



Why Privatize? The Case of Argentina's Public Provincial Banks

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Summary. — This paper analyzes detailed data on the pre- and post-privatization performance of publicly-owned provincial banks in Argentina. It estimates fiscal savings associated with privatization and describes the technical process that was used. The process included the creation of residual entities for the liabilities that private buyers found unattractive. The paper argues that the Fondo Fiduciario, which was created to convert the short-term liabilities of the residual entities into long-term obligations, helped make these privatizations politically feasible. Given the substantial number of state-owned banks in developing countries, this paper provides insight into the desirability and feasibility of future privatizations. © 1999 Elsevier Science Ltd. All rights reserved.

1. INTRODUCTION

Bankers' incentives matter. Banks are key institutions for attracting savings, in the form of short-term deposits, and converting them into longer-term investments, in the form of loans. When private capital is genuinely at risk, bankers have strong incentives to gather information about the creditworthiness of potential borrowers, which they can then use to determine how, and on what terms, credit is allocated. This ensures that investment is directed toward the most productive purposes and imposes a hard-budget constraint on firms.¹ When political pressure distorts bankers' incentives, however, credit may be directed without due regard to commercial lending criteria. These pressures are likely to be especially pronounced for state-owned banks. In theory, bank privatization might, therefore, have a large effect on financial sector performance and, in turn, on aggregate long-term growth.²

In practice, however, bank privatization has not always been successful. For example, Chile privatized many public banks in the early 1970s as part of its privatization program. In 1982, the financial distress of the industrial conglomerates caused by high interest rates and currency devaluation meant that many firms were unable to service their loans.³ This forced the government to rescue, and renationalize, many of the recently privatized banks. World

Bank (1989) suggests that an inadequate regulatory framework "allowed [the privatized banks] to be acquired by industrial groups, which used them to make excessive loans to group firms" (p. 127).⁴ In a crosscountry analysis, Cull (1997) finds that financial depth did not increase in countries that received World Bank loans with conditionalities tied to

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bank privatization, relative to countries that received other types of World Bank financial sector loans.⁵ These results emphasize that bank privatization might only be successful when accompanied by improved regulation.

Unlike some other countries that undertook substantial bank privatization, Argentina tried to improve banking sector regulation and supervision. In the 1990s, Argentina gradually raised capital adequacy ratios, adopted stricter loan classification and provisioning standards, improved the certification procedure for bank auditors, imposed minimum diversification standards for bank loan portfolios including lending limits to a single affiliate, maintained high reserve requirements, and recreated and strengthened the Superintendency of Banking.⁶ At the same time, Argentina took strides to loosen foreign entry restrictions and to privatize state-owned banks, especially those owned by the provinces and municipalities.⁷ The substantial number of bank privatizations and the improvements in the regulatory framework combine to make Argentina a unique case study—the benefits of privatization should be especially noticeable given the attention paid to regulation and supervision. The data that follow indicate that state-owned banks allocated credit poorly and thus lost capital at a far greater pace than privatized banks; that privatization will likely reduce the fiscal burden associated with recapitalizing struggling state-owned banks; and that privatized banks have substantially improved their loan portfolio quality and operational efficiency. Although the post-privatization period has not been long, many of the privatized banks appear to be functioning as well as the largest private banks in Argentina, a number of which are foreign-owned.

Argentine bank privatizations offer a unique opportunity for analysis for another reason—provincial policy makers, who were in different political and fiscal situations, were making a “one-shot” decision because Argentine provinces typically had only one or two banks to privatize. By contrast, in Eastern and Central Europe it appears that governments often decided to privatize the highest-quality state banks first.⁸ The demonstration effect of successfully privatizing a state “jewel” could have garnered political support for the privatization program in general, thus permitting the sale of more marginal banks in the future. Such demonstration effects were not important objectives for provincial policy makers since the

provinces often, as noted above, did not own additional banks. A companion paper (Clarke and Cull, 1998), which studies the political economy of bank privatization in Argentina, confirms this empirically and finds that political incentives affect the likelihood of privatization. We find that poorly performing banks were more, not less, likely to be privatized; that provinces with governors who belonged to the fiscally conservative *Partido Justicialista* were more likely to privatize (and to do so earlier); and that fiscal and economic crises increased the likelihood of privatization. The sequence of bank privatizations was, therefore, notably affected by fiscal and political pressures.

The paper begins by estimating the fiscal impact of privatizing Argentina’s public provincial banks. In section 2, using the estimated loss rates, we calculate the future costs of recapitalization. The results indicate that the present value of future recapitalization far exceeds the costs associated with privatization, and is large compared to either provincial deficits or provincial expenditures.⁹ Section 3 describes how assets and liabilities were apportioned between the privatized provincial bank and a “residual” entity, and discusses the fiscal implications of this strategy. The privatized bank that was created contained performing assets from the old public provincial bank which were matched with a nearly equal amount of the old bank’s (mostly private) liabilities.¹⁰ Nonperforming assets, and the remaining liabilities, were retained as a “residual entity” by the province.¹¹ In addition, most provinces agreed to capitalize jointly the privatized provincial bank with the winning bidder.¹² The sum of these capitalization costs and the eventual losses associated with liquidating the residual entity will be the realized costs of privatization.¹³ Importantly, even if *no* residual entity assets are recovered, the recapitalization simulations indicate that the typical province would generate large fiscal savings from privatizing its public provincial bank.

Another important fiscal issue is the future solvency of the privatized provincial banks. If privatized provincial banks continue to operate as poorly as public provincial banks, they will go bankrupt. Although predicting the future solvency of any bank, public or private, is a speculative endeavor, the available post-privatization data strongly suggest that the privatized provincial banks operate quite differently from public provincial banks. In fact,

data presented in section 4 on credit allocation by sector, operating income and costs, and portfolio quality indicate that, by 1996, privatized provincial banks operated similarly to the 10 largest private banks in Argentina. A case can be made, therefore, that the solvency risks posed by privatized provincial banks are no worse than those posed by the typical private bank—although it should be emphasized that the post-privatization experience has not been long, and future data are required before firmer conclusions can be drawn. Finally, in section 5, we conclude and draw lessons from Argentina's bank privatization experience to date.

2. THE COST OF NOT PRIVATIZING

During 1991–96, the net worth of most public provincial banks fell, even in nominal terms (See Table 13 in Appendix B). The notable exception was Banco de La Provincia de Buenos Aires (hereafter Buenos Aires), whose net worth increased at a pace commensurate with many well-established private banks. Given its location and the resulting implications for its business, Buenos Aires' situation appears to be distinct from those of other public provincial banks.¹⁴ Therefore, Buenos Aires is treated separately in much of the analysis.

Using balance sheet data from during 1991–96, Appendix B estimates the rate at which provincial, private, and privatized provincial banks' net worth declined relative to total liabilities (and assets). The data indicate that loss rates were, on average, much higher for public provincial banks than for privatized or private banks. Based upon this data, we derive counterfactual estimates of the cost of recapitalizing typical public provincial banks under a variety of scenarios.

In the simulations, the ratio of net worth to total liabilities (NW/TL) of the public provincial bank is assumed to fall at the average rate that NW/TL fell for public provincial banks (except Buenos Aires) during 1991–96 (i.e. 9%). It is also assumed that the province recapitalizes the simulated bank every three years so that its ratio of net worth to total assets is 11.5%, the level dictated by Argentine prudential regulations.¹⁵ Finally, it is assumed that nominal liabilities grow at a rate of 11% per year, the average rate for public provincial banks during the period.¹⁶ For a bank with 25,000,000 pesos in reported net worth, a level very close to the median for public provincial banks (except Buenos Aires) from 1994–96, the nominal recapitalization payments would total over 205.5 billion pesos if it remained in public hands.¹⁷

Discounted repayment flows using a 10% interest rate are shown in column 7 of

Table 1. *Estimates of the costs of recapitalizing a typical public provincial bank*

Ratio of Net Worth to Assets in Year 1: 0.115 (Required by Argentina's Prudential Regulations)						
Net Worth in Year 1: 25,000,000						
Loss Rate in Ratio of Net Worth to Liabilities: 0.090 (Sample Mean, Provincial)						
Rate of Growth in Nominal Liabilities: 0.113 (Sample Mean, 1996)						
Discount Rate is 10% for Present Value Calculations						
Year	Net Worth millions	Total Assets millions	Total Liabilities millions	Implied Asset Growth During Cycle	Nominal Recapitalization	Present Value of Recapitalization Payment Millions
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	25	217	192	0.020	0	0
3	-11.9	226	238	0.020	42.9	29.3
6	-14.8	280	295	0.020	53.1	27.2
9	-18.3	347	366	0.020	65.8	25.3
12	-22.6	430	453	0.020	81.5	23.6
96	-9092.0	172,747	181,839	0.020	32731.0	3.2
99	-11262.8	213,994	225,257	0.020	35881.6	2.6
Total					205,515	383

