

# **COULD FISCAL AUSTERITY HAVE SAVED THE ARGENTINE ECONOMY?**

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Abstract: Fiscal consolidation under conditions of low growth is more likely to produce larger deficits and growing debt burdens. In those circumstances a balanced budget amendment designed to restrain central or provincial government spending, is unlikely to work unless separate measures to increase growth can be introduced at the same time. But if the currency is pegged to a slow growth economy or to an appreciating currency that option may get ruled out.

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## **1. Introduction**

Post war economic performance in Argentina, as in most South American economies, has been characterised by periods of severe instability. Hyper-inflation, massive debt burdens and repeated devaluations, or a de facto default in periods of severe financial instability, are all too familiar stories of the period. Argentina didn't escape. As a result Argentina has faced fluctuating fortunes in terms of growth.

But in the 1980s the situation began to change, first with the "conversion" of Chile to market based policies of the type associated with the Chicago School; and then with the restoration of democracy in Argentina, and a succession of successful financial stabilisation plans both there and in Brazil.

In Argentina's case, the centre piece had been the introduction of a currency board system in 1991 to manage the exchange rate, and the move to give the US dollar legal tender status along with the Argentine peso. Until recently this system was remarkably successful in terms of creating financial stability. Despite the financial crises that caused the Brazilians to devalue their currency in 1999, and despite the waves of speculation that hit Mexico in 1994-5 and 1998-9, the one-to-one dollar-peso peg was held successfully until the crisis at the end of 2001. At first growth was strong, unemployment fell and investment flowed in. This reflected the greater stability and discipline in the financial markets brought in by the new constraints on monetary policy. The economy boomed without any obvious inflationary pressures since monetary policy was, in effect, being controlled by the US. Consequently

inflationary expectations, along with wage demands and any devaluation expectations, all faded away. But by 1996 things began to change. A combination of tight monetary policy from the US, plus a steady risk premia of 2%-3% points above the US Treasury rates on Argentine debt, and a rising dollar exchange rate vs. the rest of the world, took the boom away. Output and national income began to shrink again – and as a result, public deficits and the burden of debt (the majority of which is owed overseas) increased alarmingly. This led to sharp increases in the default risk premia charged on loans in Argentina, rising from 4% points in 2000, to as much as 20% or 30% points during 2001. Argentina perhaps could not have been expected to have survived this kind of “lack of credibility”, brought on by a prolonged recession with strict monetary controls designed for an economy that was not in recession. That is one of the costs of belonging to a unilateral, rather than a multilateral monetary union.

In an attempt to deal with this situation, the Argentine authorities first introduced a limited set of supply side reforms aimed at making their labour market more flexible; and then an export subsidy/import tariff scheme in an attempt to get the benefits of a devaluation of the currency without having to abandon their currency board. These changes were designed to head off the possibility that devaluation would eventually be forced on the economy as the only feasible way out of stagnation and increasing debt.

At the same time, many – both in an academic context, and in the policy making community – have argued that the key to solving Argentina’s financial crisis was

stronger fiscal controls and consolidation. For example Nogues and Grandes (2001) argue that a country's debt position – and hence the country risk component in any risk premia on loans made in that country – will be a function of the fiscal deficits and growth prospects of that country. In Argentina's case, they argue, fiscal deficits needed to be reduced significantly in order to stabilise the debt. Without that, there was the risk of ballooning debt, lower growth prospects and a possible crisis: “the worst scenario is one where the fiscal responsibility law is not enforced”.<sup>1</sup> But it is far from clear whether their analysis actually implies that full fiscal responsibility would have been sufficient to head off the crisis or a possible default.

On the policy making side, the IMF (IMF, 2001a) also gave high profile to the importance of fiscal controls and debt reduction for solving Argentina's problems, although they did recognise that fiscal contractions could damage growth and make the necessary fiscal restructuring more difficult. Nevertheless, the IMF did recommend “fiscal consolidation efforts [to be achieved by reducing primary deficit spending and raising revenues as a proportion of GDP] as the main action needed<sup>2</sup> in support of the Argentine governments own programme of structural reform and export growth. The IMF economists also recognised that Argentina needed sustained and unambiguous actions at the federal and provincial levels, since the latter were to contribute nearly half of the fiscal consolidation efforts [IMF, 2001a, p17].

