Part IV

Case Studies: Policies, Countries and International Organizations

12 Disinflation and Overvaluation

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1 INTRODUCTION

For the most part, currency crises are not accidents. They come at the tail-end of a disinflation strategy that has relied too heavily 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 offer some ideas.

2 A FRAMEWORK

A starting point for the political economy of exchange rates is provided by placing the exchange rate in two contexts. The first is the link between the exchange rate, standard of living, and the 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 domestic prices in terms of the consumption basket be W and P. The domestic price level is a function of import prices (E) and domestic output prices which are equal to unit labour costs (aW). Thus we obtain a direct positive relationship between the wage in US$ 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 labour productivity, real wages are given:[1]

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

The consumption wage is a central political variable. In Figure 12.1 we show the line *ww* along which there is social peace. Any level of the wage in US$ that is lower leaves labour dissatisfied and is tantamount to strikes, riots or political unrest.[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 excess demand in the labour 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 US$ is too high, so that there is a trade deficit. Below 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 labour satisfied. Introducing a political constraint into the labour market thus creates, not surprisingly, over-determination. Thus at point A there is full employment and social peace, but there is a deficit on the external front. At point B external balance prevails, there is social peace, but there is also 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 on A, Figure 12.1). 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 on world capital markets. One way or another, disequilibrium is postponed.

The action only becomes 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 to the devaluation and the economy moves back towards point A, but of course with a devaluation–inflation spiral that goes nowhere.

The alternative is to attempt to reduce spending, contract output and move to point B. In this strategy, real wages are protected, but employment is not. Point B cannot 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 US$ raises com-

petitiveness, 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 towards domestic goods. Thus the move from A or B is highly dubious as a political proposition, and hence will be postponed to the last minute and beyond.

One complication is worth 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 time the *FF* schedule 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.

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

The inflation–depreciation linkage provides the other ingredient for our political-economy setting. Inflation is a problem; and 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 to slow down inflation, it is extremely 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 may not follow an indexation rule. As a result, the link between inflation and depreciation involves an accelerative Phillips curve:

$$\Delta\pi = \alpha(e-\pi) + \lambda y \qquad (2.2)$$

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. At this point the real exchange rate and the real quantity of money as well as fiscal policy enter as determinants.

The unpopular way to bring down inflation works on the demand side. The standard IMF programme would reduce the growth rate of domestic credit and 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.

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, via indexation, as reduced wage inflation. But there are other 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 Equation (2) above suggests.

Over time, depreciating at a pace below the rate of inflation has two implications. First, inflation falls. Second, the *real* exchange rate appreciates steadily. When the disinflation objective is accomplished, a new problem arises 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 (see Point A in Figure 12.1). If such financing is not there, domestic recession mirrors the external overvaluation (Point B in Figure 12.1).

One way or another, 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 seem to rate the course of least resistance: inflation is enemy no. 1, never mind overvaluation. Some case studies will bear out this proposition.

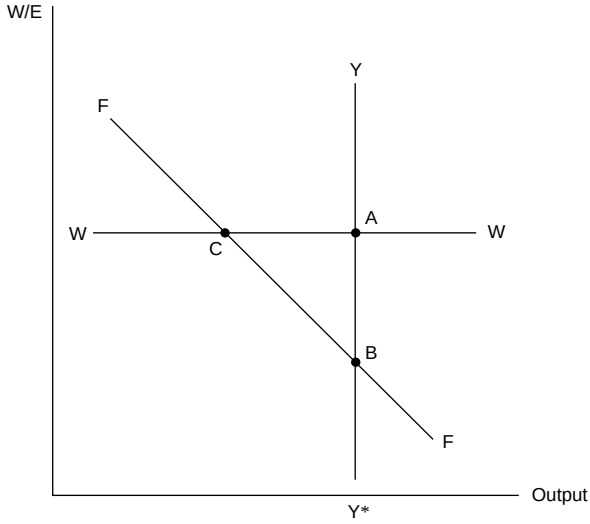

Figure 12.1 The Latin triangle

3 CASE STUDIES

In this section we report on three case studies: Chile at the end of the 1970s; Mexico in 1990–5; and Brazil, still ongoing. The cases have a point in common: an effort to stabilize inflation in the context of a broader package of reforms, and the programmes share two particular features: a trade-opening process; and renewed access to international capital markets.