Table 1.¹⁸ This discount rate is used by the World Bank in evaluating many of its long-term projects in Argentina and is, therefore, both inflation and risk-adjusted. The 10% rate implies a discounted payment stream of 383 million pesos. Recall that the simulated bank's total assets were only 217 million pesos at the start of the period (column 3). To put that 383 million peso figure into better perspective, note that the average size of the residual entities created to date has been about 46% of the pre-privatization assets, 66% of liabilities (Table 2).¹⁹ If the simulated bank were typical of the privatized provincial banks created to date, we would expect a residual entity of 125.8 million pesos in liabilities and 100.2 million in assets. In general, the costs associated with capitalizing the privatized entity and its sales price were quite small in comparison with the size of the residual entity (see sections 3 and 4 for details). Ignoring those factors for the moment, if the province recovered none of the assets of the simulated residual entity, and paid off all its liabilities immediately, *the costs would be less than one-third of the estimates of discounted recapitalization costs*. Even a province that discounted future pesos at a rate as high as 15% would save six million pesos if it re-

covered nothing from its residual entity.²⁰ From a fiscal perspective, the choice is clear, even when a province manages the residual entity as poorly as is possible. In practice, however, provinces may be able to recover a significant portion of the residual entities' assets, and may negotiate their way out of some liabilities. In those cases, the choice to privatize should be even clearer.

Simulated recapitalization costs are large not only in comparison with the residual entity, but also with respect to other fiscal variables. In 1996, the average expenditures for the provinces that had privatized their banks was 720 million pesos; their average deficit was 21 million (Table 3). The 383 million pesos, therefore, represent over half of yearly government expenditures. In every third year, recapitalization payments of 20–30 million pesos would more than double the typical 1996 deficit. Even under the assumption that the province manages the residual entity as poorly as possible, the savings from privatization (257 million pesos) would amount to a third of yearly government expenditures and could finance 1996 deficits for over twelve years.²¹ In short, the potential fiscal savings associated with privatization are large, even with counterfactual recapitalization esti-

Table 2. *Residual entities as a percentage of pre-privatization assets/liabilities*

Residual entity	Year created	Assets millions	Assets as % of assets prior to privatization	Liabilities millions	Liabilities as % of liabilities prior to privatization
(1)	(2)	(3)	(4)	(5)	(6)
Chaco	1995	245.3	54.0	233.1	56.8
Formosa	1995	135.7	36.7	244.9	83.4
Mendoza	1996	666.6	61.2	666.6	71.4
Misiones	1995	144.2	28.6	331.8	66.0
Prev. social ^c	1996	292.1	49.7	292.1	56.4
Rio Negro	1996	49.2	24.6	47.4	26.2
Salta	1996	91.6	73.3	73.4	74.2
San Juan	1996	78.6	34.2	175.3	66.9
San Luis	1996	29.7	31.6	81.8	90.1
Sant del Est ^c	1996	199.6	81.1 ^a	227.3	84.4 ^a
Tucuman	1996	261.7	66.7	262.9	70.2
Average		199.5	46.1 ^b	239.7	66.1 ^b

Source: Fondo Fiduciario. Assets in year prior to privatization come from B.C.R.A. balance sheet data.

^a Asset data for Santiago del Estero implied that their residual entity was 135% of pre-privatization assets, an obviously unrealistic estimate. Figure for Santiago del Estero are, therefore, based on reported assets in the year of their privatization (1996). See note 19 for further discussion of Santiago del Estero.

^b Calculation excludes Santiago del Estero.

^c Prev Social is the former Banco de Prevision Social de La Provincia de Mendoza; Sant del Est is the former Banco de La Provincia de Santiago del Estero.

Table 3. *Fiscal situation of provinces in 1996*

Sample	Average expenditure (millions of pesos)	Average revenues (millions of pesos)	Deficits (millions of pesos)
1. All provinces	2,195.2	2,263.3	68.1
2. Provinces except Buenos Aires	1,075.0	1,105.2	30.2
3. Provinces that have privatized provincial banks	698.8	719.9	21.2

Source: Ministry of Economy (National Directorate for Fiscal Coordination with the Provinces).

mates designed to be conservative. Had we used a discount factor of 5%, for example, the discounted recapitalization stream would have been 4.2 *billion* pesos—six years of provincial expenditures, enough to finance the equivalent of a 20 million peso deficit (in 1996) for some 200 years.

One might argue that public provincial bank quality has improved, or that the remaining banks are of higher quality than those that have already privatized, and thus the 9% loss rate in NW/TL overstates future losses. If the remaining public provincial banks are better ones (and thus have lower loss rates), their quality should be reflected in a smaller residual entity.²² Their discounted recapitalization payments may be smaller than for the early privatizers but, because these payments are offset by the liabilities of a much smaller residual entity, privatization will also make sense for them—unless, of course, these banks are of such high quality that they experience no losses

in the future. The data on net worth and NW/TL, and that presented in section 4 on operating income and costs, however, make that proposition especially dubious.²³

3. THE PRIVATIZATION PROCESS AND ITS FISCAL IMPLICATIONS

The quality of a public provincial bank's portfolio did not go unnoticed by depositors in an environment where there was no explicit deposit insurance, especially in a time of crisis.²⁴ We have detailed data on deposit flight from the public provincial banks during the Tequila Crisis (Table 4). Clarke and Cull (1997) demonstrate that the provincial banks that suffered the most deposit flight tended also to have the highest shares of nonperforming loans. By contrast, large private banks and some large public banks (including Banco de la Provincia de Buenos Aires) actually gained

Table 4. *Deposit flight from public provincial banks during the Tequila crisis*

Public provincial bank	Deposits as of 1/31/95 (millions of pesos)	Change in deposits from 12/94 to 1/95(millions of pesos)	Percent change in deposits from 12/94 to 1/95
Buenos Aires	3,085	+71.0	+3.2
Salta	50	+10.1	+10.6
San Luis	99	+0.9	−19.5
Rio Negro	151	−8.8	−17.1
Jujuy	88	−15.2	−29.3
Formosa	89	−34.8	−25.3
Santa Fe	632	−39.0	−15.4
Chubut	179	−47.2	−20.4
San Juan	170	−54.8	−30.2
Social de Cordoba	268	−56.0	−14.7
La Pampa	368	−60.5	−18.6
Cordoba	926	−111.4	−14.2
Neuquen	180	−113.2	−39.6
Mendoza	528	−137.9	−21.7

Source: B.C.R.A. and the Fondo Fiduciario.

deposits during the crisis. It appears that it was largely a liquidity crunch, one that affected the worst banks most severely, and compelled many provinces to privatize. There were, however, some notable exceptions. For example, Cordoba, whose public banks suffered relatively high deposit flight, opted not to privatize. Econometric evidence in Clarke and Cull (1998) indicates that, in Cordoba's case, the political affiliations of its leaders made privatization much less likely. We do not, therefore, want to overstate the importance of the liquidity crunch in bringing about privatizations, but we do put it forth as a contributing cause.

The quality of the bank's portfolio, in practice, also determined the size of the residual entity. Although a poor portfolio largely reflected past performance and, therefore, had nothing to do with the privatization process *per se*, opponents were likely to claim, at least in the court of public opinion, that the realized losses were due to privatization. In all but one observed case, the purchaser of the privatized entity did not assume ownership of all pre-privatization assets and liabilities. While this might seem strange from an economic perspective—buyers could have simply paid negative prices (i.e. been paid by the province)—political reality and the buyer's desire to “start afresh” dictated that a residual entity be created to ensure a positive price.

Although the individual cases varied, the basic strategy was to shift attractive assets to

the privatized entity and then match those assets with liabilities, while leaving the privatized entity with sufficient net worth. The key determinant of the size of the residual entity was, therefore, the quality of the public provincial bank's assets (see Table 5).