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<sup>1</sup> Nogues and Grandes (2001), p149.

<sup>2</sup> IMF (2001a) p27-28.

In the event, Argentina did introduce a series of strong fiscal austerity measures intended to reduce industrial subsidies, social support, the governments payroll, and (in particular) the expenditures made by provincial governments. That resulted in the Fiscal Pact of November 2000, thought at the time to be enough to produce reductions in the burden of public debt by 2002<sup>3</sup>. There were also arrangements to improve tax collection, reform pensions and the public health system (IMF 2001a). All these measures were then reinforced by the introduction of a Zero Deficit Law in July 2001, which was intended to eliminate any further build up of debt; and to provide the conditions under which further loans could be made by the IMF. Those additional loans were necessary to provide liquidity to the capital markets; and to allow the refinancing of existing government or commercial debt in circumstances where the private capital markets were unable, or unwilling except at penal rates of risk premia, to roll over or continue financing existing or new debt as it became due. In effect this would have transferred some of the debt to the more forgiving creditors – i.e. to those, like the IMF, with a direct interest in preserving the stability of Argentina’s financial system. But we assume further stand-by credits would not have been made available until the fiscal consolidation programme had proved successful.

The distinguishing feature of all these interventions is that they appear to have had very little effect: they neither restored growth, nor have they succeeded in preventing

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<sup>3</sup> But on the assumption that growth would return to rates of 2½% to 3% per year (IMF, 2001a, p19). In the event, and at that time as well (according to official data published at the same time) real growth was around –2%. Further more a US dollar devaluation was also foreseen in this scenario, which of course never happened.

the public sector debt from deteriorating to the point of default. The question which has to be asked therefore, is whether sufficiently strong fiscal consolidation/fiscal austerity programmes could have been expected to resolve Argentina's financial crisis? The answer we reach below is "no". By the time these measures were introduced, the unfavourable debt dynamics were too strong. In the absence of a direct stimulus to growth, there was no chance of avoiding both a default and devaluation. Thus, having gone past the point of no return, the Argentine authorities were confronted with the worst of both worlds – rather than with just the consequences of either monetary loosening or fiscal indiscipline.

## **2. Argentina's Debt Burden in 2001**

We start from the proposition that Argentina's current financial (and economic) difficulties were reflected in, and may have been caused by, the escalation in her public debt burden. That much at least, is made clear by the new "Zero Deficit law" passed by the Argentina Congress on 29 July 2001<sup>4</sup>. That law however did not specify exactly what a zero deficit should be taken to mean. Does it mean a zero primary, or a zero overall (gross) deficit? What would be done if there were deficit overruns? Does zero actually mean no increases in expenditures or reductions in tax rates - an important consideration given the negative growth and price deflation which is now taking place? Then there is also a question of how rapidly the zero deficit could actually be achieved, given an existing deficit of 3.6% of GDP.

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<sup>4</sup> See IMF (2001b).

The first of these questions is easily resolved. As of mid-2001, Argentina appeared to be running a primary budget surplus of 3.1% of GDP (see below). In fact Argentina has probably been running small primary surpluses of 0.5% - 1% of GDP since late 2000. It is inconceivable that a zero deficit law would then have been introduced to loosen fiscal policy and produce a zero primary deficit. We need only consider the implications of a zero overall deficit therefore.

On the other hand, public sector debt is not the only problem. There is substantial external debt, which is roughly split 60% to 40% between the public and private sectors. The public sector component of this (almost exactly two-thirds of the total public sector debt) is already accounted for in the zero deficit law. But the private sector component is around 130% of annual exports, and taken together with the public sector's external debt, constituted a significant risk to (and pressure on) the Currency Board's fixed peg of parity against the dollar for the peso.<sup>5</sup>

To analyse Argentina's debt dynamics we start out from the following data, taken from the IMF's International Financial Statistics (23 August 2001). They all refer to the position at the end of 2001Q2: i.e. at the time when the fiscal austerity plan was actually applied as a final attempt to stem the slide into crisis:

Output growth in constant prices (% p.a.) = -2.1%

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<sup>5</sup> See Anthony and Hughes Hallett (2001) for a discussion of the interrelation between the currency (devaluation) risk implied here, and the country (default) risk we discussed earlier.