3.1 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, and privatization and deregulation, including opening up trade, were to improve economic efficiency. Inflation stabilization was a paramount objective. By 1977 much of this had happened, and growth was accelerating – an economic miracle was in the making. But inflation stubbornly continued, albeit at a far reduced rate.

In line with monetarist thinking at the time, the 'law of one price' found adherents among policy-makers. In their thinking, there was a

Table 12.1 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
Current account (% of GDP)	3.7	5.2	5.4	7.1	14.5	9.2

Source: Bosworth, Dornbusch and Laban (1994).

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 halting depreciation once and for all. In a highly competitive, open economy the impact on prices could lead only to a dramatic, immediate stop of inflation. Moreover, if expectations mattered, the fixed exchange rate strategy – now we would call it a nominal anchor – could not fail to stabilize the prospect of stability.

Accordingly, as described in Edwards and Cox-Edwards (1987) and more recently, Corbo and Fischer (1994) in 1978 the government moved to a fixed exchange rate policy: 39 pesos = US$ 1.00 for ever.[3] In a dictatorship 'for ever' has a more plausible ring than in an unstable democracy. Hence the experiment, which got underway with every expectation of success. And successful it was, for a time.

Economic growth remained high throughout 1978–80, and inflation came down substantially, though not to levels near price stability as shown in Table 12.1. An important reason for the slow reduction 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 per cent per year. Not surprisingly, price inflation was not very different. The law of one price was not working tightly.

Figure 12.2 shows the real exchange rate index. It is apparent that a huge real appreciation developed. In terms of Equation (2.2), 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

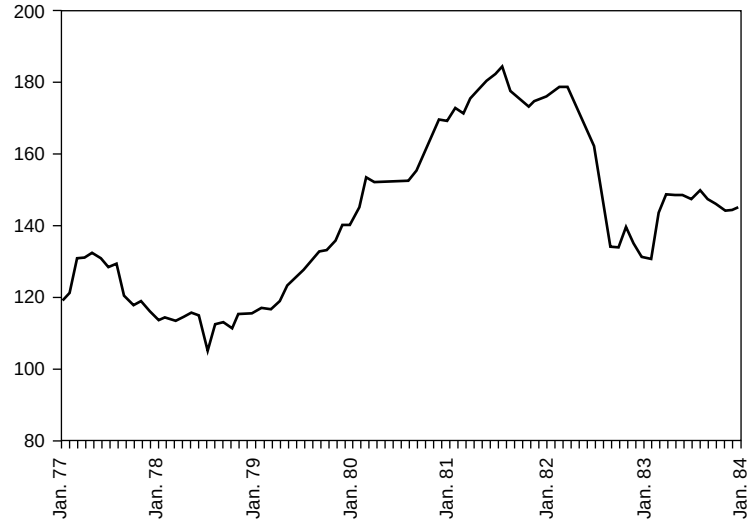

Figure 12.2 Chile: real exchange rate (index 1990=100)

was at work: that is, the income effect of real appreciation at the outset more than offsets the substitution effect. Accordingly, real appreciation starts by being expansionary in terms of aggregate demand. Moreover, it is also popular, since it means increasing purchasing power. The opening-up 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 would 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 the financial markets. Those who believed that the fixed rate strategy would last had an interest in borrowing off-shore, in dollars, so avoiding 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 rates soared, and the higher they became, the worse were the loans, and the more adverse selection was the rule. Not surprisingly, when the currency ultimately crashed, so did the banking system.

Overvaluation never goes away quietly.[4] 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 if that crisis had not occurred. Policy-makers like to explain that everything would have been all right, had it not been for this or that unpredictable event. But overvaluation is ultimately dragged down by its own weight; not all news is good, so that it is mainly an issue of time before a sufficiently unfavourable 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 was to be extremely successful. One of the pillars of that period was to keep the real exchange rate competitive at all times.

