July 1996

LATIN TRIANGLE

Rudi Dornbusch
Massachusetts Institute of Technology

For the most part, currency crises are not accidents. They come at the tail end of a disinflation strategy that has relied overly on the nominal exchange rate. The question is why policy makers should run the risk of a currency collapse. The jury is still out, but the experiences of three countries reviewed here offers some ideas.

A FRAMEWORK

A starting point for the political economy of exchange rate is provided by placing the exchange rate in two contexts. The first is the link between the exchange rate, the standard of living, internal and external balance. The second considers the exchange rate in the inflation process.

A link between the standard of living and the exchange rate comes from the real or consumption wage. The price of imports, for simplicity, is equated with the nominal exchange rate, e. Let the money wage and home prices in terms of the consumption basket be W and P. The home price level is a function of import prices (e) and domestic output prices which are equal to unit labor costs (aW). Thus we obtain a direct positive relation between the wage in dollars W/E and the standard of living. Real wages in terms of the consumption basket ($w \equiv W/P$) can only rise if wages rise in dollar terms. In terms of domestic goods, given labor productivity, real wages are given.[1]

$$(1) \qquad w = W/P(aW,e) = \varphi(W/e; a)$$

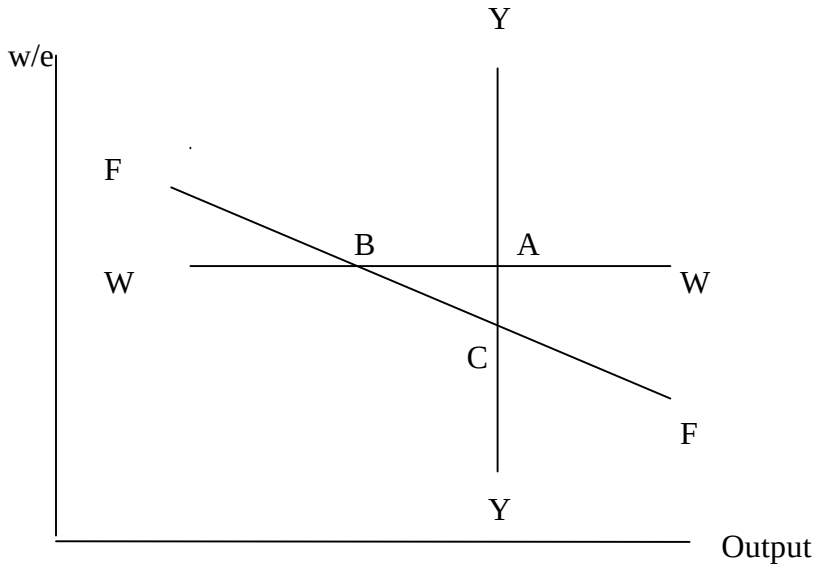
The consumption wage is a central political variable. In Figure 1 we show the line ww along which there is social peace. Any level of the wage in dollars that is lower leaves labor dissatisfied and is tantamount to strikes. riots or political unrest more generally.[2]

There are two more relations to be considered: Along YY there is full employment. Any level of output below Y* means unemployment, any higher level represents an excess demand in the labor market. There is also the external balance, FF. Points to the right and above FF show deficits: Output and/or the level of wages in dollars is too high so that there is a trade deficit. Bellow and to the left of FF there are surpluses.

The typical political economy situation is one where the three schedules do *not* intersect. There is no equilibrium that balances the external accounts, achieves full employment and at the same time leaves labor satisfied. Introducing a political constraint in the labor market thus creates, not surprisingly, overdetermination. Thus at point A there

[1] To fix ideas, one might think of the P- function as Cobb-Douglas in import and domestic prices.
[2] The relation might also be a function of the level of output. In that case, at higher levels of output, real wage vindications might be higher and in depressions labor might settle for less.

is full employment and social peace, but there is deficit on the external front. At point B external balance prevails and social peace, but there is unemployment. Finally, at point C full employment and external balance are assured, but social peace is not because the real wage is too low.



