5

The Challenge for National Macroeconomic Management

The problem to be dealt with macroeconomically is one of aggregate demand running ahead of aggregate supply. The difficulty may simply be one of timing, as some Mexican policy-makers maintained. Policy reforms and the associated investment may be properly directed towards increasing aggregate supply capacity for tradeable goods, but getting the additional production on stream takes time. Mexico's exports of manufactures were in fact growing fast in the early 1990s – but not as fast as the imports stimulated by the increase in aggregate demand. Losing the race may be very costly. One response is to try to slow down demand, but we shall see that this is intimately related to the capital flow problem.

5.1 Preventing the Increase in Aggregate Demand

What is required is some policy in the face of this increase in demand. As we shall see, such policies require the authorities to face up to a fundamental dilemma. In the short-to-medium run there is macroeconomic disequilibrium. The obvious weapon with which to fight the increase in aggregate demand is a rise in the domestic nominal interest rate. A rise in the nominal interest rate will depress domestic interest-sensitive expenditures. To the extent that domestic inflationary pressures are threatening, the nominal interest rate will need to go sufficiently high to raise the real interest rate sufficiently to depress expenditures and contain the boom.

This is a very big task. Policy authorities in advanced industrial countries are accustomed to using monetary policy to respond to increases of aggregate demand – due to investment booms or consumption booms – of perhaps as much as five per cent of GDP. For example, the extraordinary boom in Germany post-reunification added to aggregate demand by as much as six per cent of GDP. By contrast the increase in investment resulting from the liberalisation which we are discussing might take the investment share from the high teens (numbers common in Latin America) to the thirties and above which are common in the Asian NIEs, and within the space of a decade or even half a decade. Such shifts – in the absence of immediate and unprecedented mobilisation of national savings efforts – would require the use of tight monetary policy of a kind without precedent in the OECD countries. Note that European post war growth saw high investment shares, but capital was very immobile internationally, and there was tight credit rationing to mobilise savings.

5.2 The Dilemma

A tight monetary policy will itself induce capital inflow, over and above that attracted by the new investment opportunities. That capital inflow will make it very difficult to prevent the exchange rate from appreciating. This is an example of the 'inconsistent trilogy': in general, it is impossible to maintain simultaneously free movement of capital, domestic monetary autonomy, and a fixed exchange rate.

Indeed, a very tight monetary policy, sufficient to stop an investment boom of the kind discussed above, will make it impossible to prevent the exchange rate from appreciating a very great deal. If capital is very mobile, we should expect appreciation to go so far as to compromise severely the new-found profitability of the export sector. Indeed if capital is very mobile, the mechanism by which the investment boom is damped down will consist almost entirely of the crowding out of net exports, since interest rates will not be able to increase far above world levels.

5.3 The Policy Options – a Taxonomy

We can create a taxonomy of responses to this dilemma. Each responds to the increase in aggregate demand in a different way.

(i) sterilised intervention

The Central Bank may attempt to maintain the value of the exchange rate in the face of capital inflow by buying up reserves in exchange for domestic money. It may then also attempt to prevent consequences of the inflow for the domestic money supply, by selling domestic-currency denominated government bonds to a value equal to the capital inflow, so as to maintain a fixed monetary base in the face of the macroeconomic disturbance. This is a policy of sterilised intervention. In the view of several observers, this policy has often been successful, at least within limits (Dominguez and Frankel, 1993; IMF, 1995; Montiel, 1995).

The effect of such a policy could well be not just to prevent the capital inflow from leading to a monetary expansion, but also to force up domestic interest rates on domestic government bonds and so provide some macroeconomic dampening. This is because portfolio holders – both domestic and foreign – would have to absorb an increased supply of these assets. To the extent that the capital inflow was carried out with the intention of purchasing such bonds, then no yield adjustments would be necessary. But to the extent that the capital inflow was carried out with the intention of purchasing real assets, whose profitability has risen for the reasons discussed in the previous chapter, the sterilised intervention will create an ex-ante excess supply of government bonds, and will lead to a rise in interest rates. In general, too, we would expect domestic and foreign assets to be less substitutable for our 'emerging market' economy than for a highly developed country.

There are four problems with such a policy. First there are limits to the extent that such a policy can be pursued in the face of large and determined capital movements; the Central Bank may simply run out of sufficient government paper assets, or the capacity of new, thin markets for government paper to absorb this new emission may be limited. In the end the policy becomes unsustainable, for reasons already described.