3.2 Mexico

After the mid-1950s, for a period of twenty years, Mexico held on to full convertibility and a fixed exchange rate. Its performance was exemplary in terms of discipline. But after that, with oil outrun by aspirations, exchange-rate mismanagement started and has continued since the 1970s. 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; 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 1994–5 which is illustrated in Table 12.2. The Salinas Administration took office in 1988 even though the economic team had been in place during the previous *sexennio*, though at a lower level. Disinflation had been under way since 1987, when, inflation at its peak had reached well over 100 per cent. The strategy for disinflation was the *pacto*, an incomes policy package that essentially matched the Mexican corporatist political model: labour (that is, the PRI unions represented by Don Fidel Velasquez, then aged 97), business and the government met periodically to lay out ceremoniously an agreed strategy for wages, prices in the private and public sector and the exchange rate. The agreements ensured that there were no backward-looking indexation effects to dominate the disinflation programme.

On the surface, the strategy worked well – between 1987 and 1994, the annual inflation rate came down from 130 per cent to only 7 per

Table 12.2 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 (% of GDP)	–2.2	–0.3	1.6	0.7	–0.7	1.0
Current account (US$ billion)	–7.5	–14.8	–24.4	–23.4	–28.8	–0.7
Current account of GDP	–3.0	–5.1	–7.4	–6.4	–7.7	–0.2

Source: Bank of Mexico.

cent. But the strategic ingredient was the exchange rate. The real exchange rate – measured by Mexican wholesale prices in US – appreciated steadily as shown in Figure 12.3. The formal arrangements for the exchange rate varied: prefixed, fixed, and a band. The central fact, however, was that depreciation lagged steadily behind inflation and, accordingly and mechanically, the real exchange rate appreciated.

Mexico, like Chile, had undergone a major programme of deregulation, restructuring of the public sector and aggressive trade opening.[5] As a short-run effect of these measures, growth was slowed down and the external deficit, reinforced by real appreciation, grew substantially. But with the budget balanced, how could the deficit be anything but a sign of vigour and dynamism? Interestingly, unlike in Chile, investment had not increased at all, but that did not stop observers from talking about deficits generated by high levels of imported capital goods.

The government was clearly aware of the large real appreciation. But the availability of virtually unlimited external capital and the political timetable 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. 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 policy was enlisted to maintain the facade with full sterilization of the reserve losses. The Mexican government pretended 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 clearing by foreign investors. The new government contemplated devaluation and, it is rumoured, the wealthy Mexicans got a first helping of the reserves.

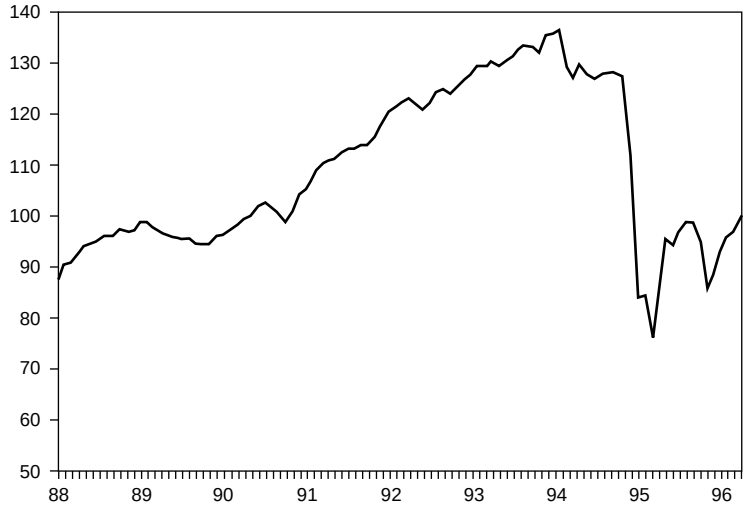

Figure 12.3 Mexico-USA: relative price levels (index 1990 : 100)

The rest is history – a massive collapse of the peso. In Mexico, as in Chile, the banking system was involved in betting on the peso, and collapsed. The clean-up cost US$30 billion or more and still continues.

