

## Money Illusion and Dollarisation

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It takes a very special kind of money illusion that accepts real wage cuts from a large and perfectly obvious devaluation but cannot generate a fall in wages or prices [Dornbusch, 2000, p. 5].

It is sometimes said that it would be illogical for labour to resist a reduction of money-wages but not to resist a reduction of real wages ... But, whether logical or illogical, experience shows that this is how labour in fact behaves [Keynes, 1936, p. 9].

Like other conveniences of life the use of money is taxable, and ... a Government can get resources by a *continuous* practice of inflation, even when this is foreseen by the public generally, unless the sums they seek to raise in this way are very grossly excessive [Keynes, 1924, pp. 54-55].

The views and opinions expressed in this paper are those of the author alone, and do not necessarily reflect the views of the United Nations.

## **I Introduction**

Mainstream views of economists on the ideal system for international payments have swung from a single currency (or fixed rates) to multiple currencies (with flexible rates) and back to a single currency (or fixed rates). Classical economists had a strong preference for a single world currency. John Stuart Mill (1848, bk. iii.20), for example, hoped that “progress of political improvement” would lead to a world in which “all countries had the same currency,” and deplored the fact that “almost all independent countries choose to assert their nationality by having, to their own inconvenience and that of their neighbours, a peculiar currency of their own.” Economists later agreed to tolerate national currencies, provided there were fixed rates of exchange between them. The ideal of fixed rates was enshrined in the Bretton Woods agreements of 1945, although central banks were allowed to change the parity of their exchange rates in cases of fundamental disequilibria. In practice, the Bretton Woods system was more a regime of ‘adjustable pegs’ than ‘fixed rates’. Nonetheless, fixed, unmoveable rates of exchange remained the ideal, even if not always attained in practice.

Milton Friedman (1953) challenged classical fixed rate orthodoxy in a brilliant essay, “The case for flexible exchange rates.” Much later, Robert Mundell (1961) published his “optimal currency areas” paper, and Peter Kenen (1969) examined more closely the issue of optimal exchange rate regimes for developing countries. The new orthodoxy, which became (and remains) the standard textbook paradigm, stresses the usefulness of flexible exchange rates as a tool for adjusting to asymmetric macroeconomic shocks. Economies that face similar (symmetric) shocks should be linked with fixed exchange rates or a common currency. The argument essentially was that, when adjustment is necessary for balance of payments reasons, it is easier to change the value of a currency than to change thousands of prices in an economy. If money illusion is present, then many of these prices, wages in particular, are ‘sticky’ and will adjust downwards only with great difficulty. The prices of assets, including real estate, do adjust downwards quite quickly, but this gives rise to serious financial problems when the value of assets falls below the value of the loans they are supposedly guaranteeing.

By 1973 all major countries had abandoned the Bretton Woods system of fixed exchange rates in favour of flexible exchange rates. Around this time, economists began to praise fixed exchange rates and call for a return to classical orthodoxy. Robert Mundell (1973), who had so eloquently supported flexible exchange rates, became a leading proponent of common currencies.<sup>1</sup> The concern of Mundell, and other economists who oppose independent currencies, is that exchange rate uncertainty, hence the premium charged for exchange risk, hinders the development of capital markets and discourages the international diversification of portfolios. This message has fallen on receptive ears. By 1979 the core countries of Western Europe had adopted fixed exchange rates between one another and by 1999 had adopted a common currency, the euro. Dollarisation is all the rage in Latin America, where Ecuador and El Salvador have joined Panama in unilaterally adopting the US dollar as a sole legal tender for all transactions, and Argentina has fixed its peso to the US dollar with a Hong Kong-style currency board. Among economists and policymakers alike, a new consensus is emerging; in the words of McKinnon (2001, p. 13), “globalisation, in the form of greater trade integration, seems to be pushing the world towards being potentially one giant optimum currency area with, ideally, a single common money.”

Dollarisation is the term used to describe any process of reduction in the number of national currencies. To date, however, the U.S. dollar and the euro are the only serious options for countries that are thinking of closing their central banks. Countries move toward dollarisation when there is a guaranteed, fixed rate of exchange between one currency and another, such as the Hong Kong and US dollars, or the Argentine peso and

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<sup>1</sup> Milton Friedman to this day favours flexible exchange rates and opposes indiscriminate unification of national currencies. Support for flexible exchange rates crosses ideological boundaries, which is not common in economic debate. Mundell (1997) explains this nicely, using the example of two otherwise opposed economists: “Friedman ... [and James] Meade championed flexible exchange rates. Their reasons were very different. Meade, the liberal socialist, saw flexible exchange rates as a device for achieving external balance while freeing policy tools for the implementation of national planning objectives. Friedman, the libertarian conservative, saw flexible exchange rates as way of getting rid of exchange and trade controls. Both economists saw flexible exchange rates as a means of altering real wages when money wage rigidities would otherwise cause unemployment.”

the US dollar. *De facto* dollarisation refers to the use of a foreign currency alongside the national currency, possibly as a means of exchange, but more likely as a unit of account for debts and long-term leases.

In this paper, I question the wisdom of dollarisation and remind readers that, because of the prevalence of money illusion, flexible exchange rates are useful as a policy tool. Exchange rates, like all tools, can be used for good or for harm. Taxation and government expenditures can also produce great harm. Is this reason for abandoning, or severely restricting, independent fiscal policy everywhere? Some would do so, on grounds that governments almost always abuse discretionary authority, unless they are restricted by rules such as those mandating a ‘balanced budget’. I would argue that many governments, through experience, learn to make use fiscal policy wisely, and suggest that the same might be true for exchange rate policy.

The three quotes printed on the very first page of this paper set out its central theme. No one disputes that *real* exchange rates ought to be flexible. What is in dispute is whether flexibility of *nominal* exchange rates is necessary to attain the desired flexibility of *real* exchange rates. Proponents of dollarisation assume the absence of money illusion, such that workers are as willing to accept a reduction in nominal wages as they are the same reduction in real wages produced by inflation. If wages and prices are perfectly flexible, real exchange rate depreciation (appreciation) can be effected just as easily via a devaluation (revaluation) of the nominal exchange rate as via a general deflation (inflation) of wages and prices.<sup>2</sup> If there is widespread money illusion, as Keynes observed, then the case for fixed exchange rates is severely weakened.

Dollarisation results in loss of seigniorage, the implicit tax on cash balances that accrues to whoever issues the common currency. This can be dealt with through agreements on the sharing of seigniorage, as is the case in the euro area. Otherwise, proponents of full dollarisation must show that the benefits of this measure outweigh the

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<sup>2</sup> This brings to mind an old adage that seems especially appropriate here: “If pigs had wings, they would fly.” With suitable assumptions, anything is possible, even flying pigs!

costs. It should be noted also that governments lose seigniorage when they move to rigidly fixed exchange rates, even without full dollarisation. This is true for two reasons. First, the rate of price inflation may fall with a fixed rate of exchange, which means a lower rate of taxation of cash balances. Second, convertibility laws (currency boards) that promise to provide foreign currency at a fixed rate 'on demand' impose costs on the monetary authority, which must hold large reserves of foreign exchange as cash or as liquid assets that yield little interest.

The choice between fixed and flexible exchange rates cannot be decided by theory alone. No one disputes that it is best for all residents of some regions to share a common currency. It would be very inconvenient, for example, for the residents of Tokyo to use a different yen than the residents of Osaka, or for residents of New York to use a different dollar than the residents of New Jersey. But it is seriously argued that it is equally desirable for residents of all the Americas, from Canada to Argentina and Chile, to share a common currency. And many economists, including Mundell and McKinnon, would expand this currency area to include almost the entire world. In this paper I focus on Latin America, but the discussion, I believe, is relevant for emerging markets in Asia and other parts of the world.

To shed light on the dollarisation debate, I compare two cases of financial crisis and abandonment of fixed exchange rates in the 1980s (Costa Rica and Chile) and two, more recent examples (Argentina and Brazil) of countries that have used the nominal exchange rate as an anchor to combat inflation. Costa Rica has adopted a 'crawling peg', or sliding exchange rate, with frequent devaluations that produce increases in the price of the dollar at a current rate of approximately 8 percent a year, whereas Argentina has a currency board arrangement that fixes its peso to the dollar, supposedly irreversibly. Nonetheless, the two exchange rate systems have much in common, for both are *de facto* dollarised. The economies of Chile and Brazil, for the most part, are not dollarised, so variations in the nominal exchange rate remain a viable way to effect changes in the real exchange rate. For Brazil, this became very evident with the successful devaluation of the *real* in January of 1999.

