

Lecture Note on Argentina

Econ 434

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1 Introduction

Argentina is interesting because it was such a big surprise and because it was doing so well, at least prior to the Russian crisis. Why did it fall apart so badly? Did Argentina suffer worse shocks than other similar economies? Doubtful. Rather it was the impact of these shocks on the vulnerabilities created by Argentina's currency and fiscal policies that were at the heart of the problem.

2 Background

In 1991, Argentina adopted the “convertibility plan” to reduce its four-digit annual inflation rate. Under this plan, Argentina pegged the peso one-to-one to the U.S. dollar and held a dollar in reserve for every peso the central bank issued. This currency board arrangement enabled the government to eliminate inflation.



Figure 1:



Figure 2:

Notice that the currency board fixed the peso relative to the dollar. In this way it constrained inflation. It did not, however, fix it relative to other Argentine trading partners, as is evident in figure 1.

You might think, given all the talk of debt default, that the problem was government profligacy. But Argentina's budget deficit has ranged between 1 and 3 percent of GDP, not bad for a depressed economy, and its government debt is only about half of GDP, better than many European countries. By the numbers, Argentina's fiscal picture looks better than America's did a decade ago.

Brazil's 1999 devaluation and the dollar's sustained appreciation represent serious shocks to the Argentine economy. With the peso pegged to the dollar, domestic prices and wages must decline if Argentine products are to remain competitive with Brazilian and other non-U.S. goods; however, prices and wages adjust slowly, typically only after the country slips into recession. Another way to gauge this is to look at the real exchange rate, which is the ratio of Argentine CPI relative to trade-weighted foreign CPI's measured in pesos. In figure 2 we see the strong appreciation since 1995. This is not a surprise for countries that have experienced an exchange-rate based stabilization from high inflation.

One of the big problems from the real appreciation, especially since the Brazil crisis is that growth has slowed down. The early 1990's were very good by Argentine experience. But in the wake of Brazil GDP growth became negative. This is evident in figure 3 which shows output growth in the 1990's: Almost three years of recession makes it hard to grow out of the debt problem.

3 Economic Performance and External Shocks

Argentina out-performed Latin America during most of the 90's after years of dismal performance. There was a severe hiccup during the Tequila crisis, but Argentina recovered. Yet after the Russian crisis, when capital flows started to reverse, Argentina recovered much slower than the rest of the region.

Real GDP Growth Rate
(Percentages)

| | 1981-90 | 1991-97 | 1998 | 1999 | 2000-01 |
|-----------|---------|---------|------|------|---------|
| Argentina | -1.3 | 6.7 | 3.9 | -3.4 | -2.1 |
| Bolivia | -0.4 | 4.3 | 5.5 | 0.6 | 1.5 |
| Brazil | 2.3 | 3.1 | 0.2 | 0.8 | 3.1 |
| Chile | 4 | 8.3 | 3.9 | -1.1 | 4.3 |
| Colombia | 3.4 | 4 | 0.5 | -4.3 | 2.2 |
| Mexico | 1.5 | 2.9 | 4.9 | 3.8 | 3.3 |
| Peru | 0 | 5.3 | -0.4 | 0.14 | 1.9 |
| Venezuela | 0.3 | 3.4 | 0.2 | -6.1 | 3.3 |
| Average | 2 | 3.6 | 3.2 | 1.6 | 2.1 |

Figure 3: Real GDP Growth in Latin America

3.1 Terms of Trade Shocks

Figures show that these were smaller in Argentina than in other countries. Why? Because Argentina was more closed. Other Latin countries are more open and have more exports to the US, for example (so are more sensitive to our slowdowns).

3.2 Capital Flows

With respect to capital flows the effects were not larger at first than in other economies. For example, spreads and capital outflows were larger in Brazil. Only in 2000 and after did Argentina face really large spreads.

In summary, the evidence shows that the global contraction in capital flows that occurred in 1999 did not affect Argentina as severely as (and certainly not more severely than) other LAC countries. Thus, Argentina was

able at first to continue running large current account deficits, as it had done in the previous years (Figure 2.5b). After 1999, however, capital flows to most LAC countries recovered somewhat, except for Argentina (and Venezuela), where they continued to fall – especially in 2001. Hence, the conclusion is that most of the deterioration of capital flows to Argentina at the end of the decade reflected Argentina-specific factors rather than global factors.

