FIXING ARGENTINA

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For presentation at ESEADE, Buenos Aires, April 2-3, 2002
This paper available at http://www.cato.org

SUMMARY

Argentina's currency crisis and economic depression have been caused by the bad policies of its government—not by banks, foreign investors, the IMF (despite the bad advice it has given), or other scapegoats. The De la Rúa and Duhalde governments have made four gigantic blunders:

- Increasing tax rates.
- Freezing bank deposits, then forcibly converting them into pesos.
- Devaluing the peso.
- Breaking contracts made in dollars and in general upsetting the property rights on which a market economy depends.

At present, all property is potentially subject to government control or confiscation. There is little reason for anybody to produce, save, or invest in Argentina. The country is returning to the failed economic model that caused so much trouble in the 1980s, which had to be jettisoned from 1989 to 1991.

Fixing Argentina's currency and economy requires reversing these blunders and returning to policies that respect private property and encourage the private saving, investment, and initiative that create economic growth. The main steps necessary in the short term are:

- Officially dollarize.
- Unfreeze bank deposits and remove exchange controls, which will be feasible under the type of dollarization proposed here.
- Drastically reduce tax rates.

A summary of recommendations can be found on page 32.

Kurt Schuler is a Senior Economist at the Joint Economic Committee of the U.S. Congress in Washington. This paper expresses my personal views, which are not necessarily those of the Joint Economic Committee or the U.S. government. This paper originates from my earlier work with Steve H. Hanke, in particular, our December 2001/January 2002 paper "How to Dollarize in Argentina Now," which is available in Spanish translation at <http://www.elcato.org/crisisargentina.htm> and <http://www.agendaestrategica.com.ar>.

CONTENTS

PREFACE: THE FAILURE TO UNDERSTAND ARGENTINA'S CRISIS

Argentina was once one of the world's richest countries. Again and again, though, its people have chosen or at least tolerated leaders who have had no idea how wealth is created and preserved. Argentina's currency crisis and economic depression result from this disastrous failure of understanding.

The failure extends well beyond Argentina. The International Monetary Fund and the Group of Seven nations have given bad advice or failed to give good advice. It was reported before the peso was floated that the IMF was advising dollarization or floating, as if both choices were equally good. (Under central banking, the peso has depreciated against the dollar by a factor of almost 10,000,000,000,000.) When asked about dollarization at a press conference on January 11, 2002, Anne Krueger, the IMF's first deputy managing director, said, "my understanding is that, at the moment, it is technically unfeasible."[1] In reality, dollarization is *always* technically feasible at some exchange rate. John Taylor, the undersecretary for international affairs at the U.S. Treasury, admitted in a hearing of a committee of the U.S. Congress that he thought dollarization would have been better than the freeze of deposits the De la Rúa government imposed in December 2001, but that he had not communicated his opinion.[2]

The failure of understanding extends also to most prominent foreign economists who have written about Argentina. They mistakenly blamed the peso's former exchange rate link to the dollar for Argentina's economic problems and advised floating the peso and forcibly converting dollar deposits into pesos (pesofication). They were oblivious to the immense destruction of property rights they were advocating. One test of an economist's advice is whether he would apply it at home. No foreign economist has volunteered to convert his own dollar bank account into pesos at the disadvantageous rate imposed on the Argentine people.

The failure also extends beyond monetary matters to tax policy. Obsessed by the alleged overvaluation of the peso before it was devalued, few observers noted the crippling effects of Argentina's high level of taxation, which discourages production and encourages tax evasion.

I wrote this paper out of frustration that Argentina's government, the IMF, the Group of Seven, and most economists have offered nothing but a diet of ashes. Critics of the current policies must propose specific alternatives, not just complain about existing policies. Except in my own previous work with Steve Hanke, nobody seems to have offered a comprehensive set of alternative policies, though a few economists have made valuable analyses and suggestions concerning particular topics, some of which I have incorporated here.[3] Although there is still strong political resistance to the ideas I propose here, particularly dollarization, the failure of the current policies is battering down resistance. The day will come when new ideas can be implemented and a more prosperous Argentina can emerge.

0. WHAT CAUSED THE CRISIS?

(Readers interested only in the cures for the crisis may proceed directly to section 1.)

Tables 0.1 and 0.2, on the next two pages, relate the basic facts of Argentina's economy and economic crisis. The conventional view of Argentina's crisis as it unfolded in 2001 was that

- Argentina's convertibility system was a currency board.
- The system's exchange rate of 1 peso per dollar made the peso overvalued.
- As a result, Argentina's exports suffered, triggering recession and default.

According to the conventional view, the way to end the recession was to allow the peso to float. However, because Argentines had so many of their bank deposits and loans in dollars precisely because they were afraid of that floating would result in severe depreciation, the conventional view advised the government to forcibly convert them into pesos (pesofication).[4]

The government followed the advice that advocates of the conventional view dispensed. Argentines have already tasted its bitter fruits, including a rapidly depreciating peso. Knowing why the conventional view was so wrong is essential to a proper diagnosis for ending the crisis.[5]

Errors of the conventional view: convertibility was not an orthodox currency board. Few commentators on currency boards have distinguished between orthodox and unorthodox boards.[6] As I have stressed in writings with Steve Hanke dating back to 1991, the convertibility system was never an orthodox currency board.[7] Rather, it was a currency board-like system, which left Argentina's central bank intact with important discretionary powers. An orthodox currency board has three major defining features: (1) a rigid exchange rate with an anchor currency, (2) full convertibility into the anchor currency at that exchange rate, (3) and reserves of 100 percent or slightly more of its monetary liabilities, held in foreign assets only. Together, these three features imply that an orthodox currency board has no room for discretion in monetary policy. The convertibility system at times lacked one, two, or all three features.

(1) The exchange rate of 1 peso per dollar lasted from April 1991 until January 2002. However, upon becoming minister of the economy and finance in March 2001, Domingo Cavallo announced a plan to convert the exchange rate link from the U.S. dollar alone to a basket comprised half of the dollar and half of the euro. The law was passed in June. Cavallo's willingness to meddle with the exchange rate link caused people to question whether the other features of the convertibility system were equally insecure. Interbank interest rates in pesos immediately doubled, and never returned to their former levels for any sustained period.[8]

(2) When the convertibility system was introduced in April 1991, there were almost no exchange controls, and those that did exist were later eliminated as dead letters. The exchange rate was a single rate. On June 19, 2001 the government began offering a preferential exchange rate for exports—a type of discrimination that is contrary to the spirit of an orthodox currency board. On December 1 the government announced a freeze on bank deposits (*corralito*), which remains in effect in modified form.[9]

Table 0.1. Main economic indicators for Argentina, 1996-2001

	1996	1997	1998	1999	2000	2001
GDP (billions of current pesos)	272	292	298	283	284	271
Growth of real GDP per person (%)	4.2	6.3	0.8	-6.5	-0.6	-7.0
Inflation (consumer prices, %)	0.2	0.5	0.9	-1.2	-0.9	-1.1
Inflation (producer prices, %)	3.7	-1.1	-3.3	-4.1	-3.7	-5.6
Unemployment rate, October (%)	17.3	13.7	12.4	13.8	14.7	18.3
Exports of goods (bn US$)	23.8	26.37	26.44	23.3	26.3	26.7
Imports of goods (c.i.f., bn US$)	23.8	30.5	31.4	25.5	25.4	20.3
Current account balance (bn US$)	-6.9	-12.3	-14.6	-12.0	-8.9	-4.4
Monetary base, December (bn pesos)	14.1	15.0	16.4	16.5	15.1	16.9
Net foreign reserves, December (bn US$)	13.5	16.9	20.8	22.8	21.9	14.8
Peso bank deposits, December (bn)	25.9	32.4	34.4	33.7	31.9	18.6
Dollar bank deposits, December (bn)	28.3	36.9	42.5	47.2	51.9	47.6
Money market rate, pesos (%)	6.23	6.63	6.81	6.99	8.15	24.90
Money market rate, US$ (%)	5.91	6.39	6.55	6.07	7.53	12.76
Lending rate, pesos (%)	10.51	9.24	10.64	11.04	11.09	28.6
Lending rate, US$ (%)	9.12	7.84	8.95	9.07	9.67	17.5
Federal tax and nontax revenue (bn pesos)	47.7	55.4	56.7	58.5	56.6	51.1
Fed. spending, revenue sharing (bn pesos)	52.9	59.6	60.6	65.6	63.2	59.0
Gross government debt, e.o.p. (bn US$)	97	101	109	118	128	141d
Country risk premium, e.o.p. (%)	4.94	4.61	7.07	5.33	7.73	43.72

Notes: a = September; c.i.f. = cost, insurance, and freight; e.o.p. = end of period. Amounts in dollars or pesos are in current units (nominal amounts for the year in question, not adjusted for inflation). Net foreign reserves are for the central bank. Total spending by all levels of government has been in the range of 25-32% of GDP.

Sources: Ministry of Economy, Secretariat of Finance, Undersecretariat of Financing, "Main Macroeconomic Indicators," <http://www.mecon.gov.ar/download/financiamiento/newinf.xls>; Banco Central de la República Argentina, *Información Monetaria y Financiera Mensual,* at <http://www.bcra.gov.ar>; International Monetary Fund, *International Monetary Statistics;* J. P. Morgan Emerging Markets Bond Index Plus (country risk premium).

Table 0.2. Chronology of important economic events in Argentina since 1999	
December 10, 1999	Fernando de la Rúa succeeds Carlos Menem as president. Economy in recession since September 1998. Country risk premium is 6.10 percent.
January 1, 2000	Package of increases in tax rates take effect. Tax revenue will be below forecast.
December 18, 2000	International Monetary Fund leads US$40 billion aid package to Argentina.
March 2001	Economy Minister José Luis Machinea resigns March 2. Ricardo López Murphy appointed March 4, resigns March 19. Domingo Cavallo appointed March 20, unveils plan March 21 to impose financial transactions tax and increase tariffs.
April 17	Cavallo introduces bill to link peso to euro and dollar (enacted June 25).
April 25	De la Rúa replaces BCRA president Pedro Pou with Roque Maccarone.
June 3	Debt swap of US$29.5 billion.
June 15	Cavallo announces preferential exchange rate for exports (starts June 19).
July 11-26	Argentina's credit rating cut. Country risk rises above 13 percentage points.
July 30	Congress passes "zero deficit" law.
Aug. 21-Sept. 7	IMF increases Argentina's US$14 billion stand-by loan to US$22 billion.
October 14	Peronist victories in congressional mid-term elections.
November 1	New measures, including debt swap for most of the US$132 billion public debt.
November 30	Offers to take part in local portion of debt swap exceed US$50 billion. Overnight interest rates in pesos average 689 percent on fears of devaluation. Bank run.
December	Cavallo announces restrictions on deposit withdrawals and on transfer of funds abroad December 1 (effective December 3). IMF announces December 5 that it will not disburse US$1.3 billion in aid to Argentina this month; country risk premium exceeds 40 percentage points. Central bank imposes high reserve requirements on new deposits December 7 to discourage shifts of deposits within the banking system. General strike December 13. Riots and looting. Cavallo resigns December 19. De la Rúa resigns December 20. Three interim presidents (Ramón Puerta, Adolfo Rodríguez Saá, and Eduardo Camaño) December 20-January 1. Saá declares default on foreign debt December 23.
January 1, 2002	Eduardo Duhalde, chosen by Congress, sworn in to complete de la Rúa's term.
January 6	Law of Public Emergency and Reform of the Exchange Rate Regime.
January 9	Peso devalued to 1.40 per dollar for certain transactions, floated for the rest. Pesofication of bank deposits at 1.40 peso per dollar (loans at 1.00).
February 11	Foreign exchange market fully reopens; peso falls to around 2 per dollar.
March 25	Retail selling rate of peso touches 4 per dollar before rebounding.
January-March	Continued recession, low tax revenues, first signs of renewed high inflation.

Source: Press reports.

(3) The Convertibility Law, which established the convertibility system, provided that the Banco Central de la República Argentina should hold freely available foreign reserves of at least 100 percent of its monetary liabilities, but allowed the central bank to count Argentine government bonds payable in foreign currency as up to one-third of those reserves. These bonds were not true foreign reserves. There was no maximum reserve ratio. Over the course of 2001, the central bank's ratio of true foreign reserves (that is, excluding Argentine government bonds) to foreign liabilities varied from 193 percent on February 23 to 82 percent at year end.[10] In an orthodox currency board system, reserves would have remained near 100 percent continuously.

Errors of the conventional view: the peso was not overvalued. There are three senses in which a currency can be overvalued. In the most precise and easily observed sense, a rigid exchange rate is overvalued if at that rate, demand to sell the currency exceeds the willingness of the central bank to buy the currency. To the extent the Banco Central de la República Argentina acted like an orthodox currency board and held foreign reserves equal to its monetary liabilities, overvaluation in this sense could not occur, because a peso was simply a kind of coat-room ticket to a dollar. At times during the life of the convertibility system, the BCRA held "pure" foreign reserves (that is, not counting Argentine government bonds) that were below 100 percent, but it later reverted to reserves of 100 percent or more except at the end: the ratio fell below 100 percent on November 30, 2001 and remained below until the peso was devalued in January 2002.