Output growth in current prices (% p.a.) = -2.6%

Output price inflation, GDP deflator % p.a. = -0.5%

Consumer price inflation, % p.a. = -1.1%

Public Sector deficit to GDP ratio = 3.59%

Public Sector debt to GDP ratio = 48.0%

Short term interest rates (30 day dollar loans, interbank rates) took the following values: 10% (September 1999); 9% (early July 2001); 14% (mid-July 2001); 26% (late July 2001); 31% (mid-August 2001); and 14% (late August 2001).

Current Account Deficit = 3.2% GDP

The question we wish to analyse is: could a strict zero deficit law, constraining both provincial and federal fiscal expenditures, have slowed or prevented Argentina's de facto default at the end of 2001? In that context, the post-IMF loan period referred to in the text below is that following the additional \$8bn stand by credit which was made available on 21 August, 2001. The phrase "on current data" then also refers to that period. It therefore includes the 14% interest rate of late August 2001. It is also important to note that these figures imply that the Argentines were, at that point, running a primary surplus ratio which was equal to their interest payments of 0.14 (0.48) of GDP, less the current overall deficit. That implies a total primary surplus of 3.1% of GDP.

In the event, the crisis was resolved by a default, a devaluation of the peso, and a change of regime which has involved abandoning the currency peg of the currency board system and some strict (if temporary) controls on financial transactions and capital movements. The result has been further contractions in output, modest inflation and rising unemployment. But the question to be addressed here is whether, based on the information available at the time, these consequences could have been avoided (and could have been expected to have been avoided) by sufficient fiscal austerity; plus sufficient stand by credits to enable the necessary debt refinancing to take place in the interim.

### **3. Debt Dynamics and Deficit Arithmetic**

#### **3.1 Conditions for a stable level of Public Sector Debt**

Traditional analyses of the evolution of public sector debt split it between that part which is generated by the addition of new primary deficits, and that part generated by interest payments on the existing debt. We start from the Government's budget constraint

$$G - T + rB = dB / dt + dM / dt \quad (1)$$

The left hand side is the government's budget deficit. It consists of the primary deficit (G-T), where G represents aggregate (non interest) expenditures and T total revenues in a given period, and the interest payments on the existing debt (rB). The right hand side shows that the deficit can be financed either by new debt (dB / dt) or new money (dM / dt). Thus B represents the stock of debt, and M the stock of money in the economy.

It is convenient to express these variables as ratios to GDP, so that they can be used to show the increasing burden of debt itself - and also the possibility of “financing” it through growth or inflation. We define

$$b = B / Y \quad (2)$$

as the debt to GDP ratio, and write

$$\dot{b} = \dot{B} / Y - BY / Y^2 \quad (3)$$

where symbols such as  $\dot{B} = dB/dt$  represent time derivatives. Equation (3) can be rewritten as

$$\dot{B} = \dot{b}Y + b\dot{Y} \quad (4)$$

and hence, substituting (4) into (1),

$$\dot{b} = (g - t) + (r - x)b - \dot{m} \quad (5)$$

where  $g = G / Y, t = T / Y, x = \dot{Y} / Y$  (the rate of growth of GDP). Lastly  $\dot{m} = (dM / dt) / Y$  is the growth of the monetary base as a proportion of GDP. Hence  $(g-t)$  now represents the primary budget balance as a proportion of GDP, and  $\dot{m}$  the monetary financing component. But with a currency board in place, the expansion of the money supply is governed by the expansion of the US money supply. If the latter grows at around 5% per year in nominal terms, and if the increase in the Argentine money stock  $(dM / dt)$  is therefore limited to what can be earned through exports

9% of GDP on current data) or capital inflows (3% of GDP), then  $\dot{m}$  must be less than 0.09% at the very most<sup>6</sup>. That is small enough to be ignored.

