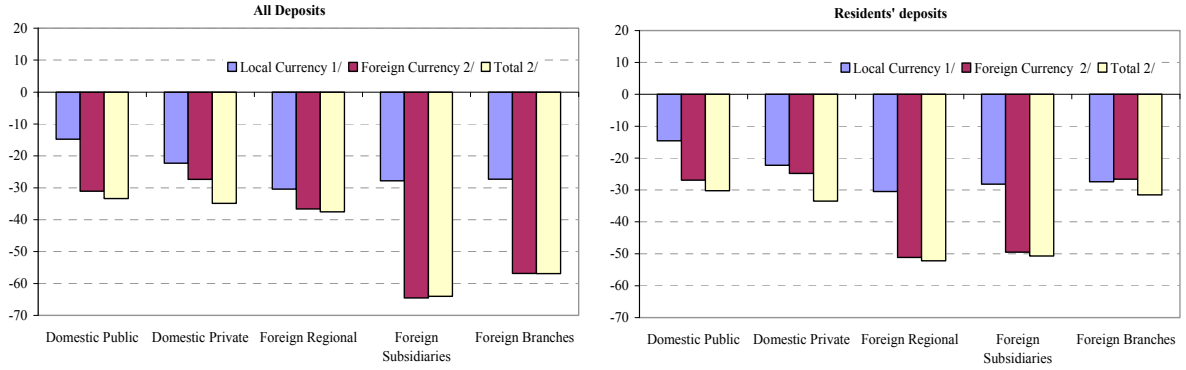
[13] This figure partly reflects the large capital flight from Argentina during the 2001 financial crisis. However, non-resident deposits were significant even before that episode, for example reaching 31 percent of the system at end-1999.

[14] See Appendix 3 for a detailed description of the events that lead to the 2002 financial crisis.

resulted in a loss of about 46 percent of total deposits of the system in a period of only seven months (December 2001-July 2002).

However, while all banks were affected in one way or another, the extent of the deposit run was not homogenous across them (see aggregate and bank-level figures in Figure 2 and Annex 1's Figure B, respectively). A first glance at the data shows that private domestic banks faced deposit losses of about 27 (22) percent of foreign (local) currency deposits, while foreign banks experienced substantially larger deposit losses, averaging 54 (28) percent. Further, in the aggregate (including resident and non-residents deposits) non-regional foreign affiliates were most affected, with subsidiaries and branches experiencing foreign-currency deposit losses of 65 and 57 percent, respectively. Regional foreign banks, public domestic banks and cooperatives were also largely affected, although deposit losses were significantly lower.

Figure 2. Deposit Evolution During 2002 Bank Run in Uruguay
(Private non-financial sector deposits; percent change)



Note: 1/ In Uruguayan pesos; 2/ In US dollar terms.

However, these statistics mask the effect of the deposit run by non-residents, which were mainly concentrated in foreign banks.[15] When excluding non-resident deposits, the picture changes significantly. Most noticeable is the fact that deposit losses of foreign branches were very much in line with those of domestic (public and private) banks—at around 30 percent—and quite lower than those of subsidiaries (51 percent), possibly suggesting that depositors were able to discriminate among foreign banks according to their legal structure and their different embedded risks. Finally, regional institutions were the most affected, with losses averaging 52 percent of deposits, possibly reflecting their exposure to Argentine risk (many of the owned by Argentinean banks) and some idiosyncratic solvency issues.[16]

The patterns of deposit withdrawals across the different episodes in Argentina and Uruguay suggest that foreign banks may have played a stabilizing role in some episodes of local financial stress, but such role may have varied depending on the nature of the crisis as well as the legal structure of those banks. However, these patterns could reflect, at least in part,

[15] Arguably, the behavior of non-resident depositors was driven primarily by exogenous factors (i.e., developments in Argentina) and less so by bank fundamentals or ownership type.

[16] Rumors of fraudulent activities by a regional bank were one of the key factors that fueled the deposit run.

differences in the strength of bank balance sheets across groups. Disentangling whether foreign banks (and their different legal forms) played a stabilizing role because of safe haven perceptions or because of differences in fundamentals requires controlling for such differences. This is performed in the next section.

III. Econometric Exercise

Our goal is to assess whether the patterns of deposit flows vis-a-vis foreign banks described above reflected safe haven perceptions. This requires controlling for bank fundamentals (as institutions with stronger balance sheets would naturally retain more deposits, independently of their ownership type) as well as interest rate responses (as different institutions may have reacted differently to prevent deposit losses).

A. Methodology

Following the literature on market discipline, the behavior of depositors vis-à-vis different types of banks during bank run episodes is explored through bank-level panel data estimations of the following equation:

$$y_{i,t} = y_{i,t-1}\alpha + \mathbf{i}'_{i,t}\beta + \mathbf{f}'_{i,t}\boldsymbol{\gamma} + \mathbf{m}'_t\boldsymbol{\delta} + \mathbf{d}_i^{o\prime}\boldsymbol{\theta} + \varepsilon_{i,t} \quad (1)$$

where *i* is the bank and *t* is the month; $y_{i,t}$ is the monthly change in total resident deposits; $i_{i,t}$ is the (implicit) average interest paid by each bank, and it captures the bank's endogenous response to retaining or attracting deposits; $\mathbf{f_{i,t}}$ is a vector of bank level fundamentals that capture banks' asset quality, liquidity, profitability, capitalization levels, size as well as banks' exposure to exchange rate and sovereign risk (see Tables A and B in Appendix 1 for a description and the definition of each variables in Argentina and Uruguay, respectively);[17] $\mathbf{m_t}$ is a vector of macroeconomic variables, including measures of devaluation expectations and country risk, meant to capture systemic risks. Finally, $\mathbf{d}_i^o$ is a vector of bank-ownership dummy for public banks, foreign branches, foreign subsidiaries, or foreign regional banks. These dummies—which capture differences in bank-ownership and legal structure—are our variables of main interest, as they are a proxy for the unobserved characteristics of foreign banks, such as safe haven perceptions. See Tables C and D in Appendix 1 for summary statistics.

Equation (1) is estimated using the system linear generalized method of moments (GMM), also known as Arellano-Bover/Blundell-Bond GMM estimator. This estimation method is well suited for our objectives, since it is designed to efficiently estimate the effect of time-invariant variables (e.g. ownership characteristics), while allowing for right-hand side variables that are not strictly exogenous, such as the banks' interest rates.[18]

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[17] Three-month lags are used in order to incorporate the delays in publication of bank-level data in both countries. Using shorter lags does not change the conclusion of the analysis.

[18] For more details on System GMM see Roodman (2007).

The analysis of depositor behavior during bank runs is carried over the period December 1994-November 2001 in Argentina, and December 2001-July 2002 in Uruguay. Bank run episodes are defined as the periods when there are two or more months of deposit losses in the banking system, or when more than one-half of the banks were losing deposits. Based on these rules we study the previously mentioned 4 bank run episodes in Argentina and 1 in Uruguay. The criteria of two or more months with a decrease in the banking system deposits identifies 3 bank runs periods in Argentina (Dec 94–Apr 95, Oct 98–Nov 98, and Sep 01–Nov 01) and one in Uruguay (Dec 01–July 02). Based on the criterion that more than one-half of the banks were losing deposits, we select the same 4 previous episodes and the period Oct 97–Sep 97 in Argentina. This latter period was characterized by an important redistribution of deposits in the system.

