

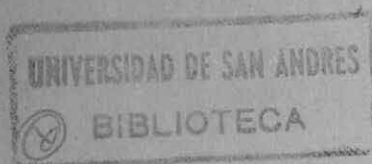
CICLO DE SEMINARIOS 1995
DEPARTAMENTO DE ECONOMIA

**Market discipline and
contagion in the argentine
banking panic.**

(December 1994 / May 1995)

A microeconomic analysis of the crisis

Liliana Schumacher (B.C.R.A.)



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MARKET DISCIPLINE AND CONTAGION

IN THE ARGENTINE BANKING PANIC

(December 1994/May 1995)

A Microeconomic Analysis of the Crisis

**Liliana Schumacher
October 1995**

SUMMARY AND CONCLUSIONS.

Between 1991 and April 1995 Argentina did not have any form of deposit insurance. At the same time and in order to stop hyperinflation, the government adopted a monetary regime based on a fixed exchange rate with full convertibility of the domestic currency into american dollars and bimonetarism.

Under such a regime, the money supply is endogenous and any attempt to issue currency above this endogenous amount, will end up in a loss of reserves and a subsequent threat to the convertibility of the domestic currency. This had two practical implications for the banks: i) The Central Bank could not have a very active role as the lender of last resort; ii) in case of trouble banks could not be bailed out by the Central Bank, in particular deposits could not be paid back by the Central Bank.

The system developed without visible problems for four years but the mexican devaluation and the subsequent outflow of capital of the argentine banks started a liquidity crisis of major consequences: between December 20 1994 and May 1995 \$ 8,4 bn dollars left the banking system (about 17,2 % of total deposits), Central Bank reserves fell from \$17,6 bn to \$12,1 bn (a 31 % reduction) and M3 fell by \$ 8,4 bn (a drop of 16,8 %).

As of September 1995 there are in Argentina 164 financial institutions, that is to say 40 institutions less than in November 1994. Out of this 40, 10 were suspended and then liquidated in different ways (*) and 30 were acquired in merges. One institution was reopened after being suspended and one is still suspended. The rest of the institutions were also affected by a drop in their deposits, although they survived the shock. The loss in deposits due to closures was 3,1 %.

The goal of this paper is to study the dynamics of the panic from the point of view of depositors' behavior. The topic might be of interest, since it offers the possibility of studying depositors response in a banking regime which has some similarity with the pre Federal Reserve-pre FDIC american regimes with a larger availability of individual banks data. The point is whether such a regime provides incentives for depositors to use the information available to punish banks selectively - a market discipline approach to panics - or whether depositors disregard individual banks information and are only concerned with other depositors behaviors - a bubble approach to panics. It will be seen that given the particular features of the shock that started the crisis, the argentine panic was a mixture of both.

* Most of them were sold and depositors were paid with the proceeds of the sale since they are seniors creditors by the argentine law.

Some stylized facts and plan of the paper.

Table 1 summarizes individual banks information along the crisis. It shows the monthly average drop in total deposits, how many institutions had a fall in their deposits in each month, the number of institutions acquired in mergers, and the number of suspensions during each month of the crisis. Annex 1 includes more specific information about mergers, failures and suspensions (institutions, type and date).

TABLE 1

	Deposits Growth %	Number of Institutions with a drop in Dep.	Acquisitions	Suspensions
December	0.02	134	0	0
January	-2.27	139	0	2
February	-2.95	153	2	1
March	-8.31	169	3	3
April	-4.31	155	1	5
May	-0.88	130	11	0
June	2.02	58	14	0
July	5.12	58	0	1

Source: BCRA. Over a total of 204 institutions only 198 provided information
 Suspensions: January: Extrader and Finansur (The last one was reopened in February);
 February: Basel; March: Feigin, Cnel Dorrego and Mulicredito; April: BID, Tarraubela,
 Luro, Interbonos, Austral

It can be seen that deposits drops became larger month after month between December and March and that the panic spread during the same period over more and more institutions. In March the crisis attained its deepest point with an additional aggregate fall of 7,7 % and 85 % of all financial institutions affected. After March withdrawals decelerated but it was only after May that there was recovery.

It has become classic by now to divide the Argentine panic into four phases in order to study its macroeconomic features. From the microeconomic point of view, this distinction is also relevant. As it will be seen later, Phase 1 -December-January-February- is mostly associated with the depositor from abroad and with aggregate currency and liquidity risk; phase 2 - March- is the deepest point of the crisis and it is also a turning point; in March, Argentina reached a set of agreements with the IMF, the World Bank and the IDB that enlarged its dollar reserves and also confirmed its policy commitments; this had a big impact on the behavior of depositors with concerns moving from liquidity and currency risk to individual banks abilities to remain solvent after the shock. Thus, phase 3 - April and May - became more associated with the behavior of the domestic depositor and with specific-bank risk. Phase 4, after May, is the recovery.

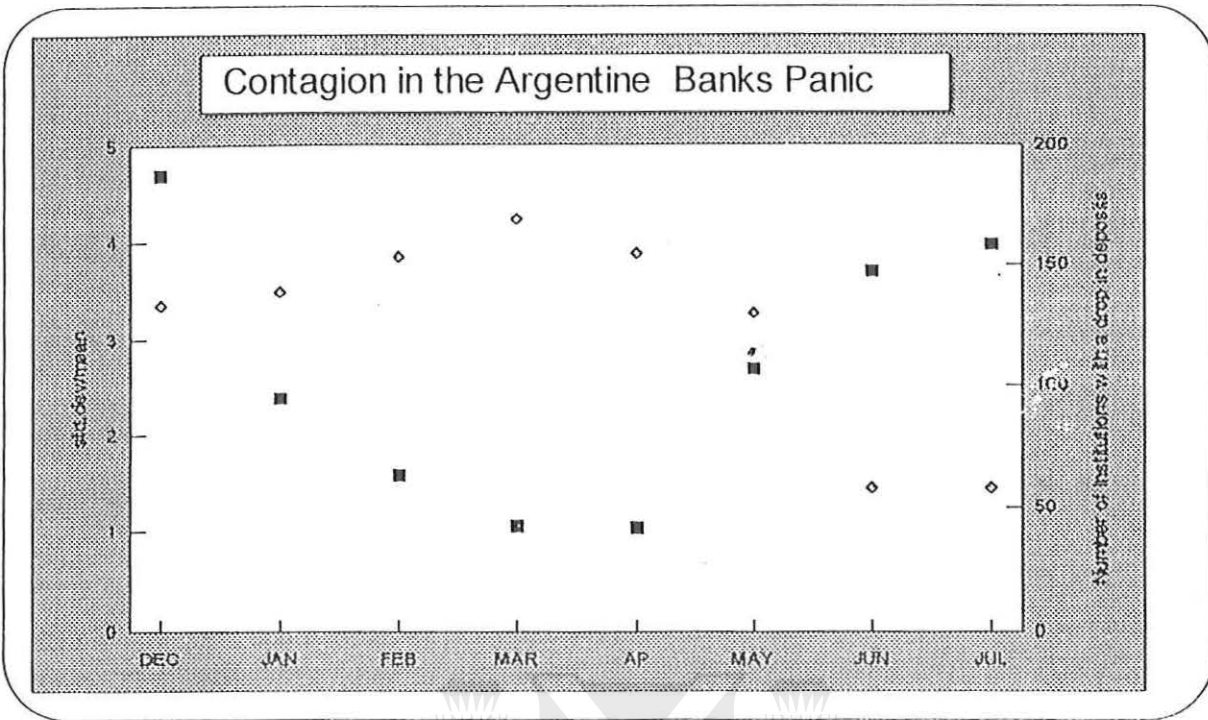
Table 2 shows some basic statistics for the period December through May, for the four phases and for each month with means and standard deviations institutions drops.