## II The case against dollarisation

Professor Rudiger Dornbusch (2000, pp. 2-3), in a recent essay, dismisses in short order what he claims are *the* five arguments<sup>3</sup> that make up the case against dollarisation:

1. Sovereignty;
2. Loss of seigniorage;
3. Loss of monetary policy;
4. Loss of a lender of last resort;
5. Fiscal preparedness.

“On the surface,” he writes, “each argument is persuasive; on closer scrutiny none really is.” Except for the last argument (fiscal preparedness), I grant more credit to these arguments than Professor Dornbusch is willing to concede. I cite this paper not because Dornbusch’s views are exceptional (Robert Mundell and Ronald McKinnon, among others, would agree with them) but rather because he presents them in an exceptionally clear and lucid way.

Dornbusch asserts that sovereignty as an issue “should not come up in most countries” (p. 2). He is entitled to this value judgement, but sovereignty is, in fact, a major reason why dollarisation is not on the agenda in Canada or Mexico despite the fact that these economies are increasingly linked, through NAFTA, to the economy of the United States. The lack of appeal of dollarisation in Canada is even more surprising given that Mundell and McKinnon, two of the most visible proponents of monetary union, are nationals of that country.<sup>4</sup>

Loss of seigniorage, Dornbusch concedes, is a critical issue, but one that will be offset by “the reduction in public debt service costs that result from reduced interest

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<sup>3</sup> More correctly, he states that “four arguments make up the case against currency boards,” then goes on to list five. Either this was a slip of the pen, or “sovereignty” does not qualify as worthy of mention.

<sup>4</sup> It would be misleading, however, to claim that there is *no* support in Canada for a North American currency union. See, for example, Courchene and Harris (1999).

rates.” No government in Latin America issues external debt in its national currency, so the reduction in domestic interest rates is relevant only for internal debt, and governments always have the option of issuing that in dollars as well, thus reducing the cost of debt service to the extent there is exchange risk. Dollarisation reduces the cost of debt service only if it reduces country risk (the risk of default). If dollarisation produces a recession, country risk may go up rather than down.

Writers often assume that dollarisation, by eliminating the possibility of devaluation, will reduce or even eliminate country risk. The reasoning is that firms, banks and governments that borrow heavily in foreign currency will find it difficult to service their debts following a devaluation, and may default. Eduardo Lizano (1997, p. 400, fn 3) president of Costa Rica’s central bank, thus predicts that if Costa Rica “were to dollarise completely ..., exchange risk and country risk would disappear.”<sup>5</sup> It is true that exchange risk would disappear by definition if Costa Rica were to dollarise. But it does not follow that country risk would disappear or even be reduced, as Costa Rica’s neighbour to the south illustrates nicely. There is no risk of devaluation in Panama, because there is no central bank and no local currency except for coins of small denomination. Country risk nonetheless exists, and Panama, despite full dollarisation, pays a higher premium than Costa Rica on the U.S. dollar bonds its government floats in international financial markets. (See Goldfajn and Olivares, 2000.)

Dornbusch concedes that dollarisation means a loss of monetary policy, but argues that this is of little consequence since no economy on the periphery can hope to cut nominal interest rates below those in New York or Frankfurt. This assumes implicitly that monetary policy is not used with discretion for stabilisation purposes, which is not, in general, true. If two economies, such as that of the United States and Argentina, have little in common, it will be only by chance that the monetary policies of the US federal reserve will match the needs of Argentina; interest rates may rise when domestic conditions call for a fall, and vice-versa. Nonetheless, if a country has consistently abused

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<sup>5</sup> “... si el país decidiera proceder a la dolarización completa de la economía nacional ... el riesgo cambiario y el riesgo país (country risk) desaparecerían.”

monetary policy, which is certainly the case of Argentina, then there is a case for adopting the currency of any country that promises to pursue monetary policy that stabilises the value of its currency.

Dornbusch makes the valid point that central banks cannot (or should not) rescue failing banks and failing bank supervision by printing money. But he forgets that runs on well-managed banks can cause them to fail even though they are solvent, due to lack of liquidity. Local banks, or the Treasury operating on their behalf, may not be able to supply sufficient credit quickly enough when it is needed. For this reason, it is considered prudent for any country contemplating dollarisation to open its financial sector to foreign-owned firms, which have direct access to international money markets and little or no need for a domestic “lender of last resort.”

Finally, Dornbusch makes the reasonable point that it is difficult to see, apart from the seigniorage argument, how a fiscal problem can be managed more easily with flexible than with fixed exchange rates. Fiscal problems do not go away with fixed rates, but he suggests that dollarisation might possibly be a catalyst for fiscal reform. I am less optimistic, but agree that it is a possibility and that fiscal order is necessary regardless of the exchange rate regime.

To my mind, these five arguments miss the main case against dollarisation, which is the loss of the exchange rate as a policy instrument. To his credit, Dornbusch does discuss this under a separate heading (pp. 4-5). He is sceptical that workers can be ‘fooled’ by devaluation and inflation into accepting wage cuts that they otherwise would not accept, and cautions that “unexpected movements of the exchange rate ... will translate into a premium in interest rates and hence the cost of capital” that “in turn translates into a loss of competitiveness.” Dornbusch, like most theorists, is reluctant to attribute irrational behaviour to economic agents, but there is abundant evidence that money illusion persists despite the best efforts of economists to educate the public (Shafir, Diamond and Tversky, 1997). Irving Fisher (1928) wrote an entire book on the subject, directed to lay readers, but it appears to have had no effect on their behaviour.



Canada has a long history of flexible exchange rates, yet it is able to issue external debt in its own currency, and its domestic interest rates have converged with those of the United States.<sup>6</sup> These, precisely, are the benefits promised by proponents of dollarisation. Canada shows that this can be accomplished with a floating currency that has depreciated significantly in both nominal and real terms relative to the US dollar. Laidler and Aba (2001) recently completed an empirical study of the Canadian dollar, and came to conclusions that have broad relevance for countries contemplating dollarisation:

Long ago, economists learned, or should have learned, that it is impossible for a country to create prosperity by devaluing its currency. It is high time that economists also understood that it is equally impossible to create prosperity through other manipulations of the exchange rate, including fixing it irrevocably (p. 2).

When commodity prices fall, as they have on average since 1995, Canadian living standards must fall. The exchange rate on the US dollar is the messenger that brings this news, not the cause of the problem (p. 2).

If the nominal exchange rate were not allowed to depreciate to absorb the effects of falling real commodity prices, domestic wages and prices would have to fall instead – which many would agree is a painful adjustment (p. 11).

It is possible for Chile and Brazil, like Canada, to use exchange rates to facilitate the adjustment of their economies to external shocks, for they are not yet *de facto* dollarised. Costa Rica and Argentina (even if it were to abandon its currency board) no longer have this option because a large portion of their public and private debt is denominated in U.S. dollars. Devaluation in a dollarised economy brings with it bankruptcies and fiscal imbalances, which is why there exists in such economies what Calvo and Reinhart call “fear of floating”, even when the exchange rate is supposedly flexible.

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<sup>6</sup> Australia has been equally successful with its floating exchange rate regime.

### III Devaluation in the 80s: Costa Rica and Chile

A number of countries in Latin America suffered financial crises in the early 1980s. I focus on two of these countries: Costa Rica and Chile. The Chilean case is well known, and much has been written on it. The Costa Rican experience is less known, and offers an interesting comparison to Chile. The basic indicators for each country, from 1987 through the year 2000, are shown in tables 1 and 2 below.

One thing should be noted at the outset. Looking at the last column of tables 1 and 2, it is clear that Costa Rica and Chile experienced a *contraction* in capital inflows, but not a *reversal* of flows. In other words, while the economies certainly had less access to foreign savings, there was no net capital outflow. The Asian crisis that began in Thailand in July 1997 was different, for it triggered massive capital flight. The size of the current account reversal in some countries of Asia was nothing short of incredible. Thailand went from a current account *deficit* of 8 percent of GDP in 1996 to current account *surpluses* of 12.7 percent of GDP in 1998 and 10 percent in 1999. Korea faced nearly as great a shock, shifting from a current account deficit of 4 percent of GDP in 1996 to surpluses of 12.7 percent in 1998 and 6 percent in 1999. The comparable figures for Costa Rica and Chile look benign in comparison. Costa Rica's current account deficit fell from a pre-crisis 14 percent of GDP to *deficits* of 10 percent of GDP in the two years following the onset of the crisis. Chile's current account deficit fell from a pre-crisis 14.5 percent of GDP to *deficits* of 5.6 percent and 11 percent of GDP in the two years following the first crisis year.