Another sense in which a currency can be overvalued is precise in theory but more difficult to observe in practice. In this sense, a currency is overvalued if it deviates from an ideal of "neutral money" and makes prices fall purely because of a lower than optimal supply of money and credit, not because of lower demand for the goods in themselves. The Federal Reserve appears to have pursued an overly tight monetary policy from 1999 until partway through 2001. Would the BCRA make fewer mistakes than the Federal Reserve over the long run, though? Abundant experience indicates that it would not.

In the final, loosest sense, a currency is said to be overvalued if, expressed in a common currency, some measure of prices has increased more in one country than another over a period. In making such measurements, questions of what period to use as the base and how to make the calculations are important. Consumer prices in Argentina rose about 30 percentage points more than they did in the United States from March 1991 (the month before the convertibility system began) and the start of 2001. However, consumer prices in San Francisco also rose about 15 percentage points more than in Honolulu over the same period, yet nobody has proposed that as a result San Francisco should devalue. A change in the base changes the result: from mid 1992 onward, cumulative inflation in consumer prices was less in Argentina than in the United States.

Other measures of consumer prices in Argentina confirm that they were in line with prices elsewhere. A survey of prices in 58 of the world's largest cities in 2000 found that for a basket of 111 goods and services, weighted by typical consumer habits—including three categories of house rent—Buenos Aires ranked 22nd, about midway between the most expensive city, Tokyo, and the least expensive, Bombay.[11] The *Economist* magazine's Big Mac index, which compares the prices of McDonald's hamburgers around the world, indicated that the peso was 2 percent undervalued relative to the dollar in early 2001.

Producer prices are more relevant than consumer prices as indicators of export competitiveness. Using March 1991 as the base, cumulative inflation in Argentina minus cumulative inflation in the United States peaked at nearly 15 percent in mid 1996. It fell below 2 percent by February 1999, and from December 2000 until the end of the convertibility system, it was negative, indicating an undervalued peso.[12] And although models estimating equilibrium exchange rates should be viewed with skepticism, a recent careful study has estimated that from 1993 to 1999 (the period for which the study made calculations), the peso was always within 6 percent of its so-called fundamental equilibrium real exchange rate.[13]

The claim that the peso was overvalued is a fable, with no support in the evidence.[14] Critics of the peso's rigid exchange rate with the dollar mistook high cost and trouble in government finances for overvaluation. The peso is now undervalued by most measures, but Argentina remains a high-cost country for producing many goods because it lacks an efficient legal system, a tax code that encourages enterprise and compliance, flexible labor laws, and other institutions that are outside of monetary policy.[15] The massive violations of property rights the Duhalde government has made have increased those costs.

Errors of the conventional view: a strong peso did not crush exports. Argentina's exports of goods increased every full year of the convertibility system (1992 to 2001) except 1999, when Brazil, its largest trading partner, suffered a currency crisis. Exports in 2001 barely exceeded those of 2000, but that was because the freeze of bank deposits in December 2001 killed trade generally. The export sector has been one of the few bright spots in the Argentine economy. Claims that Argentina's exports fell after 1999 or that Argentina had a growing trade deficit are not based on an examination of the statistics, which are readily available.[16]

Growth in exports was not limited to commodities; exports of manufactured goods also increased, including in 2000 (the last year for which statistics are available). Nor does Brazil's January 1999 currency devaluation seem to have made Argentine exports permanently uncompetitive there. Exports to Brazil, including those of manufactured goods, increased in 2000 over 1999. (Statistics for 2001 are not yet available.) Brazil's devaluation was unfortunate for Argentine exporters, but the experience of a floating peso suggests that the Argentina would have made matters worse for its economy as a whole had the government devalued the peso to remain "competitive" with Brazil in 1999.

Looking beyond trade in goods to the current account, which also includes trade in services, investment income, and transfers such as worker's remittances, Argentina had deficits every year of the convertibility system. The biggest factor behind the deficits was interest payments owed to foreign investors. Persistent current-account deficits are not inherently bad, nor do they necessarily indicate an overvalued currency or danger of a currency crisis, especially for a country that has capital-account convertibility (as Argentina did for almost the entire life of the convertibility system). The United States has had a current-account deficit every year since 1982, with the exception of 1991.

True causes of the crisis: Menem's debt. As we have seen, the conventional account of the crisis does not withstand examination. The main cause of the crisis was mishandled government finance, in particular government debt (not "foreign debt" in general). The problem began during the presidency of Carlos Menem. After enacting bold and beneficial reforms during his first term, Menem spent most of his second term trying not to offend anybody so as to gather support for an unconstitutional third term. Argentina was fortunate to have Menem as president in the 1990s, but equally fortunate that he did not succeed in becoming president for life.

Under Menem, Argentina suffered the unfavorable external shocks of the East Asian currency crisis (which slowed investment in emerging markets generally) and Brazil's currency devaluation. Also, by some measures, the Federal Reserve System's monetary policy was too tight from 1999 until sometime in 2001. However, it is important to put these external shocks into perspective. Argentina's trade with Brazil (imports plus exports of goods, divided by two) was less than 2.5 percent of GDP until the devaluation of the peso, and its total trade in goods has long been below 10 percent of GDP. As for the Federal Reserve's monetary policy, it is doubtful that Argentina would have done better under a floating exchange rate. Internal factors were far more important than external ones in creating Argentina's crisis.

Menem bequeathed to president Fernando de la Rúa a growing government debt. At the end of 1994, the federal government's gross debt was about US$70 billion and gross domestic produce (GDP) was US$257 billion. By the third quarter of 2001 the debt was twice as large, at US$141 billion, while annual GDP was US$271 billion—only 5 percent bigger than 1994 in nominal terms, and smaller in real terms per person.[17] In addition, the federal government has recently assumed responsibility for some provincial debt.

True causes of the crisis: De la Rúa's tax increases. President De la Rúa did not create the debt problem, but his government responded to it incorrectly, by enacting three large tax increases. The first, which took effect in January 2000, increased income tax rates for people earning over 30,000 pesos a year; subjected retirement benefits over 24,000 pesos a year to tax; and increased the wealth tax (assets tax), beverage taxes, tax surcharges on automobiles, and the special tax on tobacco. The so-called Competitiveness Law imposed a financial transaction tax, which became effective in early April 2001. The rate was initially set at 0.25 percent and later raised to 0.4 percent. In August 2001, the government raised the financial transaction tax by decree to the legal maximum of 0.6 percent, where it remains.[18]

The tax increases stifled the recovering economy. The financial transaction tax was doubly harmful because it gave bank depositors an incentive to withdraw funds from their banks and use cash instead to avoid the tax. As the economy continued to shrink under a high tax burden, the government had increasing difficulty funding its debt, because potential lenders were afraid of an eventual default.

True causes of the crisis: Cavallo's meddling with the peso. Despite problems with the government debt, the peso and the banking system remained quite solid until March 2001, when Domingo Cavallo was appointed minister of economy and finance. Cavallo had previously expressed the opinion that the peso should eventually float, and he apparently viewed changing the anchor for the peso from the dollar to basket of half a euro and half a dollar as a step in that direction. To repeat, interbank interest rates in pesos immediately doubled. A slow "silent run" on banks began as depositors who distrusted the government withdrew their funds. In another bad sign for the long-term stability of the peso, Pedro Pou, the independent-minded president of the central bank who preferred dollarization to devaluation, was ousted on a pretext in favor of the more pliable Roque Maccarone in April.

By June the original convertibility system was definitively finished. Congress approved changing the exchange rate link if and when the euro ever appreciated to one per dollar. More important, Cavallo announced a preferential exchange rate for exports—a dual exchange rate. This was contrary both to the intent of the original convertibility system and of an orthodox currency board. Cavallo's measures showed that the government was quite willing to tamper with the convertibility system. In previous episodes when confidence in the peso declined, the government had responded, sometimes after an agonizing delay, by reaffirming the link to the dollar and the commitment to a single exchange rate. By removing those cornerstones of the convertibility system, Cavallo left the edifice shaky.

The freeze on bank deposits imposed on December 1, in response to large withdrawals on November 30, was the final blow. Argentines remembered how high inflation during similar freezes in 1982 (engineered by Cavallo) and 1989 had robbed them of the real value of their savings. Cavallo and De la Rúa resigned in the face of widespread protests.

A new phase: Duhalde's destruction of property rights. The interregnum of three presidents between De la Rúa and Duhalde was notable mainly for the default on the foreign debt declared by then-president Adolfo Rodríguez Saá on December 23. Default was by then inevitable given the disorganization of the government. However, the government could still have quarantined its own financial problems from the rest of the economy.[19] Instead, president Duhalde chose a course of contamination. His chief idea in economic policy has been to expel the dollar from the financial system. The Law of Public Emergency and Reform of the Exchange Rate Regime, passed on January 6, and the measures the government has since announced have amounted to massive destruction of property rights.[20] The measures include:

- Devaluation of the peso to 1.40 per dollar and later a floating exchange rate.
- Forced pesofication of bank deposits and loans.
- Forced pesofication of contracts in dollars.
- Seizure of the dollar reserves of banks.
- Exchange controls.
- Changes in bankruptcy law that work to the disadvantage of creditors.
- Application of the nonsensical 1974 law on economic subversion.
- New taxes and regulations, introduced in uncoordinated fashion and revised daily.

Despite the government's attempt to eliminate the dollar, dollars are more highly sought and the peso's exchange rate with the dollar is today the focus of more attention than at any time since early 1991, before the convertibility system was established. The Duhalde government is returning Argentina to the failed economic model that caused so much trouble in the 1980s, and had to be jettisoned between 1989 and 1991. What is needed now is to re-establish private property rights and protect them from a government that has little appreciation of their importance for creating and preserving wealth.

1. ENDING THE CRISIS: DOLLARIZATION

The convertibility system, though imperfect, was a stabilizing force in Argentina's economy. The rapid depreciation of the peso under a floating exchange rate is the most visible sign of lack of confidence in the economy and the government. The shrinking peso is making the economy shrink along with it. Officially replacing the peso with the dollar is the quickest and most effective step that can be taken to restore confidence in the economy. Money is the most widely held form of property in society, and dollarization will start to reverse the destruction of private property rights that has been so disastrous to Argentina.

As of March 25, the date of the latest official figures when I was writing this paper, the BCRA had monetary liabilities (the "narrow" monetary base) of 20.6 billion pesos, of which 13.7 billion pesos were notes and coins in circulation. In addition, as section 3 describes in more detail, as of the end of March there were outstanding 2.3 billion pesos of national bonds and almost 2.9 billion pesos of provincial government bonds that are intended to circulate like notes. Adding them to the monetary liabilities of the BCRA yields an "expanded" monetary base of 26.1 billion pesos. Bank deposits were 72.4 billion pesos.[21] (The nominal amount of bank deposits reversed its decline of almost a year when dollar deposits were forcibly converted into pesos at 1.40 peso per dollars in January. Since then, deposits have been falling again. Also since then, the central bank has published less full and frequent information about bank deposits and other aspects of financial institutions, making the financial system less transparent.) How many dollars does Argentina have and how many does it need to "support" these amounts? Table 1.1 lists some statistics useful in thinking about this question.

How many dollars does Argentina have? It has been claimed that Argentina lacks the dollars to dollarize.[22] At *some* exchange rate, though, there are always enough dollars for a monetary system to dollarize, even in conditions where confidence is initially low.

The central bank stated that it had US$12.9 billion in foreign reserves as of March 25. Are the central bank's numbers reliable, or are its freely available foreign reserves less than they seem, because the central bank has lent dollars to the Banco de la Nación or other banks that cannot readily repay? When challenged by Steve Hanke on this point in a letter of January 17 to the *Financial Times,* the IMF's chief press officer responded on February 1 by changing the subject and not saying whether the central bank's figures were reliable or unreliable.[23]

The central bank has seized the dollars formerly deposited with it by commercial banks or held in their vaults.[24] Almost all dollars in the financial system are now owned by the central bank. Commercial bank deposits of foreign currency at the central bank were merely US$15 million on March 25, versus a peak of US$6.6 billion on January 14.

The public has long held a considerable amount of dollar notes. A U.S. Treasury report of January 2000 estimated that Argentines hold US$25 billion of dollar notes—almost US$700 per person. That is more per person than Americans themselves hold, if estimates are correct that most dollar notes are held outside the United States. The Argentine economist Eduardo Levy Yeyati has suggested that holdings of dollar notes are much lower, perhaps US$ 7 billion.[25]

Table 1.1. Key statistics of the Argentine financial system

Balance sheet of central bank (BCRA)—billions of pesos, March 23, 2002

Assets		*Liabilities*	
"Pure" foreign reserves	30.700	Peso notes and coins in circulation*	13.708
Government bonds	9.924	Deposits of banks in pesos*	6.652
Short-term loans to government	0.500	Bank liquidity fund*	0.208
Loans to banks	8.514	Deposits of banks in other currencies	0.036
Quotas at IMF and other institutions	3.799	Government deposits	9.638
IMF loans onlent to government	33.362	Other deposits	0.032
Other	0.384	Owed to IMF and other institutions	35.637
		BCRA securities issued	0.208
		Other (not specified)	4.082
		Surplus (*previsiones*)	1.141
		Capital	15.839
Total	*87.183*	*Total*	*87.183*

*Items comprising monetary base = 20.569 billion pesos. In addition, there were 2.3 billion pesos of national government bonds (Lecops) and almost 2.9 billion pesos of provincial government bonds (Patacones, etc.) intended to circulate like money.