TABLE 2

	mean (1)	st. dev (2)	(3) = (2) / (1)	1/4 quantile	3/4 quantile
May / Dec.	-28.86	26.35	0.91	-46.46	-12.34
Phase 1	-10.92	18.81	1.72	-18.45	-1.76
Phase 2	-11.83	10.81	0.91	-17.47	-6.63
Phase 3	-13.67	18.45	1.35	-24.02	-2.52
Phase 4	5.05	18.59	3.68	-3.26	14.83
December	-1.33	8.18	6.15	-3.91	0.54
January	-3.44	10.29	2.99	-7.09	0.20
February	-7.56	12.35	1.63	-11.21	-1.49
March	-11.88	10.81	0.91	-17.56	-6.68
April	-9.62	10.43	1.08	-15.35	-2.97
May	-5.24	14.66	2.80	-10.49	0.07
June	2.40	9.60	3.99	-1.86	6.30
July	2.06	12.98	6.31	-2.04	8.73

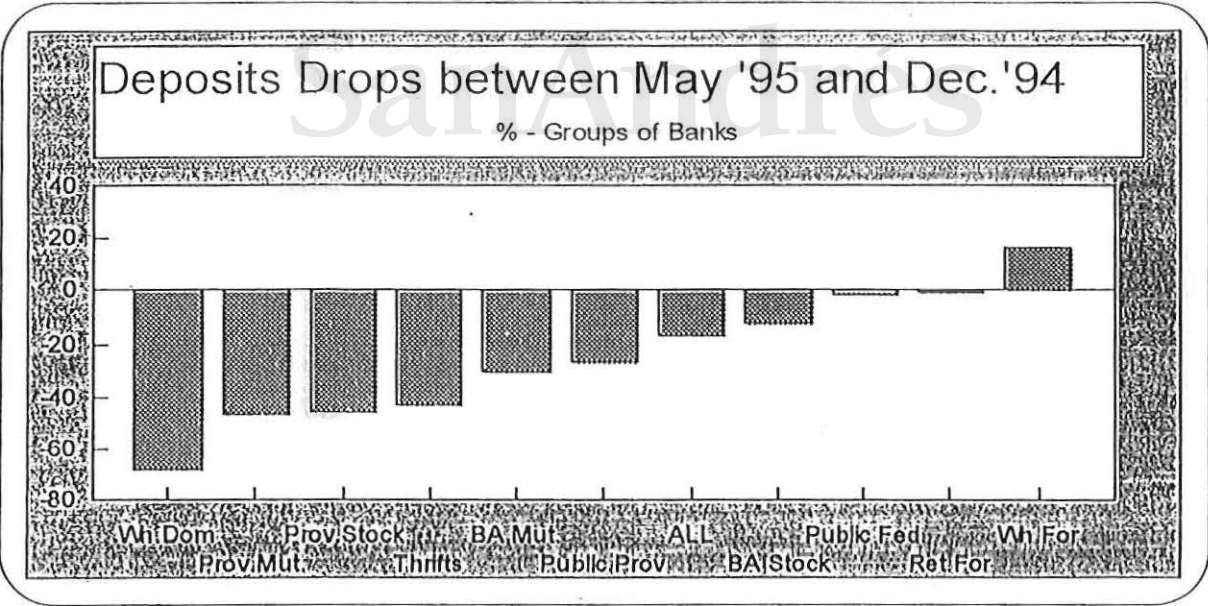
Between May and December the institutions mean drop was 28,9 % with 50 % of drops between 46,5 % and 12,3 %. Maxima and minima were very large (not shown, 56,2 and -94,7) and this reflects in a large standard deviation. The mean drop for the first phase of the panic was 10,9 %; for the second phase 11,8 %, for the third phase 13,7. % and for the recovery it was a 5 % growth. Almost all the extreme maxima and minima corresponded to wholesale financial institutions.

Standard deviations got larger as the crisis got deeper. But in March and April when the mean drops are larger than for any other month (column 3), standard deviations became smaller and when standard deviations are normalized by the monthly mean drop, it can be seen that that this normalized measure falls as the crisis becomes deeper. That is to say, as the mean drop became larger, "punishment" became relatively less discriminating. In other words, it seems, a priori, that as the crisis became deeper, there was more contagion. This idea is captured by the figure below that shows how the ability to discriminate seems to be inversely related to the deepness of the panic.



But together with these evidences of contagion, there are also some a priori evidences of market discipline. The beginning of the Argentine banking panic was related to a country risk episode: currency risk, due to the Mexican devaluation, that should have affected all banks in a similar way. But not only were banks not affected evenly, as seen before, but there seems to have been some underlying criteria used by depositors to discriminate among institutions.

Table 3 shows the evolution of deposits per group of banks. Figure 2 summarizes this information for the period May '95/December '94.



Evolution of Deposits II - Groups of Banks-

	December	January	February	March	April	May	June	July
Wh.Dom	(6.84)	(25.27)	(32.27)	(23.69)	(13.95)	3.59	8.35	11.66
Prov.Mut.	(2.03)	(4.76)	(7.86)	(17.49)	(14.77)	(11.93)	(24.66)	(1.19)
Prov.Stock	(0.74)	(3.61)	(8.15)	(17.19)	(20.34)	(6.35)	(0.42)	7.74
Thrifts	(0.38)	(4.81)	(15.40)	(6.56)	(14.70)	(11.14)	2.86	(10.39)
BA Mut.	(1.74)	(6.62)	(7.42)	(11.84)	(11.39)	4.56	10.06	18.38
Public Prov	(1.32)	(6.44)	(5.57)	(8.23)	(4.95)	(3.69)	(2.31)	(3.21)
ALL	0.02	(2.27)	(2.95)	(8.31)	(4.01)	(0.88)	2.01	5.12
BA Stock	0.84	(1.32)	(0.27)	(6.72)	(3.25)	(1.89)	4.90	6.08
Public Fed	2.07	(1.60)	(1.13)	(5.29)	0.82	4.23	5.28	7.07
Ret.For	(0.00)	4.45	0.84	(6.29)	0.62	0.06	1.93	4.36
Wh.For	(4.28)	9.78	23.31	2.94	(3.29)	(9.68)	7.39	7.48

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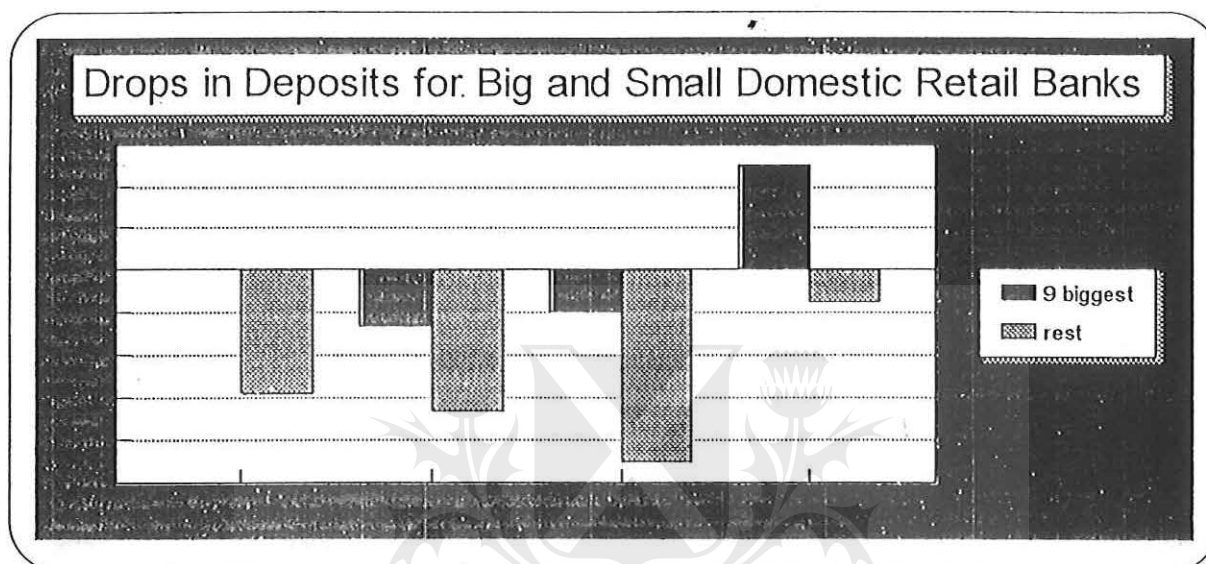
Evolution of Deposits I - Groups of Banks-

	May'95/Dec'94	Phase 1	Phase 2	Phase 3	Phase 4
Wh.Dom	-67.93	-52.85	-23.69	-10.86	20.99
Prov.Mut.	-46.75	-14.02	-17.49	-24.94	-25.56
Prov.Stock	-45.72	-12.12	-17.19	-25.40	7.28
Thrifts	-43.19	-19.79	-6.56	-24.20	-7.82
BA Mut.	-30.62	-15.06	-11.84	-7.35	30.29
Public Prov	-26.75	-12.81	-8.23	-8.45	-5.45
ALL	-17.25	-5.15	-8.31	-4.85	7.24
BA Stock	-12.14	-0.77	-6.72	-5.08	11.28
Public Fed	-1.18	-0.69	-5.29	5.08	12.73
Ret.For	-0.63	5.32	-6.29	0.68	6.37
Wh.For	16.50	29.57	2.94	-12.66	15.42

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While for all the system the loss in deposits was around 18 %, BA stock banks, public banks owned by the Federal Government and foreign banks -both retail and wholesale- had a lower loss; actually wholesale foreign banks grew over the period. The higher losses were suffered by wholesale domestic banks - over 60 % as a group-, by provincial private banks, both mutual and stock, - around a 40 % loss-, by thrifts and by provincial public banks.

In Figure 3 domestic retail banks were divided into the biggest nine and the rest. Given that only retail domestic banks are considered, wholesale and foreign banks are left out.



The biggest nine banks had no loss in deposits during the first phase, a lower drop in deposits in March and they recovered immediately after March, when the agreements with the multilateral organizations were signed while for the smallest institutions the drop in deposits was still more acute in April and May and they only recovered in June-July.