Suppose now some shock happens, political or economic. The target wage w rises and the challenge is how to reconcile constraints and aspirations. The answer is to borrow. (Point A). The country runs policies to achieve a high level of output and a high real wage. External finance pays the bills. This may take the form, of aid or of borrowing in world capital markets. One way or the other, disequilibrium is postponed.

The action only starts getting interesting when the money runs out. At some point adjustment becomes necessary. Moving to point C by devaluation is one answer. But the moment that happens, strikes and riots break out, wages adjust for the devaluation and the economy moves back toward point A, but of course with a devaluation-inflation spiral that goes nowhere.

The alternative is an attempt to reduce spending, contract output and move to point B. In this strategy, real wages are protected, but employment is not. Point B won't last long since the misery of unemployment creates its own political backlash. From there, sooner or later, the move is to point C. Output and employment do rise, but now the politics of real wage reductions come in. There is an extra complication in that the short-run response of output and employment to real wages may well be negative. True, a cut of wages in dollars raises competitiveness, but it may well reduce spending. There are income and substitution effects: lower real wages mean lower real income and that reduces domestic demand. It may be more than offset, though not in the short run, by the substitution effects that shift demand toward domestic goods., Thus the move from A or B s highly dubious as a political proposition and hence will be postponed to the last minute and beyond.

One complication bears noting. As the economy stays at point A and postpones adjustment by drawing on external financing, it builds up debt. That creates an extra burden and an extra source of vulnerability. Accordingly, over r time the FF schedule actually shifts down and to the left: it takes increasingly competitive wages or lower spending levels to create the surpluses that finance external debt service. Accordingly, a period spent at point A means that ultimately the sustainable real wage (point C) becomes much lower.

The framework shows why exchange rate economics is so m a political theme. In a classical study of devaluation crises, Cooper (1971) found that finance ministers who preside over a devaluation almost universally fall: they end the dream, they create a mess. Of course, that conclusion is wrong; they are the unfortunate ones who are caught at the tail end of a period of economic mismanagement. Of course, often they themselves are responsible for building up the problem.

The inflation-depreciation linkage provides the other ingredient for our political economy setting. Inflation is a problem, reducing inflation is hard if there are no volunteers. The exchange rate becomes the seemingly costless option for pioneering disinflation. Slowing the rate of depreciation relative to the prevailing rate of inflation not only helps slow down inflation, it is outright popular since it raises real wages. Of course, it is a grave mistake not to look down the road and ask how the resulting overvaluation will be undone. More often than not, there is a currency crisis at the tail end of this story.

The inflation process is made up of wage increases, rises in public sector prices, and exchange depreciation. In any significant inflation context, there are important elements of indexation. Thus wage inflation will be indexed to price inflation but will also depend on the level of unemployment. Public sector prices will tend to be indexed and the exchange rate may or not follow an indexation rule. As a result, the link between inflation and depreciation involves an accelerationist Phillips curve:

$$\Delta\pi = \alpha(e-\pi) + \lambda y \qquad (1)$$

Here π is the rate of inflation, e the rate of depreciation of the currency and y the output gap. The equation states that inflation accelerates whenever depreciation runs ahead of inflation or when output exceeds potential. If there is no output gap and the real exchange rate is constant, inflation is constant. To close the model we would need the determination of output. Here the real exchange rate and the real quantity of money as well as fiscal policy enter as determinants.[3]

The unpopular way to bring down inflation works on the demand side. The standard IMF program would reduce the growth rate of domestic credit, money growth and hence spending. The sharp rise in unemployment would then translate into reduced wage inflation and ultimately lower inflation. All this is very unattractive. By contrast, trying to bring down inflation by slowing the rate of increase in public sector prices is very popular. But it translates immediately into increased budget deficits. That is too obvious a problem. The same is true for attempts at price control. Here, too, the backlog is obvious. That leaves the exchange rate as the option.

[3] See Dornbusch (1980,93) and Rodriguez (1978, 1982).

Slowing down the rate of exchange depreciation reduces inflation in a number of ways. First, the direct impact on import prices of consumer goods and intermediate goods shows up in reduced price inflation and comes back from there, via indexation, as reduced wage inflation. But there are also extra effects: competition from lower inflation of import prices forces reduced inflation on domestic producers. Expectations of declining inflation foreshadowed by the reduced exchange depreciation spreads to forward looking price formation. Through a variety of channels, reducing depreciation works to reduce price inflation just as Eq. (1) above suggests.