A simple cross-sectional ordinary least squares (OLS) regression (which incorporates the nine banks for which reliable data on fixed assets and nonperforming loans were available) shows that the worse the public provincial bank's portfolio, the larger the residual entity.²⁵

$$\begin{aligned} \% \text{Assets} = & 27.8 + 0.548 (\% \text{ nonperforming}) \\ (\text{t-stat}) & (2.53) \quad (2.49) \\ & + 0.798 (\% \text{ physical assets}) \\ & (0.39) \end{aligned}$$

$$N = 9, \text{ Adj. } R\text{-Squared } 0.352.^{26}$$

Results for physical assets are less compelling. Although the coefficient is positive, it is not statistically significant. Given so few observations, however, provincial policy makers should consider the possibility that physical assets might increase the size of their residual entity and might require a different liquidation strategy than financial assets.

In some cases the public provincial bank had negative net worth when privatized (ensuring that residual liabilities will be larger than re-

Table 5. *Size of residual entities*

Bank	% of Pre-privatization assets	% of Pre-privatization liabilities	% Nonperforming pre-privatization (1994)	% Normal pre-privatization (1994)	Physical assets (% of pre-privatization assets)
Chaco	54.0	51.3	32.6 ^b	52.6 ^b	8.9
Formosa	36.7	66.2	4.0	79.4	2.5
Mendoza	61.2	61.2	20.2	49.5	0.3
Misiones	28.6	65.8	12.5	71.6	5.3
Prev social	49.7	49.7	34.2	43.4	1.0
Rio Negro	24.6	23.7	47.3	28.4	1.2
Salta	73.3	58.7	75.9	7.5	4.5
San Juan	34.2	76.4	23.1	68.8	1.5
San Luis	31.6	87.1	12.9	80.9	35.5
Sant del Est	81.1 ^a	84.4 ^a	71.8 ^c	13.8 ^c	3.7
Tucuman	66.7	67.0	53.4	43.8	4.6

Sources: Data on the % of loans that are non-performing and normal comes from B.C.R.A. balance sheets. Data on physical assets comes from Fondo Fiduciario balance sheets for residual entities at the time of privatization.

^a Calculations described in Table 2.

^b 1993 data were used. By 1994, the effects of privatization were evident in Chaco's portfolio quality data.

^c 1993 data were used. No data were available for 1994.

sidual assets). In these cases, no matter how successful the recovery of residual assets, the provinces will face net losses. In the two worst cases (Formosa and Misiones), residual liabilities exceed assets by 100–200 million pesos. Although these losses are substantial, as the simulation results indicate, from a fiscal perspective privatization is still the best choice. For Misiones and Formosa, banks whose assets were roughly twice the size of the simulated bank in section 2, the discounted recapitalization stream would total well over 500 million pesos, substantially more than the 200–350 million pesos they face in residual liabilities.

While residual asset recovery will, hopefully, proceed quickly, it will neither be quick enough, nor on such advantageous terms, to cover most residual liabilities—even in those cases where assets exceed liabilities. As a result, provinces needed some way to meet a substantial portion of their residual obligations immediately. In an effort to address this, the Argentinean Government, the World Bank and the Inter-American Development Bank developed the Fondo Fiduciario, a part of the federal government that extends loans to provinces that have privatized their provincial banks. The provinces used the loan proceeds to pay off obligations. In this way, some short-term obligations were converted to longer terms. From a political perspective, financing obligations in this way was clever, as the yearly loan payments due to

the Fondo are less eye-catching than the short-term obligation payments would have been.²⁷

The Fondo Fiduciario's experience to date is summarized in Table 6. For the smaller residual entities (below 200 million pesos in liabilities), Fondo Fiduciario loans typically covered well over half of their liabilities. For medium-sized residual entities (200–300 million pesos), Fondo loans met roughly one-third of their obligations. For the two largest residual entities, these loans covered less than a quarter of total liabilities. Clearly, those provinces with the largest residual liabilities will have the most pressure to recoup residual assets quickly, as they were able to refinance a relatively small portion of their obligations through the Fondo. It is also interesting to note that, in each case, at least half of the loan proceeds went to retire obligations to two creditors—B.C.R.A. (Banco Central de la Republica Argentina) and Banco de la Nacion.²⁸ Although the data provided by the Fondo Fiduciario does not indicate why or when these debts were incurred, both B.C.R.A. and Banco de la Nacion were important sources of liquidity for the public provincial banks, especially during the Tequila Crisis.

In those cases where a relatively small share of liabilities was financed through the Fondo, the short-term fiscal implications of privatization will depend largely on the province's ability to negotiate its way out of liabilities and to

Table 6. *Fondo Fiduciario assistance*

Bank	Residual liabilities ^a (millions)	Total loan from FF ^a (millions)	Undisbursed as of 2/4/97	Debts paid to B.C.R.A.	Debts paid to Banco De La Nacion
Chaco	233.1	78.0	0	78.0	0
Entre Rios	N/A.	78.0	0	45.3	0
Formosa	244.9	80.0	0	32.2	37.7
Jujuy	N/A.	50.0	33.3	16.6	0
Mendoza	666.6	160.0	0	89.7	70.3
Prev social	292.1	100.0	0	79.3	20.7
Misiones	331.8	78.0	0	20.2	47.6
Rio Negro	47.4	80.0	0	32.3	11.5
Salta	73.4	50.0	0	16.7	9.5
San Juan	175.3	78.0	0	43.7	34.3
San Luis	81.8	50.0	0	21.0	0
Santa Fe	N/A.	160.0	160.0	N/A.	N/A.
Sant del Est	227.3	50.0	33.3	3.0	0
Tucuman	262.9	80.0	25.0	53.6	18.1

Source: Fondo Fiduciario.

^a Fondo Fiduciario loans data are reported in US dollars. Residual liability data are reported in pesos. Since the exchange rate is pegged so that a peso is worth a dollar, this presents little problem.

recover provincial assets. There is little available evidence on the provinces' experiences to date. When we conducted our study, the Fondo Fiduciario had balance sheets for only three residual entities both at their inception and at some point later (when asset recovery and liability retirement should have already begun). Unfortunately, the balance sheet data for these three cases do not give any indications as to the terms on which the assets were recovered or liabilities retired. Assets may have been recovered at a rate of pennies on the dollar, while liabilities may have been retired at face value.

In many cases the province contracted the owner of the privatized entity to collect residual assets. The private owners receive a higher percentage of face value for recovering lower quality assets (i.e., loans for which repayment problems have been most chronic). To the extent that residual balance sheets reflect the face value of assets, such contracts make it impossible for the province to receive compensation for the full value of its residual assets. This is not, of course, to imply that these contracts are a bad deal for provinces—indeed, it is likely that private entities with the appropriate incentives are best equipped to recoup assets.

Rather, we merely point out that, in many cases, the upper bound on asset collection may be somewhat lower than what is reflected in residual balance sheets.

Given so little data, analyzing the effect of the liquidation contracts on asset recovery is beyond the scope of this paper. In the future, however, such an analysis may be possible, although it would require very detailed data on the quality of the assets recovered, the terms of each liquidation contract, and the terms on which credits were repaid. Table 7 summarizes the total fiscal costs associated with privatization for individual provinces under various asset recovery scenarios. The total potential short-term costs associated with privatization are equal to the sum of any capitalization costs borne by the province plus residual entity liabilities, minus the price paid for the privatized entity (column 5). Final privatization costs will depend on the extent to which provinces recover residual assets. Column 6 lists total privatization costs assuming that 20% of residual assets are recovered; column 7 assumes a 50% recovery rate. Clearly, total costs will be quite sensitive to the success of the recovery effort. The total cost estimates in Table 8 as-

Table 7. *Total fiscal costs associated with privatization under various residual asset recovery scenarios*

Province	Amount paid for privatized bank (million pesos) ^a	Value of shares retained by province (million pesos) ^b	Liabilities of residual entity (million pesos)	Assets of residual entity (million pesos)	Total fiscal costs of privatization 0% asset recovery	Total fiscal costs of privatization 20% asset recovery	Total fiscal costs of privatization 50% asset of recovery
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Chaco	6.3	2.9	233.1	245.3	229.7	180.6	107.0
Entre Rios ^c	15.1	N/A.	N/A.	N/A.	N/A.	N/A.	N/A.
Formosa	9.3	4.0	244.9	135.7	239.6	212.4	171.7
Mendoza	20.1	0.6	666.6	666.6	647.1	513.8	313.8
Prev social	8.2	0.2	292.1	292.1	284.1	225.7	138.0
Misiones	9.1	0.0	331.8	144.2	322.7	293.9	250.6
Rio Negro	10.2	1.8	47.4	49.2	39.0	29.2	14.4
Salta	4.4	1.1	73.4	91.6	70.1	51.8	24.3
San Juan	11.3	3.8	175.3	78.6	167.8	152.1	128.5
San Luis	5.4	0.0	81.8	29.7	76.5	70.5	61.6
Sant del Est	6.7	0.0	227.3	199.6	220.7	180.7	120.9
Tucuman	10.3	2.6	262.9	261.7	255.2	202.9	124.4

Source: Fondo Fiduciario.