Why did neither Costa Rica nor Chile in the 1980s suffer the 1990s Asian-style crisis of massive capital flight? I am not sure, but suspect that two elements played a role. First, much of the external debt was long-term, even in the case of Chile, where the debt was private but regulated to be of a term of no less than one year. Second, in neither case were the currencies fully convertible; purchase of foreign exchange required approval, and this served to restrain capital flight.

**Table 1. Costa Rica: Macroeconomic Indicators, 1977-2000.**

| Year | Percentage Change |                                  |  | Index              | Percentage of GDP  |                 |
|------|-------------------|----------------------------------|--|--------------------|--------------------|-----------------|
|      | Real GDP Growth   | Consumer Prices (annual average) | Increase in Average Price of US Dollar | Real Exchange Rate | Government Balance | Current Account |
| 1977 | 8.9               | 4.2                              | 0                                      | n.a.               | -2.8               | -7.3            |
| 1978 | 6.3               | 6.0                              | 0                                      | n.a.               | -4.4               | -10.3           |
| 1979 | 4.9               | 9.2                              | 0                                      | n.a.               | -6.7               | -13.8           |
| 1980 | 0.8               | 18.1                             | 0                                      | 100.0              | -8.1               | -13.7           |
| 1981 | -2.3              | 37.1                             | 153.9                                  | 54.4               | -2.4               | -15.6           |
| 1982 | -7.3              | 90.1                             | 71.9                                   | 55.9               | -1.0               | -10.4           |
| 1983 | 2.9               | 32.6                             | 9.9                                    | 67.8               | -1.9               | -9.9            |
| 1984 | 8.0               | 12.0                             | 8.4                                    | 69.5               | -0.1               | -6.9            |
| 1985 | 0.7               | 15.1                             | 13.3                                   | 71.5               | 0.9                | -7.4            |
| 1986 | 5.5               | 11.8                             | 11.0                                   | 65.9               | -1.7               | -3.6            |
| 1987 | 4.8               | 16.8                             | 12.1                                   | 63.1               | -1.7               | -8.3            |
| 1988 | 3.4               | 20.8                             | 20.8                                   | 59.4               | -1.6               | -6.6            |
| 1989 | 5.7               | 16.5                             | 7.5                                    | 62.5               | -3.3               | -9.2            |
| 1990 | 3.6               | 19.0                             | 12.4                                   | 61.2               | -3.3               | -8.7            |
| 1991 | 2.3               | 28.7                             | 33.7                                   | 56.7               | -3.4               | -1.8            |
| 1992 | 9.0               | 21.8                             | 9.9                                    | 60.0               | -1.8               | -5.6            |
| 1993 | 6.3               | 9.8                              | 5.7                                    | 61.9               | -2.3               | -8.2            |
| 1994 | 4.9               | 13.5                             | 10.5                                   | 61.5               | -6.5               | -2.9            |
| 1995 | 4.0               | 23.2                             | 14.4                                   | 62.7               | -5.2               | -4.0            |
| 1996 | 0.3               | 17.5                             | 15.6                                   | 63.1               | -5.0               | -2.9            |
| 1997 | 5.8               | 13.2                             | 12.0                                   | 64.7               | -3.6               | -4.9            |
| 1998 | 8.0               | 11.7                             | 10.6                                   | 65.7               | -3.3               | -5.0            |
| 1999 | 8.0               | 10.0                             | 11.1                                   | 64.9               | -3.0               | -6.2            |
| 2000 | 1.4               | 11.0                             | 7.9                                    | 67.0               | -3.9               | -7.1            |

Source: IMF, International Financial Statistics (March 2001 CD-ROM), and Banco Central de Costa Rica.

Note: Costa Rica recently revised its national accounts, increasing nominal GDP by 25% to 32% for the years 1991 to 1998. Nominal GDP was not revised for prior years, so this table uses the old nominal GDP series through 1998, and estimates for 1999 and 2000. Real GDP growth is based on the revised series. See appendix A

**Table 2. Chile: Macroeconomic Indicators, 1977-2000.**

| Year | <u>Percentage Change</u> |                                  |  | <u>Index</u>       | <u>Percentage of GDP</u> |                 |
|------|--------------------------|----------------------------------|--|--------------------|--------------------------|-----------------|
|      | Real GDP Growth          | Consumer Prices (annual average) | Increase in Average Price of US Dollar | Real Exchange Rate | Government Balance       | Current Account |
| 1977 | 8.3                      | 91.9                             | 65.0                                   | n.a.               | -1.1                     | -4.1            |
| 1978 | 7.8                      | 40.1                             | 47.0                                   | n.a.               | -0.1                     | -7.1            |
| 1979 | 7.1                      | 33.4                             | 17.7                                   | n.a.               | 4.8                      | -5.7            |
| 1980 | 7.7                      | 35.1                             | 4.7                                    | 84.4               | 5.4                      | -7.1            |
| 1981 | 6.7                      | 19.7                             | 0.0                                    | 100.0              | 2.6                      | -14.5           |
| 1982 | -13.4                    | 9.9                              | 30.5                                   | 90.2               | -1.0                     | -9.5            |
| 1983 | -3.5                     | 27.3                             | 54.8                                   | 73.9               | -2.6                     | -5.6            |
| 1984 | 6.1                      | 19.9                             | 25.0                                   | 73.3               | -3.0                     | -11.0           |
| 1985 | 3.5                      | 29.5                             | 63.3                                   | 58.3               | -2.3                     | -8.6            |
| 1986 | 5.6                      | 20.6                             | 19.9                                   | 49.8               | -0.9                     | -6.7            |
| 1987 | 6.6                      | 19.9                             | 13.7                                   | 46.0               | 1.9                      | -3.6            |
| 1988 | 7.3                      | 14.7                             | 11.7                                   | 43.6               | 1.0                      | -1.0            |
| 1989 | 10.6                     | 17.0                             | 9.0                                    | 44.3               | 1.5                      | -2.5            |
| 1990 | 3.7                      | 26.0                             | 14.2                                   | 42.7               | 0.8                      | -1.6            |
| 1991 | 8.0                      | 21.8                             | 14.5                                   | 43.9               | 1.5                      | -0.3            |
| 1992 | 12.3                     | 15.4                             | 3.8                                    | 46.5               | 2.3                      | -2.3            |
| 1993 | 7.0                      | 12.7                             | 11.5                                   | 47.6               | 2.0                      | -5.7            |
| 1994 | 5.7                      | 11.4                             | 4.0                                    | 49.0               | 1.7                      | -3.1            |
| 1995 | 10.6                     | 8.2                              | -5.6                                   | 51.9               | 2.6                      | -2.1            |
| 1996 | 7.4                      | 7.4                              | 3.9                                    | 53.7               | 2.3                      | -5.1            |
| 1997 | 7.4                      | 6.1                              | 1.7                                    | 58.7               | 2.0                      | -5.0            |
| 1998 | 3.9                      | 5.1                              | 9.8                                    | 57.7               | 0.4                      | -5.7            |
| 1999 | -1.1                     | 3.3                              | 10.5                                   | 54.7               | -1.5                     | -0.1            |
| 2000 | 5.4                      | 3.8                              | 5.2                                    | 55.1               | n.a.                     | n.a.            |

Source: IMF, International Financial Statistics (March 2001 CD-ROM), and Banco Central de Chile.