Some major balance sheet items of financial institutions—billions of pesos, March 25, 2002

Assets		*Liabilities*	
Loans in pesos	38.282	Peso deposits	55.566
Loans in dollars**	33.619	Dollar deposits**	16.790
Peso vault cash***	1.659		
Peso deposits at central bank***	6.652		
Bank liquidity fund deposits***	0.208		
Government bond of 2002***	2.800		
Dollar vault cash	0.419		

**These continued to be listed in central bank accounts in this fashion despite pesofication.
***Items included in bank reserves. Bond of US$2 billion valued at 1.40 pesos = US$1.
Note that assets do not equal liabilities because some items are unlisted.

Interest rates for loans in pesos—percent, March 27, 2002

Overnight interbank rate	56.8125
30-day interbank rate	65.1875

Note: The most recent data for each category are listed even though dates are not the same for all.
Source: Banco Central de la República Argentina, <http://www.bcra.gov.ar/pdfs/estadistica/bas2002.xlw>, <http://www.bcra.gov.ar/pdfs/estadistica/fin2002.xlw>, <http://www.bcra.gov.ar/pdfs/estadistica/dep2002.xlw>, <http://www.bcra.gov.ar/pdfs/estadistica/bai2002.xlw>.

Even if he is correct, at the current rate of exchange the value of dollar notes held by Argentines exceeds bank reserves, which averaged 14.5 billion pesos in February.[26] In addition to dollar notes, the public holds foreign assets, which it might repatriate in limited amounts.

How many dollars does Argentina need? The number of dollar reserves necessary to support dollarization depends on the exchange rate the government chooses, which is discussed below. It also depends on the particular form of dollarization Argentina establishes. Under the convertibility system, roughly two-thirds of the central bank's dollar reserves were held against peso notes and coins in circulation, and only about one-third were held against deposits that commercial banks use to settle their clearings. A dollarized system has two potential means for economizing on the actual use of dollars (Federal Reserve-issued notes, coins, and deposits) without endangering its fixed exchange rate to the dollar. One is to allow commercial banks to issue their own dollar-denominated notes. Such notes, like dollar-denominated bank deposits, would be redeemable in Federal Reserve-issued dollars, but if the public had sufficient confidence in them, actual redemptions would be small. This idea, which has many historical precedents, is discussed further in the next section.

The other way a dollarized system can economize on the actual use of dollars is to avoid imposing reserve requirements on commercial banks. Banks hold a certain amount of reserves to have a means of payment ready when they owe more than they are owed by others. Requiring them to hold more reserves than they need imposes a cost on them and increases the amount of dollar reserves required for dollarization. A later section discusses this topic in more detail. A corollary point is that deposits of commercial banks at the central bank, which are part of the monetary base, need not be converted into dollars to the extent they are imposed as a tax on bank activity, and are not actually accessible to banks. From an economic viewpoint such reserves could simply be extinguished. Under Argentina's current circumstances, however, it would be wise to convert into dollars all bank reserves that are in the form of deposits at the central bank.

Peso bank deposits need not be exchanged for dollar reserves. The belief that they must be is the source of the belief some people have that dollarization would require the government to have tens of billions of dollars in reserves on hand. I am aware of no currency stabilization plan involving a truly fixed exchange rate, whether dollarization or a currency board, that has needed huge sums for such an exchange. Rather, if people have confidence in the banking system, they keep their deposits in the banks, and add to them, as has happened in Ecuador. Dollarization would promote confidence in the banks.

Determining the exchange rate for dollarization. Determining the appropriate exchange rate for dollarization involves the following steps.

1. Determine what liabilities need to be redeemed with dollar reserves. As we have seen, the expanded peso monetary base, 26.1 billion pesos as of March 25, seems an appropriate maximum estimate.

2. Assess the financial position of the central bank and the government. As we have seen, the central bank says it has US$12.9 billion in foreign reserves. If not all its reserves are freely available, that information should be disclosed to the public. The central bank should publish a detailed description of its dollar reserves, saying what amounts have been invested for which securities or in deposits at which banks located where. The government also has the possibility of borrowing money from the IMF to support dollarization, although that should not be necessary. As is discussed later, the IMF would quite probably lend money to support dollarization. Should it require tax increases or impose other conditions that would be harmful, however, Argentina should refuse the loan.

3a. (Ordinary procedure.) Announce that dollarization will occur and allow the peso to float cleanly for no more than one week. A truly clean float implies removing controls on buying and selling foreign currencies, though it does not imply unfreezing bank deposits. To set an appropriate fixed exchange rate at which to convert peso prices to dollar prices, the best indicator is the market rate that will evolve once people know that the value of the peso will soon be fixed and that the dollar will then replace the peso. Demand for pesos may well increase, in which case the exchange rate will appreciate. The government should not try to manipulate the exchange rate to achieve any particular level; it should let market participants determine the level. Manipulating the exchange rate is costly. A highly overvalued exchange rate will price exports out of world markets and may create a recession, while a highly undervalued exchange rate will make imports expensive and prolong inflation. The exchange rate should float for a pre-established period not to exceed one week. The float should be "clean," that is, the central bank should not try to influence the exchange rate.

Many people think of the foreign reserves necessary for dollarization as a problem of *stocks,* and think therefore that the exchange rate can be determined mechanically. So, if the central bank has US$10 billion in foreign reserves and the monetary base is 30 billion pesos, the exchange rate should be 3 pesos per dollar (or 5 pesos per dollar if one thinks "coverage" is needed for 20 billion pesos of bank deposits in addition to 30 billion pesos of the monetary base). But determining the exchange rate is not a matter of working backwards from the stock of foreign reserves to some measure of the supply of money and credit; it is a matter of discovering the market rate that equilibrates *flows* in the foreign-exchange market. The stocks are not so important in themselves; what matters for the exchange rate is their adjustment over time.[27] Comprehension of this point is one of the tests that distinguishes people who understand dollarization well from those who do not.

Exchange controls on the use of the peso in foreign-exchange markets should be abolished when dollarization is announced. However, restrictions on withdrawals of bank deposits should remain in place for a time, as a later section discusses in more detail.

All the steps from 3b to the end should be simultaneous, or nearly so.

3b. (Panic procedure.) Remove exchange controls, but omit the period of floating and proceed immediately to step 4. The political and economic situation may be so bad that the exchange rate must be fixed immediately, without recourse to a short period of floating to learn from the market. The tendency of governments in such situations, which require uneducated guesses, is to establish a highly depreciated rate so as to have a large margin of error. My opinion is that should the government fix an exchange rate immediately, it should not fix a rate more depreciated than the market rate. As I write this in late March, the market rate is roughly 3 pesos per dollar. Were the government to establish a fixed rate today, I would recommend a rate of 2 pesos per dollar, understand why the government might choose 2.50 or 3 pesos per dollar, but protest vigorously a rate of 4 pesos per dollar.[28]

4. At the end of the period of floating (if there has been on), declare a fixed exchange rate with the dollar and announce that effective immediately, the dollar is legal tender. If there has been a period of floating, the fixed rate should be somewhere within the range of market rates during the period, particularly toward the end of the period. Setting exchange rates is an art rather than a science, and there is no mechanical formula for making the transition from a floating rate to an appropriate fixed rate. If there is doubt about the appropriate rate, it is better to err on the side of an apparent slight undervaluation rather than an overvaluation compared to recent market rates, so as not to cause a slowdown in economic growth. Experience indicates that an economy will quickly adjust to an exchange rate that is approximately right. Again, a large deliberate overvaluation or undervaluation is undesirable because it will require unnecessarily large economic adjustments.

The central bank will then be required to exchange the peso liabilities determined in step 1 for suitable dollar assets—some Federal Reserve notes and coins, but probably U.S. Treasury securities for the most part. The dollar will be declared to be “domestic” currency, with all the legal rights belonging to domestic currency.

5. Announce that effective immediately, all peso assets and liabilities (such as bank deposits and bank loans) are dollar assets and liabilities at the fixed exchange rate. Announce a transition period of no more than 30 days for replacing quotations of wages and prices in local currency with quotations in dollars. After the period of floating has ended and the exchange rate has been fixed, bank deposits in pesos will become deposits in dollars, while bank loans in pesos will become loans in dollars. Banks will charge no commission fees for the conversion. It should be stressed that unlike the pesofication of deposits that occurred earlier this year, dollarization should occur at a uniform exchange rate for all assets and liabilities except perhaps coins (see step 7).

During the transition period, wages can continue to be quoted optionally in pesos so that employers and banks have time to modify their bookkeeping and computer systems. Prices can also continue to be quoted optionally in pesos during the transition period, so as to spare merchants the trouble of repricing the goods on their shelves. After the transition period, wages and prices will cease to be quoted in pesos.

6. Freeze the central bank’s total liabilities and dollarize the liabilities determined in step 1. Once the central bank starts redeeming the peso monetary base for dollars, commercial banks should not be allowed to charge commission fees for converting pesos into dollars. Commercial banks will probably want to convert their peso reserves into dollar assets immediately, and that can be done, but exchanging the peso notes and coins in circulation for dollars will be slower. The central bank or the government should continue to accept peso notes and coins for a set period, say one year, though the bulk of exchanges will be made in the first 30 days. After 90 days, peso notes should cease to be legal tender for hand-to-hand payments, and after one year the BCRA should cease to be required to redeem them. Depending on the particulars of the next step, coins may remain in circulation, never to be redeemed.

7. Decide what to do about coins. Given sufficient time, arrangements can be made to have a supply of U.S. coins on hand to replace peso coins when dollarization occurs. If dollarization is begun hastily, though, the supply of U.S. coins may be insufficient. Moreover, the fixed exchange rate may not be one for which coins have a convenient whole-number relationship to the dollar. If so, coins, and only coins, can be devalued or revalued to a nearby whole-number equivalent that makes them decimal divisions of the dollar. Because coins are only a small portion of the monetary base, the overall effects will be small and the importance of this step will be correspondingly low.

In the dollarized systems of Panama, Ecuador, and El Salvador, the government or the agency that is called the central bank continues to issue coins. In Argentina, the wisest course is to deny the government or the BCRA any role in issuing new coins. Coins still in the vault of the BCRA may be issued, but no new coins should be minted. Argentina should use U.S. coins or privately issued coins, such as a syndicate of banks may decide to issue in common.

Converting peso interest rates into dollars. Interest rates in dollars will be much lower than rates in pesos. Argentina has experience with converting interest rates in a high-inflation currency to rates in a low-inflation currency (*desagio*). Ecuador's conversion scheme when it dollarized in 2000 was in fact inspired by similar experiences in Argentina. Conversion will involve establishing reference rates in pesos and dollars, then converting peso interest rates into dollar rates around a reference rate and preserving their position relative to the reference rate according to a factor of multiplication. For example, if the reference rate in pesos is 50 percent and the reference rate in dollars is 10 percent, a loan of 55 percent in pesos (1.1 times the peso reference rate) will become a loan of 11 percent in dollars (1.1 times the dollar reference rate). A loan of 40 percent in pesos (0.8 times the dollar reference rate) will become a loan of 8 percent in dollars (0.8 times the dollar reference rate). Obviously, the choice of reference rates is important, and the government should choose rates of the same type and maturity in both currencies (for example, the 7-day interbank interest rate in both pesos and dollars). If a local rate in dollars is not available or is distorted by special factors, an international market rate (such as LIBOR, the London Interbank Offered Rate) should be chosen and a suitable premium should be added to it.

What if additional dollar reserves are necessary? To repeat, the exchange rate and its role in dollarization should be thought of in terms of flows, not stocks. It is possible that after the brief period of clean floating recommended above, the market exchange rate of the peso will be such that dollar reserves are less than the liabilities to be converted into dollar reserves. To cover the shortfall, the government has a number of options. One is to sell domestic assets in the portfolio of the BCRA. Mechanical calculations that derive the exchange rate by dividing some measure of the money supply by the BCRA's foreign reserves assume that the BCRA's domestic assets are worthless.

Another way of obtaining dollar reserves is to borrow them from the IMF or another foreign official source. (I assume that the government will not be able to borrow from the private sector until it renegotiates its debt.) Another is to reduce the amount of peso liabilities converted into dollar reserves, for example by accepting peso notes in payment of taxes and not redeeming them at the central bank. Still another option is to convert some of the peso liabilities into government bonds, although given Argentina's historical experience, such bonds would not be widely desired.