Since Argentina did not receive worse external shocks than the rest of the region, the fact the Argentina performed worse than other LAC countries after 1998 must reflect either higher vulnerabilities or weaker policy responses, or both.

4 The Real Exchange Rate and Overvaluation

Argentina's real effective (that is, trade weighted) exchange rate (henceforth REER) experienced a considerable appreciation during the 1990s.¹² Between 1990 and 2001, the REER rose 13 by over 75 percent (Figure 3.1). The bulk of the appreciation developed before 1994. In fact, the REER depreciated after that date and until 1996, but then appreciated again to reach its peak in 2001.

Two factors are important here.

The first one is the relative level of productivity across countries. Other things equal, an increase in traded-goods productivity in a given country relative to its trading partners should lead to a REER appreciation – precisely the argument advanced by some observers to justify the rapid real appreciation of the Argentine peso in the early 1990s.

The second ingredient is the adequacy of the current account to sustain equilibrium capital flows. The real exchange rate must be consistent with a balance of payments position where any current account imbalance is financed by a sustainable flow of international capital – one that does not lead to explosive accumulation of external assets or liabilities. The sustainable stock of net foreign assets is given by the present value of future trade surpluses. In this framework, the equilibrium REER is that which permits sustaining the economy's long-run net foreign asset position.

the REER had become substantially overvalued after 1996, in the face of stagnant relative productivity and mounting foreign liabilities relative to

GDP. We also find that the appreciating U.S. dollar and the depreciating Brazilian real accounted for a large portion of the peso overvaluation – perhaps two-thirds, or even more, when the two forces are combined.

5 Fiscal Crisis

Some argue that the fiscal deficits were the key problem, especially lack of control of provincial governments. Others argue that Argentine fiscal policy was not out of whack compared with other LAC's.

But the currency board had special implications.

The protracted deflationary adjustment to the external shocks imposed by the hard peg to the dollar (as discussed above) had thus a major effect on debt sustainability perceptions, through two channels. On the one hand, by reducing long term growth expectations, and on the other by making further fiscal adjustment more difficult and painful as the ratio of revenues to GDP collapsed. In this context, further tax hikes (as the “impuestazo” in 2000) or expenditure cuts (as during the second half of 2001) aggravated the recession and subsequent social and political tensions.

Even more, the observed adjustment in the structural primary balance was clearly insufficient if we take into account both the direct and indirect effects of exchange rate overvaluation since 1997 on the balance sheet of the government. Our calculations indicate that in year 2000 the overvaluation of the exchange rate, estimated above, implied that the conventional accounting measures of public debt to GDP ratio had become undervalued by at least 40%, as most of public debt was denominated in dollars while Government assets (mostly its capacity to tax) was not. Even if the Currency Board had not collapsed, the required REER adjustment –through a deflationary process- would have eventually revealed the reduced capacity of the Government to pay back its debt and would have required an additional primary surplus of about 2% of GDP yearly to avoid explosive debt dynamics. The peg actually hid from public view this sharp deterioration of the fiscal position and made it more difficult to elicit political support for an additional adjustment.

One might ask how the fiscal situation could be so bad if the debt-gdp ratio was just above 40% and it is much higher in some industrialized countries. There are several points to consider.

- First, the d/GDP rose when times were very good. Privatization and

other non-recurring revenues were making the deficit look smaller than it structurally was.

- Argentina, however, suffers from inadequate tax base. The center can raise perhaps 20% of GDP, not the 50% as in Europe. And the provinces are net debtor regions, incurring expenses that the center must finance.
- Moreover, it is not the level that is so bad but the trend. Recall that the ratio rose from 29% to 41% during very good times. This had to make people wonder about what would happen in bad times.
- Then, as an emerging economy Argentina was very vulnerable to external shocks as the Brazil devaluation showed. Real GDP fell 4%.
- A lot of the government's debt was dollar-denominated and held externally. This meant that not only was their concern about revenue being raised, but also about currency mismatch.