Second, sterilised intervention is typically very costly for a developing country. It is likely to be paying several hundred basis points more on its obligations than it earns on the foreign currency assets it has purchased. The quasi-fiscal burden may be very great.

Third, such a policy may be macroeconomically unstable and its effects upon aggregate capital flows unsustainable. It is true that any rise in domestic interest rates may dampen the attractiveness of investment in the export sector and thereby dampen capital inflow whose desired destination is investment in that sector. But such a rise in domestic interest rates will mean that returns on bonds in the home country rise above returns abroad, and that will encourage inflows of capital funds into those assets. Any reduced capital inflow of the first type will simply be replaced by inflow of the second type, which may be even greater. Capital inflow will continue, creating further need for sterilisation. Indeed if capital is very mobile, capital inflows will continue unabated precisely until the policy is abandoned.

For all these reasons, sterilised intervention may be useful when a capital inflow is temporary, but it is unsustainable and unwise in the face of long-term inflows. Moreover, a policy response relying upon sterilised intervention ignores our fundamental dilemma. Observers who believe that such a policy response is likely to be adequate are viewing the capital inflow in isolation from other macroeconomic developments. Because of the large demand boom the monetary authorities will need to raise interest rates; they may need to raise interest rates well above the levels which might possibly be induced by sterilised intervention. But for the very reasons just described, if capital is mobile, any such increase in interest rates will generate capital inflow of a magnitude sufficient to destroy the sterilised intervention.

(ii) unsterilised intervention

The central bank may also attempt to maintain the exchange rate by buying up reserves in exchange for domestic money, allowing the money supply to expand in consequence. This is a policy of unsterilised intervention. It faces no financial constraint, in that the Central Bank can – in principle without limit – exchange its domestic money (which is its own liability) for foreign reserves.

But such a policy prevents the Central Bank from taking any policy response to moderate the demand boom. Indeed, the expansion of the money supply may allow domestic interest rates to fall, and so aggravate the domestic demand boom.

The consequence will be a combination of (i) domestic inflation and (ii) after an interval, competitiveness pressures on the tradeable goods sector – both the export sector and the import competing sector. Real exchange rate appreciation comes through a rise in prices rather than nominal appreciation.

If capital is very mobile, so that there is little or no scope for interest rate increases, we should expect competitiveness pressures to continue so far as to compromise severely the new-found profitability of the export sector. Excess demand and continuing inflation will prevail until the investment boom survives only to the extent that it has crowded out net exports in a current account deficit. The economy will then be left with an overblown cost structure, if the nominal exchange rate is fixed (real appreciation). Another formulation of this problem stresses the rise in the price of nontradeables that is induced by the expansion of domestic demand ahead of supply – and hence real exchange rate appreciation, with the consequences noted.

(iii) currency appreciation

The central bank may allow a nominal appreciation of the currency, or with a currency band, may widen the band of permissible currency fluctuations and allow the (real and nominal) exchange rate to drift up. This will check the domestic boom by putting pressure on both tradeable goods sectors – both the export sector and the import-competing sector.

As already noted, if capital is very mobile, we should expect appreciation to go so far that it will seriously reduce the profitability of the export sector. If the monetary authorities are resolute in their determination to stop excess demand from leading to inflation, then they will persevere with monetary restraint until the investment boom survives only to the extent that it has crowded out net exports.

Despite these problems associated with exchange rate flexibility, one can already see that a fixed exchange rate may be the worst policy. It may prove impossible – even with a fixed nominal rate – to stop the real appreciation because of domestic inflation. The fixed nominal exchange rate may at the same time remove future flexibility to respond to a capital outflow. And price rises are harder to reverse than nominal exchange rate depreciation, if the capital inflows themselves reverse. A *fortiori*, currency board arrangements are to be avoided, except in the case of very small, very open economies (even then, the Central Bank should retain scope for lender of last resort actions and should arrange lines of credit in advance of potential crises).

5.4 Softening the Fundamental Choice

The fundamental choice, however, is not between fixed and floating exchange rates. It is between, on the one hand, attempting to prevent the real appreciation, the pressure on the tradeable goods sector, and the emergence of a current account deficit; and, on the other hand, accommodating the capital inflows and allowing this to happen (either by floating the exchange rate or by allowing domestic inflation). In general, the appropriate response depends on the assessment of whether the inflows will persist. If so, accommodation is the right choice, and hindering it is positively harmful. Even a 'virtuous' contractionary fiscal policy, recommended by Schadler *et al.* (1993) and Corbo and Hernandez (1994) in all circumstances, will for persistent inflows just increase the required degree of real exchange rate appreciation (by improving the current account) and so hurt the tradeables sector even more (Kenen, 1996).