Liquidating the financial assets and liabilities of the central bank. Without a national currency, there is no good reason to keep the Banco Central de la República Argentina in its present form. The BCRA should be made to liquidate all its financial assets and liabilities. The deposits of financial institutions at the central bank can be returned to the owners or, at the owners' request, transferred to another bank. The other financial assets of the central bank can be transferred to accounts at other financial institutions—the government-owned Banco de la Nación Argentina, privately owned banks within Argentina, or banks abroad.

To discourage future governments from reintroducing the peso, the central bank's power to issue currency should be repealed. The Appendix suggests a legal formulation for this and some of the proposals in this paper related to issuance of currency.

In the dollarized system of Ecuador, the Banco Central del Ecuador has persisted because the constitution mandates its existence, and passing a constitutional amendment to abolish the central bank would be difficult. The BCRA exists only by statute law, not by constitutional law, so institutional reform should be easier than in Ecuador. The whole BCRA should receive the name of the part of the organization within it that deals with financial supervision, the Superintendencia de Entidades Financieras y Cambiarias (Superintendency of Financial Institutions and Exchange Bureaus). The successor organization can continue to gather statistics and ensure compliance with prudential regulations such as minimum capital requirements. It can continue to occupy its fine building in the heart of Buenos Aires (its main nonfinancial asset). However, it would cease to make monetary policy. It would be like the Superintendency of Banks in the dollarized system of Panama.

A short reply to objections against dollarization. Under the convertibility system, advocates of a floating peso could contrast the very real imperfections of convertibility with the imagined perfection of floating. Now Argentina is learning that floating does not work in reality as it does on a classroom blackboard. There are many objections from "blackboard economics" that can be made against dollarization. In a previous paper, written before the peso was floated, I answered some of them.[29] Now, it suffices simply to answer the objections with two questions: If dollarization would be so bad, why do so many Argentines desire dollars? If the peso is so good, why do people only use it under compulsion? Advocates of dollarization do not claim that it would be a perfect monetary system or that it would resolve all nonmonetary problems, only that it would work better than floating now does and that it would make solutions to some of the nonmonetary problems easier.

2. THE FINANCIAL SYSTEM (I): ALLOW BANKS TO ISSUE NOTES[30]

Any proper analysis of the financial system should begin by stressing that banks are not to blame for the deposit freeze, which has made the public so angry. The freeze was imposed by the De la Rúa government, and it persists because the Duhalde government has made further blunders in monetary policy. Banks are the victims, which is why the largest privately owned bank, Banco de Galicia y Buenos Aires, is close to bankruptcy.

Argentina has large potential bank reserves, but they are outside banks. Argentina's banking system is now much weaker than it was just a few months ago. The government's blunders have made depositors eager to withdraw their funds from the local banking system, either to redeposit abroad or to keep in dollar cash. The consequence has been a drain of reserves from the banks and an increase in peso notes and coins in circulation, which have increased from a low of 9.8 billion in December 2001 to 13.7 billion pesos as of March 25, 2002.

As reserves, banks use the monetary base. Under dollarization, the monetary base would consist of notes and other monetary liabilities issued by the U.S. Federal Reserve System. As has been mentioned, the U.S. Treasury estimates Argentines hold US$25 billion in dollar notes issued by the Federal Reserve. In a dollarized system, these would constitute reserves if held inside banks. There is ample room for banks to gain increased reserves, if they can persuade the public to move its holdings of the monetary base from outside banks to inside banks.

A powerful way of moving the monetary base from outside banks to inside them would be to allow banks in Argentina to issue their own notes (paper money), denominated in dollars. Bank-issued notes would be denominated in dollars, not pesos. Denominating notes in dollars would eliminate fear of devaluation. At the demand of people holding bank-issued dollar notes, the notes would be payable in notes issued by the U.S. Federal Reserve or in some other external asset acceptable to persons redeeming notes. Bank-issued notes would be much like bank-issued traveler's checks. People would accept the notes if they had confidence in the issuer and reject them if they lacked confidence. They would always have the option of continuing to use dollar notes issued by the U.S. Federal Reserve. Competitive note issue by banks has a long history and is known to economists as free banking (*banca libre*).

Allowing banks to issue notes would improve bank liquidity. To the extent that the public was willing to accept bank-issued notes in exchange for Federal Reserve-issued notes, banks would increase their *supply* of reserves on hand. Bank-issued notes would also reduce banks' *demand* for reserves. In a monetary system that uses the dollar but where banks are not allowed to issue notes, when depositors wish to exchange deposits for notes, banks must give them Federal Reserve notes. Banks call these reserves vault cash. When a depositor wishes to convert a 100-dollar deposit into 100 dollars of notes, his bank loses 100 dollars of reserves. If depositors were willing to accept bank-issued notes, converting deposits into notes would not result in any loss of reserves, any more than switching funds from a checking account to a certificate of deposit within the same bank results in a loss of reserves.

Banks would accumulate Federal Reserve-issued notes when people came to deposit them. Banks would put their own notes into circulation by paying out their own notes instead of

Federal Reserve notes when depositors wished to convert deposits into notes. Again, depositors would always have the option of demanding Federal Reserve notes rather than bank-issued notes if they desired. If there were sufficient confidence in bank-issued notes, gradually the supply of Federal Reserve notes would be replaced by bank-issued dollar notes.

The seigniorage (profit) that the Argentine government could earn from noninflationary issues of notes was shrinking as notes in circulation declined, and was on the order of US$400 million a year toward the end of the convertibility system.[31] Under a system of note issue by banks, that profit would accrue to commercial banks rather than to the government. Ultimately, the profits from issuing notes would tend to be competed away and passed along to customers in the form of lower costs or better services. The great advantage of dollarization under free banking, in contrast to conventional dollarization, is that the seigniorage, or its equivalent in benefits to consumers, would remain in Argentina and not accrue to the Federal Reserve.

Dollarizing and allowing banks to issue dollar-denominated notes would reduce interest rates and stimulate economic growth through the following channels:

- Eliminating the peso would eliminate currency risk and make long-term borrowing and lending again conceivable.
- Eliminating reserve requirements would allow banks to extend more credit on the basis of a given amount of reserves, if they thought it prudent.
- Allowing banks to issue dollar-denominated notes would help them increase their supply of reserves on hand by “capturing” some of the Federal Reserve notes now held by Argentines and replacing them with bank-issued notes.
- Allowing banks to issue dollar-denominated notes would reduce banks’ demand for reserves by reducing their need for Federal Reserve notes as vault cash. *In particular, if the public would accept bank-issued notes, eliminating the freeze on bank deposits would cause no outflow of reserves from banks (see below).*
- The boost to confidence that would result from eliminating the peso could lead depositors to bring back the deposits that have flowed out of Argentina’s banking system in recent months. A similar thing happened in Ecuador after it dollarized in 2000.

Bank-issued notes are nothing new. Allowing banks to issue their own notes might seem far-fetched or at least novel, but it is neither. Many financial firms already issue paper travelers checks, which resemble currency although they cannot pass from hand to hand without having to be endorsed. Before the 20th century, commercial banks issued their own notes in most financially advanced countries of the time—nearly 60 countries in all. Multiple brands of notes did not confuse people any more than multiple brands of traveler’s checks, credit cards, or bank deposits now do. Governments took over note issuance from commercial banks not because the private sector was doing a bad job, but because governments wanted the profits for themselves. The record of private issuance of notes was generally good.[32] In some countries bank failures caused losses to note holders, but the losses were small compared to the losses inflicted by the central banks that later took over note issuance.

Argentina was one of the countries that had note issuance by commercial banks, in the 1880s. Argentina had a rather unhappy experience because it made a number of mistakes. One was that bank notes were redeemable in government-issued pesos, a depreciated currency with no fixed link to anything, rather than in an international unit such as gold or the pound sterling. Another mistake was that as a condition for issuing notes, banks were required to hold specified Argentine government bonds. To buy the bonds, banks had to pay in gold. The government did not use the gold to re-establish a linked rate into gold for its own notes, but to pay its foreign debt (which was denominated in gold or gold-linked currencies). Unreliable government-issued currency was the shaky foundation of the financial system of the era. The government's default on its foreign debt in 1890 triggered a currency and banking crisis.[33] The government responded by ending note issuance by banks and establishing the Caja de Conversión in 1891. In 1902 the Caja began to operate as a currency board, and continued to do so, providing Argentina with one of its few periods of monetary stability, until the First World War broke out in 1914.

The United States was another country where restrictions on banks gave note issuance by banks an undeserved bad reputation. U.S. banks were prohibited from establishing branches across state lines or in most cases even within states. As a result, the banking system consisted of thousands of small and often weak banks, rather than the small number of larger, stronger banks that existed in Canada and other countries that did not restrict branch banking. Thousands of banks meant thousands of varieties of bank note brands and greater proportional losses to note holders from bank failures than occurred in Canada. In addition, banks chartered by states were often required to back the dollar notes they issued with low-quality bonds issued by the states. This was a formula for problems with banking and currency quality. Countries that did not make the regulatory mistakes that Argentina and the United States did had much happier experience.[34]

Banks would be able to induce the public to accept bank-issued notes. The incentive for banks to issue notes is apparent: supplying notes to the public changes from being a cost, as it is now, to a source of profits. What incentive would the public have to use bank-issued notes?

Bank-issued dollar notes would have lower perceived risk than peso notes. Commercial banks are not protected by sovereign immunity as the BCRA and other central banks are, so if a commercial bank broke its promise to redeem one of its dollars for a U.S. dollar, the holder of the commercial bank note could sue the bank. In addition, competition would induce banks to maintain their redemption pledge. After all, if people thought there was a possibility of one bank not fulfilling its redemption pledge, they would switch to another brand of dollar-denominated bank notes. Consequently, incentives in the market and legal system would make the quality of the redemption pledge strong.

Foreign banks that have subsidiaries rather than full branches in Argentina could improve the appeal of their notes by making them liabilities of the whole bank rather than of their Argentine subsidiaries alone.[35] Making notes liabilities of the whole bank might also help the banks by making the notes an international currency usable in other officially dollarized countries and anywhere else people want to hold dollar-denominated notes.[36]

Dollar-denominated notes issued by banks could offer three features that could make them more attractive for the public than Federal Reserve notes. One is a higher-quality supply.

Federal Reserve notes in circulation in Argentina are often more worn than usual, and small denominations are scarce. The second feature bank-issued notes could offer is design characteristics, such as Spanish words and local symbols, that would appeal to Argentines more readily than the design features of Federal Reserve notes. The third feature bank-issued notes could offer is a rebate or lottery payment feature. Banks could offer cash back to merchants who agree to accept and pay out their notes, much as credit card companies offer inducements for merchants to accept their credit cards. Competition tends to pass along the rebates from merchants to customers in the form of lower prices. The idea of a lottery payment, which has been suggested but never put into practice, is that bank notes would be like permanent lottery tickets. Now and then, banks would announce that whoever held a note with a winning serial number, drawn at random, would receive a special payment.[37] The lottery payment feature would be a kind of substitute for payment of interest on notes, since unlike deposits a note issuer does not know how long a particular person has held a note.

Banks would get their notes into circulation by paying them out to customers through automatic teller machines and over the counter. Historically, the public has readily accepted the notes of high-quality banks in free banking systems. In Scotland today, the Bank of Scotland, Clydesdale Bank, and Royal Bank of Scotland issue notes alongside the Bank of England, the central bank. In Northern Ireland, Allied Irish Banks, the (privately owned) Bank of Ireland, the Northern Bank, and the Ulster Bank issue notes alongside Bank of England notes. Customers accept bank-issued notes and rarely demand that the banks pay them Bank of England notes instead. In Hong Kong, HSBC (the Hongkong and Shanghai Banking Corporation), the Standard Chartered Bank, and the Bank of China issue separate brands of notes as the agents for the Hong Kong Monetary Authority.[38]

Banks might decide to issue individual brands of coins, presumably of similar weight and size as existing coins, or they might decide to form a syndicate to issue a single brand of coins for all members. As with notes, there are many historical precedents for private issuance of notes. U.S. coins would be legal tender and would circulate if banks did not wish to issue coins or if enough people preferred U.S. coins to bank-issued coins.

Bank-issued notes and the deposit freeze. It is possible that Argentines have been so badly burned by government-mandated deposit freezes (three in the last 20 years) that they will want to convert their pesos into notes. *If banks are allowed to issue notes, and if Argentines are willing to accept bank-issued notes, the conversion will drain no net reserves from the banking system. The total liabilities of banks will be unchanged; the only difference will be that more liabilities will be held as notes and fewer as deposits.*

I propose that all banks that pass the current regulatory standards for solvency and that are willing to make their notes (though not necessarily their deposits) immediately redeemable for Federal Reserve-issued dollars be allowed to issue notes. As a later section discusses, there should be a schedule for unfreezing bank deposits, but individual banks should have the choice of accelerating the unfreezing. For a bank that decides to unfreeze deposits immediately, US$1 of deposits will be convertible into US$1 of its own notes or, at the customer's option, into US$1 of Federal Reserve notes. A bank that decides to keep deposits frozen until the scheduled date for unfreezing will presumably offer its customers less than US$1 of its own notes for US$1 of deposits in the meantime, though its notes will be convertible into US$1 of Federal Reserve notes. When deposits are unfrozen, the bank will be required to offer its depositors US$1 of its own notes or of Federal Reserve notes for US$1 of deposits.