The key point is that in the boom there was not a sufficient fiscal adjustment to provide flexibility for the recession. Fiscal policy was needed due to the currency board tying monetary policy. But fiscal policy followed the Latin form: fiscal problems have originated in booms, when weak fiscal institutions and policy complacency do not facilitate the achievement of surpluses. As a consequence fiscal policy has to be pro cyclical also in bad times, contributing to a deepening of recessions and social tensions -and occasionally ending up in severe fiscal crisis. Argentina in the nineties was no exception to this unfortunate Latin American policy tradition: Latin American fiscal problems have originated in booms, when weak fiscal institutions and policy complacency do not facilitate the achievement of surpluses. As a consequence fiscal policy has to be pro cyclical also in bad times, contributing to a deepening of recessions and social tensions -and occasionally ending up in severe fiscal crisis. Argentina in the nineties was no exception to this unfortunate Latin American policy tradition.

And debt dynamics were adverse. It is not the absolute size of the debt, but with a very high risk premium and a recession the debt-gdp ratio was growing. A big increase in the primary surplus was needed to offset the high interest rates and low economic growth. But how to accomplish this without making growth worse? Lopez-Murphy tried to do this by cutting expenditures but this was unpopular and he was fired. Cavallo tried raising taxes

but this did not help in a big recession. When a debt swap was implemented at a very high cost – the discount rate to break even was something like 16% – it was as if the government was saying yes we are insolvent.

6 Deep Structural Flaws

At the core of the issue was a deep structural problem. The preference for the currency board was a reflection of a history of monetary confiscation and hyperinflation. The currency board provided stability. Yet pegging to the dollar had effects on competitiveness.

- On the one hand, the Argentine trade structure made a peg to the dollar highly inadequate – from a real economy point of view.
- On the other hand, the strong preference of Argentineans for the dollar as a store of value (since the hyperinflation and confiscation experiences of the 1980s) had led to a highly dollarized economy in which a hard peg or even full dollarization seemed a reasonable alternative – from a financial point of view.

No wonder that informed analysts favored –and still do- opposite exchange regime choices depending on the relative weight they assign to real economy or financial (balance sheet) effects.

6.1 Lost Opportunities

With the benefit of hindsight the boom years up to mid 1998 were a major lost opportunity. Argentina had two alternative directions for reform. It chose neither.

Staying with the hard peg but minimizing the risks associated with adverse external shocks was the first alternative. This would have required:

1. First and foremost, significant fiscal strengthening, not just to protect solvency but with the broader objective of providing some room for counter-cyclical fiscal policy. This contrasts with the expansionary pro-cyclical stance actually followed during most of the decade, and especially during the boom from end-1995 up to mid-1998 – once the implicit pension debt (as well as other implicit liabilities) had been brought in the open by pension reform

2. Second, considerable flexibilization of labor and other domestic markets (including utilities).
3. Third, significant unilateral opening to trade. None of this was done in the nineties. And
4. Fourth, even stricter prudential regulations for banks than actually adopted (in spite of the significant progress in this field), probably leading to a form of narrow banking, harder provisioning and/or capital requirements to lend to households and firms in non tradable sectors and a “firewall” between banks and the Government

Alternatively, those years would have been the right time to engage in a more orderly change of the exchange rate regime. But the exit, whether towards a successful flexible exchange rate regime with a monetary anchor or to full dollarization, would have also required significant structural reforms and institution building.

7 Currency Risk and the Currency Board

The problem is that with a currency board eliminating currency risk, the prospect of IMF support reduces any limits to foreign borrowing. So the country increases its external debt. What happens in a country like this is that dollar-denominated debt rises dramatically, especially in the non-tradeable goods sector (think of real estate, for example). Such debt is available because the currency board seems to eliminate currency risk. The problem is that this sets up a situation where real exchange rate adjustment threatens the balance sheets of the non-tradeable goods sector. This creates a “fear of floating.”

There are two potential limitations in normal circumstances:

- currency risk; this is obviously eliminated by the currency board
- default risk; this is eliminated if investors expect the IMF to offer support

This latter point is related to the notion of moral hazard in international lending. Notice that the moral hazard is not exactly as the WSJ argues. It is not the case that US taxpayers money goes to international creditors in

a bad state. Rather, there is international lending from the IMF in a bad state. But experience says that the countries actually pay back the loans, so there is no transfer of funds.