As Kenen (1996) points out, however, 'there is no way to forecast the duration of a capital inflow and, therefore, no way to know whether a country should accommodate to it'. In view of this ineradicable uncertainty, it may be sensible to soften the choice, possibly by reducing the net inflow.

There are indeed a number of ways of softening the choice:

- to quicken the pace of trade liberalisation
- to increase the reserve ratio applying to bank deposits
- to switch government-controlled deposits from the commercial banks to the central bank
- to improve the mobilisation of private savings
- to eliminate any remaining subsidies to inward investment, such as investment guarantees, location subsidies, etc.
- to impose or increase controls on capital inflows
- to relax controls on capital outflows.

We discuss these further in Chapter 6, together with a review of some important country case examples.

5.5 Capital Inflows and Budget Deficits

A number of countries, some in Africa, have been carrying out policy reforms that involve significant liberalisation, but they have not made corresponding progress in fiscal consolidation. Budget deficits are financed by selling government bonds. Interest rates rise to the point where foreign capital is attracted and capital inflow ends up financing the deficits. The consequence is a weakening of the fiscal constraint – the discipline that could support fiscal reform is lost. The high rates of return that induce the inflow are illusory, in the sense that the inflows do not finance investment in tradeables with a correspondingly high yield. The lesson is that the deficit should be controlled **before** opening up to capital flows.

5.6 Institutional Implications

5.6.1 Monetary policy and central bank independence

If fixed exchange rates are to be avoided, then it is essential to establish an alternative framework for anti-inflationary monetary stability. One of the key reasons for maintaining fixed exchange rates is as a nominal anchor, a form of anti-inflation discipline. This was why Mexico operated a quasi-fixed exchange rate as part of its stabilisation process in the run-up to the signing of NAFTA. This is the justification for the currency board law in Argentina: in the wake of the memory of the hyperinflation of the 1980s, the value of the currency is fixed to the US dollar by legislation.

The political problem is to find some 'discipline device', which has the same potency as that which was believed to be possessed by a fixed exchange rate, which will remove the ability to inflate the economy in the pursuit of short-run advantage.

The technical problem is that the relationship between the instruments of fiscal and monetary policy on the one hand and inflationary outcomes on the other hand is not clear cut. Some years ago, it was hoped that the solution lay in the rigid control of some monetary aggregate. But financial liberalisation means that the setting for monetary policy required to discipline inflation is uncertain, and reliance on higher interest rates as the discipline mechanism encourages disintermediation (i.e. the pursuit of other methods of financing expenditures so as to keep the inflationary burst going).

The technical problem and the political problem are deeply intertwined. If there were a simple connection between the money supply and inflation, then the central bank could announce a simple monetary policy (for example, keeping the money supply growing at x per cent per annum). Political interference with such a policy would be easy to observe. But if the connection between monetary policy and inflation is a complex one requiring frequent adjustments, it is much more difficult to detect and punish political inflationary interventions amongst these myriad adjustments.

There are two approaches to this combination of political and technical problems. A country undergoing a liberalisation should consider – as a matter of urgency – how to adopt one or the other of these solutions. The first is the 'New Zealand solution' – creating an independent central bank with a contractual obligation to pursue low inflation. This is transparent and straightforward, but not very flexible. The second solution is to adopt an explicit inflation target (see Leiderman and Svensson, 1995). The problem with this is that it requires detailed forecasts of future inflation; a shared understanding about how much monetary contraction is needed – i.e., about how much interest rates are to be raised – whenever the forecast inflation rate rises above target; and shared understandings that there exist circumstances in which this first understanding could be over-ridden (implicit escape clauses). The difficulty with this 'British' solution is that it is intensive on analysis and trust.

As we have explained, in the presence of the capital inflows which liberalisation is likely to bring, the exchange rate may undergo considerable movements. This underlying stability may combine with self-fulfilling expectations to produce disastrous outcomes – e.g., if capital inflows reverse and a speculative attack brings a collapse of the exchange rate, this in turn can force an abandonment of anti-inflationary discipline that will 'justify' the collapse. In the face of such possibilities, an underlying 'fulcrum' of anti-inflationary discipline is essential. Therefore one of the most important institutional innovations required in liberalising countries facing high and volatile capital flows is the establishment of one or the other of the suggested institutional structures for providing anti-inflationary discipline.