Now, given  $b$ , the condition to maintain a stable debt burden,  $\dot{b} = 0$ , is

$$(t - g) = (r - x)b - \dot{m} \quad (6)$$

where  $\dot{m} \approx 0$ . Hence the government must run a primary surplus if the interest rate payable on the existing debt,  $r$ , is greater than the rate of growth of output  $x$ . But it may run a primary deficit if growth exceeds the interest rate payable.

More generally of course, the government can run a small deficit and yet have a falling debt burden if interest rates are low enough but growth high. From (5), we have

$$\dot{b} < 0 \text{ if } (t - g) / b > r - x \quad (7)$$

In other words the debt burden falls as long as the size of the primary deficit, as a proportion of the total debt, is smaller (less negative) than the difference between the interest rate and the growth rate. Conversely the debt burden will rise if the primary deficit is too large, or if the growth rates are too low or the interest rates too high:

$$\dot{b} > 0 \text{ if } (t - g) / b < r - x \quad (8)$$

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<sup>6</sup> This is a rough calculation because it assumes that trade with the other partners remains roughly in balance, and that trade with the US remains at 15% of total trade. The may be unfair, but it is sufficient to give the appropriate order of magnitude for  $\dot{m}$ .

From this it is clear that a zero primary deficit would not have been much help in Argentina in 2001.

In fact, when we apply Argentine data to the ineq in (6), (7) or (8), it turns out that a zero primary deficit would have been of very little help in preventing a debt build up at any point since 1993. The necessary condition for no increase in the debt burden,  $r \leq x$  from (6), was violated in mid-August of 2001 (i.e. pre the IMF loan:  $r = 31\%, x = -2.6\%$ ); and at the end of August 2001 (i.e. post the IMF loan,  $14\% > -2.6\%$ ). Moreover it was violated in early July 2001 ( $r = 9\%, x = -2.6\%$ ) and in every year since 1993, as table 1 shows:

**Table 1: Short term interest rates on dollar loans and growth rates compared, Argentina (%pa)**

<b>Year</b>	<b>r</b>	<b>x</b>
<b>1993</b>	<b>9</b>	<b>8</b>
1994	7	7
1995	10	4
1996	11	0
1997	9	7
1998	9	4
1999	10	-1
2000	13	0

*Source: IMF*

Moreover Argentina's debt burden would have continued to rise even if a zero overall deficit condition had been imposed in 2001 since, by (7), the primary surplus needed

for  $\dot{b} \leq 0$  using the data for Sept. 2001 was 7.97% of GDP. The actual primary surplus was 3.1% GDP. That was nearly 4% of GDP too small. Consequently a zero gross deficit restriction at that point might have slowed the debt build up – but it would not have stopped it.

### 3.2 A Softer Strategy: A Total Fiscal Freeze

It might have been unrealistic to suppose a zero deficit could have been imposed instantly in a period of recession and declining incomes, given the starting point of a deficit of 3.6% of GDP. But what can be done is to impose a fiscal freeze: that is, to prevent any further increases in public expenditures and any reductions in current tax rates.

To see how the overall deficit would change with a complete fiscal freeze, we write the deficit ratio as

$$d = (G - T) / Y \quad (9)$$

where  $G$  = gross fiscal expenditures by the government,  $T$  = total revenues from taxation, and  $y$  = national output (GDP). So  $G - T$  = the overall deficit. If fiscal policies are now held constant, and average tax rates remain unchanged across the economy as a whole so that

$$T = tY \quad (10)$$

where  $t$  = the average tax rate, a fiscal freeze will require  $\Delta t = 0$  and  $\Delta G = 0$ . Thus we can write:

$$\Delta d = \frac{\Delta G - \Delta T}{Y} - \frac{(G - T)\Delta Y}{Y^2} \quad (11)$$

where  $\Delta x$  denotes the time differential, or time difference in some variable  $x$  over a small interval of time. This simplifies to

$$\Delta d = \frac{t\Delta Y}{Y} - \frac{(G - T)\Delta Y}{Y^2} = \frac{-\Delta Y}{Y} \left[ t + \frac{G - T}{Y} \right] = \dot{Y}(t + d) \quad (12)$$

where  $\dot{Y}$  = the rate of growth of national output. Hence a strict zero deficit policy ( $d = 0$ ) is going to require positive growth ( $\dot{Y} \geq 0$ ) if it is to be sustained. Otherwise *repeated* contractions in public expenditures will be needed to match the recession.