^a Most of the amounts paid for privatized entities went back to the new private banks either in the form of capital integrated or as deposits made by the provincial government. These small amounts should not, therefore, be seen as necessarily having improved the province's fiscal situation.

^b Because the province could presumably sell any shares it continues to hold, the fiscal implications of holding shares is likely to be small. See note 12 for a discussion of this point.

^c No residual entity was created in Entre Rios and, therefore, the total cost estimates are not meaningful for that case.

Table 8. *Average ratios of income to cost*

	Financial income/ administrative costs	Income from services/ administrative costs	Total income/ administrative costs
<i>Overall:</i>			
Private	0.915	0.529	1.44
Provincial	0.375	0.402	0.778
Privatized	0.669	0.736	1.41
<i>1994:</i>			
Private	0.764	0.543	1.307
Provincial	0.524	0.386	0.911
Privatized	0.413	0.798	1.211
<i>1995:</i>			
Private	0.883	0.494	1.377
Provincial	0.245	0.339	0.584
Privatized	0.633	0.751	1.385
<i>1996:</i>			
Private	1.088	0.506	1.595
Provincial	-0.026	0.425	0.399
Privatized	0.758	0.742	1.501

Data Source: B.C.R.A.

Notes: The privatized sample includes all banks that had completed their privatization by March 1996 (Chaco, Corrientes, Entre Rios, Formosa, La Rioja, Misiones, Rio Negro, and Salta). Only these cases had at least six months of post-privatization data on income and costs. The private sample is the 10 largest private banks in Argentina in 1996. The provincial sample includes pre-privatization observations for the banks in the privatized sample. When data were available for only a sub-sample of months for a given bank, the data were annualized.

sume that the province pays off all of the residual liabilities. To the extent that they are able to negotiate their way out of some liabilities, the total cost figures in columns 5–7 should be reduced. The bulk of the short-term fiscal implications will, therefore, derive from the terms on which the residual entity is liquidated. The Fondo Fiduciario loan data, moreover, should be some guide as to the post-privatization financing assistance that provinces might expect.

4. PRIVATIZED PROVINCIAL BANKS: INDICATORS OF FUTURE SOLVENCY

Owners of privatized provincial banks should face the same incentives as other private bankers in Argentina. To the extent that prudential regulations and bank supervision are adequate—and all indications are that both have improved substantially in the 1990s—neither privatized nor private banks should be so crisis-prone that they pose a substantial bail-out risk, especially when one considers that Argentina's present system of deposit insurance

has a disciplining effect on member banks.²⁹ In a country with a strong private deposit insurance program, provinces that privatized their banks should have little incentive to bail out troubled institutions.³⁰

Owners of privatized provincial banks however, are not in exactly the same situation as other private bankers—most received a contract to continue providing banking services to the province as part of their sales agreement. As banker to the provincial government, privatized provincial banks maintain a privileged position within the banking industry which may distort incentives. In this section, we compare privatized provincial banks with well-established private ones to determine whether they operate similarly. Available post-privatization data strongly suggest that, despite their service contracts with the provinces, privatized provincial banks did change their operations substantially. Their similarities with private banks are now far more pronounced than their similarities with the remaining public provincial banks. Importantly, although we cannot quantify the social welfare benefits, the data indicate that

credit allocation is improving. While the focus of this paper is on the fiscal benefits to the provinces—which appear to be quite substantial—it is quite likely that the most important benefit of privatization is the economic growth that should follow from improved credit allocation. Indeed, these benefits could make it wise to privatize even if the fiscal calculus did not favor privatization.

(a) *Operating income and costs*

The public provincial banks' low ratio of operating income to administrative costs is one indication of their inefficiency. During 1993–96 the typical public provincial bank generated only 0.778 pesos in total income (net financial income and income from services) for every peso spent on administrative costs (Table 8). The typical private bank, in contrast, generated 1.44 pesos in income for every peso incurred in costs and the typical privatized provincial bank generated 1.41 pesos in income per peso of cost. There was, however, a difference between privatized and private banks in the composition of income. About two-thirds of the income of private banks was financial income, while only a third was from services. In contrast, over half of the income of the privatized banks was generated through services, perhaps due to their unique relationship with the provincial governments. As described below, however, that relationship is far less pronounced in credit allocation decisions—neither private nor privatized provincial banks lend much to the public sector.

Although the privatized bank data are from different yrs (1994–96) than the private bank data (1993–96), this does not appear to be driving the results.³¹ Table 8, which also shows income and cost data broken down by year, indicates that the privatized and private banks generated comparable levels of total income per peso of cost each year that data on privatized provincial banks are available. Privatized provincial banks did generate a higher share of income through services than private banks each year but, in terms of efficiency in generating total income, their performances were remarkably similar to their well-established private competitors, and markedly better than the remaining public provincial banks. Total income outpaced administrative costs by a wide margin for the typical privatized and private bank every year. This should inspire some confidence in the future solvency of these

institutions. In contrast, the financial and service income of the public provincial banks failed to outpace administrative costs every year.

The improved performance of the public provincial banks is not, moreover, the result of improved performance in only one or two banks. In *every* instance in which the ratio of total income to administrative costs was less than one prior to privatization, the post-privatization ratio was greater than one (Table 9). This increased efficiency has coincided with substantial portfolio growth. Assets and liabilities have typically more than doubled in the years since privatization. It does not appear that privatized banks were content merely to maintain the portfolios that they inherited. Growth in assets has been fueled by the privatized banks' ability to attract deposits, which have increased at about the same pace as overall liabilities.

Substantial post-privatization improvement in the ratio of portfolio income to administrative costs suggests that new loans created from the increase in deposits have been profitable. Figures on branches and employment make it clear that the improved operating margins are not merely the result of cost cutting. Since privatization, the number of branches decreased only slightly, if at all, for each bank.³² Although some labor shedding has occurred, in most cases for which data are available, the work force has not been reduced by more than 15%. In summary, the data indicate that remaining employees generate profit far more efficiently than before. This suggests that the banks' loan portfolios became far more commercially oriented after privatization. Credit allocation data presented in the next subsection provides additional support for this hypothesis.

(b) *Credit allocation*

Portfolio composition data for privatized, provincial, and private banks in June 1996 are presented in Table 10.³³ In general, regardless of the industry, the percentage of total credits rated good was highest among private banks. The better established privatized provincial banks (those that privatized prior to April 1996) eclipsed the private banks on one measure—the percentage of good credits to the government services sector (99.9 versus 99.6%). The earliest privatizers approached the private bank percentages on two other measures—family loans (77.2 versus 84.9% good credits)

Table 9. *Ratios of income to costs before and after privatization*^a

	Financial income/ costs (Mean)	Service income/ costs (Mean)	Total income/ costs (Mean)	Assets (pesos 1000s)	Liabili- ties (pesos 1000s)	Net worth (pesos 1000s)	Deposits (pesos 1000s)	Loans	Branches	Employees	Date
Chaco											
Before	-0.379	0.173	-0.206	42,883	34,483	8400	10,950	140	28	615	11/94
After	0.683	0.683	1.366	220,335	207,088	13,247	130,995	63,012	28	547	10/96
Entre- Rios											
Before	-0.161	0.461	0.300	395,548	384,548	11,000	211,900	226,121	55	1542	1/95
After	0.726	0.521	1.247	667,609	614,133	53,476	503,221	372,225	68	1340	11/96
Formosa											
Before	-1.589	0.270	-1.319	26,569	11,569	15,000	11,569	5489	10	230	12/95
After	0.318	0.733	1.051	129,578	113,064	16,514	97,379	77,946	10	221	11/96
Misiones											
Before	-0.530	0.333	-0.197	70,498	61,498	9000	48,131	47,325	30	433	2/96
After	0.475	0.890	1.364	157,543	142,820	14,723	105,159	77,999	29	422	11/96
Rio Ne- gro											
Before	0.333	0.472	0.805	49,162	47,362	1800	42,212	41,767	21	425	3/96
After	0.610	0.524	1.134	134,984	122,142	12,842	87,640	85,988	29	416	11/96
Salta											
Before	3.090	0.289	3.379	58,941	52,711	6230	40,892	18,000	16	260	3/96
After	2.381	0.842	3.223	250,860	240,924	9936	201,988	173,074	15	301	11/96

Data Sources: B.C.R.A. and Fondo Fiduciario.