The distinction between systemic and non-systemic deposit bank runs is established through the size of the bank run; specifically a drop in deposits of more than one standard deviation during the entire bank run period was classified as a systemic bank run. The December 94–April 95 and September 00–November 01 episodes in Argentina, and the December 01–July 02 episode in Uruguay are identified as systemic bank runs.

B. Regression Results

Argentina

Table 3 reports the results of the system GMM estimations for the different episodes in Argentina. The different between the two columns for each episode is based on the inclusion or not of the interest rate response. Robust standard errors are reported. The results can be summarized as follows:

First, there is evidence that, even after controlling for bank characteristics, foreign branches and foreign regional banks were less affected than other banks during the Tequila bank run. This suggests that depositors perceived these foreign institutions as safe havens. However, these perceptions do not seem to have been significant during the two non-systemic bank runs, and even had the opposite effect during the 2001 systemic episode. In particular, while estimations indicate that the foreign branch dummy is positive both for the Tequila crisis and for the non-systemic bank runs, they are only statistically significant in the first case. The results also highlight that the gain in deposits by foreign subsidiaries and branches during most bank runs, as explored in the previous descriptive section, can be explained by bank characteristics in all cases for foreign subsidiaries and in many cases for foreign branches.[19] However, during the 2001 systemic episode, depositors' attitudes towards foreign banks, especially foreign branches, seem to indicate that they withdrew deposits proportionally more from foreign branches than from other banks, after controlling for bank fundamentals. This latter phenomenon could be explained in two potential ways. Branches might have facilitated the capital flight more easily than other banks, in the face of a systemic crisis. Alternatively, this result may reflect depositors anticipating the possible triggering of foreign branches' ring fencing provisions. Unfortunately, we do not have data to explore if any of these two potential explanations are relevant.

[19] The lack of evidence about the safe haven perceptions seems to be at least partially explained by higher interest rates paid by foreign banks (see Figure A in Appendix 1), especially during the Asian crisis.

Table 3. Argentina: Resident Depositors' Reaction During Bank Runs 1/

Variables	Systemic Bank Runs				Non-systemic Bank Runs			
	Tequila Crisis 2/ (Dec 94- Apr 95)		2001 Crisis (Sep 00- Nov 01)		Asian Crisis (Oct 97- Nov 97)		Russian Crisis (Aug 98- Sep 98)	
Percent Change in Deposits (t-1)	-0.0814	-0.0941	0.263**	0.351***	-0.136	-0.0576	-0.399***	-0.402***
	(0.0881)	(0.0913)	(0.116)	(0.131)	(0.155)	(0.166)	(0.0370)	(0.0371)
Return/Assets (t-3)	-1.038***	-1.118***	-0.160	-0.195	0.105	0.00102	1.582*	1.362*
	(0.358)	(0.369)	(0.119)	(0.134)	(0.469)	(0.449)	(0.887)	(0.718)
Non-Performing Loans/Total Loans (t-3)	0.0199	0.0236	-0.128***	-0.132**	-0.187	-0.194	0.694*	0.837*
	(0.0138)	(0.0144)	(0.0450)	(0.0557)	(0.260)	(0.196)	(0.369)	(0.447)
Capital/Assests (t-3)	0.0429	0.0254	-0.0418	-0.0494	0.100	0.0329	0.0200	-0.0563
	(0.152)	(0.162)	(0.0830)	(0.0795)	(0.159)	(0.169)	(0.413)	(0.351)
Log of Assets (t-3)	0.414**	0.403**	0.00552	0.00284	0.00521	0.0119	-0.00299	-0.0140
	(0.207)	(0.196)	(0.00383)	(0.00409)	(0.0101)	(0.0103)	(0.0260)	(0.0276)
Exposure to Exchange Rate Risk (t-3)	-0.203	-0.219	-0.00215***	-0.00263***	-0.00391	-0.000755	-0.0190	-0.0189
	(0.136)	(0.138)	(0.000694)	(0.000677)	(0.00715)	(0.00701)	(0.0182)	(0.0180)
Exposure to Sovereign Risk (t-3)	0.00389	0.00446	-0.172***	-0.182***	-0.0416	0.0102	-0.109	-0.108
	(0.00474)	(0.00492)	(0.0473)	(0.0509)	(0.0984)	(0.0990)	(0.217)	(0.192)
Liquidity/Assets (t-3)	1.488***	1.555***	0.443***	0.284*	0.137	-0.0831	-0.416	-0.430
	(0.218)	(0.245)	(0.144)	(0.149)	(0.291)	(0.235)	(0.594)	(0.551)
Exchange Rate Risk (t)	-0.00725***	-0.00804***	-0.0143***	-0.0109***	0.00518	0.00513	-0.0199***	-0.0172**
	(0.00269)	(0.00275)	(0.00163)	(0.00172)	(0.00697)	(0.00672)	(0.00720)	(0.00709)
Public Banks (dummy)	0.0158	0.0428	0.0196	0.0270*	0.0528	0.0756	-0.0841	-0.129
	(0.0520)	(0.0521)	(0.0148)	(0.0141)	(0.0827)	(0.0630)	(0.0656)	(0.0965)
Foreign Branch (dummy)	0.160**	0.185***	-0.0425**	-0.0423**	0.0517	0.0450	0.222	0.171
	(0.0636)	(0.0600)	(0.0206)	(0.0199)	(0.0878)	(0.0882)	(0.158)	(0.143)
Foreign Subsidiary (dummy)	0.00768	0.0287	-0.0224	-0.0168	0.0423	0.0122	0.0795	0.110
	(0.138)	(0.128)	(0.0137)	(0.0142)	(0.0370)	(0.0437)	(0.0913)	(0.0834)
Foreign regional (dummy)	0.343**	0.408**	-0.00959	-0.0190	-0.0484	-0.00852	0.0634	0.0405
	(0.164)	(0.192)	(0.0241)	(0.0261)	(0.125)	(0.116)	(0.0632)	(0.0512)
Interest Rate on Deposits (t)		0.00671		-0.00650***		0.0144**		-0.0163
		(0.00559)		(0.00212)		(0.00731)		(0.0122)
Observations	538	536	967	966	190	190	168	168
Number of Banks	138	137	66	66	95	95	84	84
Arrellano Bond test for AR (2)	0.33	0.32	0.46	0.59	0.46	0.87	0.65	0.60
Hansen Test	0.32	0.49	1.00	1.00	0.80	0.24	0.42	0.50

1/ This table reports Arellano-Bover regressions with robust standard errors of the change of resident deposits on bank fundamentals, deposit interest rates, exchange rate risk, and bank dummy variables. A constant and time dummies are estimated but not reported.
2/ Due to data limitations a one month lag is used instead of three-months lag.