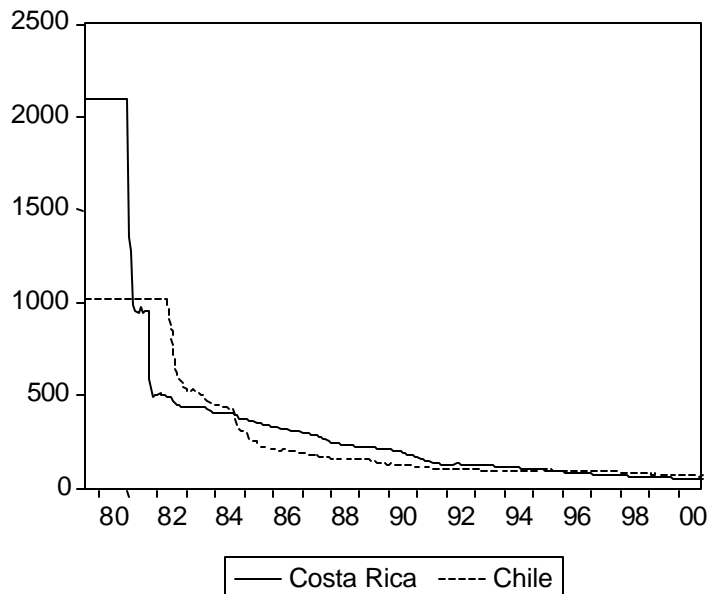
Both countries had fixed exchange rate regimes prior to the financial crisis of the 1980s, but Costa Rica, unlike Chile, had enjoyed a long history of a relatively stable exchange rate. Indeed, Costa Rica's currency, the colon, though never fully convertible, was fixed at the rate of 6.64 to the dollar from 1961 until the first oil crisis forced devaluation to 8.57 colones per dollar in late 1974. Chile, in contrast, had a long history of devaluation and inflation, culminating in hyperinflation in the years of the Unidad Popular (1970-1973). Beginning in 1974, the Chilean authorities gradually reduced the rate of devaluation of the national currency as the rate of inflation subsided. Then, in July of 1979, in an attempt to provide a nominal anchor for inflation, the exchange of the Chilean peso was anchored to the US dollar, at a rate of 39 to 1.

Costa Rica is a concrete example of a typical boom and bust episode in Latin America, where a bubble economy fuelled by a coffee boom was threatened by the collapse of coffee prices in 1978 and the oil price shock of 1979. The government failed to cut back expenditure in the face of declining revenue, so the government deficit increased from 2.8% of GDP in 1977 to 8.1% in 1980, financed by foreign borrowing that pushed the current account deficit up from 7.3% of GDP to a clearly unsustainable 14% of GDP in 1979 and 1980. Consumer price inflation, which was a modest 4.2% in 1977, registered 9% in 1979 and 18% in 1980. (See table 1 once again.)

The government of Costa Rica maintained its fixed exchange rate, but the colon became overvalued and by September 1980 there was excess demand for dollars at the official rate. An increasing proportion of foreign currency transactions, beginning with the sale of dollars to residents for travel abroad, were diverted to a free, parallel market, where the price of the dollar eventually reached 15 colones. In 1981, the government abandoned the peg entirely, and the colon plummeted. Figure 1 shows this sharp fall with monthly data, but it should be noted that the drop is somewhat exaggerated, for the underlying data refer only to the official exchange rate, so exclude the devaluation at the parallel rate in 1980. From the rate of 8.74 that had been in effect since 1974, the currency fell to 36.09 per dollar by the end of the year, by far the largest depreciation of the currency in the history of the country. The increase in the average price of the US

dollar for the year was a less dramatic, but still impressive 154% (to 21.76 colones). Figure 2 shows that there was considerable overshooting, with the drop in the real exchange rate bottoming out in November of 1981, then rising rapidly for eight months, followed by steady appreciation through 1985. Despite considerable pass-through to consumer prices, a significant real depreciation remained of about 30% in 1985. From mid-1985 through the end of 1991 the real value of the colon fell steadily, driven by regular mini-devaluations (crawling-peg adjustments) designed to promote export competitiveness.

**Figure 1. Costa Rica and Chile: Nominal Exchange Rate 1979-2000.**  
(value of local currency in US\$, index, 1995=100)

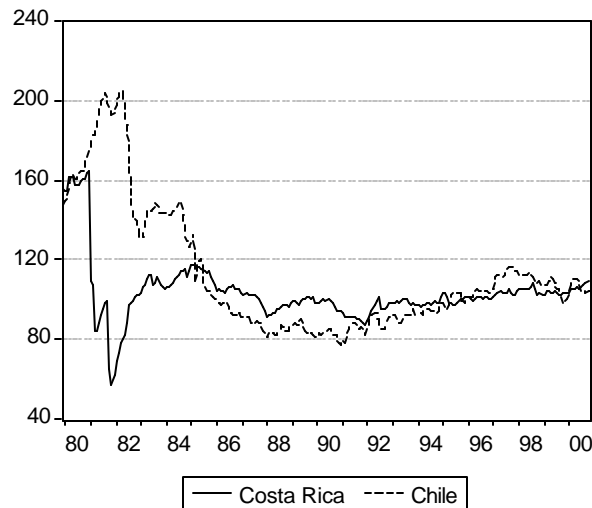


Source: Calculated from monthly averages of exchange rates reported in IMF, International Financial Statistics.

In March of 1992, the government experimented with a freely floating exchange rate. Surprisingly, the colon stabilised even though inflation continued in double digits, leading to a sharp appreciation of the real exchange rate. For this reason, the crawling peg was reintroduced in 1993 and continues to this day. The pace of devaluation has been very predictable, giving investors and exporters a high degree of certainty regarding the future price of the dollar. Costa Rica thus continues to have high inflation by

international standards, but it is predictable, as is the compensating exchange rate devaluation. What is a sign of concern is the country continues to rely heavily on foreign savings to finance its growth. Given increasing *de facto* dollarisation of the economy, as is shown below, there is a real question as to how the country would respond today to a crisis in external payments. What would be the effect of a major devaluation on the balance sheets of banks and firms? If major devaluation is out of the question, would the economy suffer more unemployment and loss of output? To date, the system has not been tested, for contagion from the 1997-98 Asian crisis was mild, producing only slight increases in the cost of external financing.

**Figure 2. Costa Rica and Chile: Real Exchange Rates, 1979-2000.**  
(real value of local currency, index, 1995=100)



Source: Monthly averages, CPI-based, trade-weighted indices reported in IMF, International Financial Statistics.

Chile in the early 1980s also combined a fixed exchange rate with a large current account deficit that amounted to 14.5% of GDP in 1981. But the government of Chile, unlike that of Costa Rica, was not engaged in deficit spending; in fact, it was running a sizeable fiscal surplus, amounting to about 5% of GDP, so was not drawing on national *or* foreign savings. (See table 2.) Because Chile's external debt was private rather than public, conventional wisdom at the time was that Chile's current account deficit, regardless of its size, was nothing to be concerned about. The then Director of the

Western Hemisphere Division of the International Monetary Fund expressed it this way in a meeting held in Santiago, Chile during the month of January 1980:

In the case of the private sector, I would argue that the difference between domestic and foreign debt is not significant – barring government interference with the transfer of service payments or other clearly inappropriate public policies – if it exists at all. The exchange risks associated with foreign borrowing are presumably taken into account as are the other risks associated with borrowing, whether it be from domestic or foreign sources. More generally, private firms can be expected to be careful in assessing the net return to be derived from borrowing funds as compared with the net cost since their survival as enterprises is at stake.  
[E. Walter Robichek, cited in Diaz-Alejandro, 1984, p. 9.]

By late 1981 Chilean borrowers were finding it difficult to obtain foreign finance, even at ever more generous spreads over the prime rate. Domestic interest rates were extremely high, and increasing. In June 1982 the peso was devalued, and fell rapidly, though not so fast nor as far as the Costa Rican colon. (See figure 1.) The devaluation caused inflation to return to its 1981 level, but the fall in the real exchange rate was nonetheless impressive. (See figure 2.) Chile's real exchange rate behaved better than that of Costa Rica, as there was much less 'overshooting'. The privatised banks, which had borrowed long-term in dollars (external loans for terms of less than one year were prohibited) and lent short-term in pesos, came under severe stress. GDP fell 13.4% in 1982 and an additional 3.5% in 1983. The real effects of the devaluation were thus stronger in Chile than in Costa Rica even though the initial devaluation was milder.

Why, in Costa Rica, compared to Chile, was there such a large 'overshooting' of the real exchange rate, as measured by changes in consumer prices relative to price changes in principal trading partners? One reason is that the government of Costa Rica, unlike that of Chile, attempted to control the prices of basic foodstuffs such as rice and beans, goods that were important components of the consumer price index. But this can



account for little of the overshooting, as any attempt to offer basic consumer goods at bargain prices triggers arbitrage, the purchase of these commodities for export to neighbouring Nicaragua and Panama.<sup>7</sup> More important is the fact that Costa Ricans were not accustomed to large devaluations nor to large price inflation, thus were slow to re-price their existing inventory of goods. Costa Ricans, in sum, were subject to a particularly severe case of ‘money illusion’.