### 3.3 Interest rate effects vs. the stock of debt effects

A second question is whether the increase in the debt burden is a result of the increases in interest rates, or of the rising debt level itself. This is an important question because we need to know if US monetary policy, as “imported” by the currency board, is inappropriate in so far as it influences the burden of domestic fiscal policy. Or whether domestic fiscal policy itself was inappropriate, and it is that which created the country risk.

To answer these questions, let  $z = rB / Y$  be the interest payments on the existing debt ratio. Then

$$\Delta z = \Delta r \cdot B / Y - rB / Y^2 + r\Delta B / Y \approx \Delta r \cdot b + r \cdot \Delta b \quad (13)$$

if  $rB / Y^2 = rb / Y$  is small. Comparing (13) with (12) shows whether the deterioration of the deficit is coming from negative growth, higher interest rates, or the build up in debt itself. For 2001, we have

Table 2:	July-Aug 01	Post IMF loan (Aug 01)	Sept 99 - June 01
$\Delta r.b$	0.025	-0.078	0.071
$r. \Delta b$	0.002	-0.006	0.005

Table 2 shows the damage to the current deficit had in fact been done by the jump in interest rates – i.e. risk premia – in mid 2001. It was not, in the first instance, the increase in debt itself, or the fall in growth as such. Conversely the advantage of the IMF loan in August 2001 was evidently the signal that new credit was going to be made available. That removed much of the risk premium at the time; and did at least as much to reduce the outstanding deficit, as all the fiscal consolidations in the first half of 2001 put together.

#### 4. Deficit Dynamics

We can show the dynamics of the debt to GDP ratio by examining how deficits had been accumulating. We use the following relationship:

$$b_t = b_{t-1} / [(1 + x_t)(1 + \dot{p}_t)] + d_t \quad (14)$$

and the associated deficit ratio

$$d_t = pd_t + i_t / [(1 + x_t)(1 + \dot{p}_t)]b_t \quad (15)$$

where  $\dot{p}_t$  denotes the rate of price inflation, and  $i_t$  the nominal interest payable on debt. The remaining notation is as before, except  $pd_t$  is the primary deficit.

The development of the debt to GDP ratio can now be written in various different ways. For example, we have

$$b_t = \alpha^t b_0 + pd_0 \sum_{j=0}^{t-1} \alpha^j + i \alpha \sum_{j=0}^{t-1} \alpha^j b_j \quad (16)$$

which shows the effect on the debt ratio, at successive points of time, of the initial conditions; of constant primary deficits since then; and of the interest payments which fall due. In deriving (16) we have written

$$\alpha = [(1+x)(1+\dot{p})]^{-1} \quad (17)$$

and have assumed constant growth rates for real output ( $x$ ) and prices ( $\dot{p}$ ).

Alternatively we can write

$$b_t = \beta^t b_0 + \left( \sum_{j=0}^{t-1} \beta^j \right) pd_0 \quad (18)$$

where  $\beta = \alpha(1+i)$ , and the last term becomes  $\sum \beta^j pd_i$  if primary deficits are not kept constant. Finally, if the overall deficit is kept constant over time, [ $d_t = d_0$ , all  $t$ ], we get

$$b_t = \alpha b_{t-1} + d_t = \alpha^t b_0 + \left( \sum_0^{t-1} \alpha^j \right) d_0 \quad (19)$$

#### 4.1 The Position in 2001

A strict zero deficit law,  $d_t = 0$  using (19), implies the Argentine debt burden

- would have reached 49.3% by 2002 (up from 48%); and
- would have 53.4% in mid 2005.

So even under a strict zero deficit law, the debt burden would have continued to rise.

#### 4.2 What primary surplus did the Argentines need?

If the zero deficit law were to succeed, then the Argentine primary deficit would have

had to have been  $\frac{-ib_{t-1}}{(1+x)(1+p)}$ , by (17). On post IMF loan data in August 2001,

this implies a primary surplus of 6.9% of GDP. But since that is smaller than the 8.16% surplus needed to stop  $b_t$  actually rising (see below), the debt ratio would still have risen even under zero overall deficits.