Over time, depreciating at a pace below the rate of inflation has two implications. First, inflation falls. Second, steadily the *real* exchange rate appreciates. When the disinflation objective is accomplished, a new problem has been created in the form of a substantial overvaluation. The counterpart of real appreciation is an external deficit and/or a domestic recession. If the overvaluation is financed by external borrowing and domestic offsetting fiscal expansion, unemployment may be negligible, but the deficit will be huge. (Point A in Figure 1 above) If the financing is not there, domestic recession mirrors the external overvaluation. (Point B in Figure 1 above).

One way or the other, bringing down inflation is *not* the end of the story; rather, it is the beginning of the next cycle. The surprise is that over and over again, governments rate the course of seeming least resistance: inflation is enemy #1, never mind overvaluation. Some case studies will bear out this proposition.

CASE STUDIES

In this section we report three case studies, Chile at the end of the 1970s, Mexico in 1990-95 and Brazil, still in the making. The cases have a few points in common: an effort to stabilize inflation in the context of a broader package of reforms. The programs share in particular two features: a trade opening process and renewed access to international capital markets.

Chile

Following the coup, the Pinochet government increasingly found its way to a comprehensive model of reform implemented by the *Chicago Boys*. The budget was balanced, privatization and deregulation including trade opening were to improve economic efficiency. Inflation stabilization was a paramount objective. By 1977 much of this had happened, growth was coming on big time, an economic miracle was in the making. But inflation stubbornly continued, albeit at a far reduced rate.

In line with monetarist thinking of the time, the “law of one price” gained adherence among policy makers. In their thinking, there was a vicious circle of inflation and depreciation: depreciation took place in order to avoid a loss in competitiveness. But depreciation in turn raised prices and wages which called for yet another round of depreciation and so on. It seemed plausible to stop the process by just halting depreciation, once and for all. In a highly competitive, open economy the impact on prices could only be this: a dramatic, immediate stop of inflation. More over, if expectations mattered, the fixed exchange rate strategy-- now we would call it a nominal anchor-- could not fail but to stabilize the prospect of stability.

Accordingly, in 1978 the government moved to a fixed exchange rate policy: 39 pesos/$US forever.[4] In a dictatorship "forever" has a more plausible ring than in an unstable democracy. Hence the experiment got underway with every expectation of success. And successful it was, for the time being.

Table 1 Chile: Macroeconomic Indicators

	1977	1978	1979	1980	1981	1982
Growth	9.9	8.2	8.3	7.8	5.5	-14.1
Inflation	64	30	39	31	10	21
Curr. Acct	3.7	5.2	5.4	7.1	14.5	9.2

Note: Current account deficit as a percent of GDP.
Source: Bosworth, Dornbusch and Labaan (1994).

Economic growth kept high throughout 1978-80 and inflation came down substantially, though not to levels near price stability. An important reason for the slow phasing down of inflation was the presence of mandatory, backward-looking wage indexation. Even as the government fixed the exchange rate, it gave wage increases of 30 percent per year. Not surprisingly, price inflation was not very different. The Law of One Price was not working tightly.

Figure 2 shows the real exchange rate index. It is apparent that a huge real appreciation developed. In terms of Eq. (2), with e=0, the inflation process is such that the rate of real appreciation is equal to the rate of inflation, dampened by a cyclical factor. With inflation initially high and a boom on top, real appreciation was rapid and cumulatively very substantial. That process continued until the collapse in June 1982.

The impact on the real economy took a while. In part this reflects the impact of real appreciation on demand. The *Diaz Alejandro* effect was at work, i.e. the income effect of real appreciation at the outset more than offsets the substitution effect. Accordingly, real appreciation starts off by being expansionary in terms of aggregate demand. Moreover, it is also very popular since it means increasing purchasing power. The opening of the economy reinforced that effect: quotas and tariffs were gone so that imports were cheap on account of both liberalization and real appreciation. Not surprisingly, the current account increasingly showed the effect of the disequilibrium prices. But with a near-balanced budget, who was to think of the deficit as anything but a reflection of a vigorous miracle economy?