To provide greater security for the public, notes could be issued by branches of banks outside Argentina so the Argentine government could not seize them, though they would be redeemable in Argentina. Moreover, the notes could be designed so they could be used throughout Latin America. That would make it harder for any future Argentine government to try seizing the notes on the grounds that they were issued for Argentina alone.

No constitutional obstacles exist. Unlike the case in some other countries, nothing in Argentina's constitution stipulates that it must have a central bank or a nationally issued currency. In fact, because the constitution has roots in the 19th century, when note issue by multiple banks was widespread around the world, the constitution contemplates the possibility of multiple issuers.

Article 75 of the constitution deals with the powers of the Argentine Congress. Paragraph 6 gives the Congress the power to "Establecer y reglamentar un banco federal con facultad de emitir moneda, así como otros bancos nacionales" (establish and regulate both a federal bank with the ability to issue money, and other national [that is, federally chartered] banks). However, the constitution explicitly contemplates the possibility of multiple note issuers in article 126, which states that "Las provincias....[n]o pueden...acuñar moneda; ni establecer bancos con facultades de emitir billetes, sin autorizacion del Congreso Federal" (provinces may not coin money or establish note-issuing banks without the authorization of the federal Congress). By implication, the federal government may itself authorize banks to issue notes, or it may authorize the provinces to charter private or government-owned banks that issue notes.

Paragraph 11 of article 75 states gives the Congress the power to "Hacer sellar moneda, fijar su valor y el de las extranjeras" (have money coined, fix its value and that of foreign monies). Notice that the constitution leaves open the possibility that the Congress may decide not to have money coined for the government.

Argentina's Law on Financial Institutions does not mention note issuance as a permitted power of commercial banks or other financial institutions. The Organic Law of the Central Bank gives the central bank power to issue notes but does not state that the power is a monopoly. It may be possible to give commercial banks the freedom to issue notes through administrative decisions, without changing any existing laws. As was mentioned above, though, it would be desirable to eliminate any potential role for the central bank as an issuer of currency, which would require amending the Organic Law of the Central Bank.[39]

3. THE FINANCIAL SYSTEM (II): OTHER ISSUES

Remove interest-rate ceilings and liquidity requirements. On November 26, 2001, the central bank began setting a weekly reference rate for interest rates paid on bank deposits. Banks were heavily penalized for offering rates more than 1 percent above the reference rate. Under pesofication, dollar deposits were converted into peso deposits paying ridiculously low rates of interest (not exceeding 7 percent).[40] Market levels for peso loans, evident in the interbank market, are 55 percent a year or more. Under dollarization, nominal rates of interest would fall substantially from their current market levels, and there would be no reason for interest-rate ceilings. The government should remove the ceilings as soon as it has chosen the exchange rate for dollarization.

Minimum reserve requirements (technically called liquidity requirements) for banks are currently up to 15 percent for the most widely held types of deposits. There is also a 75 percent requirements against new deposits first imposed on December 7, 2001 to discourage customers from shifting deposits among banks.[41] Under the convertibility system, requiring banks to hold extensive reserves was part of a regulatory strategy of keeping their assets (with the notable exception of credit to the government) highly liquid as a protection against volatility in fiancial markets. Most of the volatility, however, has been the result of potential or actual currency crises and the damage they cause to the economy. Dollarization would eliminate the peso as a source of currency crises. The government could immediately reduce minimum reserve requirements to the official U.S. level of 10 percent or even to the zero percent level of Panama's dollarized system.[42] Reducing reserve requirements would enable banks to lend more to Argentine businesses and individuals, helping to generate economic growth.

Unfreezing bank deposits. Bank deposits peaked in February 2001. Uncertainty about the future of the peso and fear of a deposit freeze like those of 1982 and 1989 led to a steady decline in deposits from March onward. On Friday, November 30, deposits fell 2.1 billion pesos (almost 3 percent) in a day. In response, on December 1 the De la Rúa government imposed restrictions on withdrawing money from the banking system and on transferring funds out of Argentina. The regulations became effective on December 3, and remain in effect in modified form. Cash withdrawals from bank deposits are limited to 1,500 pesos a month. Transfers of funds out of the country are subject to the approval of the central bank.[43] On December 7, new time deposits were subject to a reserve requirement of 75 percent, which was intended to prevent the public from switching deposits from banks it perceived as unsafe to those it perceived as safe.[44]

The deposit freeze killed trade: all major indicators of economic activity plunged in December. It was obvious to the Duhalde government that unfreezing deposits was essential to reviving the economy. The government has therefore taken some steps toward unfreezing deposits, such as making it possible to use tradable certificates of deposit to buy automobiles. However, pesofication and the devaluation of the peso have made Argentines distrustful of the government and of banks. The government correctly fears that suddenly unfreezing deposits would cause a stampede out of bank deposits and out of pesos into dollars.

Under dollarization the public would no longer need to fear depreciation of the peso. As has been mentioned, if the public would accept bank-issued notes, banks would suffer no loss of reserves when depositors withdrew their deposits in the form of notes. Even huge withdrawals would make no difference to banks. For example, if the public wished to convert 50 billion pesos of deposits into notes, total bank liabilities and reserves would be unchanged; all that would change would be the particular form in which banks owed the liabilities.

The experience of Ecuador under dollarization offers encouragement. Ecuador did not forcibly convert dollar deposits into local currency (an advantage relative to Argentina), and it does not have note issuance by banks (a disadvantage, if Argentina were to do as I propose). Like Argentina, though, Ecuador was in a depression with a rapidly depreciating currency and the government had frozen bank deposits. The banking system was weaker than Argentina's because it had been less well managed before the freeze; so weak, in fact, that the government took control of insolvent banks with about two-thirds of all deposits. On January 9, 2000, Ecuador's president announced the intention to establish official dollarization at a rate of 25,000 sucres per dollar. The dollarization proposal became law on March 13. In April, deposits started returning to the banking system, even to the insolvent banks now controlled by the government. A widely followed measure of bank deposits, quasi-money, has risen from US$1.8 billion at the end of 1999 to $3.5 billion today. The government has unfrozen deposits in stages; the main purpose of the freeze became to prevent withdrawals from banks now owned by the government.[45]

Deposits should be completely unfrozen within one year after dollarization begins. I propose that the government in fact unfreeze all bank deposits within 90 days after dollarization begins. Banks that are afraid of large losses of reserves can be allowed to decide individually whether to retain restrictions on deposit withdrawals, for a further 270 days. The price they would be required to pay to depositors would be an interest-rate premium specified by law—for example, interest rates of 3 percentage points a year more than they were paying before. Payment of the premium would cease when a bank unfroze all its deposits. For the future, banks might wish to include a similar "option clause" in their contracts with depositors allowing them to suspend conversion into the monetary base, in return for which they would pay a penalty rate of interest. A few free banking systems have had option clauses, and although rarely used, they provided solvent but illiquid banks with a way to buy time in which to become more liquid.[46]

Allow "offshorization." Bank depositors in Argentina have had their funds frozen and in effect expropriated three times in the last 20 years. Many will not for years trust the government to keep its hands off their money. Some legal protection is necessary to ensure that Argentina has a banking system that is used to accumulate savings rather than only to make payments that cannot be made in cash. Bankers and lawyers are more suited than an economist for determining precisely how to provide protection, but an economist can at least suggest a possibility. Bank deposits could be legally domiciled outside Argentina to preserve them from seizure by a future government, yet have full access to the Argentine payment system and perhaps allow depositors recourse to the Argentine legal system to settle certain kinds of disputes. For bank loans, "offshorization" would be more difficult, since many loans are made against collateral that is held in Argentina. Banks might be reluctant to have large mismatches between offshore deposits held by Argentines and onshore loans. Perhaps further thinking will yield a solution.

Because notes and coins pass from hand to hand anonymously, seizing them is harder for a government than seizing bank deposits. Even so, to provide protection similar to that for deposits, bank notes (and coins, if banks issue coins) could be made the liabilities of the head office of foreign banks or of a foreign subsidiary of Argentine banks.

Cease issuance of government IOUs that circulate like notes. When short of funds to pay workers, provincial governments in Argentina have long issued IOUs that circulate like currency, sometimes at face value, sometimes at a discount. The recently issued IOUs of the Province of Buenos Aires, the most populous and economically important province, are called Patacones (officially, Bonos de Cancelación de Obligaciones de la Provincia de Buenos Aires).[47] To consolidate the provincial IOUs, the government has issued Letras de Cancelación de Obligaciones Provinciales (Lecops). An agreement of November 15 between the federal government and the provinces about revenue sharing allowed the federal government to pay money it currently owes the provinces and 40 percent of future federal government revenue sharing in Lecops. The provinces are allowed to use Lecops to pay their employees. Currently, there are 2.3 billion pesos of Lecops in circulation, 1.6 billion pesos of Patacones, and almost 1.3 billion pesos of other provincial government IOUs, making a total of almost 5.2 billion pesos.[48] In the past, government IOUs have tended to lose value against regular currency over time.

The danger of government IOUs that circulate like currency is that they will become de facto additions to the money supply and put pressure on the government to devalue the peso so as to be able to redeem the Lecops in pesos at face value. The Lecops should be retired. The economic growth that dollarization and other measures can help bring about can reduce the need for the federal and provincial governments to issue IOUs that circulate like currency.

Sell the Banco de la Nación Argentina. It is desirable to sell the government-owned Banco de la Nación Argentina (Banco Nación for short), the country's largest bank. It has 14.5 percent of all deposits in the banking system. From the time it was established in 1891, Banco Nación has been entangled so closely in government finances that it has often been impossible to draw the line between the bank and the government. Selling Banco Nación would both make the financial system more efficient and improve the government budget by generating revenue from privatization. Research on the provincial banks that were privatized in the 1990s indicates that they have greatly reduced their nonperforming loans, lowered their administrative costs, and reduced politically motivated loans to public enterprises. Hence they are much stronger and less likely to impose a burden on taxpayers than they were before privatization.[49] Evidence from other countries also indicates that, as a recent World Bank study says, "authorities in developing countries generally need to reduce their ownership role" in banks.[50]

Another reason for selling Banco Nación is that if banks are allowed to issue notes, as proposed here, Banco Nación's special status as a government-owned bank could make it a vehicle for re-establishing central banking. Argentina has had enough problems with central banking and there is no need to return to them.

4. Government Finance

Currency stabilization precedes rather than follows a balanced budget. According to the conventional view, Argentina's crisis began with an overvalued peso. The conventional view has paid almost no attention to Argentina's high tax rates and the drag they impose on economic growth. A correct view of the crisis, however, must place tax rates squarely at the center. The tax increases of January 2000, April 2001, and August 2001 added to an already high tax burden and discouraged an economic recovery. Dollarization can provide a quick return of confidence in the economy and give a short-term boost to economic growth, but without much lower tax rates, Argentina will be unable to achieve good long-term growth.

Having misdiagnosed the cause of the crisis, the conventional view now misdiagnoses how to end the crisis. Under the current heavily managed (dirty) floating exchange rate, the IMF, which has followed the conventional view, seems to be waiting for a lower budget deficit before lending Argentina money to stabilize the peso. The IMF will be waiting a long time. In Argentina's current circumstances, currency stabilization is the mother, not the daughter, of a balanced budget. Tax revenue compared to the same period a year ago continues to fall, because the unstable peso and the freeze on bank deposits impede trade. The currency must first be stabilized if the economy is to revive and generate the higher tax revenues necessary to eliminate the budget deficit. Argentina's recent experience has been that cutting spending is not by itself sufficient to balance the budget, and raising tax rates from their already high levels actually reduces tax revenue.

Federal-provincial relations. Budgetary relations between the federal government and provincial governments are complex not because of the economics involved, but because of the politics. Historically, provincial governments that have encountered financial trouble have appealed to the federal government to rescue them with federal funds rather than fixing their problems themselves. They have been able to do so because presidents have generally needed the political support of federal governors to retain power.

Federal-provincial relations have been a matter of great concern to the IMF and the Group of Seven nations, which have urged the federal government to enforce greater financial discipline on the provinces. Their concern is amply justified under Argentina's current monetary policy. Under dollarization, though, the problem would diminish. If the federal government could not print money to fund the provinces, both it and they would be subject to greater budgetary discipline. Provincial governments would have more incentive to solve their own financial problems, as they do in the United States.

Another way of improving the incentive for provinces to solve their own financial problems would be to change the nature of federal revenue sharing (coparticipation funds). The federal government could continue to collect all income taxes, but reduce funds from the general pool and instead grant provinces some power to impose surcharges. The federal government would distribute to each province the revenue raised by that province's surcharges. Efficient provincial governments would impose lower surcharges and be more popular with voters; inefficient governments would impose higher surcharges and risk losing power to opposition politicians promising lower spending and lower surcharges.