Second, devaluation expectations played a key role in depositors' withdrawal decisions over most analyzed bank runs.[20] This evidence concurs with the literature findings in the analysis of the 2001 bank run by Levi Yeyati et al (2004) and Barajas et al (2007), and extends these findings to previous bank runs periods.

Third, bank fundamentals and bank-level variables generally seem to have the expected signs, but they are most significant in the case of the 2001 systemic bank run. It is worthwhile to highlight that public banks seem to have benefited from significant positive depositors' perceptions during the 2001 bank run. Similarly, larger banks seem to have been perceived as too big to fail in the 1995 bank run.

[20] Country risk was not included in the final estimations because this series is highly correlated with devaluation expectations. The inclusion of country risk does not alter the other variables' results.

Finally, the lag coefficient of the dependent variable being negative and statistically significant during the non-systemic 1998 bank run seems to indicate some level of overshooting on the adjustment on bank deposits even during the bank run period (e.g. capturing differences in interest rates beyond the average control rates used). Instead, the lag coefficient of the dependent variable is positive and statistically significant during systemic 2001 bank run. This could reflect the longer nature of the episode, and the fact that concerns about the sustainability of the currency board grew over time.

Uruguay

Table 4 presents the results for Uruguay. Most of the coefficients related to bank fundamentals have the expected sign (or are statistically insignificant). Aggregate risks related to exchange rate risk appear to have been mayor common factors driving deposit withdrawals. As before, the lag coefficient of the dependent variable indicates some level of overshooting on the adjustment on bank deposits even after controlling for interest rates.

Table 4. Uruguay: Resident Depositors' Reaction During 2002 Bank Run 1/

	Without interest rate reaction		Inc. interest rate reaction	
	Total Deposits	FC Deposits	Total Deposits	FC Deposits
	(Jan 02- July 02)		(Jan 02- June 02)	
Percent Change in Deposits (t-1)	-0.399***	-0.389***	-0.380***	-0.388***
	(0.073)	(0.069)	(0.071)	(0.063)
Return/Assets (t-3)	0.214**	0.118	0.208*	0.117
	(0.105)	(0.103)	(0.107)	(0.102)
Non-Performing Loans/Total Loans (FD, t-3)	-0.608+	-0.629+	-0.498	-0.607
	(0.388)	(0.422)	(0.430)	(0.463)
Capital/Assests (t-3)	0.056	0.188	-0.003	0.114
	(0.221)	(0.230)	(0.206)	(0.223)
Log of Assets (t-3)	1.200	1.127	0.856	0.596
	(1.744)	(1.795)	(1.711)	(1.820)
Exposure to Sovereign Risk (t-3)	0.255	0.187	0.231	0.248
	(0.437)	(0.516)	(0.455)	(0.541)
Exposure to Exchange Rate Risk (t-3)	0.164	0.188+	0.154	0.152
	(0.121)	(0.129)	(0.130)	(0.135)
Liquidity/Assets (t-3)	-0.184+	-0.173	-0.151	-0.151
	(0.113)	(0.123)	(0.105)	(0.112)
Sovereign Risk (t)	0.010	0.016*	0.012	0.019+
	(0.009)	(0.009)	(0.010)	(0.012)
Exchange Rate Risk (t)	-0.665**	-0.854**	-0.707**	-0.921**
	(0.303)	(0.333)	(0.332)	(0.408)
Public Banks (dummy)	0.003	0.013	0.027	0.028
	(0.046)	(0.048)	(0.049)	(0.049)
Foreign Branch (dummy)	-0.010	0.010	0.013	0.026
	(0.043)	(0.044)	(0.044)	(0.042)
Foreign Subsidiary (dummy)	-0.028	-0.025	-0.014	-0.012
	(0.033)	(0.031)	(0.040)	(0.039)
Foreign regional (dummy)	-0.060*	-0.046	-0.038	-0.037
	(0.035)	(0.038)	(0.041)	(0.040)
Interest Rate on Deposits (t)	…	…	0.080	0.113
	…	…	(0.258)	(0.254)
Observations	114	114	114	114
Number of Banks	19	19	19	19
Arrellano Bond test for AR (2)	0.37	0.40	0.50	0.47
Hansen Test	1.00	1.00	1.00	1.00

1/ This table reports Arellano-Bover regressions with robust standard errors of the percentage change of resident deposits on bank fundamentals, deposit interest rates, exchange rate risk, and bank dummy variables. A constant is estimated but not reported. Standard errors are in brackets. +, *, **, *** mean significance at 15, 10, 5 and 1% respectively. For more description of the data see Appendix Table 1.D.

The results suggest that, after controlling for banks' fundamentals, there is no safe haven perception vis-a-vis foreign banks. The estimated coefficients for these banks are statistically insignificant, both for branches and subsidiaries.[21] Coupled with the unconditional evidence presented in Figure 2, these results suggest that the larger withdrawals faced by foreign subsidiaries (relative to domestic private banks) can be explained by weaker fundamentals. Foreign branches, on the other hand, show similar performance relative to domestic private banks, both unconditionally and controlling for fundamentals.

IV. CONCLUSIONS

Our analysis indicates that, while there is a commonly held view that depositors often 'fly to (foreign bank) quality' in times of domestic financial distress, this is not the case in all domestic crises, including after controlling for bank fundamentals and interest rate responses. In fact, we find that only in one out of the five cases studied (Argentina, 1995), there is evidence of safe haven perceptions, and only towards foreign branches, while in one other episode (Argentina, 2001) foreign branches actually faced larger deposit withdrawals. Foreign subsidiaries do not appear to have been perceived differently in any of the cases either. Overall, the results suggest that favoring the entry of foreign branches over foreign subsidiaries may not be warranted from a safe haven perspective only.

[21] Although subsidiaries have consistently negative values while branches have consistently positive values.