An important complication of the overvaluation strategy played itself out in financial markets. Those who believed that the fixed rate strategy would last had an interest in borrowing offshore, in dollars, and thus avoid the high domestic interest rates. Those who did not trust the policy had an interest in borrowing at home in pesos. In an environment of financial deregulation and major bad loans on the books dating back to the 1970s, real interest rats became extreme. An d the higher they became, the worse the

[4] See Edwards and Cox-Edwards (1987), Corbo and Fischer (1994) and Dornbusch and Edwards (1994) for a discussion of the Chilean experience.

loans, the more adverse selection was the rule. Not surprisingly, when the currency ultimately crashed, so did the banking system.

An overvaluation never goes away quietly.[5] Overvaluation and the attending financing requirement involve a vulnerability. Exactly which event ultimately undermines the strategy is wide open. In Chile's case it was the international debt crisis. But that is not to say that a soft landing was around the corner had it not been for that crisis. Policy makers like to explain that everything was all right, had it not been for this or that unpredictable event. But overvaluation ultimately falls by its own weight; not all news is good, so that it is mainly an issue of time before a sufficiently unfavorable event breaks the strategy.

The end of the first Pinochet stabilization was a deep recession, a massive real depreciation and a full banking crisis. It meant starting all over again. A decade later the next stabilization had shown itself to be extremely successful. One of the pillars of that period was to keep the real exchange rate competitive at all times.

Mexico

After the mid-1950s, for a period of 20 years, Mexico held on to full convertibility and a fixed exchange rate . The performance was exemplary in terms of discipline. But then, with oil outrun by aspirations, exchange rate mismanagement started and has continued for the past 20 years. Specifically, the exchange rate experience of Mexico has been closely associated with the political cycle. In the run-up to both Presidential election years 1976 and 1982 the real exchange rate was overvalued and a currency crisis followed and the same happened in 1994.

Our interest here is in the most recent episode, the overvaluation of the first half of the 1990s and the collapse of 1994-95. The Salinas administration took office in 1988 even though the economic team had been in place already during the previous sexennio, though one layer down. Disinflation had been a process underway since 1987 when, at its peak, it had reached well above 100 percent. The strategy for disinflation was he *pacto*, an incomes policy package that quite essentially matched the Mexican corporatist political model: labor (i.e. the PRI unions represented by Don Fidel Velasquez aged 97), business and the government met periodically to lay out ceremoniously and agreed strategy for wages, prices in the private and public sector and the exchange rate. The agreements assured that there were no backward looking indexation effects to dominate the disinflation program.

On the surface, the strategy worked well-- between 1987 and 1994, the inflation rate came down from 130 percent to only 7 percent. But the strategic ingredient along the way was the exchange rate. The real exchange rate (measured by Mexican wholesale prices in US dollars) appreciated steadily. The formal arrangements for the exchange rate varied: prefixed, fixed, a band. The central fact, though, is that depreciation steadily lagged behind inflation and, accordingly and mechanically, the real exchange rate appreciated.

[5] See Goldfajn and Valdes (1996) who examine a large set of overvaluation experiences.

Table 1 Mexico: Macroeconomic Indicators

	1990	1991	1992	1993	1994	1995
Growth	4.4	3.6	2.9	0.7	3.5	-6.2
Inflation	30	19	12	8	7	52
Budget	-2.2	-0.3	1.6	0.7	-0.7	1.0
Curr. Acc't	-7.5	-14.8	-24.4	-23.4	-28.8	-0.7
% of GDP	-3.0	-5.1	-7.4	-6.4	-7.7	-0.2

Note: Budget as a percent of GDP, current account in $US billion and % of GDP.
Source: Bank of Mexico

Mexico, just as Chile, had undergone a major program of deregulation, restructuring of the public sector and aggressive trade opening. [6] As a short run effect of these measures, growth was slowed down and the external deficit, reinforced by real appreciation, became very substantial. But with the budget balanced, how could the deficit be anything but a sign of vigor and dynamism? Interestingly, unlike in the case of Chile, investment had not increased at all but that did not stop observers from talking about deficits generated by high levels of capital goods imports.