3.3 Brazil

Indexation has been the central macroeconomic pillar of Brazil, since the stabilization of the military government in the 1960s. Everything was indexed – the exchange rate, wages, public-sector prices, asset yields. As a result, because Brazil is a large, relatively closed and above all inward-looking economy, macroeconomics could be quite stable, even in the face of extreme inflation. In fact, it almost seemed as if Brazilians were enjoying the experience of hyperinflation, but, of course, economic performance deteriorated as in be seen from Table 12.3. The official reason, *ex-post*, is inflation. But that is not the whole story. An important point is *misgovernment*, both under the outgoing military government and under the democratic governments of Presidents Sarney, Color, Itamar and Cardoso.[6] This is not a fine point: after inflation a lot of work needs to be done to get the economy into shape.

In the transition to the new government, in 1994, Cardoso, then finance minister, embarked on a strategy of abolishing inflation through ingenious monetary reform. A new currency, the *real*, was phased in,

Table 12.3 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
Current account (% of GDP)	1.7	–0.1	–0.3	–2.6	–2.1
Budget (% of GDP)	–2.2	0.2	0.5	–5.0	–2.2

Note: *Forecast

Source: IMF and J. P. Morgan.

and the old hyperinflation was out; during the transition, a unit of account which shadowed the US$ was used to get around backward-looking indexation. After the introduction of the *real* in July, on a 1:1 basis with the US$, it was allowed to appreciate on the US$, thus strongly reinforcing the impression of a hard currency and an end to inflation. No surprise that the enthusiastic public elected the finance minister as the next president. No surprise either that he was attached to the disinflation miracle and the hard *real*; indexation of anything was out of the question. And no surprise, finally, that he got trapped in a major overvaluation (see Dornbusch, 1997).

At the outset of the stabilization, in mid-1994, 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 running at an annual rate of more than 15 per cent, real appreciation reached a significant level as can be seen from Figure 12.4. Two years later, real appreciation in US$ terms exceeded 50 per cent. The authorities had shifted to a 'flexible' exchange rate, but in effect that meant a rate of depreciation mostly in line with inflation. The accumulated real appreciation was maintained.

Brazil's overvaluation shows on several fronts. First, Brazil is *very* expensive. The resulting trade problem is being handled by imposing import duties and quotas, and export subsidies. That is a pragmatic solution to offset overvaluation but, of course, it results in conflicts with trading partners. On the growth side, the extremely high level of real interest rates in 1995 – more than 50 per cent – caused an economic slowdown. Now interest rates are being reduced, as far as possible. While foreign capital is available there is some hope, but how long will capital keep coming, particularly, if neighbouring Argentina starts to disappoint? If interest rates have to be raised, growth and

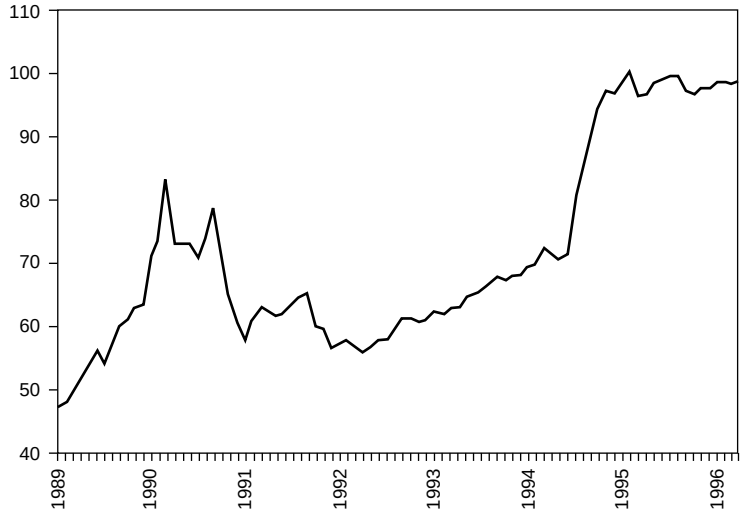

Figure 12.4 Brazil: prices in US$ (index July 1994 = 100)

banking problems will spell the end of successful stabilization.

Brazil has a tradition of disregarding foreign experience, and more so foreign advice. That has often served the country well, and this strategy is being followed once again. Just as in Pinochet's Chile or Salinas's Mexico, priority is given to Cardoso's political vision: a second term in office. 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 favourable. 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 per cent of the financing – can become a problem.