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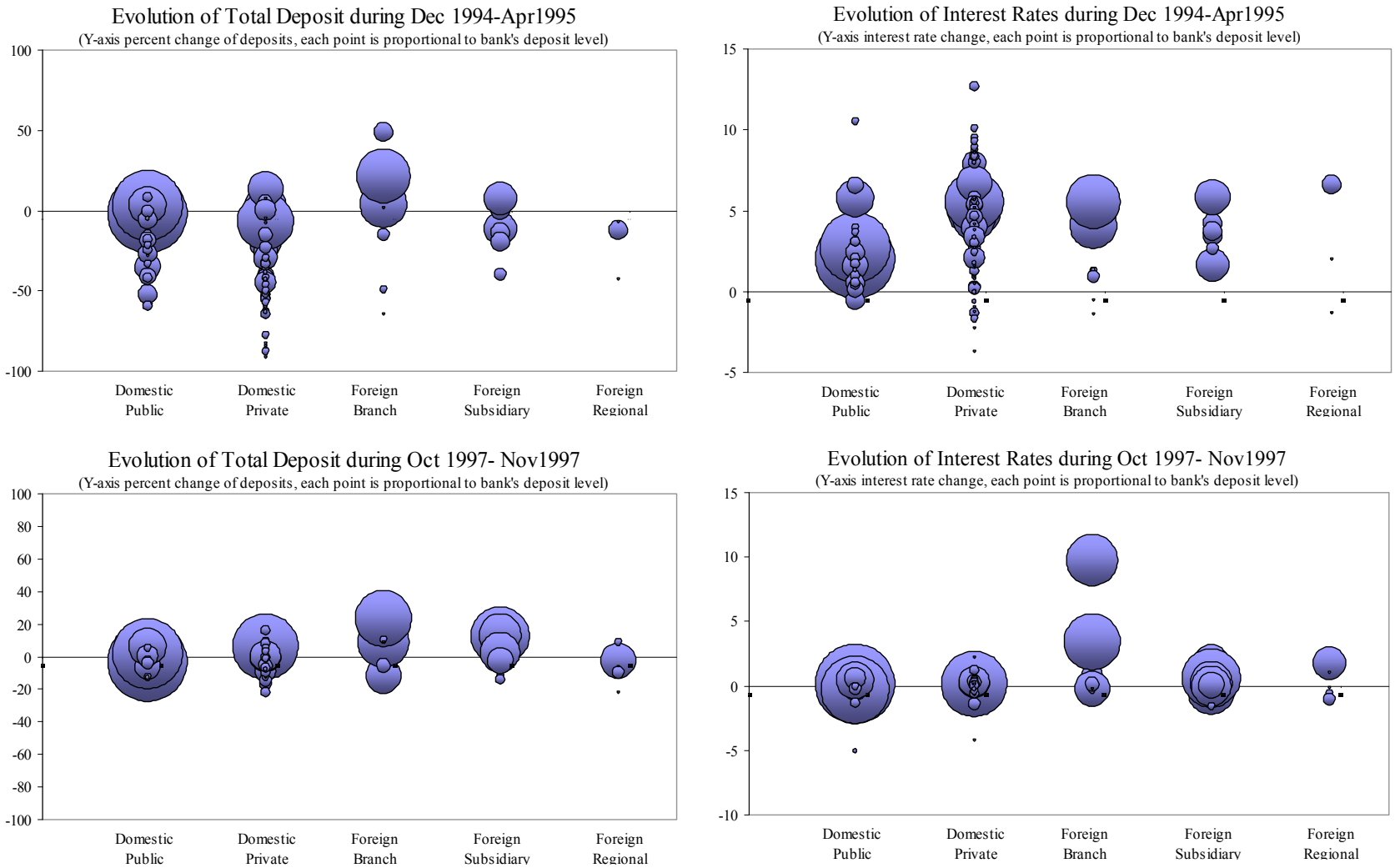
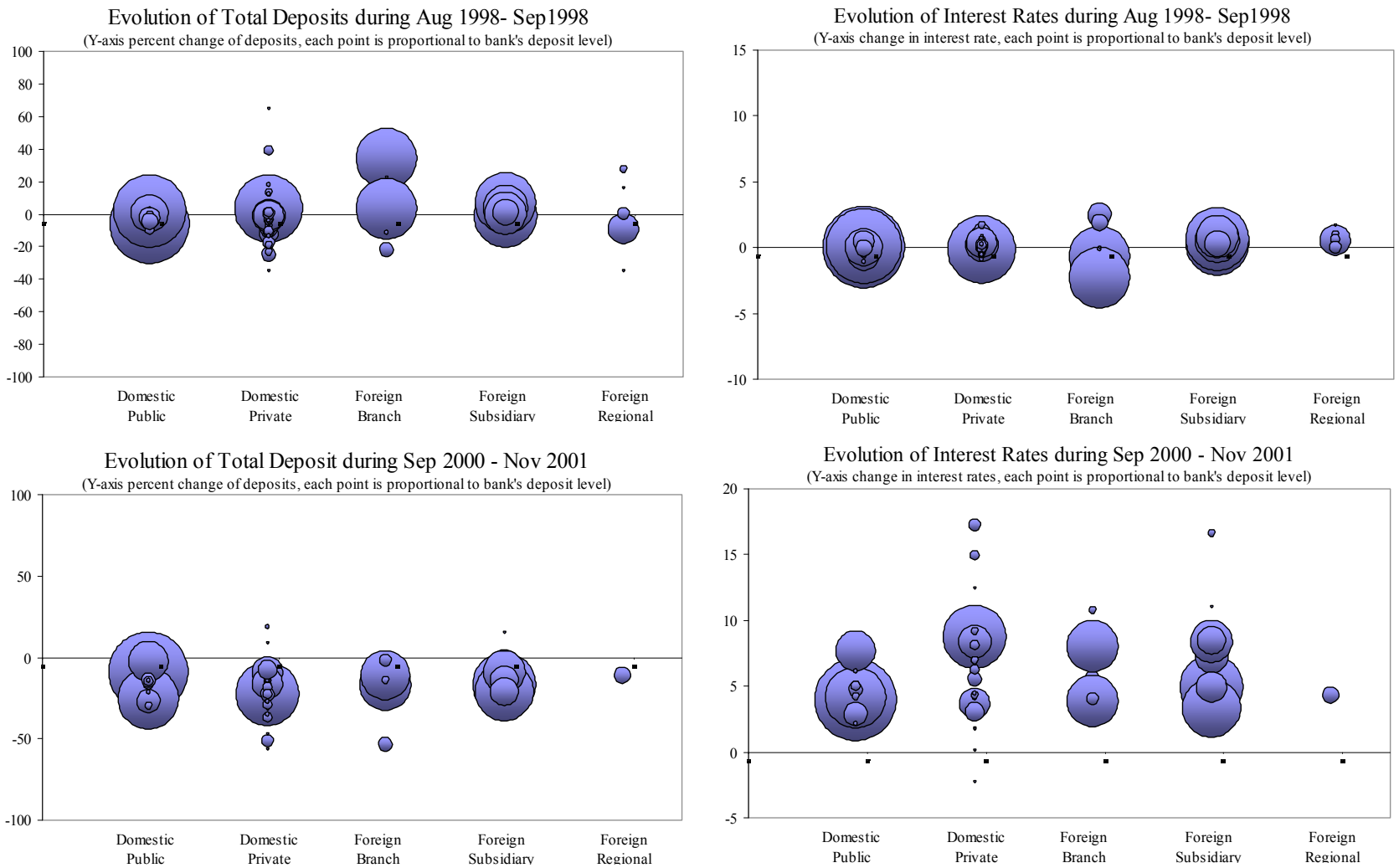
Appendix 1 – Figure A