The government was clearly aware of the large real appreciation. But the availability of virtually unlimited external capital and the political time table made a shift in strategy unpalatable. Disinflation at any price!

The strategy of keeping depreciation below inflation was kept up right into the election year. And even when political problems foreshadowed weakness, including massive capital flight by wealthy Mexicans in the aftermath of the Chiappas uprising and the Colosio assassination, the strategy was kept up. More than that, monetary strategy was enlisted to keep up the facade with full sterilization of the reserve losses. The Mexican government pretended that there were no problems and the always gullible foreign lenders mostly bought the story.

The strategy finally collapsed in the transition to the new government and in the midst of year-end balance sheet cleaning by foreign investors. The new government contemplated devaluation and, it is rumored, the wealthy Mexicans got a first helping of the reserves. The rest is history-- a massive collapse of the peso and a meltdown. In Mexico, just as in Chile, the banking system which had gotten involved in the betting on the peso went bust. That clean up is worth $30 billion or more and continues.

Brazil

The central macroeconomic institution of Brazil, ever since the stabilization of the military government in the 1960s, was indexation. Everything was indexed-- the exchange rate, wages, public sector prices, asset yields. As a result, and because Brazil is a large, relatively closed and above all inward looking economy, macroeconomics could be quite

[6] On the Mexican experience, see Dornbusch, Goldfajn and Valdes (1995) as well as the extensive references given there.

stable even in the face of extreme inflation. In fact, it almost seemed as if Brazilians were enjoying the experience of a hyperinflation, But, of course, economic performance deteriorated. The official reason, ex post, is inflation. But that is not the whole story. An important port is misgovernment both under the outgoing military government and under the democratic governments of Presidents Sarney, Color, Itamar and Cardoso.[7] This is not a fine point: after inflation is gone, there is a lot of work to be done to get the economy in shape.

Table 3 Brazil: Macroeconomic Indicators

	1992	1993	1994	1995	1996*
Growth	-0.8	4.2	5.7	4.2	3.0
Inflation	1129	2491	941	23	12
Curr. Acc't	1.7	-0.1	-0.3	-2.6	-2.1
Budget.	-2.2	0.2	0.5	-5.0	-2.2

*Forecast. Current account and budget as a percent of GDP
Source: IMF and JP Morgan

In the transition to the new government, in 1994, then Finance minister Cardoso embarked on a strategy of abolishing inflation with an ingenious monetary reform. A new money, the *Real,* was phased in and the old hyper inflation was out; in the transition a unit of account which shadowed the dollar was used to get around backward-looking indexation. Once the Real was introduced in July , at 1:1 on the dollar, it was allowed to appreciate on the US dollar thus strongly reinforcing the impression of a hard currency and of an end to inflation. No surprise, the enthusiastic public elected finance minister to become the next president. No surprise, he was attached to the disinflation miracle and the hard Real; indexation of anything was out of question. No surprise, finally, that he got trapped in a major overvaluation.

At the outset of the stabilization, in mid-94, the Real was allowed to appreciate in nominal terms. That, of course, strongly reinforced the real appreciation coming from a minor ongoing inflation. Over time, with inflation at an annual rate of more than 15 percent, real appreciation cumulated to a significant level. Two years later real appreciation comes to an increase of prices in dollars of more than 50 percent. Effectively, the authorities had shifted to a "flexible " exchange rate, but that meant effectively a rate of depreciation mostly in line with inflation. The accumulated real appreciation was maintained.

Brazil's overvaluation is showing on several fronts. First, Brazil is *very* expensive. The resulting trade problem is being handled by import duties and quotas and by export subsidies. That is a pragmatic solution to offset overvaluation, but of course it results in conflicts with trading partners. On the side of growth, the extremely high level of real interest rates in 1995-- more than 50 percent-- caused a slowdown. Now interest rates are

[7] The last military President, a cavalry man, will be remembered for proclaiming that "if inflatioon were a horse, I would long have dominated her."

being reduced, as far as possible. While foreign capital is coming, there is some hope, but how long will capital keep coming, more so if neighboring Argentina starts to disappoint? If interest rates have to be raised, growth and banking problems spell the end of a successful stabilization.