4 WHY?

We have reviewed three experiences of overvaluation. Two ended disastrously; on the third, the jury is still out – there is every reason to be optimistic, were it not for past experience. Why, then, do govern-

ments choose a strategy of currency overvaluation? A first response to this question is that they do not. A plausible argument is that there is a distinction between real appreciation and overvaluation; they may 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 means prices inevitably improve the long-run outlook for the use of productive resources. If a country were a quoted company, the stock price would rise. Is a real appreciation not just the equivalent?

The analogy goes a long way, 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 US$. A major restructuring and opening up in the first place frees labour, and therefore requires a fall in the equilibrium wage in US$. 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 US$ start to rise. To use the stock market analogy again, a major corporate restructuring that introduces new technology brings about outsourcing and reduces waste surely warrants a rise in the stock price, but as it reduces the demand for labour, it would be accompanied by a fall in the equilibrium wage – stockholders get more, wage earners get less.

Neither governments nor the market recognize this distinction. Repeatedly, opening up trade 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 argued frequently that there is no overvaluation because productivity growth is high. The argument almost suggests that after measuring competitiveness by the price level in US$, productivity growth is used as an extra adjustment. But, of course, productivity growth finds its way into prices and is not an extra. A further reason why governments go wrong in this direction is that they mismeasure productivity growth: the available number refer to gross output per worker, not value added. Thus, when restructuring and outsourcing become important, the difference between gross output and value added will become significant. The demonstration of dramatic reductions in relative unit labour costs, as claimed, for example, in Mexico, is hard to reconcile with sharply increasing prices in US$.[7] The most likely explanation is a significant over-estimate of productivity.

A separate line of explanation focuses on a misreading of both the facts and the circumstances of a 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, and plentiful money is available from abroad. This introduces, of necessity, an element of delusion. If capital inflows are huge, who would think of depreciation to sustain competitiveness? Reform addresses competitiveness and the emphasis rests with the capital market. Finance is dominant, continuity is the only thing foreign investors demand: keep playing the same music so that more money comes. And if money keeps coming, where is the risk?

The misreading takes place on both sides of the market. Investors are over-confident 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 behaviour 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 at the time of writing, that prospect seems totally unlikely. It is rejected vigorously by everyone concerned: preposterous! The same was true in Chile, and in Mexico.

A third point concerns inflation. Governments since the mid-1980s have been of the opinion 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 about, however mysterious the reason as seen by economists.[8] Moreover, central banks play their part. In the increasing quest for independence, inflation fighting is important and a hard currency helps. Reinforcement from foreign official institutions can always be counted on.

Finally, governments inevitably adopt a sequencing in their policies. The sequencing involves, importantly, the political timetable. Disinflation and overvaluation fit into that scheme: devaluation must come afterwards, at worst once reforms are complete, but it is hoped that the issue will somehow just go away. Of course, the issue does not go away, and the ultimate crash is very costly. Shortsightedness or procrastination are therefore important ingredients in mismanaged exchange rates. In the end, there is a vicious cycle; when overvaluation becomes significant, ultimately there has to be a devaluation. But it is well established that a devaluation is a political disaster.[9] So why risk a devaluation?

Notes

1. To fix ideas, one might think of the P-function as Cobb–Douglas in import and domestic prices.
2. The relationship might also be a function of the level of output. In that case, at higher levels of output, real wage claims might be higher and in depression labour might settle for less.
3. See Edwards and Cox-Edwards (1987), Corbo and Fischer (1994) and Dornbusch and Edwards (1994) for a discussion of the Chilean experience.
4. See Goldfajn and Valdes (1996), who examine a large set of overvaluation experiences.
5. On the Mexican experience, see Dornbusch *et al.* (1995) as well as the extensive references given there.
6. The last military president, a cavalryman, will be remembered for proclaiming that 'if inflation were a horse, I would long have dominated her'.
7. See Bank of Mexico (1995), pp. 141–58, which contains an elaborate presentation of the productivity theme.
8. Shiller (1996) reports surveys of inflation attitudes. His finding is that the public in Germany, Brazil and the USA views inflation as reducing the standard of living.
9. See Cooper (1971) for a documentation of the fall of finance ministers in the aftermath of currency depreciation.

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