Irving Fisher (1928, pp. 4-5) long ago observed “almost every one is subject to the ‘money illusion’ in respect to his own country’s currency. This seems to him to be stationary while the money of other countries seems to change.” Fisher recalled (1928, pp. 7) a conversation that he had with a shopkeeper on the outskirts of Berlin in the year 1922:

When I talked with her the inflation had gone on until the mark had depreciated by more than ninety-eight per cent, ... and yet she had not been aware of what really had happened. Fearing to be thought a profiteer, she said: “That shirt I sold you will cost me just as much to replace as I am charging you.” Before I could ask her why, then, she sold it at so low a price, she continued: “But I have made a profit on that shirt because I bought it for less.”

She had made no profit; she had made a loss. She *thought* she had made a profit only because she was deceived by the “Money Illusion.” She had assumed that the marks she had paid for the shirt a year ago were the same sort of marks as the marks I was paying her ....

In Costa Rica in 1981, money illusion was even more prevalent than it had been in Germany in 1922, for shopkeepers typically sold their stock, not at the replacement cost,

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<sup>7</sup> In the 1970s, arbitragers thwarted a programme of the government of Daniel Oduber to ‘stabilise’ the domestic price of beans. As might have been predicted, domestic

but at the pre-devaluation price *in colones*. The 75% devaluation of the colon in just a few months was as severe as the devaluation of the German mark in 1922, but Costa Ricans at the time were even more financially naive than the Germans had been. For a brief period there was a reverse flow of shoppers to Costa Rica from Panama, the traditional destination of Costa Rican consumers seeking bargain prices for imported goods of all kinds. I visited Costa Rica in 1981, and vividly recall hearing the owner of an upscale toy store explaining to a customer that he did not ‘speculate’ with prices, and had not re-priced any of his stock.<sup>8</sup> Needless to say, this shopkeeper, and many like him, found that they could not replace their inventory and had to close their doors. The student-owned, co-operative bookstore at the University of Costa Rica, to make a public statement against ‘speculation’, sold its entire stock at pre-devaluation prices, and had to shut down for many years, its financial capital depleted.

Chileans had just experienced a severe hyperinflation, and were under no illusion that the value of their peso was stable. This probably accounts for the fact that there was little overshooting of the real exchange rate in that country. (See figure 2 once again.) To this day, there is little money illusion in Chile. Inflation in that country is now very low, nonetheless long-term contracts, such as mortgages, or rental agreements for housing, remain indexed to consumer prices.

In Costa Rica, as in most Latin American countries, much of the external debt in the early 1980s was public. In Chile, exceptionally, nearly all the debt was private, and most of it lacked government guarantees. During the capital inflow boom the government repeatedly warned both international lenders and Chilean borrowers that private debt was private, that in no way could it be regarded as sovereign debt. Nonetheless, the government of Chile in early 1983 accepted responsibility for the external debts of private banks, and socialised the banks as well, sending some eminent financiers to prison, charged with fraud. Carlos Diaz-Alejandro (1985, p. 1), with characteristic wit,

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production collapsed, and increasing quantities of imported beans were re-exported illegally to Nicaragua and Panama.

remarked that Chile “has shown the world yet another road to a de facto socialised banking system.”

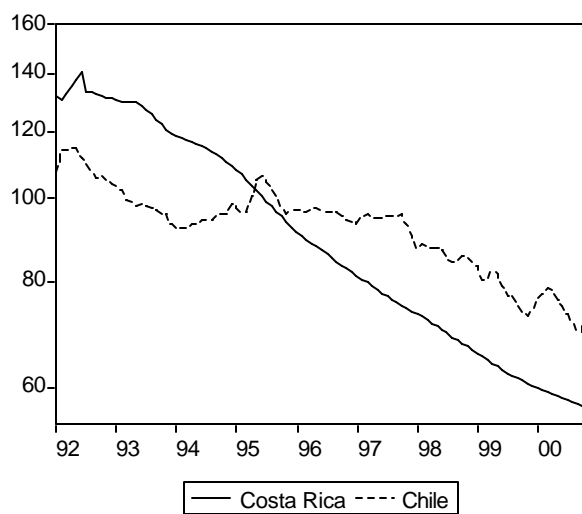
Chile came out of its financial crisis slowly, but registered steady growth in the period from 1984. A crawling peg, similar to that of Costa Rica, was used to keep exports competitive, and, as can be seen in figure 2, there was a steady real depreciation of the Chilean peso through 1990. As in Costa Rica, inflation continued at rates in excess of 20%, so the government in 1990 decided to announce an inflation objective for the following year. This was the beginning of inflation targeting in Chile, which has been very successful, as inflation has fallen to a little over three percent per annum in recent years. (See table 2 once again, and Mishkin, 2000.) Inflation targeting has worked in Chile for three reasons. First, there is an absence of fiscal imbalances. Secondly, the financial sector is well regulated. (The authorities learned painfully in 1982 what can happen with lax regulation.) Third, and most important, the economy is highly indexed (at least in the financial sector), but is *not* dollarised. It is important that firms not have liabilities in foreign currencies because, by targeting inflation, the exchange rate is left to fluctuate more or less freely.

Costa Rica’s central bank targets the exchange rate rather than inflation, and the pace of devaluation of the colon has been very predictable since 1992, as can be seen clearly in figure 1a. As a result, Costa Rica’s real exchange rate has been less volatile than that of Chile. (See table 2 once again.) Costa Rica would find it difficult to adopt inflation targeting, for it is highly dollarised, and its supervision of financial institutions leaves much to be desired. (Details could be provided here, but suffice it to say there have been several bank failures that have involved fraud, including the state-owned Banco Anglo-Costarricense.)

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<sup>8</sup> In Costa Rica the term ‘speculation’ refers to what in other countries is called ‘profiteering’ or ‘price-gouging’. It has an extremely negative connotation.

**Figure 1a. Costa Rica and Chile: Nominal Exchange Rates, 1992-2000.**  
(value of local currency in US\$, index, 1995=100)



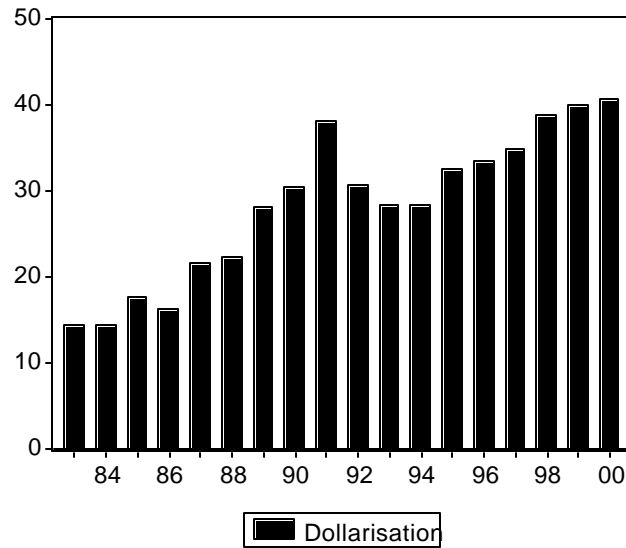
#### **IV De Facto Dollarisation of Costa Rica**

Unlike Chile, Costa Rica has become increasingly dollarised. More than 40 per cent of the money supply (M2) now consists of demand deposits, savings accounts and certificates of deposits in foreign currency.<sup>9</sup> (See figure 3.) Costa Ricans today are free to hold all their cash balances in US dollars, if they wish, and the interest paid on these deposits is attractive. Table 3 reports current rates for a private bank that is representative of rates offered by other banks in Costa Rica. Minimum balances are required for clients to earn interest on current accounts, and rates of interest vary depending on the amount on deposit. For certificates of deposit, the rates increase slightly with the term of deposit. Terms exceeding 12 months are prohibited by law. In almost all cases, the difference in the rate of interest for colon accounts and that for dollar accounts is close to 8 percentage points, which is reported to be the expected annual rate of increase in the price of the dollar. This expectation is, of course, subject to uncertainty. Some depositors might fear a faster devaluation of the colon, and prefer dollar accounts. Others will expect less devaluation, opting for colon accounts. Still others will want to hedge their bets, holding cash balances in each type of account. What is remarkable, however, is that there is no

<sup>9</sup> These data exclude foreign bank notes in circulation, so underestimate somewhat the true extent of dollarisation of the money supply in Costa Rica.

risk premium attached to the Costa Rican colon. Credit card balances would appear to be an exception, but I suspect that the listed rates discourage customers from using cards for other than transaction purposes.