Brazil has a tradition of disregarding foreign experiences and more so foreign advice. That has often served the country well. The strategy is being followed once again. Just as in Pinochet's Chile or Salinas' Mexico, priority is given to Cardoso's political vision: a second term. Keeping inflation down is essential and to accomplish that, the currency needs to stay hard. If that means high interest rates, so be it; if it means the banking system gets worse, so be it; if it means protection, so be it. The strategy will last until further notice: high reserves, a relatively small external deficit and pragmatism suggest that a Mexican-style collapse is unlikely. But even in Brazil, not all news is always favorable. A vastly overvalued exchange rate in a country that has opened up trade and relies on nervous external finance -- direct investment accounts for less than 10 percent of the financing-- can become a problem.

WHY?

We have reviewed three experiences of overvaluation. Two ended disastrously, on another one the jury is still out; there is every reason to be optimistic, except experience. Why do governments chose a strategy of currency overvaluation?

A first pass at this question is that they do not. A plausible argument is that there is a distinction between real appreciation and overvaluation; they look the same but the former is an equilibrium increase in a relative price while the second is a disequilibrium phenomenon. When a government stabilizes and reforms, that prices inevitably improves the long run outlook for the use of productive resources. If a country were a form, the stock price should rise. Is a real appreciation not just the equivalent?

The analogy goes far and surely supports some real appreciation. But even here it is tricky. True, asset prices should rise, but the real exchange rate most closely resembles the wage in dollars. A major restructuring and opening up in the first place frees up labor and therefore requires a fall in the equilibrium wage in dollars. Only when investment creates new jobs (in part as a result of reforms, in part in response to increased profitability induced by a real depreciation) can wages in dollars start rising. To use he stock market analogy further, a major corporate restructuring that introduces new technologies, brings about outsourcing and reduces waste surely warrants a rise in the stock price, but it does reduce the demand for labor and hence would be accompanied by a fall in the equilibrium wage-- stock holders get more, wage earners get less.

Governments, and the market, do not recognize this distinction. Over and over again, trade opening and restructuring are used as reasons for real appreciation simply because they represent reform and reform is good. A further mistake in this direction is the misreading of productivity growth. It is frequently argued that there is no overvaluation because productivity growth is high. The argument almost suggests that after measuring competitiveness by the price level in dollars, productivity growth is used as an extra adjustment. But, of course, productivity growth finds itself into prices and is not an extra. A further reason why governments go wrong in this direction is that they mismeasure productivity growth: the available numbers refer to gross output per worker, not value

added. Thus, when restructuring and outsourcing become important, the difference between gross output and value added opens up in a major way. The demonstration of dramatic reductions in relative unit labor costs, as claimed for example in Mexico, is hard to reconcile with sharply increasing prices in dollars. [8]The most likely explanation is a significant oveestimate of productivity.

A separate line of explanation focuses on a misreading of both the facts and the circumstances of crisis. In any one of the episodes discussed, the country in question stands high in comparison to its history: reform is undertaken, the right steps are being taken, money is plentifully available from abroad. This introduces of necessity an element of delusion. If capital inflows are huge, who could think of depreciation to sustain competitiveness. Reform addresses competitiveness and the rest is a story of the capital market. Finance is dominant, continuity is the only thing foreign investors demand: keep playing the same music so that more money comes; if money keeps coming, where is the risk.

The misreading takes place on both sides of the market. Investors are overconfident that they are well informed and liquid: as a result they stay until midnight, expecting to get out on the very last train. On the borrowing side this behavior induces the illusion that investors have no doubt that their loyalty is total and that adjustment is in no way urgent. When, suddenly, an unanticipated major piece of bad news emerges, investors pull out, the market crashes, the economic team has lost the gamble. In Brazil today that prospect seems totally unlikely along the way. It is rejected vigorously by everyone concerned: preposterous! The same was true in Chile, the same was true in Mexico.

A third point concerns inflation Governments over the past decade have bought massively into the view that inflation is all-important in public opinion. Bringing down inflation is the magic crusade. In part, it is what capital markets want to hear to keep the money coming. In part, it is the most visible sign of a reform strategy. It is definitely what the public really cares for, however mysterious the reason as seen by economists.[9] Moreover, central banks do their part,. In the increasing quest for independence, inflation fighting is important ands a hard currency helps. Reinforcement from foreign official institutions can always be counted on for reinforcement.