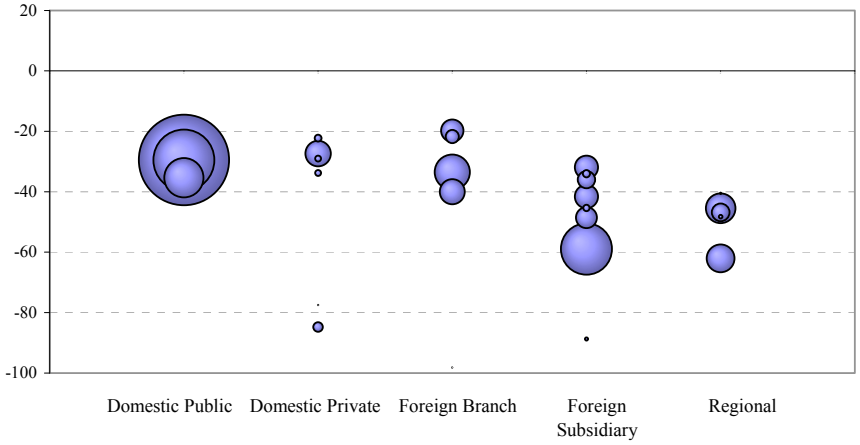


Appendix 1 – Figure A (Continuation)

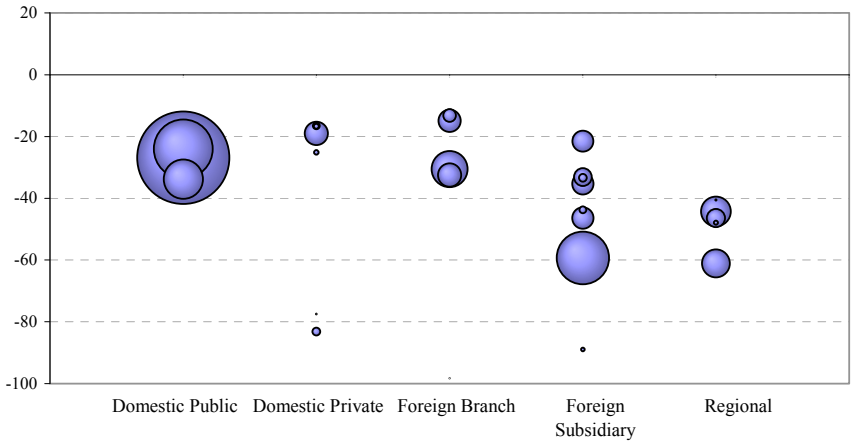


Appendix 1 – Figure B

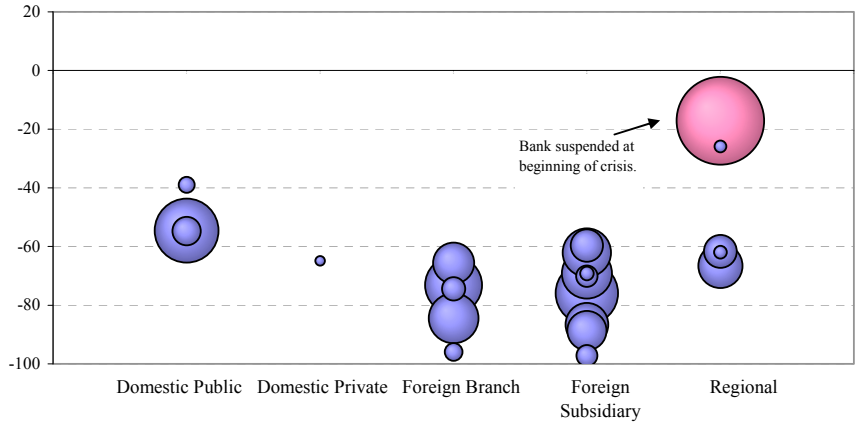
Evolution of Resident Deposits during 2002 Bank Run
(Y-axis precent change of deposits, point size proportional to bank's deposits)



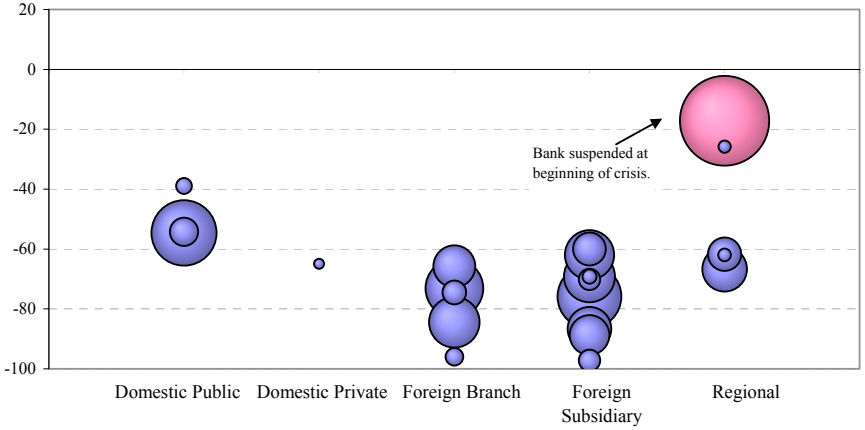
Evolution of FC Resident Deposits during 2002 Bank Run
(Y-axis precent change of deposits, point size proportional to bank's deposits)



Evolution of Non-Resident Deposits during 2002 Bank Run
(Y-axis precent change of deposits, point size proportional to bank's deposits)



Evolution of FC Non-resident Deposits during 2002 Crisis
(Y-axis precent change of deposits, point size proportional to bank's deposits)



Appendix 1-Table A. Argentina. Data description

Variable	Source	Description
Bank-level series		
Resident deposits	Central Bank of Argentina (BCRA)	Private non-financial sector deposits by residents (sight, saving and time deposits).
Liquidity	BCRA	Liquid assets over total assets
Interest rate on deposits	BCRA	Weighted average of dollar and pesos implicit interest rate. Implicit interest rates in each currency are calculated as charges for deposits over stock of deposits.
Return on Assets	BCRA	Net income over total assets.
Non-Performing Loans	BCRA	Non-performing loans over total loans.
Capital	BCRA	Equity over total assets.
Exposure to exchange rate Risk	BCRA	Loans in US dollars over equity [same definition as Levy-Yeyati et al (2007)].
Exposure to Sovereign Risk	BCRA	Bonds of- and loans to the government, as a share of bank's total assets
Log of Assets	BCRA	Natural logarithm of Banks assets (measure of banks' size)
Domestic Public Dummy	Bankscope, Bankers' Almanac, and BCRA	Domestic state-owned (majority) bank.
Domestic Private Dummy	Bankscope, Bankers' Almanac, and BCRA	Bank controlled by private domestic shareholders.
Foreign Subsidiary dummy	Bankscope and Bankers' Almanac	Subsidiary controlled by foreign shareholders from outside Latin America.
Foreign Branch dummy	Bankscope and Bankers' Almanac	Bank branch from a foreign bank incorporated outside Latin America..
Regional dummy	Bankscope and Bankers' Almanac	Foreign bank (subsidiary or branch) controlled by shareholders from Latin America.
Size	BCRA	Log of total bank assets.
Macro series		
Exchange rate risk	BCRA	Difference between average domestic currency and foreign currency deposit rates (for time deposits).
Sovereign Spread	JP Morgan	Spreads on Argentine sovereign bonds over comparable US bonds (EMBI +)