Given this a priori evidence about discrimination, the main goal of this paper is to evaluate whether banks were "punished" selectively by some criteria related to their specific risk profile.

In the next sections I will cover the following points:

- Section 1 will be a quick survey of the literature about panics and will show how the different theories relate to a market discipline approach. The point will be made that the market discipline approach is more closely related to the asymmetries of information approach to panics (Gorton, Calomiris, etc) and opposed to the view of panics as bubbles that comes out of the influential paper by Diamond and Diba.
- Section 2 will set up a simple model that will allow to explain the cross sectional fall in deposits by contagion due to aggregate risk and by specific bank risk. I will show how the aggregate risk component of the panic relates to the "bubble" approach. The specific bank risk will be given by i) individual banks self sufficiency to provide liquidity and ii) banks abilities to remain solvent after

the shock was over. I will also justify why the change in the perception of aggregate risk implied a change in the perception of individual banks risk.

- Section 3 will be devoted to the study of banks specific variables that relate to an aggregate behavior by depositors. In particular it will be shown that *depositors that held term large deposits were more sensitive to the change in the risk conditions* while depositors that held demand accounts and small depositors paid less attention to the risk environment; in this way, they provided a core amount of deposits that was much less volatile; another way to put it is to say that depositors that held large term deposits behaved more as investors among all types of depositors. The practical meaning for this paper is that some of the differential effects among banks might be due to the different positions of the banks with respect to the more affected assets, as of the beginning of the crisis.

- Section 4 will finally test for market discipline, that is to say will evaluate whether depositors used available information about individual banks to make decisions about deposits withdrawals.

Main Conclusions.

The main conclusion of the paper is that depositors did use information to sort among banks with different risk profiles and that the nature of the panic changed over time, with March as its turning point. During the first phase, depositors mainly used *quantitative and qualitative data* that provided information about *banks access to liquidity sources different from the domestic central bank*; after the agreements with the multilateral organizations, depositors became more concerned with the ability of banks to remain solvent after the shock. Thus after March the *interest rates paid by banks during the immediate pre-crisis period were used by depositors in their process of reassessment of banks specific risk* and were responsible for the strong market discipline component of deposits drops.

There is also some evidence that depositors from abroad and large depositors were more responsible for the development of the first phase while middle size and domestic depositors have a larger responsibility in the third phase.

SECTION 1. "INFORMATION ASYMMETRIES" AND "BUBBLE" APPROACHES TO PANICS

(This section will contain a description of both approaches - To be done).

Summary: A market discipline approach would oppose to a pure bubble approach for the argentine panic. For Argentina the panic was the realization of a bad equilibrium, a fulfillment of depositors' own expectations but it was also partly related to the risk position of the financial institutions

For the market discipline hypothesis, a run can be viewed as an episode by which depositors try to sort among solvent and insolvent banks and to force banks -or the Central Bank- to solve asymmetries of information (...). Since banks assets are informational intensive, depositors cannot make a precise inference of the probability of failure of banks and then use signals for this inference. The different theories for which panics are related to asymmetries of information can be distinguished among themselves by the type of signal that is considered to be used by depositors (...).

If a panic can be viewed as a form of rationing, then according to Stiglitz and Weiss, the signal used to sort among different banks is the interest rate paid on deposits.

SECTION 2. AGGREGATE RISK, SPECIFIC RISK AND CONTAGION.

A model for cross sectional drops in deposits could be specified as follows:

$$(D_T - D_0)_j = \alpha + \sum_m \beta_m K_{mj} + \epsilon_j \quad (1)$$

where:

$(D_T - D_0)_j$ = is the fall in deposits for the j institutions between the beginning and the end of the crisis.

α = represents the aggregate common effect, that is to say a contagion effect due to policy risk, and then equal for all financial institutions.

K_{mj} = is a set of m variables that are bank-specific and so the m β_m relate the specific institutions features to each institution drop in deposits.

It was observed that during the crisis some assets were more affected than others (term deposits vs demand deposits, peso deposits during the first months of the crisis, dollar deposits during the second half of the crisis) and that some depositors were more sensitive than others (in particular large depositors and depositors from abroad).

These behaviors could also be a reason for the fact that banks were affected differently. That is to say, banks with a different starting position with respect to those assets and those depositors should have suffered a higher drop in deposits. This means that there is a set of individual banks variables that, in spite of being bank specific, are related to some aggregate behaviors. Thus, (1) becomes:

$$(D_T - D_0)_j = \alpha + \sum_z \gamma_z K_{zj} + \sum_n \gamma_n K_{nj} + \epsilon \quad (2)$$

where:

K_{zj} = are the z specific bank variables related to depositors aggregate behavior

K_{nj} = are the n specific bank variables related to depositors perception of individual banks risk.

What was the source of aggregate risk?

The Mexican crisis made investors more sensitive to specific country policy risk. What was the meaning of policy risk for Argentina, that is to say what caused α ?

Some features of Argentina's monetary regime have crucial implications for its banking regime. Those features are: bimonetarism and a fixed exchange rate with full convertibility of the domestic currency into American dollars; they add to the additional feature of Argentina's banking regime: no deposit insurance. The implications of these institutional arrangements are higher than average currency risk and liquidity risk of all financial transactions carried out in the country with independency of banks risk profile.

i) **Currency Risk.** This was the first one to be seen, because of the Mexican devaluation. Given a fixed rate peso-dollar, a devaluation would primarily affect depositors that hold assets in that currency, that is to say it would affect deposits issued by all banks and then is not specific bank risk.

ii) **Liquidity Risk.** Bimonetarism and Convertibility also implies that the role of the Central Bank is very limited. It is as if there were no central bank at least as a lender of last resort. In this context, Diamond and Dybvig explanation of a panic as a bubble is very appropriate: if investors think that other investors will withdraw their deposits out of the Argentine banks, everybody wants to be the first in line since the Central Bank cannot be a lender of last resort. It is important to have in mind that Convertibility only implies that at least 80% of all domestic monetary base should be backed by reserves. The total amount of reserves as of December 1994 was \$ 17.6 bn while total deposits were about \$ 40 bns.

Thus the bubble component can be identified, in the specific case of this panic, to the *aggregate common component* that affected all banks, for their common lack of a lender of last resort. This is particularly true in this case since the beginning of the panic was in itself related to an aggregate risk -currency risk- episode that would punish all Argentine banks. A different case could have been made if the beginning of the crisis had been one bank's specific problem of solvency.

Reassessing Banks Specific Risk.

There are two sets of reasons why the aggregate shock affected the perception of individual bank risk; one set of reason is related to banks individual abilities to self provide liquidity; a second set is related to the fact that the aggregate shock made all banks portfolios riskier than before the panic

i) **Banks ability to self provide Liquidity.** As can be seen in the table below, in the context of a liquidity crisis some Argentine banks are better positioned than others to have access to external sources of liquidity, namely foreign banks and large banks; on the other side the wholesale domestic banks proved to be very much exposed to liquidity risk.

Liquidity Ratios and Groups of Banks

	Interbank loans/ Deposits	Cash Res./Assets	Non Resident Dep./Dep.	Bonds on Internat. markets/Total
Wholesale Dom. B	2.8	4.4	17.1	8.9
Wholesale For. B.	9.1	7.8	30.1	0.9
Retail For. Banks	0.8	13.4	5.0	2.3
Retail Dom. Big B. (nine biggest)	-2.3	14.0	4.5	71.6
Retail Dom. Small B.	-1.8	13.8	2.5	4.6

It can be seen that, as of November 1994, wholesale banks as a group had a larger proportion of deposits held by foreign depositors*, they were heavy users of interbank short term funds and had lower liquidity reserves.. Thus, when the shock hit Argentina, these banks were the first ones to feel the impact.

Foreign (both retail and wholesale) banks have a natural external lender of last resort: their main houses abroad.