To see what would have been necessary to stop the debt burden rising, we need to compute  $pd_0$  from

$$b_0 = (1 - \beta^t)^{-1} \left( \sum_0^{t-1} \beta^j \right) pd_0 \quad \text{when } b_t = b_0 \text{ all } t.$$

This formula is obtained from (18). Using August 2001 data, it implies a primary surplus of 8.16% of GDP each year. At the time such a primary surplus would have required a gross budget surplus of 4.9%. The actual budget was in deficit by 3.6% of GDP however: a difference of 8.5% of GDP.

## **5. Output Growth Restored**

The calculations so far have made it clear that the problem with Argentina's public finances and debt is due to the lack of growth – and, by extension, to an inappropriately tight monetary policy induced by the currency board system. There was very little that a more tightly controlled fiscal policy could have done to help, even if a zero deficit were imposed and the primary surplus had been moved up to 6.9% of GDP. In that case the only solution would have been more aggressively pursued supply side reforms; or some monetary easing in the US; or a dual (and hence softer) currency board peg, to the Euro as well as the Dollar for example<sup>7</sup>. What happens to our debt and deficit calculations if growth were restored for any of these reasons?

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<sup>7</sup> The Euro having been a relatively weak currency and out of cycle with the US dollar this follows an idea floated by Finance Minister Cavallo in April 2001, and given some kind of form by his export subsidy / import tariff scheme in June of that year. But it was never transformed into a systematic policy regime. Apart from the effect on Argentina's effective exchange rate, the idea here was to allow a reduction in the currency (devaluation) risk premium without increasing the country (default) risk premium through tight or tighter conditions. An discussion of the trade off between those two risk premia will be found in Anthony and Hughes Hallett 2001.

## 5.1 Zero (nonnegative) growth

The consensus forecasts for the Argentine economy made in July 2001, were for a nominal growth of GDP of approximately zero in 2001 – consisting of real growth of 0.4% and price deflation of 0.3%<sup>8</sup>. Whether this could have been achieved alongside the slowdown in the US economy is another matter. But it provides a useful benchmark for our analysis.

Starting from the existing 3.1% primary surplus, zero nominal growth would imply:

$$.031 / 0.48 < (.14 - .001)$$

from equation (8). So the debt burden would still have been climbing:  $\dot{b} > 0$ . Had the Argentine government been able to impose their zero deficit law with immediate effect, so that they were starting from a much larger primary surplus of 6.9%, then equation (7) implies

$$0.069 / 0.48 \geq (.14 - .001).$$

That would make the debt burden static or slightly declining:  $\dot{b} \leq 0$ . This has saved a further rise in the primary surplus of 1.2% - being the surplus which we would have needed in order to get the same outcome as we had in section 4 without growth being restored. In other words, the policy makers would have had to trade-off creating a 1.2% increase in the primary surplus against 2.6% “extra” growth, in order to get the same outcomes<sup>9</sup>.

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<sup>8</sup> The Economist Survey of emerging markets; July 14, 2001

If however, the signal of a restoration of growth had led the markets to expect better growth in the future and had brought them back to charging currency or country risk premia of 4.5 – 5% over US Treasury Bonds (instead of the 8% - 20% risk premia seen in July and August 2001), the interest rates payable on Argentine debt would have fallen to about 11%. But this scenario, combined with a zero deficit, would still imply a rising debt burden since

$$.031 / 0.48 < (.11 - .001) \text{ and } \dot{b} > 0 \quad \text{by (8)}$$

In fact the policy makers would have had to generate a primary surplus of 5.2%, i.e. 2.1% more of GDP than they currently had at the time, to prevent the debt burden rising – even under these conditions of lower risk premia.

In fact, in order to prevent the debt burden rising in this case, it would have been necessary to insert an interest rate of 6.5% - that is either a zero, or possibly slightly negative, risk premium against the interest payable on US government bonds – into the formula above. However, had this zero growth scenario been combined with both a zero initial deficit (i.e. with a primary surplus of 6.9% in 2001, in place of the 3.1% actually achieved) and lower risk premia, then, by (21) or (22) applied to current data, we could have got the following debt ratios:

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<sup>9</sup> Sections 4's calculations had nominal output shrinking at an annual rate of 2.6%.

