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**Managing Financial Flows:
Issues and Challenges in Conducting Monetary Policy¹**

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Any paper written on this topic has to start by discussing what is now usually called the “policy trilemma of international finance”. This holds that only two of the following three variables, all assumed to be good things, can be achieved simultaneously: freely mobile capital, fixed (or, more generally, managed) exchange rates, and monetary autonomy. If a central bank does not care about monetary autonomy, it can turn itself into a currency board. Or maybe it is indifferent to what happens to the country’s exchange rate, and is prepared to always live with whatever the market decides, as most of the developed countries have lived (if not always happily) since 1973. Or maybe it is thought that the authorities can permanently control the flow of capital in the way that the Malaysian authorities did following the controls of September 1998, or the world as a whole tried to prior to 1973. But, in common with most other monetary authorities (not to mention the author), the central bank probably hankers after all three objectives, and is therefore interested in an assessment of how strict the trilemma is and what sort of intermediate solutions make sense. This paper is written on that supposition.

The first section of the paper is devoted to an exposition of the “policy trilemma”. It describes the proposition, explores its implications, and assesses how strict the trilemma really is. It is concluded that, while describing a real dilemma (or trilemma), the

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trilemma is sufficiently pliable for intermediate solutions to make sense. The second section of the paper then examines what those intermediate solutions are and analyzes how to manage an economy subject to strong capital flows. Particular attention is devoted to the use of changes in reserves as an instrument to manage the economy in intermediate cases, since this is the first instrument that is typically used. The third section explores the implications of supposing that an old theory of what describes the demand for reserves, the “Mrs Machlup’s Wardrobe Theory”, is valid, and that the reasons for its validity are to be found in the psychology of speculators. These turn out to be profoundly important.

The Policy Trilemma

The policy trilemma holds that under perfect capital mobility a country has only one degree of freedom in selecting the two policy variables of the exchange rate and the money supply. In general, it has two degrees of freedom when considering the three variables of capital mobility, monetary policy, and the exchange rate. If it has capital mobility and chooses to fix the exchange rate, that determines its money supply. Or, for a country with capital mobility, national determination of the money supply is possible only if it allows the exchange rate to float. It is often asserted that a country has to choose to sacrifice completely one of the three variables, though actually this is a non-sequitur: it is possible instead to sacrifice partially two or more variables. Intermediate solutions are possible no matter how strict the trilemma.

In the long run a dilemma holds even if capital is immobile and the balance of payments consists only of current account receipts and payments. This is the implication of David Hume’s theory of how the gold standard worked: an undervalued exchange rate meant that the country runs a payments surplus, which increased the money supply, which caused inflation, until equilibrium was reached. In equilibrium a fixed exchange rate implies a particular value of the money supply: one cannot choose both. It was the work of Nobel laureate Robert Mundell in the 1960s who showed that a similar proposition was also true in the short run under capital mobility—at least, under perfect capital mobility. It is this proposition that has become known as the policy trilemma. Not only is there an equilibrium level of money supply, which tends to be established in the

long run, but it is asserted that a central bank is unable to control the money supply even in the short run if it has a fixed exchange rate and highly mobile capital. The reason is that capital flows in (or out) until the money supply is at its equilibrium rate, where the real interest rate at home is the same as that abroad.

“Perfect capital mobility” is here interpreted as a state of affairs in which even a microscopic difference in the rate of return will instantaneously bring (or repel) an indefinitely large flood of money to (from) a country. It is therefore compelled to have the same real rate of interest as the outside world. If it has a separate currency, then the same real rate of interest implies that the sum of the nominal interest rate and the expected change of the bilateral exchange rate against the “world currency” should be equal to “the” interest rate in the world currency. A critic will then point out that there is no certainty in the expected change of that bilateral exchange rate, and that one must therefore expect to have to compensate speculators for taking increasingly large open positions in either currency. It is the need to compensate investors (or speculators, if they are different) for holding indefinitely large open positions in a currency which means that there is no logical necessity for the trilemma to hold. Portfolio models of floating exchange rates are built on the explicit assumption that larger open positions have to be induced by paying more.