^a Income and cost data is only available for 1993–96. Since Corrientes privatized in 1992, no pre-privatization data were available. For La Rioja, which privatized in 1994, pre-privatization data were not available because the bank had suspended operations in 1993.

and construction (83.3 versus 91.8%).³⁴ It is important to note that the private bank sample contains only the 10 largest in Argentina, presumably among the best banks in the country. The percentage of good credit in other sectors (primary production, manufacturing, utilities, trade, and other services) was somewhat lower for the early privatizers than for private banks as of 1996.

In general, early privatizers had higher good credit percentages than either public provincial banks, recent privatizers (since June 1996), or those that had begun but not completed the privatization process ("beginners"). Public provincial banks had slightly higher good credit percentages than early privatizers in only two categories—primary production and utilities. Further, there are two reasons why the good credit percentages for the public provincial banks are likely to be significantly overstated. First, several measures of performance (nominal assets, net worth, and NW/TL) of privatized banks appear to have declined quite remarkably during the last year of

public management (see Table 13 and Figures 1–3). This apparent decline was probably due to rigorous pre-privatization audits that typically occurred at this time. This would also explain the extremely low percentages of good credits for recent and beginning privatizers in Table 10—those banks had undergone pre-privatization audits but had not benefited from the creation of a residual entity. Data for beginning and recent privatizers are, therefore, probably more reflective of the actual situation of the remaining public provincial banks than the data on public banks in Table 10.

Second, the figures for public provincial banks include Buenos Aires, a case apart from the others. When Buenos Aires data are removed, the percentage of good credits for public banks drops by about 5% in each loan category. After removing Buenos Aires and correcting for the potential overstatements in asset quality described above, the percentages of good credits will almost certainly trail those for the earliest privatizers by an even greater

Table 10. *Credit allocation by industry, 1996*

Bank type	Primary production (%)	Manufactur- ing (%)	Construc- tion (%)	Utilities (%)	Trade (%)	Govern- ment services (%)	Other services (%)	Family loans (%)
<i>Prov</i> ^a (n = 8)								
Average share	11.6	20.2	4.0	0.2	12.8	17.6	7.2	15.6
% good	52.2	41.9	53.8	75.2	43.2	93.9	63.8	17.9
<i>EstPrv</i> ^b (n = 8)								
Average share	7.2	6.4	5.8	0.06	15.4	11.8	6.2	11.8
% good	45.7	63.2	83.3	69.4	57.1	99.9	66.3	77.2
<i>RecPrv</i> ^c (n = 6)								
Average share	15.6	11.4	11.6	0.04	20.4	10.2	14.6	6.2
% good	18.8	11.2	22.4	18.4	13.1	82.7	29.6	55.1
<i>IntPrv</i> ^d (n = 5)								
Average share	11.8	12.6	5.6	0.22	28.8	14.8	7.0	15.0
% good	25.7	37.2	25.3	83.8	32.0	80.7	35.1	59.9
<i>Priv</i> ^e (n = 10)								
Average share	6.8	23.0	4.4	3.2	10.4	4.4	10.8	25.2
% good	90.3	90.1	91.8	99.4	83.1	99.6	91.2	84.9

Data source: B.C.R.A.

^a Public provincial banks that have not started the privatization process (Buenos Aires, Chubut, Corboda, Social de Corboda, La Pampa, Neuquen, Santafesino de Inversion, and Cofirene Banco de Inversion).

^b Better established privatized provincial banks, those that had completed privatization by March 1996 (Chaco, Corrientes, Entre Rios, Formosa, La Rioja, Misiones, Rio Negro, and Salta).

^c Recently privatized provincial banks that completed the process in the last half of 1996 (Mendoza, Prevision Social de Mendoza, San Juan, San Luis, Santiago del Estero, and Tucuman).

^d Banks that had begun but not completed the privatization process (Catamarca, Jujuy, Santa Cruz, Santa Fe, and Tierra del Fuego).

^e Ten largest private banks in Argentina in 1996. The columns of each row do not sum to one because we have omitted a catch-all category called "other loans."

amount. Therefore, it is fair to conclude that, as of 1996, the earliest privatizers had much higher quality portfolios than the remaining public provincial banks.

Whether the privatized banks can maintain quality is another important question. Indications are, however, positive. Of the early privatizers, nearly half have been private for at least two years—the averages in Table 10, therefore, reflect some ability to maintain the portfolio quality inherited after purging residual assets and liabilities. In addition, the operating income and cost data presented above are encouraging. At the very least, beginning and recent privatizers can take heart that, in the cases to date, the provinces have been able to create a privatized entity whose initial portfolio quality approaches that of the top private banks.

It is more difficult to draw strong conclusions regarding portfolio composition. To some extent, the composition may depend upon the resource endowments of the province in which the bank resides. It is difficult, therefore, to

argue that the industrial composition of the private bank portfolios is inherently superior to that of the other banks, and that we should expect privatized provincial banks to create similar portfolios over time. We might, however, expect less credit to be allocated to the government once political incentives have been replaced by purely economic ones. The data indicate that the remaining public provincial banks have the highest share of their portfolios concentrated in government services (17.6%), followed by beginning privatizers (14.8%). Recent and early privatizers allocate a little more than 10% of their portfolios to government services, while private banks devote a little less than 5% of theirs to the sector. It appears that credit to the public sector does decline in importance after privatization, and that this portfolio shift does coincide with improved portfolio quality.

Individual bank data confirm this observation. Table 11 shows public sector credit data before and after privatization for the eight

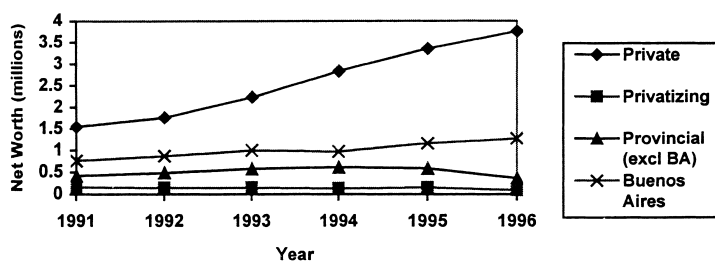


Figure 1. Net worth by bank type.

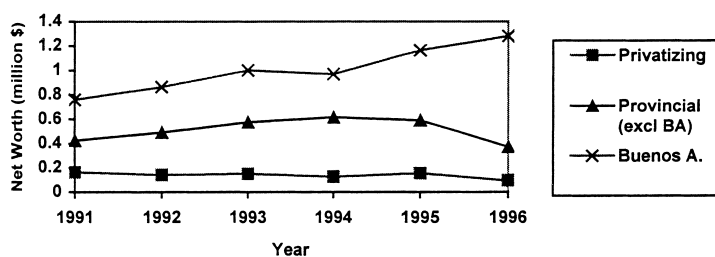


Figure 2. Net worth by bank type.

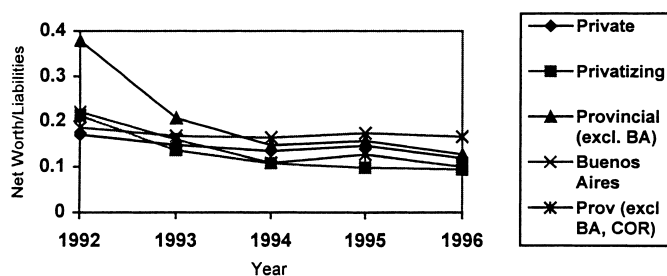


Figure 3. Ratio of net worth to total liabilities.