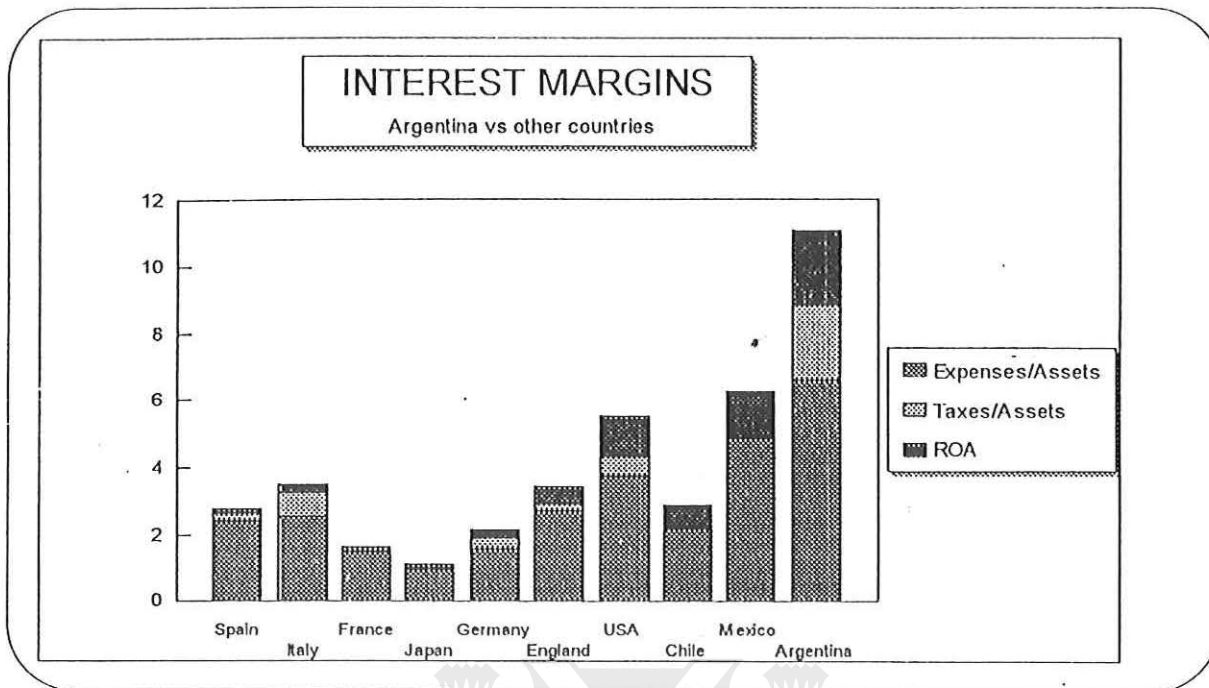
Large banks have an easier access to external lines of credit. The table above shows that 71,6 % of all bonds issued by argentine banks in international markets were issued by the nine biggest; and there is evidence that during the panic banks from abroad increased their exposure to large domestic argentine banks (to be shown)

ii) Reassessment of individual banks risk coming from other sources.

- The pre-crisis period had been one of very high deposit growth for all banks and this had allowed survival of banks with high cost/asset ratios and higher than average delinquency rates (in general small stock and mutual banks).

The figure below shows argentine banks interest margins and compared them to some selected countries. A priori, this information says that argentine banks are very inefficient, very profitable and good tax contributors. The ratio provisions/assets is also higher than for any other country (4.6 vs 3.3 for USA and 1.1 for Japan in 1993).

In a context of a lower supply of funds to the argentine system, it is clear the more inefficient and risky banks would find it difficult to fund losses or expenses with high margins.



- The external shock implied that in the short run Argentina would not be able to use foreign savings to fund aggregate consumption and investment because either they were not available at any price or they would become very expensive. This means that the level and growth of economic activity would suffer, as it actually happened. Under such circumstances, banks become riskier since counterparty risk becomes more acute.

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The considerations in i) and ii) above allow a more precise specification of (2) since the K_{ij} specific banks risk variables could be splitted into two groups: those that signalled liquidity risk and those that signalled the pre-crisis portfolio risk, now increased by the aggregate shock.

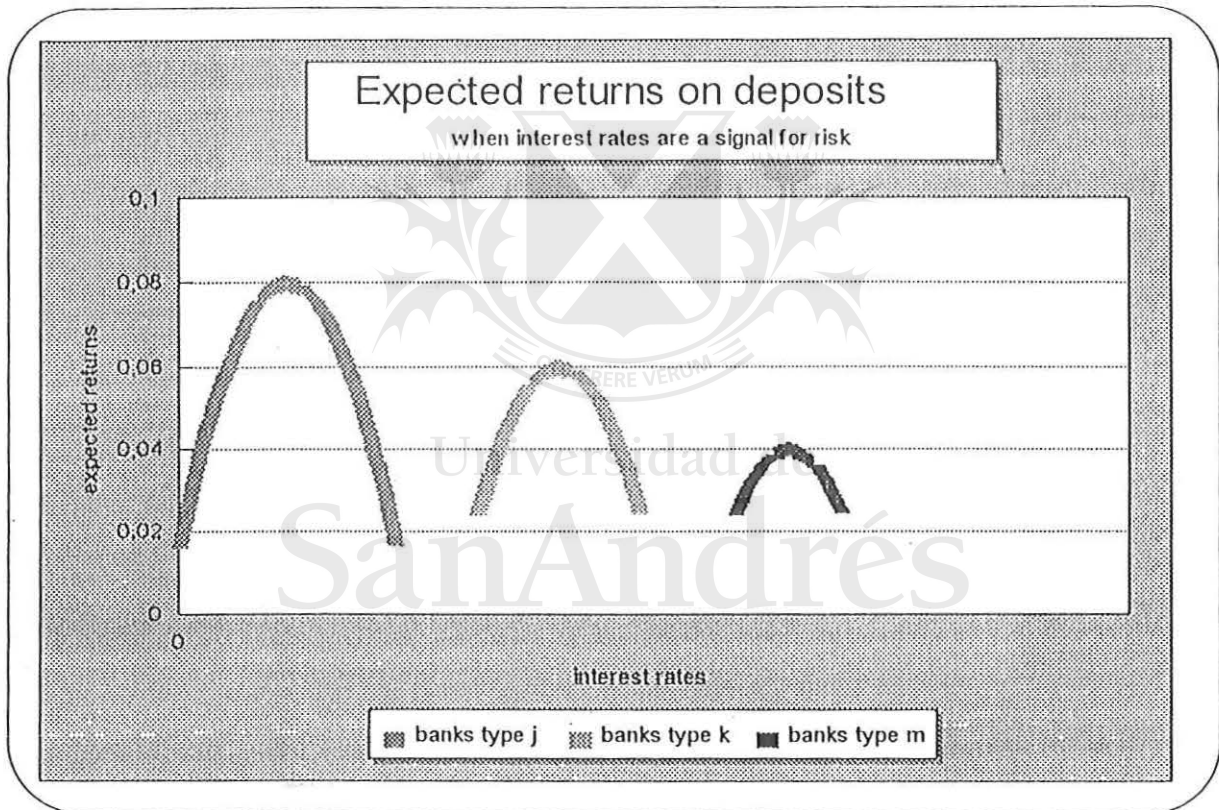
For liquidity risk, the natural candidates are the dummies mentioned above: foreign banks, large retail domestic banks and wholesale domestic banks. Besides, if these dummies account for banks self sufficiency in the provision of liquidity, some quantitative variables could be used such as: i) banks cash reserves (both in Central Bank accounts and in banks vaults)/assets; ii) use of interbank short term funds and iii) access to external loans (bonds issued in international markets).

Use of interbank short term funds is not publicly available. Cash/assets is available monthly through publication of balance sheet data. With respect to bonds issued in international markets there is an extremely close correspondence with the nine biggest. Thus, the only quantitative variable that will be included in the regression is cash/assets. Inclusion of this variable should make the dummy for wholesale domestic banks insignificant. If it does not, it will be an evidence of contagion within the wholesale domestic banks group.

For other sources of risk I will discuss now how the interest rate paid in the prepanic period was a good candidate to sort banks by their portfolio risk.

Using Stiglitz and Weiss (1981) a panic can be viewed as a form of rationing. I have already justified that the aggregate risk provided enough reasons for depositors to change their perception of banks individual risk.

Figure shows a hypothetical situation of argentine banks before the crisis when no bank was rationed. Assuming risk neutrality, returns on deposits issued by all banks equated the risk free interest rate in the vertical axe; this means that banks with higher probability of default were paying higher interest rates. When depositors's perceptions of all banks' portfolios risk increased, all curves in the picture shifted downward in the same proportion; thus, banks that paid a higher interest rate in the pre-crisis period should have been rationed more deeply than the rest.