**Table 3:**

**Public Sector Debt Ratios in Argentina with Zero Growth and Alternative Deficit Targets**

<b>Deficit Target (% GDP)</b>	<b>Interest Rate Payable</b>	<b>Debt Ratio:- Mid 2001</b>	<b>Mid 2005</b>	<b>Movement</b>
$d_t=3\%$	14%	0.50	0.60	rising
$d_t=zero$	14%	0.48	0.48	static
$d_t=zero$	14%	0.55	0.81	rising fast
$d_t=zero$	10%	0.53	0.70	rising
$pd_t=6.9\%$ (surplus)	14%	0.48	0.47	falling slowly
$pd_t=6.9\%$ (surplus)	10%	0.46	0.36	falling faster

The last two cases in table 3 are interesting because they both provide for constant or falling debt burdens for the first time. But the crucial point to recognise is that it is the increase in the growth rate (or more precisely, the removal of recession) which has generated that result. Fiscal consolidation alone ( $d_t=0$ ) would not have been sufficient.

## 5.2 A return to “normal” growth

Now suppose nominal growth returns to 3%. This could be the Economist’s survey’s consensus forecast for growth in 2002, with minimal inflation<sup>10</sup>. Or it could be a less favourable projection of slow growth (1.5%) following the 2001 devaluation, with some mild inflation (1.5%). Starting from the existing primary surplus of 3.1% GDP and the August 2001 interest rates, we find

$$.031/.48 < (.14-.03) \quad \text{so } \dot{b} > 0 \text{ still.}$$

<sup>10</sup> Since Powell and Sturzenegger (2000) report that the interest rate multiplier in Argentina is around unity, this may be rationalised as the consequence of a 3% point drop in risk premia as the financial crisis passes.

But had the authorities managed to impose a zero deficit right away (i.e. a 6.9% primary surplus), then

$$.069/.48 > (.14-.03), \text{ so } \dot{b} < 0 \text{ quite quickly.}$$

And if that is then combined with a lower risk premium, than is an interest rate of 11%, we get  $\dot{b} < 0$  faster still. Consequently a zero deficit plus growth removes the problem of increasing debt burdens, whereas a zero deficit alone could not do so.

## **6. Conclusion: a deficit reduction – growth trade-off?**

It is clear from these calculations that Argentina's expanding debt and persistent deficits have resulted from a lack of growth, not inappropriately loose fiscal policies.

On the other hand, we have not attempted to show which policies would be most effective in generating growth, or are responsible for having lost it. But we can cast the results in terms of the trade off between the various remedies. We discovered, for instance, that 2.6% extra growth would substitute for a primary surplus increase of 1.2% of GDP in creating a zero deficit without increasing the debt ratio. That is a ratio of 0.47, primary surplus to growth.

Nevertheless, a trade-off of that nature is misleading in that it results from imposing a primary surplus - or growth or risk premium changes - from the outside in order to show their consequences. In reality, a growth change would also change the primary surplus via revenues; a risk premium reduction would then improve growth and hence the primary surplus and so on. So the conclusions of this paper cannot be treated as

serious predictions of the future debt position of the Argentine economy. They are more a matter of accounting for the growth in debt burdens or deficits of the period. But our results do show very clearly that debt problems are much more easily solved by encouraging growth rather than by fiscal consolidation: 1/0.47, or 2.2 times more easily in fact.

## **Appendix:**

### **The Importance of the Currency Board in all this**

Argentina operated a currency board system to manage her exchange rate since early 1991. Under this currency board, the Argentine Peso was tied one-to-one with the US Dollar. And, to 2001, there were no realignments to that rate, although the idea of tying the Peso to a 50-50 mix of dollar and Euro was discussed at one point. Similarly a subsidy on exports and a tax on imports was introduced in 2001. That provides a de facto devaluation, if not a de jure one. But, that episode apart, there were no other changes to the currency board regime.