The crucial question is whether empirical estimates show the policy trilemma to be approximately valid. This is a topic that has been tackled by several authors, most notably by Maurice Obstfeld, Jay Shambaugh, and Alan Taylor (see for example Shambaugh 2004; Obstfeld, Shambaugh, and Taylor 2005). Their formal work is consistent with the bulk of the less formal work on the topic, of which there is a great deal. They test whether countries have the power to run independent monetary policies by regressing the interest rate in a number of potentially-dependent countries against the interest rate of a base country (which is most commonly the US interest rate), sometimes with the exchange rate regime and the presence of capital controls as other independent variables. Such regressions are run for different periods (typically the gold standard, the interwar period, the Bretton Woods regime, and the modern period, i.e. post-1973) and for the whole period. The results are reasonably consistent. They conclude that countries with currency pegs have higher coefficients on the interest rate in the base country than

those whose currencies float, while countries with capital controls have lower coefficients. The interpretation is that pegging reduces monetary autonomy but that capital controls increase it, as suggested by the trilemma. (They note that an alternative interpretation is that common shocks rather than the exchange rate regime cause interest rates to move in tandem; there appears to be an element of this because there are significantly positive coefficients on the base interest rate even for countries that did not peg, but the coefficients are consistently larger for pegging countries.) However, coefficients are substantially less than unity (around 0.4 to 0.6) for countries in which the trilemma would be expected to hold, i.e. pegging countries without capital controls.

One has to conclude that there remains some scope for monetary policy even where theory would suggest it is least expected, which is a country like Malaysia in the first half of the 1990s with a fixed exchange rate and without any capital controls. This is doubtless partly explained by the fact that even tightly pegged currencies usually allow some scope for currencies to move within a band. Perhaps more important, there is always a need for someone to accept the risk inherent in an open position in order to finance a large capital movement. Believers in the conventional model of exchange-rate determination would presumably rely solely on those two factors to explain the fact that the trilemma in its strong form does not hold. But those persuaded by the behavioural model advanced by Paul De Grauwe and Marianna Grimaldi (2006) argue that only some of the actors in the foreign exchange market act on the fundamentalist principles that conventional models ascribe to all actors, with the balance being modelable as trend-chasers. This means that some portion of the actors in the foreign exchange market will not change their demand and supply of currencies in response to a change in the interest rate, providing an additional reason why the trilemma in its strict form need not hold. (But note that their model is perfectly consistent with the weak form of the trilemma, because the critical portion of actors in the foreign exchange market who pin down the exchange rate's long-run average are the fundamentalists.)

One consequence of the trilemma being fully true (i.e., of the interest rate coefficient being equal to unity) is that there would be no effect of sterilized intervention in the exchange markets. A changed supply of a currency would result in a corresponding change in the demand without any change in the price (exchange rate). There have been a

number of tests of this proposition, such as Dominguez and Frankel (1993) and Catte, Galli and Rebecchini (1994). My own view is that papers like these established pretty definitively that intervention is an effective (if not very reliable) policy tool, but this view is not universal, as could be gathered by reading the comment of Edwin M. Truman after the Catte et al paper. Later papers like Sarno and Taylor (2001) have reinforced in my mind the conclusions that I draw, but undoubtedly views still differ. The behavioural model of exchange rate determination provides yet another reason for holding this view. In fact De Grauwe and Grimaldi (2006) devote a chapter to exploring the implications of their model for the potency of intervention. They show that it implies that a policy of leaning against the wind would reduce the volatility of the exchange rate. (One might expect that a policy of pushing rates toward the estimated equilibrium, as would occur under a reference rate (Williamson 2007), would be even more stabilizing.)

Monetary Policy

The policy trilemma therefore implies a very real tradeoff confronting economic managers who aim to target exchange rates and use monetary policy for essentially domestic purposes under conditions of high capital mobility. It implies a need to intervene on larger scales than economic managers have been accustomed to, and possibly also to use various supplementary methods of curbing capital mobility. However, it is wrong to suppose that this non-extreme form of the trilemma implies an absolute inability to conduct macroeconomic policies according to the established principles.