Figure 3. Dollarisation of Costa Rica's Money Supply.  
(foreign currency deposits as % of M2)



Source: Banco Central de Costa Rica.

Costa Rica may well be unique among emerging markets in the absence of a risk premium for use of its currency for short- and medium-term financial transactions. Even in well-managed economies of the periphery, McKinnon (2000, p. 112) explains,

... a substantial risk premium must be paid on term deposits (or bonds) in domestic currency compared to term deposits (or bonds) denominated in dollars—and this risk premium is typically much greater at the long term than at the short term. ... Before the 1997 currency attacks began in Thailand, the relevant risk premia on three-month deposits in the East Asian debtor economies averaged about 4 percentage points, whereas in Latin America they averaged closer to 5 to 6 percentage points, above those on benchmark dollar assets.

**Table 3. Costa Rican Interest Rates, March 2001.** (monthly interest at annual rate)

|                     | <u>Cost Rican Colones</u> | <u>US Dollars</u> | <u>Difference</u> |
|---------------------|---------------------------|-------------------|-------------------|
| Current account     | 9.75-11.25                | 2.5-3.5           | 7.25-7.75         |
| 33 day deposit      | 13.0                      | 5.0               | 8.0               |
| 6 month deposit     | 14.0                      | 6.0               | 8.0               |
| 12 month deposit    | 15.0                      | 6.9               | 8.1               |
| Credit card balance | 39.0                      | 24.6              | 14.4              |

Source: Banco Improsa, rates in effect for 15-21 March 2001. Site accessed on 24 March 2001. <http://improbank.com/Utilidades/tasa.html>

At this moment, it is more costly for the government of Costa Rica to finance its deficit by borrowing in dollars than by borrowing in local currency. Costa Rican treasury bills are priced in colones to yield 15%, whereas U.S. dollar bonds yield approximately 9% a year. If the dollar appreciates by 8 percent a year against the colon, as expected, then the total interest on dollar debt, including devaluation, will be 17 percent, two points *higher* than the rate of interest for debt denominated in local currency. Dollar bonds do have a longer maturity (typically 5 or 10 years rather than 6 to 12 months), which might justify a point or two higher return, but the premium for exchange risk, if not negative, is at the very least non-existent in Costa Rica.

It is understandable that dollar bonds are popular with Costa Rican investors, since their expected yield exceeds that of colon bonds. The government has issued dollar bonds exclusively for the local market, but even those it issues overseas are often resold in the local market to residents of Costa Rica. A large proportion of Costa Rica's official dollar debt is not external debt at all, but internal debt payable in a foreign currency. (See Leitón, 2001a and 2001b.) Note also that these bonds are not dollar-linked, as is common in other developing countries, but are payable in U.S. currency.

From the point of view of government finance, one might think it wise for Costa Rica to convert some of its dollar debt to colones, both to reduce the expense of debt service and to reduce the risk that the size of the debt might balloon following a larger than expected depreciation of the colon. Somewhat bizarrely, for the last four years the government has been engaged in precisely the opposite programme: dollarising its large local currency debt.

Why? When I first learned of this policy, I tried to think of what might be the motive behind it. Two possibilities came to mind. First, the government may want to lengthen the term structure of its debt. All local currency debt is in short-term treasury bills, for there are no buyers for long-term debt that pays a fixed, nominal rate of interest in colones, or at least no buyers at any reasonable rate of interest. (For the long term, the market most definitely perceives that there is exchange risk.) To protect the purchasing power of long-term bonds, the government would have to index them to prices or to the exchange rate. Prices would seem to be an attractive index, and a large amount of such bonds, known as TUDES, do exist, but they are held entirely by public institutions such as the social security fund. TUDES are not popular with private investors, who do not trust the official price index because it is calculated by, and under the control of, the government. For the same reason, investors would distrust any bonds indexed to the official exchange rate. Dollarisation is thus the *only* way to increase the term to maturity of Costa Rica's public debt. A second explanation could be that the existence of internal debt denominated in dollars allows the private sector as a whole, and banks in particular, to purchase dollar assets and hedge their dollar debts should they expect acceleration in the pace of devaluation of the colon. In other words, issuing dollar debt puts in place a mechanism for the government to bail out the private sector following a (fully anticipated) real devaluation of the colon.

After this bit of mental gymnastics, I came across an excellent, 428 page compilation of notes, documents and commentary (Lizano, 1997) dedicated entirely to the analysis of Costa Rica's internal debt. From that volume, I learned that Alberto Di Mare, a prominent local economist, is the apparent intellectual author of the programme

to dollarise the internal debt. Di Mare (1997) advocates dollarisation of the *entire* internal debt, but his reasoning has nothing to do with expanding the term to maturity of the debt, or providing dollar assets for those who want to hedge their foreign liabilities. Rather, he argues that dollarisation of the public debt would drastically *reduce* the costs of debt service and, in itself, transform the government budget from deficit into a surplus.

I quote from Di Mare's essay (p. 295), titled "Internal debt: a nonexistent problem," which appeared as a newspaper column in April of 1997:

The solution is to "dollarise" the internal debt. It is as simple as that. ...

If we "dollarise" the internal debt, in 1998 we could pay an annual rate [of interest] of 7 percent, instead of the 19.5 percent expected by [the Ministry of] Finance ..., yielding a savings for the year of approximately 72 billion colones; thus, instead of the forecast deficit of 62 billion colones, there would be a surplus of 10 billion colones. This shows clearly that the Government does not need more taxes and, if we were to provide them, what it would do is increase its expenditure.<sup>10</sup>

It is true that the *measured* government deficit, reported as more than 3% of GDP in the second-to-last column of table 1, could have been transformed into a surplus in 1998 if the entire internal debt were dollarised. This is because fiscal accounts in Costa Rica record only *nominal* interest payments, and ignore the change in the value of the dollar-denominated debt that results from depreciation of the colon. Therefore, taking Mr. Di Mare's figures, government accounts would record as expenditure 19.5% of the internal debt denominated in colones, and 7% if it were converted to dollars. The fallacy of this

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<sup>10</sup> La solución consiste en "dolarizar" la deuda interna. Así de simple. ... Si "dolarizamos" la deuda interna, en 1998 podríamos pagar una tasa anual del 7 por ciento, en lugar del 19,5 por ciento que prevé Hacienda para la "colonizada", con lo que la economía anual en los gastos de ese año sería de alrededor de ₡72.105 mil millones, entonces, en lugar del déficit previsto de ₡62 mil millones, habría un superávit de 10.340



calculation is that the two debts are not comparable; they are in two different currencies, and the rate of exchange between the two currencies is varying. These accounts, and the argument of Di Mare that is based on them, are a form of money illusion.

To meaningfully compare the cost of a debt in dollars to the cost of a debt in colones, one must make the calculations in one currency or the other, not in both currencies at the same time. What is missing from the calculation is the change in the rate of exchange between the two currencies. If the dollar increases in price at the rate of 12% a year (a figure mentioned by Mr. Di Mare earlier in the same essay), then the full cost in colones of the dollar debt is 19%, or 7% interest plus 12% nominal increase in the value (in colones) of the outstanding debt. The true savings would amount to less than 3 billion colones, not the 72 billion colones claimed by Mr. Di Mare.<sup>11</sup>

What Mr. Di Mare's calculations inadvertently show is that, absent money illusion, Costa Rica's true government accounts are in surplus, not deficit. Because the government keeps its accounts in colones, a unit of account that is shrinking in value, the calculated balances are biased. The balances would be biased even in U.S. dollars, but less so, for that is a unit of account that is shrinking at a slower pace than the colon.

Consider, for a moment, two hypothetical examples. In both cases real GDP growth is zero and interest on debt is payable at the end of the year; the public debt is not indexed, is denominated entirely in local currency, and amounts to 50% of GDP at the beginning of the year. In the first scenario, the rate of interest paid on government debt in Costa Rica is 15% per annum. The rate of price inflation is 10%, so nominal GDP grows 10% even though real GDP is unchanged, and the real (after-inflation) rate of interest is 5%. In the second scenario, the rate of interest is 5% per annum, but prices are stable

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millones de colones. Esto demuestra a las claras que el Gobierno no requiere de más impuestos, y que, si se los damos lo que hará será aumentar el gasto.

<sup>11</sup> For a detailed, and superb, reply to Di Mare, see Lizano (1997, pp. 383-384). For even more detail, and a serious attempt to exorcise the demons of money illusion from financial accounts of the government, see Rodriguez-Clare (1998 and 1999).