5.6.2 Fiscal policy institutions

We have argued that part of the capital inflow problem is a consequence of aggregate demand running ahead of aggregate supply, at least for a time until the latter can catch up. Evidently contractionary fiscal policy could help to close the gap, and that would be appropriate if the capital inflow were financing government consumption or were expected to be temporary. But in many countries, the effective use of fiscal policy for stabilisation – in particular, tax increases – requires significant improvement in tax administration.

An alternative to increasing public saving is to stimulate private saving. One means of doing this is to privatise all pensions. This measure, begun by Chile in the early 1980s, has proved sufficiently successful that other middle-income countries should certainly consider taking the same step.

5.6.3 The banking system and financial fragility

If a high proportion of the liabilities of the domestic banking system arise from capital inflows, in the form of deposits by non-residents or interbank borrowing from non-resident banks, a sudden reversal of the inflows can threaten the stability of the system.

There are two forms this danger can take. With a fixed exchange rate, capital outflow – exacerbated by the economy-wide liquidity crisis it creates – may amount to a classic run on one or more major banks. Moreover, if the exchange rate peg is broken, or if the rate was floating at the outset, a sharp depreciation will correspondingly raise the domestic currency value of foreign-currency-denominated liabilities. The Mexican banking system suffered the latter shock in December 1994 and thereafter; while one of the few significant spillovers from Mexico was the loss of confidence in the Argentine banking system, which experienced the first type of financial distress in an extreme form in spring 1995. And as we noted above, financial fragility can preclude the use of interest rates to defend the exchange rate against a speculative attack.

There are policies that can limit these dangers. Enhanced supervision and regulation of banks are obvious but still essential measures. Market-based, self-regulating supervision has its place in highly developed financial systems, but developing countries – even (or perhaps more so) those with flourishing securities markets – require a sound institutional basis for bank supervision. They should also set higher capital adequacy and other prudential standards for these banks than are needed in more developed systems. Finally, they may wish to consider taxes or quantitative limits on non-resident bank deposits (see Sec. 6.2).

5.7 Early warning indicators

Policy-makers would naturally like guidance to tell them when to start worrying and when to translate their worries into actions. Since the Mexican crisis, several authors have sought to specify the factors that indicate or determine how vulnerable a country may be to a financial crisis (Frankel and Rose, 1996; Goldstein, 1996; Sachs, Tornell and Velasco, 1996).

Both theoretical models of the 'fundamentals' and trained economic intuition and experience (also informed by theory) give similar stories, in the form of a presumptive set of 'early warning indicators'. Goldstein (1996) lists the following seven categories:

(i) an upward turn in international interest rates

(ii) growing mismatch between the government's/banking system's short-term liquid liabilities and its liquid assets (particularly international reserves)

(iii) a large current-account deficit, used mainly for consumption and financed in good measure with short-term borrowing

(iv) a highly overvalued real exchange rate

(v) constraints (most of them related to financial fragility) on the willingness to increase domestic interest rates when there is an adverse shift in international capital flows

(vi) an unsustainable boom in bank lending followed by a sharp fall in asset prices

(vii) high susceptibility to 'contagion' (reflecting small country size, regional effects, characteristics similar to original crisis country and/or weak policy fundamentals) following the outbreak of a financial crisis elsewhere.

This is all perfectly sensible. But these 'explain' both too little and too much. Taken as a whole, they amount to a fairly complete description of the relevant economic structure, policy stance, and international environment of the economy in question. In any case when things 'go wrong', some of these indicators will be 'flashing red' – but others doubtless will not. Conversely, many countries for which some of the indicators do show danger ahead will be protected by strengths in other areas. Moreover, many of the 'indicators' tend to move together (collinearity) because most are endogenous in a complex set of causal relationships, including policy reactions.

Partly for these reasons, the empirical evidence available so far certainly does not permit us to derive a limited, unambiguous set of indicators with clear predictive value. Goldstein may be demanding too much, but his own review of the data concludes that 'predicting contagion on the basis of any single characteristic didn't fare too well' (p.44).

Although the study by Sachs *et al.* (1996) of a sample of 20 countries post-Mexico does find explanatory power for crises in variables representing Goldstein's categories (ii), (iv), and (vi), these authors find none in the size of capital inflows relative to GDP, the proportion of capital inflows that are short-run, the current account deficit, the share of savings in GDP, and government consumption as a share of GDP (variables which represent aspects of Goldstein's (iii) and (vii) as well as other plausible candidates he did not include). Frankel and Rose (1996), looking at currency crises in annual data for 105 developing countries over the period 1971-92, also observe that the current account deficit, the government budget deficit, and the maturity structure of external debt are not useful indicators. On the other hand, they too find that real exchange rate overvaluation and the growth of bank lending do show something – but they also find half a dozen other equally useful indicators, including some (like debt composition) that Sachs *et al.* reject.