Using the analysis above and the considerations made about banks abilities to self provide liquidity, (2) becomes:

$$(D_T - D_0)_j = \hat{\alpha} + \hat{\beta} I_j(94) + \sum_n \delta_n D_{nj} + \hat{\gamma} Cash_j + \sum_z \hat{\theta} K_{zj} + \varepsilon_j \quad (3)$$

where

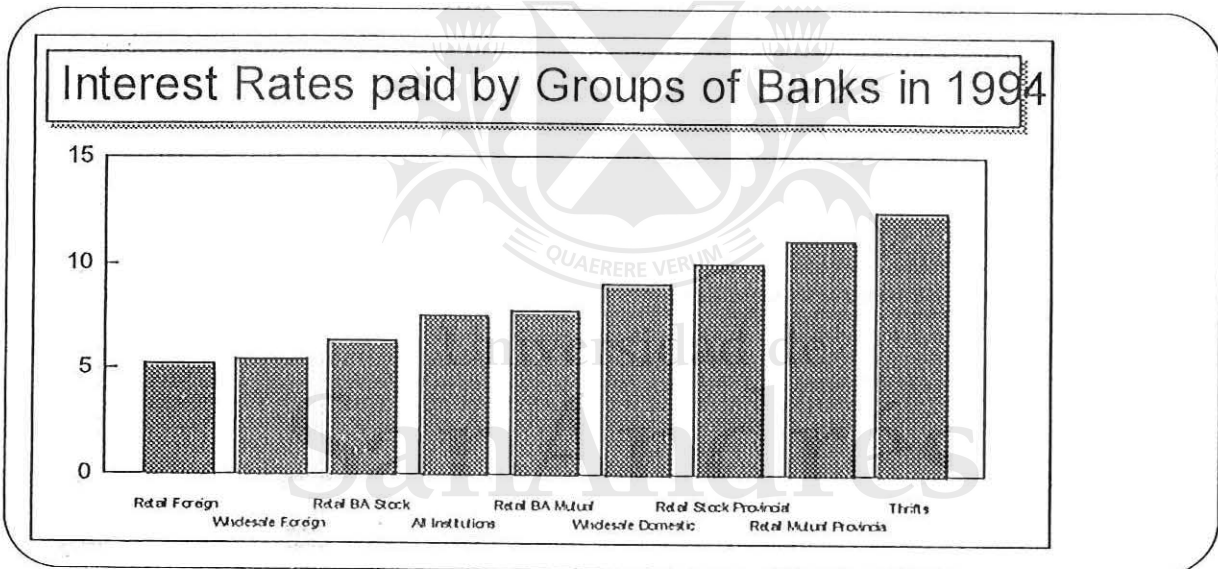
$I_j(94)$ = is the interest rate paid by banks in 1994 before the panic

D_{ij} = are dummies for types of banks (wholesale domestic, foreign, biggest nine retail domestic private banks).

$Cash_j$ = Banks cash reserves/assets as of November 1994.

Summing up, in the context of the aggregate shock, all banks became riskier, just because they were doing business in Argentina. Some banks, were seen as able to diversify the aggregate risk and thus, they were less hit by the run presumably during the first phase of the shock, before Argentina signed its agreements with the multilateral organizations that enlarged its foreign reserves. But once considerations about liquidity were removed, the issue was the ability of banks to remain solvent after the shock. Here it seems natural for depositors to have used the information they had before the shock to infer relative banks' portfolio risk. It is natural too, that banks that were seen as riskier before and then paid higher interest rates (see my other paper) suffered higher rationing now.

Finally, the figure below shows the interest rates paid by groups of banks in 1994.



SECTION 3. INDIVIDUAL BANKS VARIABLES NOT RELATED TO SPECIFIC BANKS' PORTFOLIO RISK.

It was said in the introduction that banks could have been hit differentially by their starting position with respect to some types of deposits that were more affected than others. In this section I will show the evolution of these deposits:

- i) in each month of the crisis;
- ii) between November 1994 and May 1995; and
- iii) over each of the phases that were defined in the introduction.

3.1. Dollar vs peso deposits

As of November 1994 there were in Argentina \$ 44,3 bn deposits (demand deposits, savings accounts and time deposits): 50,6 % were denominated in dollars and the rest in pesos.

	peso deposits	dollar deposits	total
December	-0.85	0.84	0.02
January	-6.33	1.53	-2.27
February	-5.01	-0.31	-2.95
March	-8.63	-8.05	-8.31
April	1.09	-8.14	-4.01
May	0.38	-2.00	-0.88
June	1.93	2.09	2.02
July	4.38	5.80	5.12

Table above, shows the monthly evolution of dollar and peso deposits. It can be seen that during December and January while pesos deposits came down, dollar deposits grew. This reflects the fact that bimonetarism was in Argentina, and up to some extent, a good way to diversify domestic currency risk. In March deposits denominated in both currencies fell. In April and May peso deposits grew and dollar deposits fell; this was explained as a return to the pre-crisis portfolio allocation once the issue about currency risk was over.*

For the complete panic, May/November, it can be seen that both types of deposits suffered a loss, although, dollar deposits were a little bit less affected.

Summarizing over the four phases, except for March when both types of deposits fell, the first and the third have opposite signs: positive for dollar deposits for the first one and positive for pesos deposits for the third one.

	peso deposits	dollar deposits	total
May '95/Nov. '94	-19.07	-15.51	-17.25
Phase1	-12.71	2.07	-5.15
Phase2	-8.63	-8.05	-8.31
Phase3	1.47	-9.97	-4.85
Phase4	6.40	8.01	7.24

What does this suggest in terms of how banks were affected?

1. For the whole period and in the first phase, banks could have been less affected the higher the ratio dollar/total deposits.
2. In March both types of deposits were equally affected, so no differential performance is expected.
3. In the third phase, banks that had a higher dollar/peso could have been more affected.

3.2. Demand Deposits, Savings Accounts and Term Deposits.

As of November 1994, 62,9 % of total deposits were term deposits, while 20,2 were savings accounts and the remaining 16,9 % were demand deposits.

Table shows the evolution of demand deposits, savings accounts and term deposits in each month of the panic.

	Demand Dep.	Savings Acc.	Term Deposits	Total
December	3.48	3.13	-1.99	0.02
January	-4.63	-2.87	-1.37	-2.27
February	-3.19	-2.73	-2.96	-2.95
March	-6.32	-5.31	-9.90	-8.31
April	11.11	-6.75	-7.55	-4.01
May	2.59	-3.39	-1.22	-0.88
June	-4.75	-2.84	6.26	2.02
July	4.02	2.40	6.37	5.12

This table says that time deposits holders were the first one to react and that both savings accounts holders and demand deposit holders reacted later. It can also be seen that in April, after the agreements reached by the government with the multilateral organizations, demand deposits recovered fully, while savings accounts and term deposits still fell.

Savings accounts holders seem to follow the behavior of term depositors with a lag: they fell with a lag in phase 1 months, and also recovered with a lag with respect to time deposits holders in phase 3

The following table summarizes this information for the whole crisis and the four phases.

	Demand Dep.	Savings Acc.	Term Deposits	Total
May'95/Nov'94	2.03	-16.88	-22.81	-17.25
Phase1	-4.46	-2.56	-6.19	-5.15
Phase2	-6.32	-5.31	-9.90	-8.31
Phase3	14.00	-9.91	-8.68	-4.85
Phase4	-0.92	-0.51	13.03	7.24

For the whole crisis, term depositors showed to be the most sensitive one, with a drop that is quite over the average, savings accounts were less affected and demand deposits were not affected at all.

Term deposits fell by more than demand deposits and savings accounts in the first and second phase. Between May and March term deposits and savings accounts fell together deeply.

These are very surprising results since demand deposits are usually considered to be better fit to have a quick response and are usually considered more volatile. Next I will try some explanations for this behavior.

1. demand deposits cannot be easily substituted for cash as a means of payments. If this is the case, demand deposits would act as a core deposits amount and it would be expected that banks that have a higher ratio of demand deposits/total deposits could perform better over a crisis. In the case of Argentina, it should be remembered that most demand deposits in Argentina are held by firms and only a few of them by individuals.
2. demand deposits holders behave differently from term depositors: while the first ones are mere liquidity managers, term depositors are real investors.
3. Savings accounts holders seem to replicate the behavior of term depositors, but with a lag.

What does it suggest in terms of individual banks' deposits drops?

This suggests that the position of the institutions with respect to its ratio Term/Total as of the first half of December 1994 may account for some of the cross sectional variation of the first phase of the crisis and even in March. The ratio term+savings/total can account for some of the cross sectional variation of the whole period and for the third phase.

3.3. The Large Depositor.

As of November 1994, there were in Argentina around 1,2 million depositors that held term deposits: 80,6 % of them had term deposits for less than \$ 50.000; 17 % between \$ 50.000 and \$ 100.000 and a remaining 2,4 % for over \$ 100.000. This 2,4 % held 50,8 % of total term deposits and the rest was shared by middle sized and small depositors*.

Depositors and Deposits by Size**

	Small	MSize	Large	Total
Total				
# of Depositors*	959956	202504	28055	1190515
Amounts (bn.dollars)	6,2	7,4	14,0	27,6
Shares				
# of Depositors*	80,6	17,0	2,4	100,0
Amounts	22,3	26,9	50,8	100,0

* assuming that each account is held by one depositor

** based on a sample that covers 87,3 of the population

This was a quite powerful feature of the pre-panic Argentine financial institutions. The meaning of this is that it is necessary 960.000 small depositors (if each account belongs to one person) to deprive the system from 22,3 % of all its CD's; given some 200 institutions on average it is 4800 depositors per bank. But *it only takes 2,5 % of total depositors (28055 persons) to deprive the system from 50 % of all its term deposits, on average 140 persons per institution.*

This is of course a very stylized fact since banks profile in terms of the size of their depositors was quite different, and this is why the starting position of banks with respect to the number and size of their depositors may have affected them in a differential way.