Domestic and foreign debt. On December 23, 2001, then-president Adolfo Rodríguez Saá announced that the government would default on its *foreign* debt. Internationally, the effect of the default has so far not hurt other emerging markets. A default on the government's *domestic* debt would cause severe harm to the economy because the government has stuffed banks and pension funds full of the debt. What the government would "save" from a default, it would lose from having to rescue financial institutions. The government has shown a faint but definite understanding of this principle. Domestic creditors of the government should continue to receive priority over foreign creditors until the economy starts growing again and the foreign debt has been renegotiated. Holders of the government's foreign debt knew they were making a risky investment and should not be bailed out through the IMF (which anyway is now much less disposed than before to bail out private-sector foreign creditors).

A growing economy offers the best chance for holders of the government's foreign debt to recoup their losses. It would be in their self-interest to support the policies this paper suggests.

Tax rates should be cut drastically. Table 4.1 shows the rates for the major federal and provincial taxes. Adding up the main federal taxes that apply to individuals makes apparent how heavy a burden they are for citizens who actually pay them, and helps explain why tax evasion is widespread. A comparison with the United States is instructive. U.S. state sales taxes range from zero to 9 percent (there is no federal sales tax); the top rate on federal income tax is 39.6 percent (state rates range from zero to 11 percent); the rates for Social Security and Medicare taxes total 15.3 percent of wages; and there is no financial transactions tax.

As has been mentioned, the De la Rúa government imposed large tax increases that took effect in January 2000, April 2001, and August 2001. Toward the end of 2001 tax revenue fell sharply, especially in December, when the freeze on bank deposits began. The Duhalde government has proposed, announced, then in some cases modified new taxes. It is repeating the mistake of the De la Rúa government.[51] Argentina needs to move towards fewer and simpler taxes, not more and highly complex taxes. The government seems to have confused tax *rates* with tax *revenues*.[52] Although the analogy is not exact, it may help to think of government as "selling" its services for a "price" that is taxation. As is the case for sellers of everything from automobiles to zippers, a higher price does not always mean higher revenues. Past a certain point, the number of buyers drops faster than the price rises, so revenue in fact falls. The solution for a seller who wants to increase his revenue is to reduce his prices.

Argentina's experience of higher tax *rates* yielding lower tax *revenues* in strongly suggests that tax rates are too high, and that the way to increase revenues is to reduce rates. For at least some taxes, Argentina seems to be on the wrong side of the Laffer Curve.[53] High tax rates reduce revenues in two ways: by reducing the amount produced of the good being taxed by those who pay the tax, and by increasing the incentive to evade the tax for people who do not pay it. It has been estimated that Argentines evade the value-added tax, the government's biggest generator of revenue, in 40 percent of transactions.[54]

Table 4.1. Major taxes in Argentina in 2001

Tax	*Rate(s) (%)*	*Revenue (bn pesos)*	*Remarks*
Federal			
Social security taxes	32.9	8.0	Employees pay 11%, including 5% (down from 11% before November 2001) to private pension funds; employers pay 21.9%. Ends at 57,600 pesos.
Value-added tax	21	15.4	Main rate 21% (was 15% several years ago); special rates of 10.5% and 27%.
Income tax	9-35	10.1	Corporate rate is 35 percent; individual rates are 9-35 percent, with top rate starting at 120,000 pesos.
Fuel taxes	~50-60	3.4	Rates vary, and were rejiggered in 2001.
Financial transactions tax	0.6		Imposed in April 2001 at 0.25%, increased in August. Paid on both bank credits and debits.
Excise taxes	various	0.5	Part of revenue shared with provinces.
Tariffs	0-35	1.7	Raised on many items March 2001.
All other taxes		6.4	Includes personal assets tax of 0.5-0.75% starting at assets of 102.300 pesos; presumptive minimum tax of 1% starting at assets of 300,000 pesos; and financial transaction tax of 0.6%.
Total		*45.5*	*In addition, 4.0 billion pesos were collected and paid into workers' private pension accounts.*
Provincial and local			
Tax on gross sales	1.0 - 4.9	4.4	Averages 3%; many exemptions.
Property tax	various	1.4	
Motor vehicle tax	various	0.7	A common rate is 3%.
Stamp taxes	1	0.6	Most common rate is 1%.
All other revenue	various	0.8	
Total of these taxes		*7.8*	*Revenue for January-September 2001.*

Notes: Revenue amounts are rounded and may not add up to totals. Capital gains tax for individuals and gift and estate taxes are zero, but real estate sales are subject to a 1.5 percent transfer tax. The provincial governments receive considerable federal revenue sharing.
Sources: Fundación Invertir Argentina, <http://www.invertir.com/taxation.html>; Ministry of Economy, Secretariat of Finance, Undersecretariat of Financing, "Main Macroeconomic Indicators," <http://www.mecon.gov.ar/download/financiamiento/newinf.xls>; Ministry of Economy, Secretaría de Hacienda, *Boletín Fiscal* and "Recursos Tributarios Provinciales," <http://www.mecon.gov.ar/coord-pcias/anexo_presupuestario/anexo4.htm> <http://www.mecon.gov.ar/hacienda/>; Administración Federal de Ingresos Públicos, <http://www.afip.gov.ar/sistema/sistema.asp>.

Lower tax rates would improve the long-term growth prospects of the Argentine economy. As was the case in Ecuador after it defaulted and then dollarized, the government should be better able to restructure its longer-term debt more readily once Argentina's creditors see that the economy is starting to improve. Lowering tax rates is a calculated risk, but raising tax rates has not worked well, so persisting with high tax rates is at least as risky.

The Duhalde government has expressed a desire to reduce tax rates, but so far it has not actually cut any rates. It can encourage sustained economic growth by making a commitment to cutting tax rates consistently for a number of years (potentially through 2007, if president Duhalde is still in office by next year and is re-elected). A good model to imitate is Ireland, which has cut the rates on one or more of its important taxes almost every year since 1987.[55]

The government needs to begin with a dramatic tax reduction. I suggest these steps:

- Cut the value-added tax from the current main rate of 21 percent to 15 percent. Eliminate the special rate of 27 percent.
- Combine the payroll tax (for social security and medical care) and the income tax into a flat-rate tax of 25 percent with no exemptions. (A flat-rate personal income tax of a sort already exists, but it applies only to nonresidents and the rate is 35 percent.)
- Eliminate the financial transaction tax, the presumptive minimum tax, and the personal assets tax.
- Eliminate all changes to the tax code since August 1, 2001 that have imposed new taxes or made the tax system more complex.
- Combine lower and simpler taxes with greater enforcement.

Further reductions beyond these would be desirable later. At present, tax rates are so high that they encourage massive evasion. Reducing tax rates now and continuing to reduce them in the future can significantly broaden the base of taxpayers. Over the next five years, the government should aim to reduce the value-added tax to 10 percent and the proposed flat tax to 20 percent.

It is instructive to compare the experience of Argentina with that of Ecuador over the last few years. Argentina's tax revenue has been falling, while Ecuador's tax revenue from sources other than oil has increased from the equivalent of US$1.5 billion in 1999, the last year before dollarization, to US$2.4 billion in 2001 and an expected $3 billion or so in 2002. In the first two months of 2002, total federal tax revenues compared to a year before were down 20 percent in Argentina, while nonoil tax revenues were up 41 percent in Ecuador.[56] Part of the increase in Ecuador's nonoil tax revenue reflects prices catching up to world levels after falling far behind in 1999. The increase remains impressive even so, for it has consistently exceeded forecasts. The underlying cause for the difference is that Ecuador's has been growing, while Argentina's has been shrinking.

Government spending. The federal budget projects revenue 15 percent lower than in 2002, with corresponding cuts in spending. Under current economic conditions, revenue and spending will not achieve their targets because the economy will shrink more and inflation will be higher than the government forecasts. Only economic recovery will permit a nearly balanced budget. Although there are government functions that are notoriously overstaffed (the bureaucracy of the Congress, the top ranks of the military) or inefficient (universities), it has proved politically difficult to reduce their spending. The government should focus on increasing revenue rather than on cutting spending. An inefficient government in a growing economy is more tolerable than a highly efficient government in a shrinking economy.

It has been suggested that government spending should be the motor of economic growth, in the manner suggested by John Maynard Keynes during the depression of the 1930s. Without entering into an involved discussion of Keynes's ideas, it suffices to note that they were proposed for conditions of deflation. Argentina today is has begun again to experience conditions of inflation. It is clear than under current conditions, more government spending will lead to higher inflation but not higher growth—a combination familiar to Argentines from the 1980s.

Establish a more transparent fiscal framework. In addition to reducing tax rates and eliminating some taxes, the government should introduce a new fiscal framework based on sound, transparent accounting. The government should produce an annual balance sheet and income statement, using a full accrual basis (which is more complete than the cash basis the government now uses) and applying Generally Accepted Accounting Principles. The balance sheet and the income statement should be audited by private accounting firms. This type of fiscal framework was introduced in New Zealand starting in 1989 and has, among other things, discouraged corruption and promoted honesty in government finances.[57]

5. CONCLUSION

Argentina and the IMF. Argentina's negotiations with the IMF have so far resulted in no new loans in part because the IMF thinks there is no "quick fix" for Argentina, as its managing director, Horst Köhler, claimed on March 21.[58] In reality, there *is* a quick fix, at least for the currency problem: dollarization. It could be done immediately, and it would establish a truly fixed exchange rate before eliminating pesos from circulation.

Ecuador in January 2000 was also in the midst of a depression, with a currency nobody trusted, and a banking system far worse managed than that of Argentina. In desperation, on January 9, president Jamil Mahuad announced dollarization, which had been proposed for months by a number of prominent local economists and business people, as well as by myself and a few other foreigners.[59] The next day the Ecuadorean sucre stabilized at the announced rate of 25,000 per U.S. dollar and remained there until sucres were eliminated from circulation. The interbank interest rate tumbled from 200 percent on January 7 to 20 percent by January 11. Money began flowing back into the banks, the economy started growing, and tax revenue rose. Those trends continue today.

Where was the IMF? Until the day before dollarization was announced, an IMF official concerned with Ecuador, with whom I had a brief private correspondence, was critical of dollarization, even though almost every other monetary policy had been tried and had failed. Although one or two members of the IMF staff (not working on Ecuador) had some knowledge of dollarization, the IMF as an institution did not. This state of affairs continues today.[60]

After president Mahuad announced dollarization, the IMF quickly declared its support. The same will happen in Argentina when it dollarizes. However, Argentina must be careful of conditions that the IMF may wish to attach to loans. In Ecuador, the IMF pushed for an increase in the value-added tax from 12 percent to 15 percent. The government negotiated the rate down to 14 percent, but fortunately for Ecuador's taxpayers the Constitutional Court declared the increase unconstitutional. The value-added tax has remained at 12 percent, and thanks to economic growth, revenue from it has exceeded projections. Besides lacking an understanding of dollarization, the IMF as an institution lacks an appreciation of the Laffer Curve. Argentina would do better to proceed without IMF assistance than to accept a loan tied to further tax increases or other conditions that would harm the economy.

Toward the future. Argentines know that the peso does not work well, and that its depreciation is the biggest single problem they face today. Dollarization is the essential first step for re-establishing private property rights and reviving the economy. Dollarization will provide a first positive jolt. It must be followed quickly with tax reform (see Table 5.1 for a summary of proposals). Beyond that, there are many other steps Argentina could take to make its economy more efficient and more flexible so it grows faster.[61] Labor laws are notoriously inflexible. The health care system, dominated by monopolistic providers, is a mess. Most of the provincial governments are poorly run. The delivery of government services is in general poor. Corruption is still extensive. Tax collection is weak. The legal system is unreliable. All these things are well known and have been the subject of many studies and recommendations. The problem is having the political willpower to make reforms and the determination to follow through with them.

Table 5.1. Summary of recommendations

Currency (for immediate action)

- Officially dollarize.
- Retire from circulation all notes of the Banco Central de la República Argentina (BCRA) and all deposits at the BCRA; replace them with dollar assets.
- Allow the existing stock of coins to continue in circulation up to a maximum equaling 700 million dollars, but require new dollar-denominated coins beyond that to be issued by the U.S. Federal Reserve System or by banks.
- Reform the central bank to strip it of all monetary policy functions.
- Allow banks to issue notes (paper money) denominated in dollars *(desagio)*.
- Convert peso interest rates into dollars.

Financial system (for action immediately or soon)

- Remove minimum liquidity requirements immediately.
- Remove interest-rate ceilings immediately.
- Remove all restrictions on deposit withdrawals within one year.
- Sell the Banco de la Nación Argentina.
- Perhaps adopt a modified version of the Lerrick-Meltzer proposal to improve the liquidity of banks. (This is not the Lerrick-Meltzer proposal for bank depository receipts.)