Under a pure currency board, the monetary authority is essentially a money changer with no discretionary (policy) powers or central banking functions. Its sole function is exchange domestic currency for foreign currency, one-to-one at the specified rate of exchange. To fulfil that function, the currency board is required to hold sufficient liquid assets in foreign currency to cover at least the value of the domestic currency base – and possibly more. But the currency board cannot make any fiat issue. It is also typical, and generally insisted upon, that the convertibility of these currencies does not cover bank deposits on other financial assets.

Hence, under a strict currency board, if your economy is running a deficit on the current trade account then, in addition to the deflationary impact to aggregate demand through reduced exports, there will be a second and more dramatic contractionary

effect in that the money supply will also be shrunk one-to-one with that current account deficit. Only if the current account deficit is matched by new capital inflows from investors keen to invest in Argentina and in liquid instruments (i.e. in cash and short term instruments) would the money supply not be contracted because the pool of liquid foreign currency assets backing the domestic issue would be replenished. But this was not the case in Argentina. First, the economy was running a large and expanding current account deficit (3.2% of GDP in 2001, forecast to rise to 3.4% of GDP in 2002). Second, Argentina's chief difficulty was precisely that she could not attract the capital inflows needed without substantial risk premia to cover the risk of default or devaluation; and that the capital inflows, when they came, were in the form of longer maturity investments – a process supported by the government's attempts to refinance its own debt to longer maturities with the aid of IMF credit lines. So the stock of liquid foreign currency assets used to back the domestic currency issue was being shrunk by the trade deficit – that is over and above anything which was being done to shrink the fiscal deficit. And anything which the domestic policy managers might have done to switch existing foreign currency assets to a more liquid form, to support the domestic money issue, would have the same effect as reducing credit in an already contracting economy.

The significance of the last remark lies in the fact that the Argentine currency board was not a pure currency board system. It had three special features. First, the maintenance of a separate currency and the discussions of dollarisation in an economy where the dollar is already legal tender, leaves doubts in the minds of many investors about whether the Argentine authorities could actually maintain their commitment to

the current rate of exchange. Hence, debt apart, the reluctance of investors to provide new capital inflows – except at penal risk premia on interest rates.

Second, the domestic monetary base could, in the Argentine case, be backed only to 67% by foreign currency reserves – the remaining 33% may be met by US dollar denominated Argentine government debt. This exaggerates the perceived risks in providing capital inflows to support the domestic issue and offset the contractionary effects of the trade deficit – first because the commitment to the existing peg is made to look weaker, and second because it “traps” investors in longer maturity more illiquid forms of investment that may be more difficult to escape if there is a default. In other words, backing the peso by US dollar government debt has introduced an additional source of risk. First, there was the risk that the Argentine authorities might choose to abandon their current dollar parity. That is the currency risk. Second, there was the risk that the assets backing any given parity and monetary issue becomes more difficult or more expensive to finance (especially if they choose to devalue). This could happen if the public and private foreign currency debts become too large; or because the future fiscal path is considered unsustainable; or because exchange rate and risk premia movements would make it too expensive. That is the default risk.

These two risks will therefore interact – and threaten to reintroduce the financial indiscipline and instability which the currency board system was intended to remove. As a result, default risk premia inevitably came to substitute for currency risk premia, once the perceived risk of a currency devaluation was thought to be receding.

## References

Anthony, M. and A. Hughes Hallett (2001) “Should Argentina Adopt the US Dollar?”  
in R. Read and A. Winters (eds) 25th Anniversary Volume of the International  
Economics Study Group, London.

IMF(2001a) “Second Review Under the Stand-By Arrangement and Request for  
Augmentation IMF”, Washington DC (January 4, 2001).

IMF (2001b), News Brief 01/81 “IMF Managing Director Prepared to Recommend  
Addition of US\$8bn to Argentina” Stand-By Credit” IMF External Relations  
Department, Washington DC (August 21, 2001).

Nogues, J. and M. Grandes (2001) “Country Risk: Economic Policy, Contagion effect  
or Political Noise?” *Journal of Applied Economics*, 4, 125-62.

Powell, A. and F. Sturzenegger (2000) “Dollarisation: the Link Between Devaluation  
and Default Risk” Central Bank of Argentina, Buenos Aires.