Two points will be made: i) the middle sized depositor followed the large depositor and the small depositor was for most of the time unaware of the change in the risk environment. ii) The large depositor was the main responsible for the panic

(*) based on a sample that covers 87,3 % of the population.

Depositors by Size
- Changes in the Number of Certificates-

	Total	Small	MSize	Large
December	-0,71	-0,94	0,80	-3,95
January	0,35	0,47	0,26	-3,20
February	-2,29	-2,49	-1,63	-0,16
March	4,74	7,46	-6,49	-5,67
June/March	-0,35	0,95	-7,05	-1,98

The table above shows the change in the number of term deposits by size. I will assume that each account was held by one person. Comparing large and middle sized deposits, it can be seen that the large depositor was more sensitive, and most probably better informed. This behavior is symmetric, that is to say, the large depositor was the first one to perceive the change in the risk environment when the panic began and was also the first one to react after March when Argentina reached its agreements with the multilateral organizations. Clearly the middle sized depositor followed the large depositor with a lag: they began to withdraw only in February and they were still leaving massively the system after March. Small depositors were for most of the time unable to understand what was going on. The negative change in December can be explained by a seasonal component due to holidays and vacations; after that, their behavior is quite erratic and is quite disconnected from the aggregate perception of risk. For instance the number of small depositors grew in March when the panic was at its deepest point.

These behaviors have a natural counterpart when total deposits are splitted into size categories by amount of deposits as shown below.

Evolution of Deposits by Size
- Changes in Amounts-

	Total	Small	MSize	Large
December	-3,90	-0,69	1,17	-7,99
January	-1,59	0,86	0,03	-3,69
February	-0,79	-0,83	-1,49	-0,35
March	-6,29	5,19	-7,64	-11,14
June/March	-0,09	4,33	-11,99	4,74

Nevertheless, the responsibility of the large depositor can be better quantified if the total drop in term deposits and in total deposits are splitted into its size components

Drop in Term Deposits by Size Components

	Large	M.Size	Small	Total Fall in Term D
June'95/Nov'94	74,5	42,0	-16,5	100,0
Phase1	96,2	1,4	2,4	100,0
Phase2	84,7	34,7	-19,5	100,0
Phase3	-2521,4	3966,8	-13,5	100,0

Drop in Total Deposits by Size Components

	Large	M.Size	Small	Drop in Term Deposits/Total Fall
June'95/Nov'94	44,0	24,8	-9,8	59,0
Phase1	74,3	1,1	1,9	77,3
Phase2	42,6	17,5	-9,8	50,3
Phase3	-228,1	358,8	-121,7	9,0

During the first phase of the panic (December, January and February), 2013 large depositors (on average 10 depositors per bank) were responsible for 96 % of total fall in term deposits (this is equivalent to 74,3 % of the fall in all types of deposits term, savings and demand deposits) Between March/November 3490 large depositors (on average 17,5 depositors per bank) were responsible for a drop of \$3 bn, that is to say 90 % of the accumulated total fall in term deposits for the first two phases of the crisis and 64 % of the fall in total deposits. During April and May large depositors contributed to a smaller drop in the amount of term deposits

**Depositors by Size
- Changes in the Number of Certificates-**

	Total	Small	MSize	Large
June/ Nov.	1,61	5,28	-13,59	-14,17
Phase1	-2,65	-2,95	-0,59	-7,17
Phase2	4,74	7,46	-6,49	-5,67
Phase3	-0,35	0,95	-7,05	-1,98

**Evolution of Deposits by Size
- Changes in Amounts-**

	Total	Small	MSize	Large
June/Nov	-2,81	20,53	-12,33	-8,01
Phase1	-6,18	-0,67	-0,31	-11,70
Phase2	-6,29	5,19	-7,64	-11,14
Phase3	10,54	15,35	-4,77	17,24

This suggests that the original position of the banks in terms of the type of investors could have been crucial in explaining the evolution of its deposits along the crisis; in particular the ratios large deposits/total deposits and large+middle sized deposits/total deposits should be able to explain part of the cross sectional variation in deposits growth.

In particular it is expected : i) a negative contribution of large/total in the first phase of the of the crisis ii) a negative contribution of large +middle size in March iii) a positive contribution of large deposits/total deposits for the third phase; iv) for the whole period large+middle sized/total should be relevant

4.4. The depositor from abroad.

The analysis that relates to the depositor from abroad will not be satisfying, since there is only information available with respect to non resident depositors whose deposits were denominated in dollars. Peso deposits held by non residents are not available. Besides, the separation between dollar deposits held by residents (DDR) and non residents (DDNR) is taken from balance sheet data, that is to say it is a stock at the end of the period instead of monthly average of daily balances. The different source explains also some of the differences that will be noticed with respect to the evolution of dollar, peso and total deposits seen before for those aggregates.

As of November 1994, there were US\$ 1,8 bn dollar deposits held by no residents (DDNR), this is about 3,7 % of total deposits and 7.3 % of dollar deposits.

Another interesting feature is that as of November 1994 there were only 60 banks that have issued dollar deposits for non residents. Out of this 60 institutions, 91.3% of total DDNR was in 21 banks each of which had at least 1 % of total DDNR. The bank that had a higher share in DDNR was Banco Nacion (the largest Argentine bank, owned by the federal government) with 18,5 % of total DDNR. Among these 21 banks there were 3 Retail Stock BA banks, 6 foreign banks (both wholesale and retail), 3 mutual banks, 2 stock provincial banks and 6 wholesale domestic banks.

	Total Dep.	Peso Dep	Dollar Dep	DDR	DDNR
May'95/Dec.'94	-11.48	-14.38	-8.62	-8.31	-12.43
Phase1	-5.42	-10.95	0.03	2.48	-30.90
Phase2	-8.33	-8.44	-8.22	-8.38	-5.31
Phase3	2.09	5.01	-0.46	-2.35	33.84

According to balance sheet date, DDNR fell 31 % during the first phase and recovered during the third phase. This is an asymmetric behavior with respect to dollar deposits held by residents that grew during phase 1 and fell during phase 3. As said many times before, the depositor from abroad was more responsible for the first phase of the panic while the domestic depositor was more responsible for the period after the agreements with the multilateral organizations

The important ratio for this study is nevertheless how much of a bank's deposits were DDNR. This section suggests that banks with a high DDNR /Total Deposits ratio should have suffered a higher loss in deposits, especially for the first half or the first two months of the crisis, other things equal, with a recovery during the third phase.

SECTION 4. TESTING FOR MARKET DISCIPLINE.

Following (3) the following test will be performed:

$$(4) \quad (D_T - D_0)_j = \hat{\alpha} + \hat{\beta}_1 I_j(94) + \hat{\beta}_2 WhD + \hat{\beta}_3 For + \hat{\beta}_4 Large + \hat{\beta}_5 Cash_j + \sum \beta_z K_{zj} +$$

$H_0 : \hat{\beta}_1 < 0$ and $\hat{\beta}_5 > 0$ for the strong market discipline hypothesis; that is to say banks that during 1994 paid a higher interest rates and banks that were less self sufficient with respect to liquidity were more heavily rationed during the panic.

and

$$\hat{\beta}_2 < 0; \hat{\beta}_3 > 0; \hat{\beta}_4 > 0 \text{ for the weak market discipline hypothesis}$$

where:

$\hat{\alpha}$ = is an estimate of the common, aggregate component of contagion. Since independent variables are centered in their means, $\hat{\alpha}$ is the fall for the average private domestic retail small bank

$\hat{\beta}_2 < 0$ means that wholesale banks suffered on average a larger fall in deposits than the average private domestic retail small bank.

$\hat{\beta}_3 > 0$ and $\hat{\beta}_4 > 0$ means that foreign banks and the nine biggest domestic retail banks suffered a lower loss than the average private domestic retail small bank.

I distinguish between strong and weak market discipline. For "strong" I understand that depositors made decisions about withdrawals based on quantitative publicly available data. For "weak" I understand that decisions were made based on qualitative features of banks.

The test of strong market discipline is a test of a specific signal or variables used by depositors. Rejection of the strong market discipline test will imply rejection of the signal that is postulated to have been used by depositors, but not a rejection of the market discipline hypothesis since it could have been the case that depositors had used another signal.

Results.

(4) will be run for the whole period May'95/December '94 and also for the three phases. In each case I will run:

i) a set of 4 regressions with strong and weak components of market discipline:

- **Regression 1** shows only the effect of interest rates. (**Regression 2** includes deposits growth 94/91; the significance of this last one variable was found by chance but it is not well understood yet)

- **Regression 3** adds to the previous variables the qualitative features of the banks related to their liquidity position; in section I showed that some groups of banks were better/worse fit to survive a liquidity shock, namely foreign banks, large domestic retail banks and wholesale domestic banks; thus the variables used in this case are dummies for those types of banks. Another version of this regression (**Regression 3'**) will include the ratio cash reserves/assets.

ii) One regression representing the aggregate component plus non specific banks risk variables (term deposits/total deposits, large deposits/total deposits, dollar deposits/total deposits, deposits held by non residents/total deposits). **Regression 4**

iii) One regression showing how much depositors were able to discriminate once controlling for non specific banks risk variables. **Regression 5**. Another version of this regression will include the ratio cash reserves/assets. **Regression 5'**

5.2.1 The complete panic.

Table shows the five regressions for the complete panic, that is to say December '94/May '95.