The established principle is that monetary policy should be directed essentially at domestic stabilization. In the Keynesian heyday this was described as targeting “internal balance”. With the advent of inflation targeting the standard description changed, to targeting the rate of inflation, but it is not clear that this changed the objective substantially most of the time: when inflation is high then unemployment is low, and vice versa, and inflation targeting merely adds the obligation to raise the average unemployment target if inflation is above the target over the cycle. In that sense it is a good safeguard against repeating the mistakes of the 1970s (at least, the 1970s as experienced in the West), but it is a mistake to portray inflation targeting as throwing out

the Keynesian baby. Another important qualification to the case for inflation targeting arises in circumstances like the present, however: when there is a major recession, controlling inflation is not the principal preoccupation of policymakers. It is not that there is any contradiction to the notion of inflation targeting: it is just that macroeconomic policy will be principally directed to reviving the economy and is not influenced by whether or not this is described as targeting inflation. Policy may have to do things which would not have been suggested by the objective of inflation targeting.

In the 1960s there was a notion that a country should aim to combine internal and external balance, and that it could accomplish this by an active use of fiscal policy. The idea (first developed by Robert Mundell, 1962) was that an appropriate mix of fiscal and monetary could reconcile a fixed exchange rate with the simultaneous pursuit of external and internal balance. Because monetary policy influences the balance of payments through the flow of capital as well as by income effects, it has a comparative advantage in controlling external balance.² But Mundell also explored the case in which capital mobility is high: specifically, it was his examination of the case of perfect capital mobility which led him to the formulation of the trilemma. He drew the conclusion that many countries³ should fix their exchange rates.

In recent years the idea of external balance slowly disappeared. Some of us attempted to keep it alive by focusing on current account balance, and arguing that the external policy aim should be to secure an average current account over the cycle which would balance (after allowing for any desired reserve buildup) the capital flow, so that the actual change in reserves would be equal to the desired change. But the general view is that one should accept whatever balance of payments situation emerges from a historically-determined fiscal policy and a monetary policy directed at domestic objectives, and not treat external balance as a policy objective. The most that those who take this view regard as of any significance is the *cumulative* external net wealth position vis-à-vis the rest of the world. An excessive tendency to export real resources, i.e. an

² This assignment still implies a need to modify the objective of internal balance if it turns out that the combination of internal and external balance results in a current account balance that would take the debt position to an unsustainable level in the longer term. See Williamson (1971).

³ Specifically, he has advocated monetary union in Europe and a fixed exchange rate for China. Whether he would generally take this position, with the corollary that the United States Federal Reserve System should decide monetary policy for the whole world, is less clear.

excessively large net wealth position, should be countered by an expansionary fiscal policy, which will lead to additional domestic spending. Conversely, a country accumulating uncomfortably large debts with the rest of the world should tighten its fiscal policy. It is implicit in this position that a country's reserve level and its flow balance of payments position are of no inherent importance, but should be allowed to adjust endogenously. This is nowadays the conventional position, and it is therefore the one that will be explored in this paper.

Consider therefore a country that is subject to the non-extreme form of the trilemma, that has an inflation-targeting monetary policy, that has no target for the flow balance-of-payments position, but that is reluctant to see a large net wealth position vis-à-vis the rest of the world arise. When the world economy is growing at a healthy rate, with rapid real growth but minimal inflation, then the central bank of such a country wishes to restrain domestic demand by maintaining relatively high real interest rates. But it is at such times that capital is tending to flow into emerging markets, and thus makes it difficult to maintain high enough interest rates. If the central bank insists on maintaining a high interest rate, by sterilizing the capital inflow, then it invites a further capital inflow and additional reserve accumulation, and a repetition of the cycle. Its alternative is to tolerate a real appreciation: either a nominal appreciation if it eases off on intervention, or inflation if it maintains the intervention but not the sterilization of it. Some of us think that the fear of succumbing to Dutch disease (which involves having the modern part of the tradables sector crowded out through real appreciation) provides a strong reason why emerging market countries are well-advised to limit real appreciation. Insofar as Dutch disease jeopardizes the ability to maintain healthy growth in the longer term, it is sensible for any country to seek to limit real appreciation, but this applies with especial force to emerging markets and developing countries.