Table 11. Credit to the public sector, before and after privatization

Bank	Credit to the public sector pre-privatization (millions of pesos)	Credit to the public sector post-privatization (millions of pesos)	Credit to the public sector, pre-privatization (% of total)	Credit to the public sector, post-privatization (% of total)	Bad credits as a percentage of total 1996
Chaco	379,892 (1994)	223 (1996)	46.5	0.4	13.8
Corrientes	378,469 (1992)	1,458 (1996)	90.9	15.6	35.2
Entre Rios	115,389 (1994)	108,281 (1996)	17.0	23.8	21.7
Formosa	54,065 (1994)	0 (1996)	20.7	0.0	0.0
La Rioja	379,083 (1991)	0 (1996)	95.8	0.0	28.4
Misiones	164,681 (1994)	38,234 (1996)	33.6	58.6	5.0
Rio Negro	158,419 (1992)	7,555 (1996)	18.8	9.2	9.1
Salta	33,227 (1995)	15 (1996)	19.5	0.0	0.0

Source: B.C.R.A.

banks that privatized prior to April 1996. With the exception of Entre Rios, the privatized banks have substantially lower nominal credits to the public sector. Interestingly, the banks that now have the highest shares of bad credits are those that had the highest shares of public credit prior to privatization—the two worst performers, La Rioja and Corrientes, loaned over 90% of their pre-privatization credit to the public sector. It is possible that these banks lacked experience in lending to the private sector and thus lacked an established private clientele. In summary, when the pre-privatization share of credit to the public sector was low, and where there was a substantial reduction in nominal public credit, portfolio quality (as measured by the share of bad credits) has improved substantially. In fact, the average share of bad credit for the five banks satisfying these criteria is a little over 5%, slightly *lower* than for the private bank sample from 1994–96.³⁵

To summarize, the available data indicate that privatized provincial banks are far more similar to Argentina's 10 largest private banks than they are to public provincial banks. First, they appear to operate as profitably and efficiently as the private banks as indicated by their ratios of operating income to costs. In addition, their composition of operating income has shifted slightly toward net financial income as opposed to income from services. Although the private banks continue to generate a higher share of their income through financial income, the privatized provincial banks are gaining ground. The improved situation of the privatized provincial banks is also reflected in their portfolio quality. Their percentage of bad credits is lower than for public provincial banks. These improvements in portfolio quality, moreover, have coincided with a decreased emphasis on public credit. All of this augers well for the future solvency of these banks. More important, perhaps, the data suggest that credit allocation is improving as a result of privatization. Although the social welfare effects of improved credit allocation are difficult to quantify, these may be privatization's most important legacy.

5. CONCLUSIONS

The evidence from Argentina strongly suggests that, from a fiscal perspective, the decision

to maintain a public provincial bank is a costly one. Loss rates for public provincial banks in Argentina were much higher than for other banks, implying that the future fiscal costs of maintaining the solvency and liquidity of these institutions are high. Although privatization might appear unappealing to policy makers with short time horizons, the long-term fiscal gains demonstrate its importance. Courageous policy makers should root out the problems caused by public provincial banks that misallocate credit and are frequently in need of recapitalization. Although the short time series make it difficult to draw strong conclusions, the data currently available indicate that privatization enhances future solvency prospects.

No doubt, the regulatory environment into which these banks were sold also affects their solvency. To the extent that sound, incentive compatible prudential regulations are in place at the time of privatization (and, in Argentina's case that appears to be true), the future performance of all banks is likely to be improved. The results, however, suggest that improved regulation and supervision does not deliver the same benefits as improved regulation and supervision combined with privatization—the provincial banks that remained in the public sector did not demonstrate the same performance gains as privatized provincial banks.

This paper also has some important findings of special interest to policy makers in Argentina, and in other countries considering privatizing state-owned banks. Based on the Argentinean experience, policy makers should expect the privatization to pass through some, or all, of the following steps. First, with respect to pre-privatization audits, expect losses hidden in these banks to be larger than indicated in prior audits. Second, if residual entities are created, expect them to comprise a large share of the assets and liabilities of the old public provincial bank if the quality of its loan portfolio was low. Third, based on the experience to date, do not expect the price paid for the privatized entity (the so-called "good bank") to be large, at least in comparison with the assets and liabilities in the residual entity. Fourth, if the residual entity is large, the province will be confronted with substantial short-term liabilities. With assistance (e.g., from Fondo Fiduciario loans in Argentina) and an aggressive asset recovery strategy, however, governments should be

able to navigate their way through short-term difficulty. It will take a significant amount of time to tell whether residual entity liquidations are proceeding well and, therefore, further analysis in this area is warranted as data become available. Finally, policy makers that

make (or have made) the tough decision to privatize should take heart that the data strongly indicate that the costs of privatization are smaller than the costs of future recapitalization, even if the near-term management of the residual entity does not go well.

NOTES

1. World Bank (1995) found a strong link between performance of state-owned enterprises and hard budget constraints. That report also summarizes the literature on hard budget constraints. Egypt's problems with overdrafts and government assumption of the liabilities of state-owned enterprises are described in Sherif and Soos (1993); Poland's efforts to harden budget constraints in Baer and Gray (1996); and China's tendency to allocate state-owned bank credit and direct government subsidies to enterprises with relatively low productivity in Hwa (1992).

2. Demircuc-Kunt and Levine (1996) show that a variety of indicators of financial development (including general measures of financial depth) are all closely aligned with income levels. Similarly, King and Levine (1993a and 1993b) and Levine and Zervos (1998) highlight the strong link between financial development and aggregate growth rates. Not only do King and Levine (1993a and 1993b) find a strong connection between real per capita growth rates and financial development, they also find a link between total productivity growth and finance—which is, perhaps, a more direct indication that well-developed financial sectors allocate resources better than others.

3. World Bank (1989), p. 123) notes that some estimates indicate that the nonperforming assets of Chile's banks might have been as large as 79% of capital and reserves in 1982 and 150% in 1983.

4. Stallings and Brock (1993), p. 105) note that the government made no effort to prevent the groups from finding ways around the rules that were in place.

5. Further, Cull (1997) finds that subsequent changes in financial depth were actually smaller in those countries that attempted privatization without regulatory reform. He notes however, that it is difficult to draw strong conclusions regarding this because privatization without regulatory reform was attempted in only one case (Egypt).

6. Minimum capital standards are relatively high in Argentina. The minimum acceptable capital ratio is

11.5% of risk weighted assets to discourage excessive risk taking (in comparison with the 8% international standard suggested under the most recent Basle accords). Especially risky assets must, in effect, be backed by relatively higher amounts of capital. As a result, the minimum required ratio of capital to assets at risk may exceed the 11.5% requirement as a function of the interest rate received on loans, the CAMEL rating of the bank, and the market risk facing a bank (using a Value-at-Risk approach). For further details see Ministry of Economics and the Central Bank of the Republic of Argentina (1996).

7. At the beginning of this decade, each Argentine province had at least one government-owned bank. Of the nearly 30 public provincial banks, almost half had been privatized as of December 1996.

8. With respect to Poland see Abarbanell and Bonin (1997).

9. The fiscal benefits of privatization may even be slightly greater than those estimated here because we ignore any additional tax revenue that will be collected from the privatized provincial banks.

10. As a result, the sales prices of the privatized entities were quite small when compared with the residual entity.

11. Interestingly, Argentina's bank privatization procedures were quite different from those in Mexico. While it may be a bit misleading to compare the larger banks privatized by Mexico with the smaller provincial banks privatized in Argentina, it is interesting to note that (a) Mexico did not have to create residual entities, (b) Mexico relied on a more de-personalized (and complicated) auction procedure than did Argentina, and (c) the prices paid for the Mexican banks were much higher. Timing effects may explain some of these differences. Mexico's privatizations occurred prior to the Tequila Crisis; Argentina's occurred after. Still, the differences in the two cases are striking and worthy of further study. See Unal and Navarro (1995) for further description of the privatization procedures in Mexico. On the impact of the Tequila Crisis on the provinces' decisions to

privatize their banks in Argentina, see Clarke and Cull (1998).

12. Put another way, many provinces decided to maintain ownership of some fraction of the shares of the privatized entity. Because they could have presumably sold these shares and used the proceeds for other government projects, the retained shares should be thought of as a fiscal cost associated with privatization.

13. To some small extent, they were defrayed by the sales price of the privatized entity.

14. As one of the flagships of the public banking system, Buenos Aires may be treated somewhat differently by regulators than other public provincial banks. A full discussion of how, and why, Buenos Aires can be publicly owned and yet *apparently* function more effectively than other state-owned banks is beyond the scope of this paper.

15. The qualitative results of the recapitalization simulations presented here are not overly sensitive to the duration of the recapitalization cycle. We get very similar results, for example, if we assume that the province recapitalizes its bank every five yrs.

16. Our simulations are: (a) counterfactual in that we compare the fiscal cost of privatizing a typical provincial bank (described below) with the cost of recapitalizing that bank (to maintain its solvency); (b) deterministic in that the loss rate is set equal to the average loss rate in the ratio of net worth to total liabilities for provincial banks during our sample period; and (c) dynamic in that the estimated cost of maintaining a provincial bank is equal to the discounted recapitalization payment stream, which is calculated over all future periods (years).