Appendix 1-Table B. Uruguay. Data description

Variable	Source	Description
Bank-level series		
Dollar deposits	Central Bank of Uruguay (BCU)	Private non-financial sector dollar-denominated deposits (sight, saving and time deposits).
Peso Deposits	BCU	Private non-financial sector peso-denominated deposits (sight, saving and time deposits).
Liquidity	BCU	Liquid assets plus government bonds over total assets
Interest rate on dollar deposits	BCU	Implicit interest rate: Charges on dollar time deposits over average monthly stock of dollar time deposits.
Interest rate on peso deposits	BCU	Implicit interest rate: Charges on peso deposits over average monthly stock of peso time deposits.
Non-Performing Loans	BCU	Non-performing loans over total loans.
Capital	BCU	Equity over total assets.
Return on Assets	BCU	Net income over total assets.
Return on Equity	BCU	Net income over equity.
Non-resident exposure	BCU	Non-residents deposits over total deposits.
Foreign exchange exposure	BCU	Dollar loans over total assets.
Sovereign Risk exposure	BCU	Bonds of- and loans to the government, as a share of bank's total assets
Domestic Public Dummy	Bank's Almanac and BCU	Domestic state-owned (majority) bank.
Domestic Private Dummy	Bank's Almanac and BCU	Bank or cooperative with private domestic share majority holder.
Foreign Subsidiary dummy	Bank's Almanac and BCU	Foreign bank subsidiary.
Foreign Branch dummy	Bank's Almanac and BCU	Foreign bank branch.
Regional dummy	Bank's Almanac and BCU	Foreign (public or private) bank with majority of regional capital.
Size	BCU	Log of total bank assets.
Macro series		
Exchange rate risk	BCU	[Difference between average local currency and foreign currency deposit rate (for time deposits with maturity between 1 and 6 months).]
Sovereign Spread	República AFAP (Uruguay)	Uruguayan Bond Index (UBI): Spread between Uruguayan bond yield and benchmark U.S. bond.

Appendix 1 - Table C - Summary Statistics

Tequila Crisis (Dec 94 - Apr 95)	Obs	Mean	Std. Dev.	Min	Max
Change in Deposits	684	-0.08	0.17	-0.75	2.08
Liquidity	684	0.10	0.06	0.00	0.39
Return on Assets	676	-0.01	0.04	-0.26	0.10
Capital	684	0.17	0.09	-0.09	0.76
Log of Assets	684	12.21	1.37	8.69	16.38
Exposure to Sovereign Risk	684	0.33	0.13	0.04	0.79
Exposure to Exchange Rate Risk	684	2.65	1.78	-12.96	8.56
Non-Performing Loans	684	0.16	0.15	0.00	0.92
Interest Rate on Deposits	677	9.53	3.60	0.81	26.88
Exchange Rate Risk	684	5.92	2.36	3.41	9.47
Public Banks	684	0.18	0.39	0.00	1.00
Foreign Branch	684	0.02	0.15	0.00	1.00
Foreign Subsidiary	684	0.07	0.25	0.00	1.00
Foreign regional	684	0.05	0.22	0.00	1.00

Asian Crisis (Oct 97 - Nov 97)	Obs	Mean	Std. Dev.	Min	Max
Change in Deposits	192	0.00	0.07	-0.23	0.32
Liquidity	192	0.08	0.04	0.00	0.22
Return on Assets	190	0.00	0.04	-0.15	0.24
Capital	192	0.13	0.10	-0.02	0.54
Log of Assets	192	12.86	1.46	9.77	16.53
Exposure to Sovereign Risk	192	0.44	0.18	0.05	0.96
Exposure to Exchange Rate Risk	192	2.50	1.85	-7.65	8.25
Non-Performing Loans	192	0.13	0.13	0.00	0.77
Interest Rate on Deposits	192	5.76	2.24	0.65	16.16
Exchange Rate Risk	192	1.61	0.78	0.83	2.38
Public Banks	192	0.17	0.37	0.00	1.00
Foreign Branch	192	0.05	0.22	0.00	1.00
Foreign Subsidiary	192	0.09	0.29	0.00	1.00
Foreign regional	192	0.15	0.35	0.00	1.00

Russian Crisis (Aug 98 - Sep 98)	Obs	Mean	Std. Dev.	Min	Max
Change in Deposits	168	-0.01	0.10	-0.46	0.51
Liquidity	168	0.08	0.05	0.00	0.24
Return on Assets	168	0.00	0.03	-0.27	0.13
Capital	168	0.13	0.10	0.02	0.51
Log of Assets	168	13.05	1.57	9.85	16.69
Exposure to Sovereign Risk	168	0.45	0.19	0.07	0.94
Exposure to Exchange Rate Risk	168	2.59	1.72	0.03	10.10
Non-Performing Loans	168	0.12	0.12	0.00	0.81
Interest Rate on Deposits	168	5.75	1.98	0.44	11.10
Exchange Rate Risk	168	1.82	0.75	1.07	2.56
Public Banks	168	0.18	0.38	0.00	1.00
Foreign Branch	168	0.07	0.26	0.00	1.00
Foreign Subsidiary	168	0.08	0.28	0.00	1.00
Foreign regional	168	0.14	0.34	0.00	1.00

2001 Crisis (Sep 00 - Nov 01)	Obs	Mean	Std. Dev.	Min	Max
Change in Deposits	967	-0.02	0.12	-1.00	1.39
Liquidity	967	0.08	0.05	0.00	0.26
Return on Assets	967	0.00	0.04	-0.34	0.12
Capital	967	0.14	0.10	0.00	0.65
Log of Assets	967	13.26	1.70	10.06	16.74
Exposure to Sovereign Risk	967	0.43	0.16	0.10	1.00
Exposure to Exchange Rate Risk	967	2.41	4.68	-82.54	23.95
Non-Performing Loans	967	0.14	0.11	0.00	0.78
Interest Rate on Deposits	966	8.36	3.48	0.59	28.93
Exchange Rate Risk	967	5.60	4.96	0.40	18.22
Public Banks	967	0.17	0.38	0.00	1.00
Foreign Branch	967	0.03	0.17	0.00	1.00
Foreign Subsidiary	967	0.12	0.33	0.00	1.00
Foreign regional	967	0.16	0.37	0.00	1.00

Appendix 1 - Table D - Summary Statistics

Uruguay (Jan-July 02)	Obs	Mean	Std. Dev.	Min	Max
Change in Deposits	114	-0.06	0.10	-0.75	0.12
Change in Deposits (FC)	114	-0.05	0.11	-0.80	0.17
Return on Assets	114	-0.04	0.16	-1.61	0.27
Capital	114	0.07	0.09	-0.68	0.33
Assets	114	0.20	0.01	0.17	0.22
Non-Performing Loans	114	0.19	0.12	0.05	0.52
Exposure to Sovereign Risk	114	0.01	0.02	0.00	0.12
Exposure to Exchange Rate Risk	114	0.39	0.13	0.02	0.60
Liquidity	114	0.32	0.25	0.04	2.23
Domestic Public	114	0.16	0.37	0.00	1.00
Foreign Branch	114	0.21	0.41	0.00	1.00
Foreign Subsidiary	114	0.32	0.47	0.00	1.00
Foreign Regional	114	0.16	0.37	0.00	1.00