The difficulty of resisting real appreciation will be higher if the behavioural theory of the exchange rate is correct. If appreciation caused by a capital inflow is resisted via sterilized intervention, the fundamentalists in the foreign exchange market reason that the currency has become undervalued, and therefore buy more. If, on the other hand, the central bank allows appreciation to occur, then the chartists observe that the exchange rate is appreciating and come to expect more. It is therefore they who buy

more of the currency. No matter what the central bank does, the demand for the currency increases. Probably the best strategy for the central bank is to allow initial appreciation until it is reasonably sure that the currency is somewhat overvalued, at which point it should intervene forcibly to prevent further appreciation. With luck this will choke off demand from both fundamentalists and chartists, and allow that rate to be held without such a large influx of capital as to undermine all hope of curtailing inflation. If this is possible at an exchange rate that is not so appreciated as to condemn the country to Dutch disease, then the problem is solved. But if Dutch disease is already threatening at that point, then relying on monetary policy and intervention does not offer a solution.

Occasionally it may be possible to combat real appreciation by measures that can be expected to enhance welfare. For example, a surplus country may still have import restrictions which it could benefit itself and the rest of the world by removing. Or it may be offering subsidies for capital imports, whose abolition would again be good for both the country and its partners. But such opportunities will not always be present, and anyway the question will arise of what should be done when such measures are exhausted if a country still has a reserve inflow. In contrast, one suspects that there is often scope for the common recommendation of economists in response to a large capital inflow: to tighten fiscal policy. This would allow interest rates to be reduced without threatening to overheat the domestic economy. The problem comes from political economy considerations. It must be difficult for an official to convince a Minister of Finance, or for him to convince his president, his colleagues, or the public, that the rational response to an increased desire to lend to his country is to increase taxes or reduce public expenditures. I am all in favour of giving the advice, but I doubt that it will often be taken.

There may also be scope for liberalizing capital outflows. There is some reason to fear that a blanket liberalization can have the perverse effect of stimulating net inflows (Labán and Larrain 1997; Bartolini and Drazen 1997), since this will probably strengthen confidence that it will be possible to withdraw the money again if so desired. But there may be scope for limited outflow liberalization that would not have this effect, such as liberalization of FDI outflows or by permitting domestic pension funds to invest abroad. Even there one has to fear that the capital outflows will materialize just when they are not

wanted, as the Chilean pension funds exploited the power to invest abroad that they had been granted in 199_ in the era of excessive capital inflows only in 1998, just when the capital inflow had gone sharply into reverse. So outflow liberalization may help, but it is unwise to rely on it.

Another possible way of discouraging overvaluation for a country with a floating exchange rate is for the government to have, and express in unequivocal terms, its opinion about the right long-run level of the exchange rate. It would be unrealistic to expect this to be a point estimate that would command complete credibility with the market, but it is equally absurd to pretend that one is completely ignorant of the range within which the real exchange rate is likely to fluctuate in the long run. Governments ought to have a certain amount of credibility in offering opinions on such topics, because it is in their interests—unlike that of a typical market operator—to think about where the exchange rate is likely to be in the next 5 years rather than the next 5 minutes. Not all economists think that such a strategy is likely to have an effect—opinions on the potency of what is sometimes called “oral intervention” tend to follow the same lines as those on market intervention. But there are some of us who believe that what I have called the “reference rate proposal” (Williamson 2007) could help.