17. In this section, we calculate recapitalization payments over the next hundred years. For most of the discounting scenarios presented here, the present value of payments received after that year is quite close to zero. The discounted recapitalization payments, therefore, should be seen as reasonable estimates of the full fiscal cost of refusing to privatize a public provincial bank.

18. An appropriate discount rate should account for the inflation-adjusted opportunity cost of capital. The question is whose opportunity cost should be used. An

argument can be made that, because the government must divert resources from the private sector through taxes to pay for recapitalizations, the appropriate discount rate is the private sector's opportunity cost of capital. Baumol (1968) states the case as follows: "The appropriate rate of discount for public projects is one which measures correctly the social opportunity cost. The decision to devote resources to investment in a public project means, given the overall level of employment in the economy, that these resources will become unavailable for use by the private sector. And this transfer should be undertaken whenever a potential project available to the government offers social benefits greater than the loss sustained by removing these resources from the private sector." In practice, Quirk and Terasawa (1991) note that this comes down to using a weighted average of the consumer rate of interest and the pre-tax corporate rate of return as the government discount rate. Those authors object to that discount rate because "the true opportunity cost of a government project is the value of the best available opportunity foregone because of the project, not simply the value of any available opportunity foregone." Determining the value of the best opportunity foregone by the government seems difficult to operationalize, however.

While no single rate is, perhaps, an adequate composite of private rates, recent data indicate that the interest rate on peso loans is presently 10% (International Monetary Fund, various years). Another school of thought holds that, since the government often borrows to finance its deficit, the appropriate rate is the one at which it can borrow. In the United States, a reasonable proxy is the Treasury Bill rate. For Argentina, money markets rates (which in the US case are typically slightly higher than the 30-day T-Bill rate), are currently 6%, which might suggest a lower discount rate than 10%. In practice, however, the World Bank uses a 10% discount on many of its long-term projects in Argentina. Given the other rates, that one seems a reasonable estimate.

19. These figures exclude data from Santiago del Estero due to measurement problems. That privatization was finalized in September 1996. The Fondo Fiduciario data for the residual entity are dated July 31, 1996, and should, therefore, be an accurate reflection of assets and liabilities at the close of the sale. The asset and liability figures from the Central Bank for 1995 for Santiago del Estero are much smaller than those in the residual entity. Inflation in 1995 was relatively low, so it seems implausible that nominal assets and liabilities could have increased so much as to permit a residual entity larger than the old public provincial bank.

20. Qualitatively similar results for simulations that assume different scenarios for loss rates in net worth appear in Appendix A.
21. The comparisons with 1996 deficits are for illustrative purposes only. Deficits were, however, relatively small in that year. The average 1995 deficit for privatizers was 140 million pesos; in 1994 it was 84 million. It is unclear to us whether the 1996 deficits or those from prior years are better estimates of future deficits.
22. See the regression in section 3 on the relationship between public provincial bank portfolio quality and the size of the residual entity.
23. Leaving Buenos Aires aside, those public provincial banks that have not begun the privatization process did have slightly better pre-privatization performance than those that eventually privatized. The disparities however, are not particularly striking. Nonprivatizers had an average nominal net worth of 66 million pesos, and experienced declines in nominal net worth of 853,000 pesos per year and in NW/TL of 8.2% per year. Their nominal assets grew at a rate of 31.8%. A quick comparison with the figures in Table 13 indicates that nonprivatizers are much more similar to public provincial banks that eventually privatized than they are to the private banks.
24. An explicit deposit insurance scheme to cover "small depositors" was adopted in April 1995 and commenced operations in December 1995.
25. The observation for San Luis was dropped from the estimation because the physical assets reported in its residual entity balance sheet implied an implausibly high percentage of those assets in its portfolio (Table 5). Although not reported here, the qualitative result is similar when percentage normal loans replaces percentage nonperforming in the regression—a high percentage of normal loans implies a smaller residual entity. These results are for portfolio quality measured *prior* to privatization—before the pre-privatization audit. Similar qualitative results obtain, however, when post-audit portfolio quality replaces the pre-audit measures in the regression. The only difference is that the pre-audit coefficient for percentage nonperforming loans is somewhat larger than the post-audit measure, indicating again that problems will likely be more severe than indicated prior to the pre-privatization audit.
26. "Percentage nonperforming" is the percentage of total loans in the worst two B.C.R.A. loan classifications. The physical asset variable is the percentage of pre-privatization assets that ended up in residual entity balance sheets under the heading "bienes de uso." Many of the public provincial banks had an abundance of branches and buildings that purchasers might have preferred not to own (so they would not have to resell them later). The dependent variable is the percentage of pre-privatization assets shifted to the residual entity (see Table 2). B.C.R.A. changed its loan classification guidelines in 1994 so that the bottom three categories—those with problems and deficient coverage, those with high risk of borrower insolvency and recovery difficulty, and those deemed unrecoverable—are now considered nonperforming ("bad credits"). The portfolio quality data used in the regressions discussed in this section are for loans classified under the old guidelines.
27. Assuming the terms of the loans are reasonable, the refinancing should, of course, make little difference from an economic (i.e., present value) perspective.
28. In many cases, 80–90% of the proceeds went to those creditors.
29. That system is partly privately managed and imposes high premia (0.36–0.72% of deposits, depending on the class of deposit) by international standards on member banks. In Denmark, another country with privately managed deposit insurance, premia payments are only 0.2% of deposits. In Colombia premia are 0.15% of deposits; in Mexico they are 0.3%—and coverage per depositor is unlimited. Membership in Argentina's program, moreover, is compulsory. Details regarding deposit insurance programs are drawn from Kyei (1995) and from Talley and Mas (1990).
30. We recognize, however, that systemic bank crises do occur, and that governments often intervene to prevent financial system collapse. See Caprio and Klingebiel (1996). It should also be noted that however, in the event of systemic crisis, the bail-out responsibility likely devolves to the federal rather than the provincial governments.
31. In particular, the "Tequila Crisis" which occurred late in 1994 is unlikely to be causing the results.
32. In some instances, owners of privatized banks are required to maintain a certain number of branches under the terms of their purchase agreements.
33. We did also have credit allocation data for December 1995. But, for the five categories of banks in

Table 10 the qualitative differences between that data and the 1996 data were not great. As a result, we present only the 1996 data.

34. Of course, because all new loans are good loans, it would more telling to observe privatized provincial banks' portfolio quality in coming years. They

do, however, appear to be starting on very solid footing.

35. Admittedly, the low shares of bad credit for some banks in Table 11 may merely reflect that all bad credits passed to the residual entity. Their "steady-state" bad credit shares may turn out to be a bit higher.

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APPENDIX A — ADDITIONAL RESULTS FROM SIMULATIONS

Table 12. *Fiscal costs of recapitalization under various scenarios*

<i>Scenario 1:</i> Ratio of net worth to assets in year 1: 0.115 (required by Argentina's prudential regulations) Net worth in year 1: 25,000,000 Loss rate in ratio of net worth to liabilities: 0.090 (sample mean, provincial) Rate of growth in nominal liabilities: 0.113 (sample mean, 1996)							
Year	Net worth millions	Total assets millions	Total liabilities millions	Implied asset growth during cycle	Nominal recapi- talization payment Millions	Present value of recapi- talization payment 10% discount rate millions	Present value of recapital- ization pay- ment 15% discount rate millions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	25	217	192	0.020	0	0	0
3	-11.9	226	238	0.020	42.9	29.3	24.5
6	-14.8	280	295	0.020	53.1	27.2	20.0
9	-18.3	347	366	0.020	65.8	25.3	16.3
12	-22.6	430	453	0.020	81.5	23.6	13.2
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96	-9092.0	172,747	181,839	0.020	32721.0	3.2	0.04
99	-11,262.8	213,994	225,257	0.020	35881.6	2.6	0.03
Total					205,515	383	132
<i>Scenario 2:</i> Same as 1, except loss rate in ratio of net worth to total liabilities is .08 (sample mean for public provincial banks except Buenos Aires, excluding the years with the highest and the lowest loss rates)							
99	-6765.7	225,257	218,491	0.031	31901.8	2.3	0.03
Total					182,721	340	117
<i>Scenario 3:</i> Same as 1, except loss rate in ratio of net worth to total liabilities is 0.0627 (sample mean for public provincial banks except Buenos Aires, excluding year with highest average loss rates)							
99	994.7	225,257	226,251	0.049	25034.2	1.8	0.021
Total					143,386	267	92
<i>Scenario 4:</i> Same as 1, except loss rate in ratio of net worth to total liabilities is 0.125							
99	-37,031	198,226	225,257	-0.018	49,835	3.6	0.04
Total					285,438	531	183

APPENDIX B — THE LOSS OF NET WORTH AMONG PUBLIC PROVINCIAL BANKS

During 1991–96, the net worth of most public provincial banks declined in both nominal and real terms (See Table 13). These small nominal drops in net worth coincided with large declines in the ratio of net worth to total liabilities (NW/TL), due to large increases in the nominal value of liabilities. The average net worth of private banks, Buenos Aires, and those privatized provincial banks that had al-

ready gone through their pre-privatization audits grew in nominal terms (Table 13 and Figure 2). Although this was a rough period for all banks—private banks' average NW/TL fell by 3.7%—the 9% average decline for public provincial banks was over twice as large (See Table 13 and Figure 3).