(there is no inflation). So nominal GDP does not change and the real rate interest is equal to the nominal rate of interest, or 5%.

Now compare, for each scenario, the value of the public debt at the end of the year and the amount of interest paid, both as a percentage of nominal GDP. (Think of the denominator as daily GDP on an annualised basis.)

|             | 1 January<br>Debt/GDP | 31 December<br>Debt/GDP | 31 December<br>Interest/GDP |
|-------------|-----------------------|-------------------------|-----------------------------|
| Scenario 1: | 50%                   | 45%                     | 7.5%                        |
| Scenario 2: | 50%                   | 50%                     | 2.5%                        |

Recall that real GDP is constant in both scenarios, but in the first case grows nominally by 10% because of price inflation. For this reason, in scenario 1, the ratio of debt to GDP falls by 10%, or 5 percentage points, to 45% of GDP.

In conventional government finance accounts, interest payments would be recorded as 7.5% of GDP in scenario 1, and as 2.5% in scenario 2. But why record the interest payments in this fashion, if the two scenarios are economically the same, except for differing price inflation? This is the money illusion that so obsessed Irving Fisher, and is still with us today. The problem is that the debt in scenario 1 is measured in a unit of account (the colon) that has shrunk by 10 percent in the course of the year, whereas in scenario 2 it is measured in a currency that is stable.

How can the accounts of scenario 1 be corrected for money illusion? By noting that a portion of the interest payment is, in reality, not interest payment at all, but repayment of debt. What portion is debt repayment? It is an amount equal to 5% of GDP, which is sufficient to restore the real level of debt to where it was at the beginning of the period. If all public debt were indexed to the price level, this would happen automatically. Without indexing, it can still be done by deducting inflation from nominal

interest payments. Brazil, during a period of very high inflation in the 1980s, adopted such a system of accounts, and referred to the ‘inflation’ portion of nominal interest payments as ‘monetary correction’. The joke at the time in Brazil was that ‘In Brazil everything is backwards. In other countries, government deficits cause inflation; in this country inflation causes the deficit!’ As is often the case with humour, this statement contains much truth. Rates of inflation of ten to twenty percent *a month*, as was typical in Brazil at the time, distort measures of government expenditure unless (a) the debt is indexed or payable in a stable currency, or (b) the accounting system allows for monetary correction.

Rates of inflation of ten percent a year, which characterise Costa Rica at the moment, result in distortion of government accounts that is less severe, but nonetheless important. Why, then, do governments that face modest rates of inflation resist the accounting tool of monetary correction? I am not sure, but suspect that two explanations play a role. First, when there is a sudden surge of inflation, such as in the United States in the 1970s, the rate of inflation can exceed nominal interest rates, with the result that calculated real rates of interest are negative. It may seem strange to record a negative charge for service of the public debt, but that, precisely, is what happens in some periods due to money illusion, i.e. to the confusion, in the minds of the public, of nominal with real rates of interest.<sup>12</sup> Second, central bankers and economists generally favour price stability. If government accounts overstate the true budget deficit, this is all the better if one’s aim is to promote fiscal restraint.

In today’s financial markets, the case for dollarisation of debt in Costa Rica is even weaker than it was in 1997. Dollarisation is likely to increase the fiscal costs of servicing debt, for the interest that the government pays on colon debt is 15%, the interest

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<sup>12</sup> In the financial pages of New York newspapers, it is common to see statements to the effect that low interest rates today encourage investment compared to the high rates of the 1970s and 1980s. This is an example of money illusion, present even in the financial capital of the world. There is rarely if ever any acknowledgement in the financial press that *real* rates of interest were exceptionally low in the inflationary 1970s, and jumped, with the disinflation of the early 1980s, to levels that remain extraordinarily high for the United States. For a penetrating historical analysis of this topic (real interest rates, not the money illusion), see DeLong (1999).

rate in dollars is 9%, and the dollar is expected to appreciate at an annual rate of 8% against the colon. For fiscal savings, the government should reverse gears, and convert dollar debt to colones!

## **V Pegged exchange rates in the 90s: Argentina and Brazil**

Argentina and Brazil share a similar history of economic mismanagement, inflation and hyperinflation. Brazil's record of growth, though erratic, was nonetheless much better than that of Argentina. In 1950, according to purchasing power parity estimates of Penn World Tables, the per capita GDP of Argentina was more than three times that of Brazil. In the next forty years, per capita income more than tripled in Brazil, whereas it stagnated in Argentina, with the result that by 1990 per capita GDP in Argentina exceeded that in Brazil by only 16 percent.

In the decade of the 90s, after many failed efforts at stabilisation of prices, the two countries decided to use the exchange rate as a nominal anchor to combat inflation, and each succeeded. Argentina in 1991 adopted a convertibility law that pegged the Argentine peso to the U.S. dollar. This was a natural way to proceed, even though the United States is not a major trading partner of Argentina, because the country was, to a very large degree, *de facto* dollarised by that time. In this "currency board" type of arrangement, each peso in circulation, by law, is backed by a dollar in reserves. As can be seen from the indicators in table 4, this drastic measure was an immediate and spectacular success. (No, the figure for 1990 is not a misprint. Inflation was 2,314 percent that year.) Taking away from government the power to freely print money forced fiscal restraint, brought price inflation quickly to a halt, and, as a bonus, unleashed the most rapid economic growth that Argentina has seen in a century. Between 1991 and 1998, inflation all but disappeared, and real GDP grew an average of 5.8 percent a year.

**Table 4. Argentina: Macroeconomic Indicators, 1990-2000.**

|      | Peso/US\$<br>exchange<br>rate | Real GDP<br>growth (%) | Inflation<br>(%) |
|------|-------------------------------|------------------------|------------------|
| 1990 |                               | -1.8                   | 2314.0           |
| 1991 | 1.00                          | 10.6                   | 171.7            |
| 1992 | 1.00                          | 9.6                    | 24.9             |
| 1993 | 1.00                          | 5.7                    | 10.6             |
| 1994 | 1.00                          | 5.8                    | 4.2              |
| 1995 | 1.00                          | -2.8                   | 3.4              |
| 1996 | 1.00                          | 5.5                    | 0.2              |
| 1997 | 1.00                          | 8.1                    | 0.5              |
| 1998 | 1.00                          | 3.8                    | 0.9              |
| 1999 | 1.00                          | -3.4                   | -1.2             |
| 2000 | 1.00                          | 0.2                    | -1.0             |

Note: GDP growth for 2000 is for first three quarters only.

Source: IMF, IFS and Banco Central de la Republica Argentina.

Brazil was very influenced by the success of Argentina's convertibility plan, but chose a different, though equally successful path, to stabilisation of both its exchange rate and internal prices. Brazil's economy was highly indexed, but –and this is important— was never dollarised. In 1993 the government undertook serious fiscal consolidation to balance the budget. Then, in March 1994, the government introduced the URV (Unit Value of Reference), an index tied to the price of the U.S. dollar and used to inflate all prices and contracts. In July 1994, the URV was converted into a currency called the *real*. The unit of index became the unit of account, which retained the previous stability of prices in URV. As can be seen in table 5, the decline in inflation was almost as spectacular in Brazil as it had been in Argentina. Price inflation fell quickly to single digits, reaching 3.2 percent in 1998, and GDP growth was quite respectable.