1. The drop in deposits for the average private bank due to the aggregate shock was around 20/21 %. As we said before those factors are represented here by currency and liquidity risk. When the dummies variables are introduced, it can be seen that the loss suffered by the average private domestic retail small argentine bank was 22/24 %. Small are all domestic retail banks not included in the nine biggest, with assets lower than \$ 800 m

2 Both the centered and uncentered R2 are shown since the mean in the model stands for the contagion effect. On the whole regression 5 allows to explain 75 % of the individual drops in deposits or 40,2 % of cross sectional deviations from the means of deposits drops.

3. The pre-panic interest rate paid by banks has a major role in explaining cross sectional drops in banks 'deposits over the crisis. It can be seen that it is significant even after controlling for non specific banks risk variables in equation 5

4. Qualitative features of banks such as foreign, wholesale domestic and size are also significant showing that for these banks the crisis had a differential impact: negative for wholesale domestic banks and positive for the foreign and large domestic retail big banks. When log of assets replaces the dummy "nine largest" it is not significant (not shown), meaning that it was only very big banks that were seen by depositors as able to diversify away aggregate liquidity risk. This was a right perception. There is preliminary information (not fully processed yet) that banks from abroad increased their exposure to Argentina over the crisis by providing lines to the biggest argentine domestic banks.

5. There was the impression (Figure) that mutual banks had been more affected than the average bank; for instance almost 95 % of mergers during the crisis involved mutual banks. But a dummy for "mutual" is never statistically significant (not shown). One possible explanation is that the information conveyed by this dummy is already contained in the interest rates. "Mutual" , was found to be an important determinant of the probability of failure of banks and the probability of failure was shown to be the main determinant of the pre-panic interest rates paid by banks (see the other paper)

6. When non specific risk banks variables are considered alone (regression 4) they explain less well the cross sectional differences in banks'deposits drops. Over the whole period, the ratio CD's/total deposits ("term") is the only one that is statistical significant and also has the expected sign.

7. Regression 5 summarizes the effect of all components for the whole panic. The outstanding conclusion is that the variables said to represent the market discipline components, both weak and strong are the ones that played the major role in explaining cross sectional deposits drops deviation from their means drops over the crisis. The impact of non specific risk banks variables is not very important when these variables are considered individually, although the set of the four variables was found significant by an F test.

5.2.2. Phase 1. The External Shock-Reassessing Aggregate Liquidity and Currency Risk .

The five regressions about this phase allow to make the following points:

1. The mean fall, depending on the models was between 6 and 7 % for the average private bank and around 8/9 % for small domestic retail private banks.
2. The interest rates paid by banks is statistically significant only when the dummies for foreign, wholesale domestic and size are not present. This is a feature that links this period more to aggregate liquidity risk rather than to individual banks solvency; it will be seen that later in March, April and May "foreign" and "biggest" were less significant.
3. In regression 4 (model that only accounts for aggregate risk and non specific banks risk) all variables are quite significant and have the right sign: banks that had higher term deposits/total deposits ratios and higher large deposits/total deposits ratios were more affected. Also since this is a period associated with currency risk, banks with a higher proportion of dollar deposits were less affected. Finally the dummy for non resident depositors has the right sign although low statistical significance. It should be recalled that the responsibility of the non resident depositor is quite underestimated by this variable that only accounts for *dollar* deposits held by non residents..
4. On the whole regression 5 allows to explain 38 % of the cross sectional variation in deposits falls. Only the weak version of the market discipline hypothesis can be verified for this phase although it is quite an expected result given the nature of the shock. A test for the significance of the set of non specific banks risk variables found them significance when considered all together.

5.2.2.2. The Agreements with Multilateral Organizations: From Aggregate Risk to Individual Banks Abilities to Remain Solvent in the Aftermath of the Shock.

Table shows the five regressions for March 1995. We can see that:

1. The drop in deposits for the average private bank was during this one month around 7 %; for the average small domestic retail private bank was 6 %. which means that during March on average large and foreign banks suffered more contagion than the small banks
2. The interest rate (and also deposits growth 1991/4) becomes more significant than in the previous period in every model; this is in spite of the fact that March is the month during which the crisis attained its deepest point; but March is also the month during which Argentina reached its agreements with the IMF, IDB and WB with particular impact on the perception of aggregate currency and liquidity risk. This is as if March were a turning point, the month during which the main features of the panic had an important change, going from considerations about the ability to face aggregate liquidity risk to the ability to remain solvent once the panic was over. The counterpart is the lower significance of the set of dummies.

3. In Regression 4, when only non specific bank risk variables are considered, only "term" remains significant, reflecting the fact that during March the panic extended not only to more banks but also to other smaller deposits and to dollar deposits.

5.2.2.3. The Internal Phase of the Panic - Reassessing Banks Portfolios Specific Risk.

During April and May there is a deacceleration of withdrawals although this is still not a recovery. But the country has signed a set of agreements with the multilateral organizations, that has increased its foreign reserves and confirmed its policy commitments. As seen in section , depositors from abroad already left but are now returning to the system. Thus, this period of the crisis mostly concerns the domestic depositor.

Table shows the five regressions for April/May.

1. The most important variable that explains cross sectional differences is the interest rate; taken alone it explains 18 % of cross sectional deviations from mean and remains very statistically significant once the regressions are adjusted for non specific banks risk variables. The significance of the interest rate is higher for this phase *than in every model when different periods are compared*. This is the period during which the strong version of the market discipline hypothesis is verified and the dummy variables that signalled for the ability of banks to provide liquidity are not significant any more

2. When non specific banks risk variables are considered in regression 4, it can be found that big has a positive sign although term is still negative though little significant. This represents the immediate large depositors reaction to the agreements signed with the multilateral organizations..

3. Regression (5) allows to explain 24 % of total cross sectional variation. The interest rate is the most significant variable, although taken together the four non specific banks risk variables are significant. It can also be seen that once adjusted by the interest rate, dollar deposits has a negative contribution which is in line with the aggregate behavior described before; that is to say, depositors are returning to their pre-panic portfolio, once the liquidity shock is over.

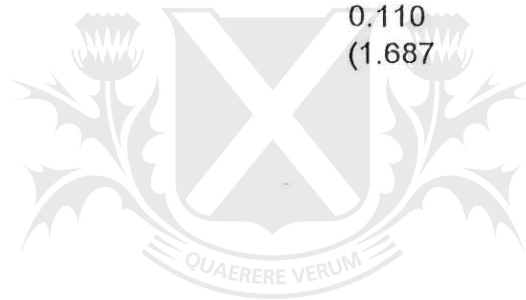
Regressions 3' and 5'. The ratio cash reserves/assets is very significant and has the right sign during the first phase. The significance of the dummy for wholesale domestic banks is not so much less once cash/assets is included, providing some evidence of contagion within the wholesale domestic banks group.

During phase 2 and 3 cash/assets is significant but has the wrong sign. This is another evidence that after March, depositors became less concerned with liquidity risk.

COMPLETE PANIC

Dependent Variable: Log(Deposits as of May 1995/Deposits as of December 20 1994)

	(1)	(2)	(3)	(4)	(5)
Constant	-0.217 (-11,981)	-0.201 (-11,856)	-0.223 -11.188	-0.213 (11,920)	-0.241 (-10.698)
Log. Int. Rate	-0,527 (-4,780)	-0,429 (-4,171)	-0.135 (-0.900)		-0.383 (-2.06)
Dep Growth (94/91)		-0,243 (-4,829)	-0.193 (-3.909)		-0.209 (-3.852)
For			0,167 (2.902)		0.095 (1.704)
Wh.Dom			-0.107 (-1.898)		-0.129 (-2.152)
9 biggest			0,110 (1.687)		0.096 (1.626)
Term				-0.635 (-3.997)	0.133 (0.653)
Big				-0.038 (-0.533)	-0.093 (-1.274)
Dollar Dep				0.15 (1.027)	-0.150 (-0.941)
Non Res				-0.000 (-0,409)	0.001 (0.400)
SSR	3.997	3.295	2.876	3.191	2,000
Number of Obs	117	116	116	107	105
R2	16,0	29.1	36.4	11.3	40.2
R2 (uncentered)	55.8	63.5	68.2	60.6	75.5



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PHASE 1

Dep. Variable: Log(Deposits as of February 1995/Deposits as of December 20 1994)