The large drops in NW/TL were partly due to severe financial disintermediation (low liability levels) early in the period. In 1991, inflation was 172% and, as a result, the ratio of M2 to GDP dipped to 10.6%. The ratio of quasi-money (time, savings, and foreign currency deposits)

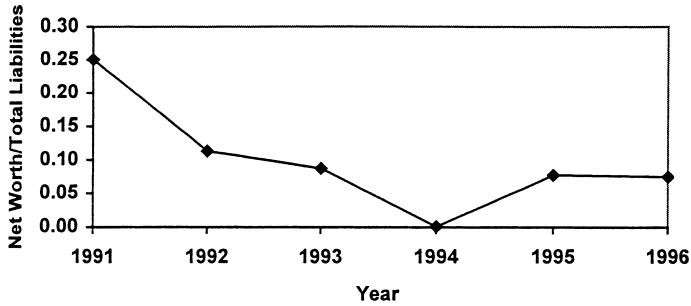
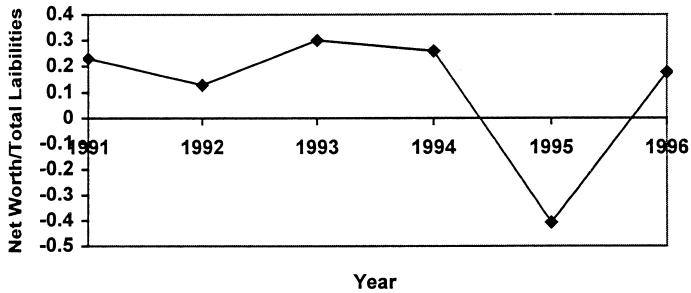
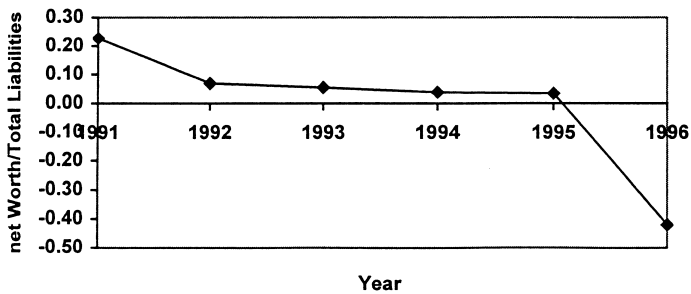
Table 13. *Net worth/assets by type of bank (1991-96)*^a

Bank type	Mean	Std. dev.	Max.	Min.	Obs.
<i>Net worth</i>					
Provincial	87,476.8	208,054.1	1,282,039	-32,307	135
Provincial (excluding BA)	44,622.4	47,491.6	227,959	-32,307	129
Private	221,535.6	168,059.1	687,052	9,478	70
<i>Privatized provincial</i>					
Last year public	-16,938.7	53,275.7	58,352	-133,079	13
1st year private	17,896.8	11,441.0	37,403	4,500	6
2nd year private	28,041.0	16,488.6	45,852	13,423	3
<i>Change in net worth</i>					
Provincial	2,959.7	37,037.0	194,707	-128,424	109
Provincial (excluding BA)	-1,890.6	25,824.9	65,012	-128,424	104
Private	36,854.4	47,189.8	232,437	-93,911	60
<i>Privatized provincial</i>					
Last year public	-50,778.8	64,395.5	14,240	-186,965	13
1st year private	46,818.8	73,145.3	146,231	-34,214	6
2nd year private	6,027.3	4,611.0	8,923	710	3
<i>Change in net worth/total liabilities</i>					
Provincial	-0.086	0.217	0.170	-1.523	106
Provincial (excluding BA)	-0.090	0.222	0.170	-1.523	101
Private	-0.037	0.066	0.138	-0.307	58
<i>Privatized provincial</i>					
Last year public	-0.150	0.208	0.054	-0.665	13
1st year private	+0.210	0.265	0.584	-0.052	5
2nd year private	+0.005	0.045	0.053	-0.035	3
<i>% Change in assets</i>					
Provincial	+26.7	39.1	215.5	-50.6	108
Provincial (excluding BA)	+27.6	39.8	215.5	-50.6	103
Private	+43.9	36.1	174.3	-27.1	58
<i>Privatized provincial</i>					
Last year public	-8.1	37.7	66.8	-76.8	13
1st year private	-13.1	64.6	80.8	-69.2	5
2nd year private	+68.6	75.8	156.1	23.4	3

^a Provincial covers all public provincial banks, including observations for privatized provincial banks prior to privatization. As noted below, qualitative results for provincial banks are quite similar if these pre-privatization observations are dropped. As noted earlier, Buenos Aires appears very different from the other public provincial banks. Therefore, results excluding Buenos Aires are presented in addition to results including Buenos Aires. Private covers a sample of 10 large private banks. Data for privatized provincial banks are broken into three categories. The first is all observations from privatized banks when they were in their final year as a public bank (when more rigorous audits occurred). The second, "1st year private," contains observations for all privatized banks during their first full year of private operations. "2nd year private" contains observations from their second years of private operation.

to GDP was only 4.2%, low even by developing country standards. As inflation subsided (24.6% in 1992 and 10.6% in 1993), financial depth recovered (quasi-money was 8.7% of GDP in 1992 and 11.7% in 1993) and NW/TL dropped as bank liabilities increased. Even excluding the dramatic drop in 1991, however, the average annual loss in NW/TL was 6.3% for public provincial banks.

The performance of privatized provincial banks with respect to net worth and NW/TL depended on how far the bank was along the privatization process. In the year prior to the actual sale (the last year of public management), when rigorous pre-privatization audits typically occurred, net worth plummeted, usually dipping well below zero. In the first full year of private management, net worth recov-

Figure 4. *EntreRios*—ratio of net worth to liabilities.Figure 5. *Formosa*—ratio of net worth to liabilities.Figure 6. *San Luis*—ratio of net worth to liabilities.

ered, normally becoming positive. On average, the gains in net worth, when coupled with the reduced liabilities of the privatized provincial bank, were more than sufficient to offset the decline in NW/TL during the last year of public operation. The improvements left the average privatized provincial bank with a marginally

acceptable NW/TL ratio (9.8%) that was often sustained throughout the second year of private operation (See Figures 4–6 for examples).

Year by year comparisons between public and privatized provincial banks are difficult due to a lack of data. No reliable comparisons can be made before 1993: only Corrientes had been

privatized, and it was still not far along the post-privatization path. During 1994–96 there were typically provinces in the first, second and third years of privatization. The number of observations in each group were, however, quite small (less than four). With few exceptions, banks in their first and second full years of private operation *outperformed* all other banks. Privatized banks in their first year of private operation typically experienced dramatic post-audit increases in both net worth and NW/TL which were, no doubt, largely due to the provinces' efforts to create salable banks from the post-audit ruins. The dramatic increases are not, therefore, an indication that old public provincial bank operations had necessarily improved, but rather that the difficulties resulting from years of sub-par operations had been swept into the residual entities.

Figures 4–6 show the privatization cycle—dramatic declines in NW/TL in the last yr of public operation, and a recovery in the first year of private operation that is maintained in the second year—is evident regardless of banking conditions in a given year. Entre Rios, Formosa, and San Luis all experienced dramatic declines in NW/TL in their last years as public banks (respectively 1994, 1995, and 1996). Both Entre Rios and Formosa recovered to NW/TL levels just under 0.10 (in line with the Basle guidelines for capital adequacy). As noted, Entre Rios maintained these levels in its second full year of private operation. It remains to be seen whether Formosa will do the same in 1997, and whether San Luis will recover and then maintain in 1997 and 1998.