Government finance (for action immediately or soon)

- Reduce tax rates. It is possible that lower tax *rates* will quickly result in higher tax *revenues.* In the short term, cut the value-added tax to 15 percent; combine the payroll and income taxes into a flat-rate tax of 25 percent with no exemptions; abolish the financial transaction tax, presumptive minimum tax, and personal assets tax. In the longer term, reduce the value-added tax to 10 percent and reduce the personal and corporate income taxes to 20 percent.
- Introduce a transparent fiscal framework for the federal and provincial governments, including published balance sheets and income statements using an accrual basis (not the current cash basis); annual audits by outside firms; and adherence to generally accepted accounting principles.
- Make the provinces more responsible for their own tax revenues.
- Repayment of foreign debt will have to wait until the economy begins growing again.

Expected results

- Much lower interest rates.
- Rising bank liabilities (deposits, bank notes, etc.) and loans.
- More seigniorage (profit from issuing notes) retained by financial system.
- Higher economic growth, though sustaining growth will require continued effort.

APPENDIX: A MODEL DOLLARIZATION STATUTE

(This model law suggests the main features desirable for a law on dollarization. An actual statute may need to be somewhat different to comply with legal technicalities.)

In accord with article 75 of the constitution, this "Law on Dollarization" is enacted.

1. The Argentine peso is hereby eliminated as a unit of account and replaced by the United States dollar at a rate of ___ pesos = 1 dollar. Notes, coins, and other monetary liabilities of the Federal Reserve System of the United States shall be legal tender in Argentina.

2. All assets, liabilities, and prices denominated in pesos are hereby redenominated into dollars at the rate specified in paragraph 1.

3. The government shall establish reference rates and procedures for converting peso interest rates into dollar interest rates.

4. The Banco Central de la República Argentina (BCRA) shall cease to be a central bank, and its monetary assets and liabilities shall be liquidated as speedily as possible. Its peso liabilities shall be converted into dollars at the exchange rate specified in paragraph 1.

(a) The BCRA shall return all deposits by banks or the public to their holders within 90 days after this law becomes effective.

(b) The BCRA shall not issue any new notes or reissue old notes. It shall withdraw existing notes from circulation as quickly as possible. Ninety days after this law becomes effective, BCRA notes shall cease to be legal tender, though they may continue to be accepted by consenting parties. One year after this law becomes effective, the BCRA shall no longer be required to exchange its notes for dollars.

(c) The BCRA shall issue no coins beyond those already in its vaults when this law becomes effective. The government shall not mint new coins to replace old coins.

5. Banks licensed to operate in Argentina may issue notes and coins denominated in U.S. dollars or other units of account and redeemable in those units. The notes shall not be subject to a circulation tax or value-added tax. Notes issued by banks shall not be forced tender.

6. Neither the federal government nor provincial or local governments shall issue notes intended to circulate like currency.

7. All restrictions on buying and selling foreign currencies are hereby abolished. Consenting parties may use any currency they specify, for any amount they choose.

8. All restrictions on withdrawals of bank deposits shall be eliminated one year from the enactment of this law, or sooner if decreed by the Executive Power.

9. Previously enacted legislation conflicting with this law is repealed.

10. This law becomes effective immediately.

NOTES

Web sites that are temporarily unavailable directly or have had information removed from them may be viewed through the Internet Archive, <http://www.archive.org>.

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[1] Anne O. Krueger, "Transcript of a Press Briefing (Teleconference) on Argentina," January 11, 2002, <http://www.imf.org/external/np/tr/2002/tr020111.htm>.

[2] U.S. House of Representatives, Committee on Financial Services, Subcommittee on International Monetary Policy and Trade, Hearing on "Argentina's Economic Meltdown—Causes and Remedies," February 6, 2002, extemporaneous testimony of John B. Taylor (not yet published).

[3] Within Argentina, they include Martín Krause, Pedro Pou, and Gabriel Rubinstein (whose Web site <http://www.econline.com.ar> is essential reading—see also his book *Dolarización: Argentina en la Aldea Global,* Buenos Aires: Nuevohacer Grupo Editor Latinoamericano, 1999); outside of Argentina, they include to some Charles Calomiris, Guillermo Calvo, and, to a limited extent, Adam Lerrick and Allan Meltzer.

[4] Economists in the United States who support the conventional view include Olivier Blanchard (Massachusetts Institute of Technology—see "Argentina's Symbols Crash Against Reality," *The Nation* [Bangkok], December 17, 2001); Michael Bordo and Ricardo Chang (Rutgers University—see "Throw Away the Dollar Peg," *Financial Times,* June 7, 2001, p. 21), Martin Feldstein (Harvard University—see "Argentina's Fall—Lessons from the Latest Financial Crisis," *Foreign Affairs,* March/April 2002, pp. 8-14); Ricardo Haussman (former chief economist of the Inter-American Development Bank, now at Harvard University's Kennedy School of Government—see "A Way Out for Argentina," *Financial Times,* October 30, 2001, p. 23); Paul Krugman (Princeton University—see "Crying with Argentina," *New York Times,* January 1, 2002, p. A21); Adam Lerrick and Allan Meltzer (Carnegie-Mellon University—Meltzer's remarks at an American Enterprise Institute conference "Who Lost Argentina?," Washington, February 5, 2002); Michael Mussa (former chief economist of the IMF, now at the Institute for International Economics—see "Fantasy in Argentina," *Financial Times,* November 11, 2001, p. 23); Nouriel Roubini (New York University—see "Should Argentina Dollarize or Float? The Pros and Cons of Alternative Exchange Rate Regimes and Their Implicatians for Domestic and Foreign Debt Restructuring/Reduction," manuscript, New York University, December 2, 2001, at <http://www.stern.nyu.edu/globalmacro/>); Martin Uribe (University of Pennsylvania—see Jenalia Moreno, "Free Floating of Currency Cheered," *Houston Chronicle,* February 12, 2002, business section, p. 6); John Williamson (Institute for International Economics—see Bill Hieronymous, "IIE's John Williamson Comments on Argentina's Financial Crisis," Bloomberg news wire, December 31, 2001); and perhaps Sebastian Edwards (University of California-Los Angeles—see "The False Promise of Dollarisation," *Financial Times,* May 15, 2001, p. 12). Even Jeffrey Sachs, who has supported dollarization in Argentina, has claimed that the peso was overvalued and that afloating might have benefits ("A Crash Foretold," *Time International* (Latin America), January 14, 2002, p. 17).

[5] Steve H. Hanke commented on Argentina's crisis as it unfolded in a number of articles, some of which are available at <http://www.cato.org/current/argentina/index.html> and <www.forbes.com/hanke>.

[6] Examples include Martin Feldstein, "Argentina's Fall—Lessons from the Latest Financial Crisis," *Foreign Affairs,* March/April 2002, pp. 8-14; Nouriel Roubini, "The Case Against Currency Boards: Debunking 10 Myths About the Benefits of Currency Boards," manuscript, New York University, 1998, <http://www.stern.nyu.edu/~nroubini/asia/CurrencyBoardsRoubini.html>; Paul Krugman, "A Cross of Dollars," *New York Times,* November 7, 2001; and most publications by staff of the IMF, such as Tomás J. T. Baliño and Charles Enoch, editors, *Currency Board Arrangements: Issues and Experiences,* IMF Occasional Paper No. 151, Washington, D.C.: International Monetary Fund, 1997.

[7] Steve H. Hanke and Kurt Schuler: *¿Banco central o caja de conversión?* Buenos Aires: Fundación República, 1991; "Argentina Should Abolish Its Central Bank," *Wall Street Journal,* October 25, 1991, p. A15; *Russian Currency and Finance: A Currency Board Approach to Reform* (written with Lars Jonung), London: Routledge, 1993, pp. 72-7; *Currency Boards for Developing Countries: A Handbook,* San Francisco: International Center for Economic Growth, 1994, pp. 47-51; "A Monetary Constitution for Argentina: Rules for Dollarization," *Cato Journal,* vol. 18, no. 3, Winter 1999, pp. 405-19, <http://www.cato.org/pubs/journal/cj18n3/cj18n3-11.pdf>.

[8] Law 25.445, modifying Law 23.928 (the Convertibility Law); Banco Central de la República Argentina, <http://www.bcra.gov.ar/pdfs/estadistica/bai2001.xlw>. Information on Argentine economic laws can be found at Infoleg, a service of the Ministry of Economy, <http://www.infoleg.mecon.gov.ar/default.htm>.

[9] Decree 803/2001, Decree 1570/2001.

[10] Banco Central de la República Argentina, <http://www.bcra.gov.ar/pdfs/estadistica/bas2001.xlw>, column F divided by column J.

[11] UBS, "Prices and Earnings Around the Globe: An International Comparison of Purchasing Power," <http://www.ubs.com/e/index/about/research/economicresearch.newdialog.0007.Upload5.pdf/pl00e1_o.pdf>, Zurich: UBS Switzerland, 2000, p. 6.

[12] For price indexes for the United States, see the U.S. Bureau of Labor Statistics, at <http://data.bls.gov/cgi-bin/surveymost?bls>. The producer price index is the unadjusted index for finished goods. For consumer price indexes of particular U.S. cities, see <http://data.bls.gov/labjava/outside.jsp?survey=cu>. For price indexes for Argentina, see the Instituto Nacional de Estadística y Censos (INDEC), <http://www.indec.mecon.gov.ar/DEFAULT.HTM>. The consumer price index is for greater Buenos Aires.

[13] Kalin Hristov, "FEER and Currency Boards: Evidence From the 90's," unpublished manuscript, Bulgarian National Bank, presented at the Centre for Central Banking Studies (Bank of England) Conference on Exchange Rates, November 26, 2001, p. 25.

[14] Shortly before writing this paper, I sent e-mail messages to three economists who had testified to a committee of the U.S. Congress that the peso was overvalued. I asked them according to what measure the peso was overvalued, using what base year, and according to whose calculations. Two did not respond; the third admitted that he had not investigated the subject for himself, but had accepted estimates given to him by the BCRA and the Ministry of the Economy in early or mid December 2001.

[15] For comparisons of Argentina to other countries, see Simeon Djankov, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer, "The Regulation of Entry," National Bureau of Economic Research working paper 7892, September 2000, p. 36, at <http://www.nber.org>; James Gwartney and Robert Lawson with Charles Skipton and Walter Park, *Economic Freedom of the World Report 2001,* Vancouver: Fraser Institute, 2001, <http://www.fraserinstitute.ca/publications/books/efw_2001/>; Gerald P. O'Driscoll, Jr., Kim R. Holmes, and Mary Anastasia O'Grady, *2002 Index of Economic Freedom,* Washington: Heritage Foundation, 2002, <http://www.heritage.org/index/2002/>; and World Economic Forum, *Global Competitiveness Report,* New York: Oxford University Press, 2001 (country rankings available at <http://www.weforum.org/pdf/gcr/Overall_Competitiveness_Rankings.pdf>).

[16] In a paper dated March 2002, Martin Feldstein, one of the best-known economists in the United States, writes that Argentina has a "growing trade deficit," whereas in fact it had trade surpluses in 2000 and 2001. Martin Feldstein, "Economic and Financial Crises in Emerging Market Economies: Overview of Prevention and Management," National Bureau of Economic Research working paper 8837, March 2002, p. 8, at <http://www.nber.org>. For the statistics, see the Instituto Nacional de Estadística y Censos, <http://www.indec.mecon.gov.ar/DEFAULT.HTM>.

[17] Statistics from Ministry of the Economy, Secretariat of Finance, "Main Macroeconomic Indicators," <http://www.mecon.gov.ar/download/financiamiento/newinf.xls>.

[18] Law 25.239, Law 25.413 (the Competitiveness Law), Decree 380/2001, and Decree 969/2001.

[19] Many economists believe that when a government encounters financial problems, the currency must suffer depreciation. That has been the general practice of national governments, but it is obviously not true for lower levels of government because they do not issue their own currencies, nor is it inevitable that national governments should depreciate their currencies rather than default on their debt or otherwise reorganize their finances.

[20] Law 25.561; see also Decree 71/2002 and Ministry of Economy, Resolution 6/2002..

[21] See the sources cited in Table 1.1.

[22] Allan Meltzer made this claim in extemporaneous testimony to the U.S. House of Representatives, Committee on Financial Services, Subcommittee on International Monetary Policy and Trade, Hearing on "Argentina's Economic Meltdown—Causes and Remedies, Day 2," March 5, 2002 (not yet published).

[23] Steve H. Hanke, "Questions the IMF is Obliged to Answer" (letter), *Financial Times,* January 17, 2002, p. 10; Thomas Dawson, "Dollarisation in Argentina Cannot Be Counted on to Succeed" (letter), *Financial Times,* February 1, 2002, p. 12. A more recent comment on this issue is Gabriel Rubinstein, "Existen las reservas del BCRA?," March 26, 2002, at <http://www.econonline.com.ar>. The BCRA makes a monthly statement giving some details about its foreign reserves, "Reserves Internacionales/Liquididez en Moneda Extranjera," <http://www.bcra.gov.ar/pdfs/contad/temp0202.pdf>.