Appendix 2 - Argentina - Chronology of main events

Dec 1994 — Apr 1995: Systemic Bank Run (Tequila Crisis)

On December 20th, 1994, Mexico devalued its currency. Investors and the public at large feared that a devaluation of Argentina's domestic currency would follow the Mexican devaluation. This sense of uncertainty was soon reinforced by the upcoming Argentine presidential elections of May 14th, 1995. Two phases can be identified: (i) depositors mostly ran on peso-denominated deposits during December 1994 and January 1995. Dollar-denominated deposits increased but not enough to compensate the important fall in peso-denominated deposits; (ii) both peso and dollar-denominated deposits decreased sharply during February to April 1995. Although 9 banks closed their doors (5 banks were suspended by the Central Bank and 4 were absorbed by other banks), they represented less than 1.60 percent of the total assets of the banking sector.

Oct 1997 — Nov 1997: Non-systemic Bank Run (Asian Crises)

Although the Asian crisis started in July 1997 after the currency devaluation implemented by Thailand, Malaysia, and Indonesia, the first consequence that can be observed in Argentina was after the First Attack on the Hong Kong dollar on October 23rd. Hong Kong had implemented a currency board similar to the Argentinean one, hence economic agents worried again about the sustainability of the Argentinean system. During this bank run, there was a fall in peso-deposit 5 percent, which was offset by a 9 percent increase in dollar denominated deposits. Hence, at the end of November 1997, dollar deposits represented 58 percent of total deposits. Two banks were suspended (and then revoked) by the Central Bank. Nevertheless, they represented less than a quarter percentage point of the total banking sector's assets.

Aug 1998 — Sep 1998: Non-systemic Bank Run (Russian Default)

Russia defaulted on its debt and devalued its currency on August 17th, 1998. This increased concern about the debt and currency sustainability of numerous emerging markets, including Argentina. The analysis of newspaper articles shows that economic agents were also worried about the fate of Brazil immediately after the Russian default. Agents were expecting more negative effects if a crisis started in Brazil, Argentina's main trading-partner. The fall in peso-denominated deposits was important, 10 percent, in only two months. Although the increase in dollar-denominated deposits was not enough to offset completely the drop in peso-denominated deposits, the decrease in total deposits was only 1 percentage point. During this peso-deposit bank run, the Central Bank suspended Mayo Coop Bank which had about 1 percent of the banking sector's assets. In terms of assets, this was the most important suspension during the bank-run episodes under study.

Sep 2000 — Nov 2001: Systemic Bank Run (End of Currency Board)

Before September 2000, there was some uncertainty regarding the sustainability of the currency board due to the government's weak fiscal performance and the long economic recession (the decline in the economic aggregate indicators started about late 1998). Nevertheless, an important additional ingredient was added at the end of September and biggining of October, that increased the levels of uncertainty even more. On October 6th, 2000, the vice-president (and head of one of the two main coalition parties in the government) resigned. Although this long period is not homogeneous, all bank-runs phases responded to the same sources of uncertainty throughout the period. This bank run can be sub-divided into five phases.

Phase I — From September 2000 to February 2001: The vice-president's resignation together with the weak fiscal position of the government increased doubts about the continuity of the currency board. The level of uncertainty finally decreased after the government reached an agreement with the IMF on December 19th, 2000. The size of the international aid program was around 40 billion in total, with most parts conditional on the fulfillment of some fiscal goals and other conditions. All groups of banks by ownership, with the exception of the domestic private group, lost peso and dollar-denominated deposits from October to December. In particular foreign branches experienced the higher falls in deposits (3 percent). Deposits recovered in January and February with domestic public banks taking the lead. Nonetheless, this recovery period was not enough to offset the losses experienced by all groups of foreign banks. Three banks closed during this period, two of them were suspended by the Central Banks. They represented around 0.3 percent of the banking system assets.

Phase II — From March 2001 to May 2001: Even though, at the beginning, the agreement with the IMF was considered sturdy, the weak political base of the government and the crisis in Turkey (Turkey devalued its currency on February 22nd, 2001) triggered a new increased in uncertainty. Moreover, two Argentinean finance ministers resigned during March. Cavallo was named finance minister on March 20. The public in general welcomed Cavallo's appointment but some of his first measures produced some uncertainty e.g. the removal of the president of the Central Bank who was considered a strong supporter of the currency board, and of the idea of introducing the Euro within the currency board. The debt-swap program implemented by Cavallo during May was in some ways successful and it seemed to decrease the fiscal problems of the government. The banking sector lost around 5 percent of the deposits during March to April. There was a recovery in level of the banking sector deposits in May, but it was not enough to offset the drop in deposits during the previous months. In contrast to other bank groups, foreign branches lost deposits during May due to a big drop in peso-denominated deposits (8 percent) and a additional fall in dollar-denominated deposits (2 percent). Only one small foreign branch was suspended by the Central Bank during this period. It represented about 0.01 percent of the banking sector's assets.

Phase III — From June 2001 to August 2001: The ultimate modification of the Currency Board by the Congress on June 20 triggered a new increase in uncertainty and in devaluation expectations. The Congress approved the introduction of the Euro once the Euro and the US dollar reached parity (the value of the Euro was below the US dollar at that moment). This change in the Currency Board, although it did not have any immediate impact on the old rules, signaled to the public how easy it was to change the currency board rules. The introduction of many quasi-currencies also made public the severe fiscal problems of both the federal government and the provincial governments. The drop in the banking sector's deposits was very large: around 21 and 9 percent of peso and dollar denominated deposits. Public banks were the group most affected. They lost around 37 and 15 percent of their peso and dollar-denominated deposits respectively. The Central Bank suspended one coop bank during this period, which had only about 0.02 of the banking system assets.

Phase IV — From September 2001 to October 2001: A new agreement was reached with the IMF on August 26. This international support together with measures designed to reduce the fiscal deficit (including a 13 percent cut on public employees and retirees wages) seemed to have slightly decreased the uncertainty and devaluation expectations' levels. However, the political uncertainty did not decrease due to national elections and state governors' opposition to following the federal government fiscal adjustments.
On the aggregate, the banking sector gained deposits (2 percent) during these two months due to the 3.6 percent increase in dollar-denominated deposits. The variation in peso-denominated

deposits was negative (-3.7 percent). Foreign branches and foreign subsidiaries were the only groups that lost deposits, 8 percent and 2 percent, respectively. In contrast, public banks increased their level of deposits in both peso and dollar-denominated deposits. Only one bank, Chase Manhattan, closed its doors due to the previous merger of its parent bank with JP Morgan which also was present in Argentina.