Finally, governments inevitably adopt a sequencing in their policies. The sequencing involves, importantly, the political time table. Importantly, disinflation and overvaluation fit into that scheme: devaluation must come afterwards, at worst once reforms are complete but hopefully the issue will somehow just go away. Of course, the issue does not go away and the crash ultimately is very costly. Shortsightedness or procrastination are therefore an important ingredient in mismanaged exchange rates. In the end there is a vicious cycle: when overvaluation has become significant, ultimately there has to be a devaluation. But it is well established that a devaluation is a political disaster.[10] So why risk a devaluation?

---

[8] See Bank of Mexico (1995) pp.141-158 which contains an elaborate presentation of the productivity theme.

[9] Shiller (1996) reports surveys of inflation attitudes. His finding is that the public in Germany, Brazil and the US views inflation as reducing the standard of living.

[10] See Cooper (1971) for a documentation of the fall of finance ministers in the aftermath of currency depreciation.

REFERENCES

Bank of Mexico (1995) The Mexican Economy: 1995. Mexico City: Bank of Mexico

Barro, R. (1995) "Inflation and Economic Growth." NBER Working Paper No. 5326. Cambridge, Mass. National Bureau of Economic Research

Bruno, M. and W. Easterly (1995) "Inflation Crises and Long-Run Growth. " NBER Working Paper No. 5209. Cambridge, Mass. National Bureau of Economic Research

Corbo,V. and S. Fischer (1994) " Lessons from the Chilean Stabilization and Recovery." in B. Bosworth, R. Dornbusch and R. Laban (eds.) The Chilean Economy. Policy Lessons and Challenges. Washington DC: Brookings

Cooper, R.N. (1971) "An Assessment of Currency Devaluation in Developing Countries." in G.Ranis (ed.) Government and the Economy. New Haven: Yale University Press.

Dornbusch, R. (1980) Open Economy Macroeconomics. New York: Basic Books.

---------- (1993) Stabilization, Debt and Reform. Englewood Cliffs: Prentice Hall

---------- and S. Edwards (1994) "Exchange rate Policy and Trade Strategy" in B.Bosworth, R. Dornbusch and R. Laban (eds.) The Chilean Economy. Policy Lessons and Challenges. Washington DC: Brookings

Dornbusch, R. and Fischer, S. (1993) "Moderate Inflation" World Bank Economic Review. Vol. 7, No.1. pp.1-44.

Dornbusch, R., I.Goldfajn and R.Valdes (1995) "Currency Crises and Collapses." Brookings Papers on Economic Activity. No.2

Edwards, S. (1992) "Exchange Rates and Nominal Anchors" NBER Working Paper No.4246 .Cambridge, Mass. National Bureau of Economic Research

----------. and A. Cox-Edwards (1987) Monetarism and Liberalization: The Chilean Experiment. Cambridge: Ballinger.

---------- and P. Montiel (1989) "Devaluation Crises and the Macroeconomic Consequences of Postponed Adjustment." IMF Staff Papers Vol. 36 No.4 December pp.875-903

Fischer, S. (1993) "The Role of Macroeconomic Factors in Growth" Journal of Monetary Economics Vol.32 pp. 485-512.

Goldfajn,I. and R. Valdes (1996) “The Aftermath of Appreciations” NBER Working Paper No. 5650. Cambridge, Mass. National Bureau of Economic Research

Rebelo,S. and C.Vegh (1995) “Real Effects of Exchange Rate Stabilization. An Analysis of Competing Theories.” NBER Macro Annual . Cambridge: National Bureau of Economic Research.

Rodriguez, C. (1978) “A Stylized Model of the Devaluation-Inflation Spiral.” IMF Staff Papers , Vol.24 March.

---------- (1982) “The Argentine Stabilization Plan of December 20th” World Development , Sept.

Shiller, R. (1996) “Why Do People Dislike Inflation?” NBER Working Paper No. 5539. Cambridge, Mass. National Bureau of Economic Research