	(1)	(2)	(3)	(4)	(5)
Constant	-0.074 (-6,363)	-0.061 (-5,439)	-0.079 (-6.050)	-0.082 (-7.812)	-0.092 (-6.531)
Log. Int. Rate	-0.217 (3,033)	-0,139 (-2,016)	0.084 (-0.878)		0.081 (0.700)
Dep Growth (94/91)		-0,139 (-4,111)	-0.094 (-2.946)		-0.059 (-1.735)
For			0.139 (3.634)		0.109 (3.120)
Wh.Dom			-0.114 (-3.104)		-0.090 (-2.474)
9 biggest			0.082 (1.866)		0.075 (2.003)
Term				-0.345 (-3.522)	-0.130 (-1.010)
Big				-0.122 (-2.869)	-0.116 (-2.502)
Dollar Dep				0.134 (1.643)	0.068 (0.718)
Non Res				-0.001 (-1.033)	-0.000 (-0.085)
RSS	2.122	1.807	1.447	1.228	0.849
Number of Obs.	129	127	127	113	110
R2 (cent., adjust)	6,0	15.5	30.7	20.2	37.9
R2 (uncentered)	25.6	33.4	46.7	43.3	58.2



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PHASE 2

Dependent Variable: Log(Deposits as of March 1995/Deposits as of February 1995)

	(1)	(2)	(3)	(4)	(5)
Constant	-0.068 (-13,06)	-0.064 (-12,400)	-0.058 (-9.02)	-0,069 (-11,949)	-0.057 (-6.393)
Log. Int. Rate	-0,064 (-1,971)	-0,040 (-1,259)	-0.092 (-1.929)		-0.119 (-1.738)
Dep Growth (94/91)		-0.06 (-3,806)	-0.056 (-3.477)		-0.061 (-3.054)
For			-0.027 (-1.395)		-0.037 (-1.760)
Wh.Dom			-0.041 (-2.309)		-0.055 (-2.600)
9 biggest			0.002 (0.104)		-0.003 (-1.129)
Term				-0.147 (-2,751)	-0.131 (-0.172)
Big				-0,021 (-0,908)	0.003 (0.101)
Dollar Dep				0.014 (-,319)	-0.021 (-0.374)
Non Res				0,000 (0,225)	0.000 (0.331)
RSS	0.403	0.356	0.335	0.359	0.292
Number of Obs	125	123	123	112	109
R2 (cent., adjust)	2.3	12.2	15.2	4.3	17.11
R2 (uncentered)	58.1	62.9	65.0	58.9	66.5

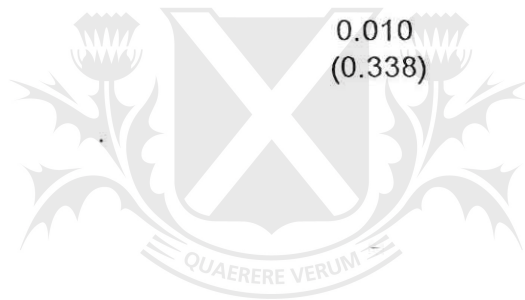


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PHASE 3

Dependent Variable: Log(Deposits as of May 1995/Deposits as of March 1995)

	(1)	(2)	(3)	(4)	(5)
Constant	-0.078 -10.631	-0,079 (-10,902)	-0.082 (-8.704)	-0.056 (-6.923)	-0.077 (-6.315)
Log. Int. Rate	-0.23 (-5,187)	-0,229 (-4,996)	-0.201 (-2.829)		-0.269 (-3.117)
Dep Growth (94/91)		0.009 (0,384)	0.008 (0.326)		-0.011 (-0.363)
For			0.012 (0.429)		0.004 (0.152)
Wh.Dom			0.017 (0.652)		-0.025 (-0.791)
9 biggest			0.010 (0.338)		0.004 (0.131)
Term+Savings				-0.376 (-1.651)	0.161 (0.576)
Big				0.090 (2.762)	0.050 (1.310)
Dollar Dep				-0.006 (-0.094)	-0.150 (-1.877)
Non Res				0.000 (0.479)	0.001 (1.400)
Dep Growth (94/91)					-0.011 (-0.363)
RSS	0.649	0.643	0.64	0.653	0.54
Number of Obs	116	115	115	106	104
R2 (cent., adjust)	18.4	16.9	15.1	10.3	19.8
R2 (uncentered)	50,7	51,0	51.2	46.1	55.4

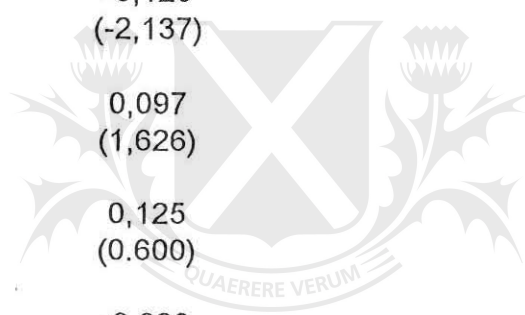


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COMPLETE PANIC

Dependent Variable: Log(Deposits as of
May '95/Deposits as of December 20 1994)

	(3')	(5')
Constant	-0,226 (-11,018)	-0,241 (-10,647)
Log. Int. Rate	-0,127 (-0,846)	-0,385 (-2,060)
Dep Growth (94/91)	-0,178 (-3,312)	.0,212 (-3,801)
Cash/Assets	0,023 (0,686)	-0,009 (-0,244)
For	0,174 (2,971)	0,094 (1,658)
Wh.Dom	-0,100 (-1,728)	-0,129 (-2,137)
9 biggest	0,110 (1,680)	0,097 (1,626)
Term		0,125 (0,600)
Big		-0,099 (-1,283)
Dollar Dep		-0,154 (-0,957)
Non Res		0,001 (0,368)
SSR	2,863	1,979
Number of Obs	116	105
R2	36,11	39,6
R2 (uncentered)	68,3	75,6



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PHASE 1

Dependent Variable: Log(Deposits as of
February'95/Deposits as of December 20 1994)

	(3')	(5')
Constant	-0,088 (-7,080)	-0,092 (-6,625)
Log. Int. Rate	118 (1,308)	0,091 (0,806)
Dep Growth (94/91)	-0,042 (-1,288)	-0,042 (-1,226)
Cash/Assets	0,084 (4,102)	0,052 (2,421)
For	0,164 (4,496)	117 (3,433)
Wh.Dom	-0,087 (2,485)	-0,091 (-2,579)
9 biggest	0,080 (1,934)	0,071 (1,948)
Term		-0,076 (-0,596)
Big		-0,081 (-1,704)
Dollar Dep		0,086 (0,924)
Non Res		0,000 (0,250)
SSR	1,269	0,090
Number of Obs	127	110
R2	38,6	40,8
R2 (uncentered)	53,3	60,5



PHASE 2

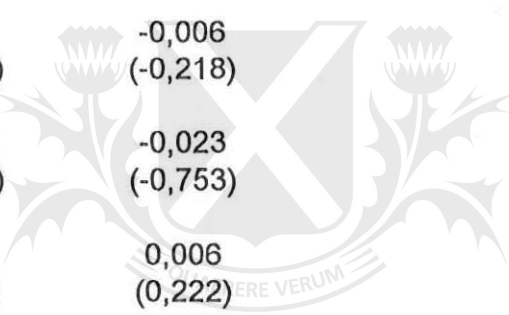
Dependent Variable: Log(Deposits as of
March '95/Deposits as of February 1994)

	(3')	(5')
Constant	-0,055 (-8,546)	-0,058 (-7,089)
Log. Int. Rate	-0,101 (-2,130)	-0,125 (-1,867)
Dep Growth (94/91)	-0,070 (-4,089)	-0,071 (-3,518)
Cash/Assets	-0,023 (-2,142)	-0,029 (-2,228)
For		-0,042 (-2,037)
Wh.Dom		-0,054 (-2,596)
9 biggest		-0,001 (-0,040)
Term		-0,042 (-0,551)
Big		-0,016 (-0,576)
Dollar Dep		-0,031 (-0,564)
Non Res		0,000 (0,001)
SSR	0,323	0,278
Number of Obs	123	109
R2	17,7	20,4
R2 (uncentered)	66,4	68,2



PHASE 3**Dependent Variable: Log(Deposits as of
May'95/Deposits as of March 1994)**

	(3')	(5')
Constant	-0,075 (-8,072)	-0,076 (-6,479)
Log. Int. Rate	-0,220 (-3,244)	-0,289 (-3,441)
Dep Growth (94/91)	-0,024 (-0,943)	-0,028 (-0,954)
Cash/Assets	-0,054 (-3,565)	-0,047 (-2,617)
For	-0,005 (-0,190)	-0,006 (-0,218)
Wh.Dom	-0,001 (-0,023)	-0,023 (-0,753)
9 biggest	0,010 (0,364)	0,006 (0,222)
Term		0,019 (0,068)
Big		0,014 (0,349)
Dollar Dep		-0,179 (-2,291)
Non Res		0,001 (1,140)
SSR	0,573	502
Number of Obs	115	104
R2	23,2	24,5
R2 (uncentered)	56,4	58,4



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