To make matters worse for the hopeful policy-maker, Frankel and Rose establish that 'most variables...tend to move very sluggishly in the years surrounding currency crashes. This leads one to expect that it will be difficult to predict the exact timing...(p. 16)'. And if that too is perhaps an excessively demanding requirement, consider the statement of Kaminsky and Reinhart (1995), as reported by Goldstein: '...even the best early-warning indicators send at least two wrong signals for every correct one, and for most indicators, the signal-to-noise ratio is much worse than that...'

We conclude that there is no substitute for seasoned economic judgment. Our own discussion above focuses on the real exchange rate and financial fragility – yet despite its high apparent vulnerability on these criteria, Argentina managed to escape a crash in early 1995 (with, admittedly, some external help). It is hard to measure and use as an 'indicator' the credibility of policy-makers.

5.8 Is there a Justification for any Further Action?

In this chapter we have considered the appropriate macroeconomic policies in response to inflows. In the next Chapter we will consider some policies which might be undertaken in order to limit directly the inflows themselves. But before we do this, the reader may reasonably ask, "Why might such restrictive policies ever be desirable? Why not just carry out the recommended macroeconomic policies – in particular avoiding a pegged, over-valued exchange rate – and then allow the free movement of international capital? What is the market failure to which such controls are supposedly addressed?"

This difficult question gets to the heart of the matter, and there is no general agreement. Our view is that there are market failures to do with capital flows and that these can – *not do, but can* – justify further policies of a preventive, interventionist kind. There is a useful list in Eichengreen and Wyplosz (1996), who assert that "there is by now an accumulation of historic and episodic evidence consistent with the notion that such distortions characterise the international lending process". Here we simply provide a check-list of such market failures and the relevant arguments.

(i) Swings in sentiment not obviously associated with the arrival of economic or political news often occur in international capital markets. These can give rise to bandwagon effects which lead to excess flows. There are significant informational difficulties associated with foreign lending, in particular the difficulty of assessing sovereign risk. A rational response may be to ration credit to individual borrowers and to rely partly on the judgements of other lenders when determining how much to lend. In these circumstances, minor 'news' can give rise to major changes in assessment of sovereign creditworthiness, a problem which can be compounded by "cascades" of (possibly false) information as lenders imitate each other's behaviour. (See Gai, 1995)

(ii) Excess flows may occur because of moral hazard in the banking system. Regulators may be unwilling, and in less developed countries they may be unable, to allow banks to fail, and at the same time may be unwilling or unable to enforce sufficient prudence in the face of risks. Banks, knowing that they are assured of a bailout (either explicitly, or implicitly through the government relieving them of their obligations) face incentives to lend to too many, too risky projects. Improved regulatory structures will greatly reduce but may not completely remove the susceptibility to these problems.

(iii) In liquid international markets, there are possibilities of self-fulfilling speculative attacks which share similar features with bank runs and which may occur even if not justified by the underlying economic "fundamentals".

(iv) Finally, the macroeconomic policies in response to capital flows which we have reviewed in this Chapter are not in themselves costless. We have discussed the difficulties of rapidly increasing the savings rate. In the meantime there may be no alternative to allowing the nominal, and the real, exchange rate to appreciate. This inflicts costs on traded goods producers. If the capital flows are temporary the appreciation may cause dislocation of production, whose effects are difficult to reverse. If the capital flows are permanent, the effect on traded goods producers will again be temporary as, with time, policy induces domestic savings to increase, thereby enabling the real exchange rate to come back down again.

All of these problems can interact. Initial trade liberalisation can give rise to over-exuberant capital inflow. That can cause over-appreciation of the nominal, and real, exchange rate. That can cause such a large fall in the profitability of the tradable goods sector as to induce a reversal of capital inflow. That can cause rapid self-reinforcing withdrawal. It can even cause a self-fulfilling crisis.

This sketch just given is not completely dissimilar to the actual Mexican experience. It may seem a bit overdrawn. But it indicates why we do not think that the minimalist advice, namely "just carry out the recommended macroeconomic policies and then allow the free movement of international capital", is always the correct advice. (Note too that it is not even completely clear that floating the exchange rate will guard against such a crisis, since if the reversal of flows is great enough, the exchange rate may go into a self-reinforcing slide. This is especially if markets for the currency are thin, as they are in developing countries, and if the credibility of the policy-makers is not watertight.)