However, this cannot give assurance of resolving the trilemma. Avoidance of real appreciation may require that a country take measures aimed directly at it. Sterilized intervention has to be maintained, despite its high cost⁴, and if it is lucky this will suffice. At worst, however, the inflow has to be curtailed by some form of capital control. The traditional forms of capital control involved banning some flows or else giving someone in authority the power to approve or disapprove of them. Economists have two very strong objections to such measures. In the first place, they threaten to create distortions. Agents may have very strong motives to want to transfer capital in some cases, and actual transfers may lead to a strong presumption of social gain, while in other cases the benefits to the individual may be marginal and those to society may be negative. Yet if one applies some rule all transactions in a particular category will either be allowed or disallowed. The obvious way to avoid this is to give an individual the power to approve

⁴ Estimates of the cost of sterilization in Latin America have run up to 2% of GDP. Unless one believes that the RMB is now above its fundamental value against the dollar, it is highly likely that this figure is substantially greater in the case of China at the present time.

or forbid particular flows. But then that individual is someone that it is worth tempting to approve a particular flow with a bribe. If his country is in some emergency situation he may place country before self-interest, but this becomes increasingly difficult to be sure of sustaining as the emergency is overcome and normality returns.

The alternative is to adopt some mechanism that has to be enforced but that gives to the individual involved the power to decide whether or not to make a particular transfer. There are a number of possibilities:

1. Inflows may be discouraged by the prudential regulations imposed on banks. For example, banks may be required to hold matched foreign currency positions, or else banks that make foreign currency loans to the non-tradable sector may be required to hold higher reserves against such loans. The problem with this idea is that it does not provide much of an anti-cyclical instrument. It may well make sense to impose such prudential regulations on banks, but if so it hardly makes sense to contemplate relaxing them when the direction of the capital flow reverses.
2. It is possible to raise the reserve ratio of the banks. A higher reserve ratio will have the effect of limiting the monetary expansion that results from any given increase in the monetary base, and will prevent bank lending getting out of hand. It will also increase the differential between the interest rate charged to domestic borrowers by the banks and the international interest rate, thus diminishing the incentive for further inflows intermediated through the banks. The problem is that high reserve ratios diminish the efficiency of the financial system as borrowers are diverted from those lenders subject to high reserve requirements and toward others that escape that requirement. They threaten disintermediation.
3. Inflows may be penalized by some acts that are close substitute for raising the reserve ratio, like requiring postal savings banks to switch part of their deposits from commercial banks to the central bank (Fischer and Reisen, 1992). This either reduces the return to savers, which threatens to impose disintermediation on the postal savings banks, or it imposes costs on the central bank.

4. Inflows may be discouraged by the classic method pioneered by Chile in the 1990s: requiring any agent borrowing abroad to deposit a part of the proceeds without interest for a period.⁵ Chile required those bringing debt funds into Chile to place 30% of the proceeds in the central bank for a period of one year, which imposed a higher percentage cost on shorter-term inflows. There continues to be disagreement in the economic literature about whether this had the effect of discouraging the total level of capital inflows⁶, although there is substantial agreement that it influenced their composition (away from short-term inflows).
5. A close substitute for the monetary cost which became so famous in Chile was the fiscal alternative which those importing capital were offered. That is, instead of making a deposit for a period of a year in the central bank, those wishing to bring capital into Chile were free to pay the present value of the lost interest on that deposit up front to the Ministry of Finance. It has in fact been argued by Zee (1999) that it would be administratively simpler to adopt this option as the sole form of penalty, and that it would not be unduly difficult to police it.
6. Another fiscal possibility, which Switzerland adopted in the early 1970s when it was struggling to maintain a fixed exchange rate against a widespread expectation that the Swiss franc would be revalued, is to tax more highly interest which accrues to foreigners than the standard tax rate that applies to nationals. This again seems administratively fairly straightforward. Doubtless there would be cheating, but it would require lying to the tax authorities. It was not terribly effective when Switzerland used the technique, but it is arguable that it might be much more effective in the context of floating exchange rates than when applied in the era of the adjustable peg and the market had a strong expectation that a step revaluation was imminent.

Note that I have not included the Tobin tax (defined as a small uniform tax on international transactions in both directions) among the possibilities. This is because I do not see it as among the plausible mechanisms for substantially altering net capital flows.