Phase V — November 2001: The international organizations did not approve of the fiscal indicators presented by the government (i.e. they were below the goals previously established), and also they were not satisfied with the lack of progress in reaching an agreement between the federal and state governments. This closed the doors for international financial assistance. The levels of uncertainty and devaluation expectation increased exponentially. The drops in peso and dollar-denominated deposits were around 8 and 5 percent respectively. All bank groups suffered a fall in both types of deposits. Proportionally, domestic private banks were the group more affected in both peso and dollar-denominated deposits.

Appendix 3. Uruguay - Chronology of main events during the 2002 crisis

Uruguay's real economy experienced rapid growth between 1990 and 1998, supported by strong fundamentals, investment grade status and a general perception of being a safe economy within the region.

Starting in 1999, a number of adverse shocks brought the economy to a recession. The crises in Brazil and Argentina—Uruguay's main trading partners, jointly accounting for about ½ of total exports—and an outbreak of foot-and-mouth disease in early 2001 inflicted significant damage on Uruguayan export sector. Further, the devaluation of Brazil's real (January 1999) and the Argentina peso (January 2002) lead to a significant appreciation of Uruguay's real exchange rate, casting doubts about the sustainability of the crawling peg framework.

Despite these adverse shocks, confidence in the Uruguayan banking system had not been undermined by 2001. Furthermore, as the crisis in Argentina developed, the Uruguayan banking system was able to attract a large volume of deposits from Argentines, as Uruguay was still perceived as a safe haven for capital, partly reflecting an implicit and unrestricted government guarantee and a major presence of foreign banking in the system.

In the first quarter of 2002, however, public confidence in the Uruguayan banking system began to erode. Cash-strapped Argentine depositors, unable to access their accounts in Argentine banks following a deposit freeze in late 2001 and pesification in early 2002, started withdrawing their funds from Uruguay (at the time almost half of deposits were held by nonresidents, largely Argentines).[22] At the onset, problems affected primarily the local subsidiary of an Argentine bank (*Banco de Galicia*) and a large domestic private bank (*Banco Comercial*) that had substantial exposure to Argentina and was weakened by fraudulent activities on the part of some of its managers. However, as the financial crisis worsened and the deposit freeze was tightened (the 'corralon') in Argentina, deposit withdrawals in Uruguay intensified, spreading to resident deposits and to other financial institutions in the system (including public banks). Concerns about Uruguay's crawling peg, and the fait of the highly-dollarized banking system were exacerbated by the downgrading of Uruguay's sovereign debt—previously investment grade—for the first time in many years.
Subsequent large financial support from international financial institutions[23] was not successful in stemming the deposit and currency run. By end-July, a 5-day bank holiday was declared, during which further financial support from IFIs was negotiated, and the operations of several banks were suspended (Banco Montevideo, La Caja Obrera, Banco Comercial and Banco de Credito). Also, a law created the Fund for the Stabilization of the Banking System (FSBS) to provide full backing of dollar sight and saving deposits of suspended institutions and state-owned banks; and extended the maturity of dollar time deposits of public banks (BROU and BHU) to three years. Following these measures the deposit run gradually receded.

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[22] Prior to the 2002 crisis, the banking regulatory framework in Uruguay did not distinguish between resident and non-resident deposits, and some banks (e.g. *Banco Galicia Uruguay*) relied heavily on non-resident as their deposit base.

[23] See *Uruguay—Ex Post Assessment of Longer-Term Program Engagement* (SM/05/84, 03/07/2005).

Uruguay - Synthesis of events of 2002 crisis

2001	**December 2**	Argentina imposes a deposit freeze ("corralito").
	December 12	IMF suspends loan disbursements to Argentina
	December 23	Argentina announces the default on its sovereign debt.
2002	**January 4**	The government announces an increase of the exchange rate band from 6 to 12 percent, and an acceleration of the rate of depreciation from 1.2 to 2.4 percent per month.
	January 11	Standard and Poor's (S&P) lowers Uruguay's outlook to negative reflecting concerns regarding the continued contraction of the economy and doubts about the ability to reduce the fiscal deficit.
	January 15	Uruguay widens its Crawling Exchange Rate Band
	End-January	Rumors about problems at Banco Galicia Uruguay and Banco Comercial surface.
	February 3	Argentina tightens the deposit freeze ("corralón").
	February 13	Central bank of Uruguay suspends operations of Banco Galicia (Uruguay)
	February 15	S&P lowers Uruguay's sovereign debt rating to BB+ (below investment grade) on concerns over the fiscal deficit, weak growth prospects and fragility of the domestic financial system.
	Late-February	Domestic bank problems spread to other institutions. Banco Montevideo and Banco La Caja Obrera are placed under intensive supervision, after experiencing significant deposit runs. Banco Commercial is capitalized by the government.
	March 13	Fitch lowers Uruguay's credit rating below investment grade.
	March 25	IMF completes the last review of the 2000 SBA and approves a new SBA for SDR 2.0 billion.
	April 19-29	A bank holiday is imposed in Argentina, leading to an acceleration of the deposit run by non-residents in Uruguay.
	April 26	Banco Comercial received financial assistance from the government (through deposits from CND) and is recapitalized by shareholders. The central Bank reaffirms its commitment to the exchange rate regime.
	May 5	Moody's lowers Uruguay's credit rating.
	May 14	S&P lowers Uruguay's sovereign debt rating by two notches, to BB-, on account of fiscal problems and concerns over exchange rat and monetary policies.
	May 28	The IMF and the IDB announce upcoming augmentations of financial assistance to Uruguay (of about US$ 3 billion over two years). Fitch lowers Uruguay rating to B+.
	May 29	Parliament approves the "Ley de Estabilidad Fiscal"
	June 19	The monetary regime of adjustable bands is abandoned, and the exchange rate is allowed to float.
	June 21	Central Bank intervenes Banco Montevideo/Banco La Caja Obrera (Uruguay's third largest bank)
	June 25	The IMF increases its Uruguay's SBA by about US$ 1.5 billion.
	July 10	Moody's lowers Uruguay's credit rating from Ba2 to B1.
	July 23	The Minister of Finance and Members of the Board of the Central Bank resign.
	July 26	S&P lowers Uruguay's credit rating to B, quoting pressures on the financial system and weak fiscal accounts.
	July 30	A 5-day bank holiday is declared. Operations of Banco Montevideo, and La Caja Obrera are suspended for 60 days. Banco Comercial and Banco de Credito are suspended for 30 days. Congress passes the Banking System Stability Law, creating the FSBS and reprogramming time deposits at BROU and BHU for three years.
	August 5	The bank holiday is lifted
	August 8	A new Letter of Intent is signed with the IMF.
	August 20	Suspended banks star reimbursing sight deposits.
	August 28	The ceiling for savings account withdrawals are increased
	September – December	Operations of Banco Montevideo, Banco La Caja Obrera, Banco Comercial and Banco de Credito are repeatedly suspended.
	November 21	S&P lowers Uruguay's credit rating to B-.
	November 26	The government announces a bill to restructure suspended banks, and creating a new bank (Nuevo Banco Comercial) out of the assets of Banco Montevideo, Caja Obrera and Banco Comercial.
	December 2	Argentina terminates the deposit freeze.