This does not mean there is no moral hazard, however. As the bullet point makes clear, the problem with state-contingent lending is that it could enforce bad policies. Consider two cases:

- state-contingent lending allows a country to implement a deposit insurance scheme that protects the banking system
- state-contingent lending allows friends of the government to be bailed out ahead of others

The first is good, the second it bad.

How to prevent accelerated external debt without jeopardizing a country's external environment? Need to have investors share in the cost of further IMF funds, somehow.

Notice that in the recent period investors have believed that Argentina could not pay the debt. Hence, they demanded very high interest rates under the assumption that Argentina would default. Of course there is another equilibrium in which investors believe that the debt will be paid off. In that equilibrium the interest rate is lower and the debt is feasible. The debt plan that Argentina has imposed is an attempt to switch to the new equilibrium.

A key issue to think about is when should the IMF say enough foreign borrowing is enough?

8 Was it the Currency Board?

It seems as if the problem is that inability to devalue in the face of shocks. But is this the case?

It is hard to believe that the currency board is the cause of Argentina's crisis. Look at output in Argentina over the last 35 years in figure 4. It is quite clear that output has grown much faster since the currency board was implemented. It looks like the output process has improved precisely during this decade.

Adoption of the currency board did not remedy three basic problems

- high debt levels and a poor fiscal system – problematic especially because this is a fiscal crisis

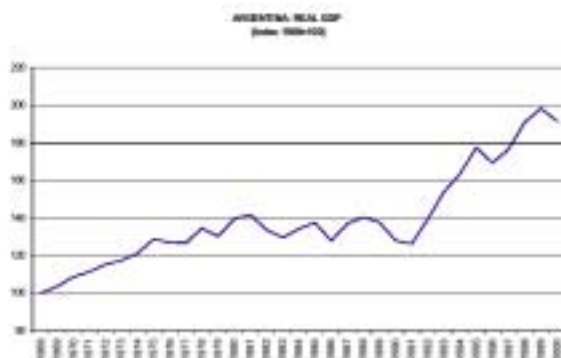


Figure 4: Argentina's Real GDP

- Argentina has invested little over the last 50 years, and despite some restructuring its economy is inefficient
- Unconstructive labor relations

Would devaluation help? Share of trade is about 10% of GDP, and much of its industrial output is too inefficient to sell in world markets – like in Eastern Europe. Terms of trade improvement would not help that much. But devaluation would increase the peso cost of debt and it would destroy confidence in the financial system.

9 The Denouement

While in early 2001 many still thought of Argentina as an example of how to have a super-fixed exchange rate, by December it was clear that some exit was needed. The currency seemed over-valued, external debt was large and growing, and the economy was in recession, making the debt dynamics even worse. The country risk premium reached 2000 basis points. What to do?

Three types of suggestions were offered:

- partial default on debt but retain convertibility law
- dollarize to remove all uncertainty about the currency, though perhaps at a rate higher than one to one

- devalue and pesify the economy following adoption of a generalized indexation scheme

Cavallo, the Economy Minister, chose none of these. Instead he tried to restructure the debt and make a deal with the provinces, whose spending made the fiscal situation so problematic. A run on the banking system in December led to a freeze on bank deposits and exchange controls. Public riots ensued, as the public had thought their savings untouchable – that was the whole point of the convertibility law. The government fell, Duhalde eventually (after three other Presidents) took power, and the "old" economic policy was denounced.

The government rejected any of the suggested alternatives, rather choosing a scheme that managed to combine the worst elements of each. The peso was devalued, the debt defaulted on, a deposit freeze expanded, and dollar-denominated debts pesified, at arbitrary rates.¹ The peso fell from parity to more than 3 to the dollar. This was amazing given that the most pessimistic estimates of its overvaluation were only about 60%. Why such a fall?

The essential reason was that all these policies greatly reduced the demand for money. Devaluation meant that a peso was not a dollar, but the freeze meant it was not worth a peso either. The banking system was devastated especially as the government pesified deposits and bank assets (i.e., loans) at different rates. The economy seriously tanked. The result was a serious monetary overhang, as the real demand for money was far short of supply. In theory a one-time price adjustment could solve the problem. But in practice this leads to inflation, so the IMF suggested not lifting the deposit freeze. Instead, convert the deposits in long-term bonds, a form of monetary confiscation not likely to be popular (not that inflation is, but harder to know whom to blame).