[24] Decree 214/2002; Banco Central de la República Argentina, Communicación "A" 3468, February 8, 2002, <http://www.bcra.gov.ar/folio/A3468.pdf>.

[25] U.S. Treasury Department, *The Use and Counterfeiting of United States Currency Abroad,* January 2000, p. 19, <http://www.federalreserve.gov/boarddocs/RptCongress/counterfeit.pdf>; Eduardo Levy Yeyati, "10 Años de

Convertibilidad: La Experiencia Argentina," manuscript, Universidad Torcuatro di Tella, p. 41, <http://www.utdt.edu/~ely/Convertibilidad.pdf>. There are by now many academic papers on the convertibility system and on dollarization. Levy Yeyati's paper is one of the few that is of some use for thinking about dollarization in Argentina in the context of the present economic crisis.

[26] Banco Central de la República Argentina, *Información Monetaria y Finaciera Mensual,* February, <http://www.bcra.gov.ar/pdfs/estadistica/bol0302.pdf>.

[27] Theoretically, banks can gain all the reserves they need from inflows of deposits, and need hold no initial reserves.

[28] As a very rough guide to establishing a fixed exchange rate immediately, Gabriel Rubinstein's concepts of a "dollar of maximum confidence" and a "dollar of minimum" confidence are helpful. See his Web site, <http://www.econline.com.ar>.

[29] Kurt Schuler and Steve H. Hanke, "How to Dollarize in Argentina Now," December 20, 2001 and January 2, 2002, <http://users.erols.com/kurrency/argjdec01f>, pp. 31-3. For sample objections from blackboard economics, see Eduardo Levy Yeyati and Franco Sturzenegger, "Dollarization: A Primer," manuscript, Universidad Torcuatro DiTella, July 2001, <http://www.utdt.edu/~fsturzen/CHAPTER1.pdf>; Nouriel Roubini, "Should Argentina Dollarize or Float? The Pros and Cons of Alternative Exchange Rate Regimes and Their Implicatians for Domestic and Foreign Debt Restructuring/Reduction," manuscript, New York University, December 2, 2001, at <http://www.stern.nyu.edu/globalmacro/>); *Journal of Money, Credit, and Banking,* vol. 33, no. 2, part 2, May 2001; and *Journal of Policy Modeling,* vol. 23, no. 3, April 2001.

[30] I first discussed this idea in Kurt Schuler, "U-Turn Out of the Dead End: How to Solve Argentina's Debt, Currency, and Banking Problems," manuscript, August 16 and 27, 2001.

[31] It has been claimed that a reasonable estimate of the present value of seigniorage is 23.8 percent of GDP, although the value could be significantly higher or lower depending on various factors. (The present value is the stream of future revenues, discounted more heavily the farther in the future the revenues are.) See Eduardo Levy Yeyati, "10 Años de Convertibilidad: La Experiencia Argentina," manuscript, Universidad Torcuatro Di Tella, pp. 30, 69, <http://www.utdt.edu/~ely/Convertibilidad.pdf>.

[32] Kevin Dowd, editor, *The Experience of Free Banking,* London: Routledge, 1992.

[33] There are discussions of Argentina's experience in this period in John H. Williams, *Argentine Trade Under Inconvertible Paper Currency, 1880-1900,* Cambridge: Massachusetts: Harvard University Press, 1920, chapters 7-8; and Angel M. Quintero-Ramos, *A History of Money and Banking in Argentina,* Rio Piedras, Puerto Rico: University of Puerto Rico, 1965, chapters 3-4.

[34] See Kevin Dowd, editor, *The Experience of Free Banking,* London: Routledge, 1992 (especially Dowd's chapter "US Banking in the 'Free Banking' Period"); Lawrence H. White, editor, *Free Banking,* 3 volumes, Aldershot, England: Edward Elgar, 1993.

[35] Large foreign banks that have subsidiaries in Argentina include BBVA, Deutsche Bank, and HSBC. Large foreign banks that have full branches in Argentina include Banco do Brasil, Bank of America, Citibank, FleetBoston Financial, ING, J. P. Morgan Chase & Co., and Lloyds TSB.

[36] Banks with branches in the United States may even wish to issue notes there. Federally chartered banks in the United States have had the capacity to issue notes since 1994 (for the first time since 1935). One reason they have not issued notes is that they have been unaware the law allowed them to do so. See Kurt Schuler, "Note Issue by Banks: A Step toward Free Banking in the United States?," *Cato Journal,* vol. 20, no. 3 (Winter 2001), pp. 453-65, <http://www.cato.org/pubs/journal/cj20n3/cj20n3-8.pdf>. Bank-issued notes in the United States are subject to a tax of 1 percent a year. See United States Code, title 12, section 541.

[37] J. Huston McCulloch, "Beyond the Historical Gold Standard," in Colin D. Campbell and William R. Dougan, editors, *Alternative Monetary Regimes,* Baltimore: Johns Hopkins University Press, 1986, pp. 74-5; C. A. E. Goodhart, "How Can Non-Interest-Bearing Assets Co-Exist with Safe Interest-Bearing Assets?," *British Review of Economic Issues,* vol. 8, no. 19, Autumn 1986, p. 5.

[38] The Scottish and Irish monetary systems had free banking in the 1700s and 1800s, and Hong Kong had free banking from 1845 to 1935. Today, banks that issue notes in Scotland, Northern Ireland, and Hong Kong do so under reserve requirements like those applying to an orthodox currency board. See Bank of England, "Fact Sheet: Bank Notes," <http://www.bankofengland.co.uk/banknotes/factnote.pdf>; Hong Kong Monetary Authority, "Bank Notes in Hong Kong" Web page, <http://www.info.gov.hk/hkma/eng/currency/notes_co/index.htm>; and Web sites of the note-issuing banks. In Scotland, the Bank of Scotland is part of HBOS Group; the Clydesdale Bank is part of the National Australia Bank group; and the Royal Bank of Scotland is part of the Royal Bank of

Scotland group, which includes England's National Westminster Bank. In Northern Ireland, the Northern Bank is part of the National Australia Bank group and the Ulster Bank is part of the Royal Bank of Scotland group.

[39] Selected laws concerning the Argentine financial system are available on the Web site of the central bank at <http://www.bcra.gov.ar/publica/epub0001.asp>.

[40] Banco Central de la República Argentina, Communicación "A" 3467, February 8, 2002, <http://www.bcra.gov.ar/folio/a3467.pdf>.

[41] Banco Central de la República Argentina, Communicación "A" 3387, December 7, 2001, <http://www.bcra.gov.ar/folio/A3387.pdf> and Communicación "A" 3470, February 8, 2002, <http://www.bcra.gov.ar/folio/A3470.pdf>.

[42] In the United States, the requirement of 10 percent applies to accounts that banking regulations define as transaction accounts. Nontransaction accounts have no reserve requirement. Over the last ten years, "sweep" accounts that minimize funds in nontransaction accounts have enabled banks to reduce their overall ratio of reserves to total bank deposits. Although Panama has no reserve requirements, it does have liquidity requirements. Typically, an amount equal to 30 percent of deposits must be held in specified classes of assets. Panama, Decree-Law 9 of February 26, 1998, article 46, <http://www.superbancos.gob.pa/law9.htm>.

[43] Decree 1570/2001; Banco Central de la República Argentina, Communicación "A" 3372, December 1, 2001, <http://www.bcra.gov.ar/folio/A3372.pdf>.

[44] Banco Central de la República Argentina, Communicación "A" 3387, December 7, 2001, <http://www.bcra.gov.ar/folio/A3387.pdf>.

[45] For accounts of Ecuador's experience under dollarization so far, see Paul Beckerman, "Dollarization and Semi-Dollarization in Ecuador," World Bank Working Paper 2643, July 17, 2000, <http://econ.worldbank.org/files/2322_wps2643.pdf>; Franklin A. Lopez, "Dollarization in Vulnerable Economies: The Lessons from Ecuador," unpublished paper, University of New Orleans, November 2001; Carlos Julio Emanuel (minister of economy and finance, Ecuador), "La Dolarización y el Paso a la Economía Real," January 16, 2002, <http://minfinanzas.ec-gov.net/docs/economia.doc>; and IMF country information on Ecuador, at <http://www.imf.org/external/country/ECU/index.htm>. For monetary statistics, see Banco Central del Ecuador, *Boletín de Coyuntura* (weekly), <http://www.bce.fin.ec/indicadores/semanal/bol_sem.htm>.

[46] See Kevin Dowd, *Laissez Faire Banking,* London: Routledge, 1993, pp. 25-113; a more skeptical view is Parth J. Shah, "The Option Clause in Free-Banking Theory and History: A Reappraisal," *Review of Austrian Economics,* vol. 10, no. 2, 1997, pp. 1-25, <http://www.mises.org/journals/rae/pdf/rae10_2_1.pdf>.

[47] See Province of Buenos Aires, Ministry of the Economy Web site on Patacones, <http://www.ec.gba.gov.ar/Financiamiento/Patacones.htm>.

[48] Oscar Martinez, "Negocian el Apoyo del FMI para Rescartar los Bonos Provinciales," *Clarin,* online edition, March 30, 2002, at <http://www.clarin.com>.

[49] George R. G. Clarke and Robert Cull, "Why Privatize: The Case of Argentina's Public Provincial Banks," World Bank Research Working Paper 1972, September 1998, <http://econ.worldbank.org/docs/703.pdf>.

[50] World Bank, *Finance for Growth: Policy Choices in a Volatile World,* Washington: World Bank, 2001, p. 124.

[51] Information on government revenues and spending can be found at the Web site of the Ministry of Economy, Secretaría de Hacienda, <http://www.mecon.gov.ar/hacienda/>. See especially the *Boletín Fiscal* and the "Resultado de las Cuentas del Sector Público No Financiero."

[52] Notable exceptions have been Charles Calomiris and the economic consulting firms Polyconomics and InterMarket Forecasting, which have warned of the dangers of increasing tax rates in Argentina. See <http://www.polyconomics.com> and <http://www.intermarketforecasting.com>. To see the IMF's surprise that higher tax rates did not increase revenue proportionally, read its Argentina country reports at <http://www.imf.org/external/country/ARG/index.htm>.

[53] It is also important to remember that the tax rates that maximize economic growth are lower than the rates that maximize government revenue. See Lawrence B. Lindsey, "Revenue Maximizing Taxation is Not Optimal," report, Office of the Chairman, Joint Economic Committee, U.S. Congress, July 1997, <http://www.house.gov/jec/fiscal/tx-grwth/lindsey/lindsey.pdf>.

[54] Daniel Altman, "Reviving Argentina: The Trouble with Taxes," *New York Times,* January 1, 2002, p. C1.

[55] Ireland's experience is summarized in Fred McMahon, *Roads to Growth: How Lagging Economies Become Prosperous,* Halifax: Atlantic Institute for Market Studies, 2000, chapter 2, <http://www.aims.ca/Publications/Growth/aimsch2.pdf>.

[56] Argentina, Ministry of Economy, Secretariat of Finance, Undersecretariat of Financing, "Main Macroeconomic Indicators," <http://www.mecon.gov.ar/download/financiamiento/newinf.xls>; Ecuador, Servicio de Rentas Internas, <http://www.sri.gov.ec/pdf/estadisticas2001web.pdf>, p. 5.

[57] Robert O'Quinn and Nigel Ashford, "The Kiwi Effect: What Britain Can Learn from New Zealand," London: Adam Smith Institute, 1996, pp. 28-30, <http://www.adamsmith.org.uk/policy/publications/pdf-files/kiwi-effect.pdf>.

[58] "There's no one, neither in Argentina, nor at the IMF nor in any other place[,] who has a quick fix for a very, very complex situation." Quoted in Simon Gardner, "Argentina Wants Big Debt Cut, IMF Sees No Quick Fix," news wire, March 21, 2002.

[59] The Instituto Ecuatoriano de Economía Política translated two papers I wrote on dollarization in general ("Promoviendo la Dolarización Oficial in los Mercados Emergentes," made available over the Internet only, and "Fundamentos de la Dolarización," published as a pamphlet). The institute also published a study I wrote after dollarization was announced, suggesting the particular form dollarization should take ("Dolarización Oficial en Ecuador"); see <http://www.his.com/~ieep/documen.htm>. I first wrote on dollarization in Ecuador in "Por Qué el Sucre No Es Tan Bueno Como el Dólar," *El Financiero* (Quayaquil), May 4, 1998, p. 15, and visited Ecuador in July 1999 and January 2000 to give speeches on dollarization and discuss it with government officials and local economists and business people.

[60] I am informed that at the annual meeting of the Inter-American Development Bank in São Paulo from March 11-13, 2002, Anne Krueger told the Ecuadorean delegation that Ecuador had a currency board.

[61] Although I disagree with much of the IMF's advice on tax and currency matters, some possible economic reforms are discussed in IMF country reports on Argentina, at <http://www.imf.org/external/country/ARG/index.htm>. World Bank documents on Argentina are available online at <http://www.worldbank.org>.