**Table 5. Brazil: Macroeconomic Indicators, 1990-2000.**

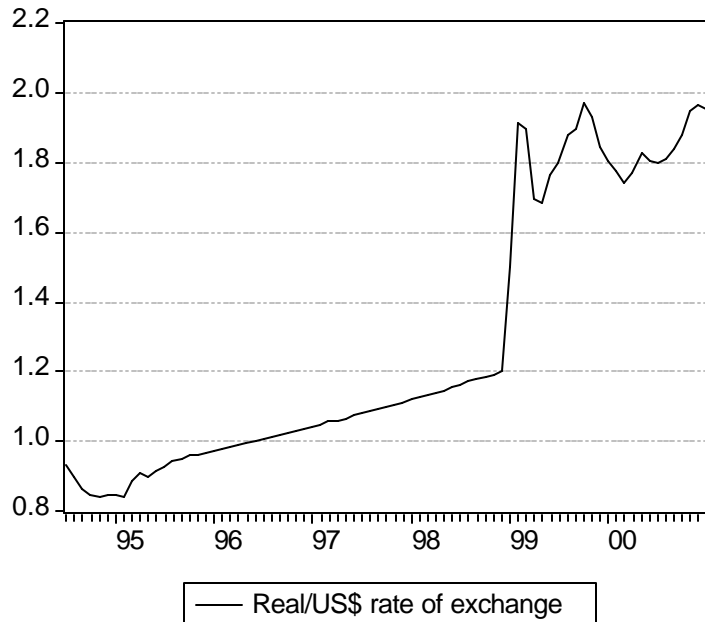
|      | Real/US\$<br>exchange<br>rate | Real GDP<br>growth (%) | Inflation<br>(%) |
|------|-------------------------------|------------------------|------------------|
| 1990 |                               | 0.4                    | 2947.7           |
| 1991 |                               | 1.0                    | 432.8            |
| 1992 |                               | -0.5                   | 951.6            |
| 1993 |                               | 4.9                    | 1928.0           |
| 1994 | 0.87                          | 5.8                    | 2075.9           |
| 1995 | 0.92                          | 4.2                    | 66.0             |
| 1996 | 1.01                          | 2.7                    | 15.8             |
| 1997 | 1.08                          | 3.3                    | 6.9              |
| 1998 | 1.16                          | 0.2                    | 3.2              |
| 1999 | 1.81                          | 0.8                    | 4.9              |
| 2000 | 1.83                          | 4.2                    | 7.0              |

Note: 1994 exchange rate is average for July-December.

Source: IMF, IFS and Banco Central do Brasil.

The careful reader will note a major difference between Argentina and Brazil in the behaviour of the nominal exchange rate. The *real*, though pegged to the U.S. dollar, was never fixed. More precisely, only its upper value was initially fixed, at the ratio 1 *real* to 1 dollar. Contrary to expectations, the Central Bank launched the *real* in July of 1994 at the rate of R\$ 0.94 per dollar, then used its extensive reserves to combat speculators and force the nominal exchange rate to R\$ 0.86 per dollar by September. (See figure 4.) This policy of attacking inflation by appreciating the currency was effective, but it came at a cost. Brazil's domestic interest rates were high—much higher than those in Argentina—and this stimulated an inflow of capital, in the form of unhedged foreign debt (Cinquetti, 2000). The benefit of such a strong commitment to price stability is that the government was able to do away entirely with wage indexation in March of 1996. This increased greatly the effectiveness of monetary policy, permitted gradual depreciation of the *real* through 1999, and paved the way for a major devaluation when this became necessary in 1999. (See figure 4 once again.)

**Figure 4. Brazil: Nominal Exchange Rate, July 1994 - February 2001.**



Source: Monthly averages reported in IMF, International Financial Statistics.

Both Argentina and Brazil were affected by the financial contagion that began with Thailand's devaluation in July of 1997, but each had internal problems as well, and these problems were remarkably similar. Their respective programmes produced a dramatic decline in the rate of inflation, but left them with overvalued exchange rates and current account deficits. This gave rise to fears of default, which affected foreign capital flows, which caused interest rates to rise, which in turn impacted negatively on both the fiscal and current account balances. The problems the two countries faced were thus similar, but their response could not have been more different.

Argentina is in a straightjacket. Despite the strict parity of the exchange rate, there is an exchange risk attached to borrowing in pesos rather than dollars. This risk premium had been about one percentage point, but by March of 2001 it increased to 4.8 percentage points. Because of this interest rate differential, the bulk of private debt and 93 percent of government debt is in foreign currencies rather than pesos. Even without the convertibility law, devaluation would be unthinkable, for it would destroy the balance

sheets of both private firms and the government. Unfortunately, because of default risk, high and increasing interest rates in dollars are having a similar effect on these very same balances. Argentina has been in recession since 1998. Prices and output are falling, and unemployment is rising. Out of desperation, the president in March 2001 brought back Domingo Cavallo, architect of the convertibility plan, as finance minister. Perhaps by some miracle, Mr Cavallo will be able to restore confidence to investors and growth to the economy. If not, the country will be forced to devalue, default on its foreign debts, or possibly even both. (See Wolf, 2001.)

Brazil reacted very differently to its financial crisis. In January 1999 the *real* was devalued by 40% against the dollar; the price of dollars increased at once from about R\$1.20 to R\$2.00, then fluctuated considerably at the new, higher level. This was very much a “pre-announced” devaluation; everyone expected it, though no one expected it to be so large. Banks and large companies were allowed to hedge their foreign debt by purchasing dollar-indexed government bonds. This produced, of course, exchange losses for the central bank and amounted to a bailout of the private sector. But, for precisely this reason the devaluation did not produce a recession. Growth had slowed at any rate in 1998 because of the high interest rates required to defend the *real*, and growth actually increased in 1999, and especially in the year 2000. (See table 5 once again.) Most remarkably, there was little pass-through of the effects of the devaluation to consumer prices. The nominal devaluation was, to a very large extent, a real devaluation, which greatly improved the competitiveness of Brazil’s exports on world markets.

Brazil’s success unfortunately has made the situation of Argentina even worse, for the two are important trading partners, and are linked together in a preferential trading arrangement known as Mercosur. The devaluation of the *real* thus leaves the Argentine peso even more overvalued. Both Brazil and Argentina have a long history of very high protective barriers to trade, and both have liberalised very much their trade regimes in the 1990s. Thus it is interesting to note that Mr. Cavallo requested from Brazil (since this would otherwise violate the Mercosur treaty) permission to increase to 35% from 14% the tariff on consumer goods imported from outside Mercosur, and to reduce to zero the



tariff on capital goods imported. Brazil acceded to this request. Brazil, by devaluing, has been able to maintain its policies of trade liberalisation. Argentina, which cannot devalue its currency, in effect is devaluing the peso (increasing the price of foreign exchange) for consumer goods. This is the dark side of dollarisation, of super-fixed exchange rates. Liberalisation and removal of exchange rate uncertainty for the capital account might well come at the expense of liberalisation of the trade account. History suggests that this is a poor trade off. It is much more important to have an open trade account than to have an open capital account, as many successful economies have demonstrated.

## VI Conclusion

To be written following the 11 April workshop in order to take into account comments and suggestions of participants.

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## **Appendix A: Revision of nominal GDP in Costa Rica**

Costa Rica recently revised its national accounts beginning in the year 1991. Real GDP is now calculated in 1991 prices rather than 1966 prices. Although GDP prior to 1991 has not been revised, the real GDP indices reported in the IMF International Financial Statistics have been chain-linked.

At the same time, Costa Rica has revised upwards the estimates of nominal GDP. As can be seen in the table below, this increase is substantial, and amounts to at least 25% and as much as a 32% increase in each year for which estimates are available for both the old and new series. This break in the series creates, of course, a problem when one wants to deflate other nominal series, such as current account deficits and government deficits, by nominal GDP. There is no indication of such a break in the IMF International Financial Statistics, so a user might inadvertently calculate a sudden drop in 1991 in the ratio of the current account or government deficit to GDP. To avoid this, I opted to use the old series throughout, estimating the unknown figures for 1999 and 2000 on the basis of the growth of nominal GDP in the new series between 1998 and 1999, and between 1999 and 2000, respectively. There are no abrupt breaks in the resulting series, but readers are cautioned that any deficit expressed as a percentage of GDP would look better (or not as bad) using the revised figures for nominal GDP.

**Appendix table A. Costa Rica: Revision of Nominal GDP in the National Accounts, 1991-2000.**

| Year | New Series | Old Series | Change (%) |
|------|------------|------------|------------|
| 1986 | 246.579    | 246.579    | 0.0        |
| 1987 | 284.533    | 284.533    | 0.0        |
| 1988 | 349.743    | 349.743    | 0.0        |
| 1989 | 425.911    | 425.911    | 0.0        |
| 1990 | 522.848    | 522.848    | 0.0        |
| 1991 | 867.999    | 690.158    | 25.8       |
| 1992 | 1142.11    | 906.439    | 26.0       |
| 1993 | 1354.44    | 1069.4     | 26.7       |
| 1994 | 1641.38    | 1305.8     | 25.7       |
| 1995 | 2081.38    | 1620.43    | 28.4       |
| 1996 | 2431.27    | 1904.57    | 27.7       |
| 1997 | 2956.56    | 2260.48    | 30.8       |
| 1998 | 3571.52    | 2695.54    | 32.5       |
| 1999 | 4343.92    | n.a.       |            |
| 2000 | 4792.02    | n.a.       |            |

Source: New series is from IMF, International Financial Statistics, March 2001 and Banco Central de Costa Rica. Old series is from IMF, International Financial Statistics, February 2000.