To see this the problem of the overhang in this situation, let m be real money demand per unit of real gdp. Then money market equilibrium requires:

$$\frac{M}{P} = my \tag{1}$$

so the price level is

$$P = \frac{M}{my} \tag{2}$$

¹In particular, deposits were pesified at higher rates than bank loans, so the banks were hit hard.

Now what is M made of? Three components: currency, peso deposits, and dollar denominated deposits:

$$M = C_0 + D_0 + E_P F_0 \quad (3)$$

where E_P is the rate at which frozen dollar-denominated deposits, F , are pesified. Using this in (2):

$$P_1 = \frac{C_0 + D_0 + E_P F_0}{m_1 y_1} \quad (4)$$

What is immediately apparent from expression (4) is that the rise in the price level depends on the rate at which deposits are unfrozen and the rate at which they are pesified. It also depends on what happens to real income. If the latter falls this leads to more overhang.

How large was pesification? Dollar-denominated deposits may have been \$45 billion. The pesification rate was 1.4, which translates into $P63$ billion. Meanwhile $C_0 + D_0 = P26$ billion.

Say that initially $y = 280$ billion and that it fell by 10%. Also assume that money demand is 7% of GDP. Then prior to the crisis the price level, $P_0 = 1$. With these assumptions what is P_1 ?

$$P_1 = \frac{26 + 1.4(45)}{.07(252)} = 5$$

so inflation is something like 400%. Not surprising that the exchange rate overshot so much. And notice that this ignores any indexation of prices! Nor have we taken into account a dramatic fall in money demand from inflation.

We can also analyze in a similar fashion the required depreciation. Define $\delta \equiv \frac{E_1 - 1}{1}$ as the required devaluation of the peso. The inflation rate is $\pi \equiv \frac{P_1 - 1}{1}$. Now our concern is with inflation from this overhang. That is, how much the exchange rate must rise given that prices are increasing due to the overhang. This will depend on the share of non-traded goods, b , and the rate at which foreign prices are passed through to domestic prices. Hence, we can write:

$$\pi = b\pi_n + (1 - b)\delta \quad (5)$$

where π_n is inflation in non-traded goods. Now the rate of inflation in non-traded goods depends on pass through, so we have $\pi_n = a\delta$. Hence, we can

re-write (5) as

$$\pi = ba\delta + (1 - b)\delta \quad (6)$$

$$= \delta[ba + (1 - b)] \quad (7)$$

Our concern is with δ so we re-write (7) as:

$$\delta = \frac{\pi}{ba + (1 - b)} \quad (8)$$

But from the definition of inflation this is just

$$\delta = \frac{P_1 - 1}{ba + (1 - b)} \quad (9)$$

and using the definition of δ we obtain an expression for the new exchange rate:

$$E_1 = 1 + \frac{P_1 - 1}{ba + (1 - b)} \quad (10)$$

What is evident from (10) is that the larger is the rise in prices the larger is the required exchange rate adjustment. And it is also evident that a larger pass through coefficient reduces the required change while a larger share of traded goods lowers it.

If we assume that $a = .6$ and $b = .5$ then given our calculations for P_1 we obtain $E_1 = 6$, in other words a 500% devaluation of the peso.

What lessons might we learn from this? Exit from a dollarized economy is costly. So is default on public debt. When this is an important asset of the banking system the latter is threatened, and pesification of deposits can ruin the credit system. Moreover, we learned that a banking system dominated by foreign banks does not protect against a bank run in a dollar-denominated economy.

But the most important lesson to remember is that a super-fixed exchange rate does not fix all problems. It is not a panacea, and it is not a substitute for fiscal reform and structural reform. In an economy that is not very open and that is dollarized it is very hard to respond to external shocks. And when a recession worsens debt dynamics there is not much way to adjust. All exits are bad.

The sad part of this story is that the worst hurt by this experience were those who trusted in the new economy. The convertibility law led to increased

savings and increased use of the financial system. Those who held dollar deposits in Argentine banks thought that their savings were safe. They were wrong, and they were those ready to build the economy. In that way the exit was really tragic.