⁵ Equity inflows were discouraged by a different method, of forbidding withdrawal within a year.

⁶ Compare Edwards (1999) and Williamson (2000, pp. 37-45).

It could raise useful sums of money for international good causes if it were levied at such a low rate (at most 1 basis point) as to have no significant impact on the size of capital flows. But the fact of it being non-discriminatory and applying equally to both inflows and outflows means that it is inherently unsuitable for influencing capital flows in a desired way, and if it is levied at the very low rate now discussed it would in any event have *de minimis* effects on capital flows.

It is difficult to understand why there is so much resistance to using some form of capital control as a mechanism for weakening the trilemma, given that countries are anxious to avoid their currencies becoming greatly overvalued and risk stunting growth, and also wish to use monetary policy for domestic stabilization. It would be one thing if there were strong reasons for supposing that capital controls have deleterious effects on growth, or income distribution, or some other variable with welfare significance. But if we are speaking of reasonably non-discriminatory forms of capital control rather than the traditional forms dismissed earlier, the empirical evidence for any such effect is very weak at best (see Prasad, Rogoff, Wei, and Kose 2003). The reason for seeking to avoid capital controls is essentially ideological: an elegant model says their effects are deleterious, and there are some powerful actors in the economy for whom this neoclassical model is more important than all the empirical evidence.

A perfectly reasonable desire to avoid catching Dutch disease is not the same as a desire to run large current account surpluses. The model par excellence of export-led growth was the East Asian countries prior to 1997, which typically ran current account *deficits* that were financed by capital imports that were offered by the lenders because of countries' success in expanding exports. The proceeds of that capital inflow were then used to augment their investment. In response to the Asian crisis a number of countries shifted about 10% of GDP from investment into the balance of payments, as a result of which they both suffered lower growth themselves and sowed the seeds of the crisis now reverberating around the world. I do not for a moment wish to be thought to be endorsing such policies, but there are perfectly sensible policies that do not involve either systematically undervaluing exchange rates or laying oneself open to Dutch disease.

Possible Implications of Mrs Machlup's Wardrobe

In the 1960s there was a vigorous debate about what determined countries' demands for reserves. One of the participants in this debate was Fritz Machlup, who eventually offered his analysis of the problem thus (Machlup 1966, pp, 26-27):

What then are reserves needed for? They are not "needed" at all, strictly speaking. But monetary authorities make a fuss if they do not have all they think they ought to have. Let me explain this by comparing the typical central banker with my wife... How many dresses does my wife need? One, seven, 31, or 365? You may think that one dress is all she really needs—and even this is only because of our "culture pattern". I assure you, however, that she thinks she needs more. Whether she wants 25 or 52 depends on her upbringing and on the Joneses with whom she wishes to keep up. Perhaps she wants to maintain a fixed ratio of dresses to the family income. If that ratio declines, she will fuss and fret, and if I were to keep her from getting additional clothes, she would impose restrictions and controls affecting my home life and our external relations with friends and acquaintances. I conclude that the right amount of clothes owned by my wife is that which keeps her from fussing and fretting and spares me the danger of unpleasant restrictions.

....

In my first formulation I mixed relevant with irrelevant points. Irrelevant is the emphasis upon the central bankers' ambition "to maintain certain ratios of foreign reserves to total liabilities". Relevant is "that most central bankers start fussing when the reserve ratio declines". Maintaining a certain reserve ratio would imply resistance to an increase as well as a decrease. But it is only the political reaction to a *decrease* that matters.

The analogy of my wife's wardrobe was also not quite correctly phrased in that it stressed the number of dresses hanging in her clothes closet instead of the annual addition to her wardrobe. She does not really care so much whether she has 25 or 52 dresses, if only she gets a few new dresses each year. This ambition is the correct analogue of the central banker's ambition. He is not so much concerned whether his reserve ratio ...is 47 or 74 percent, if only his reserves increase, however modestly, and do not decrease.

At the time the most common reaction to this analysis was to think that Machlup had rightly diagnosed the typical central banker as somewhat irrational. But an alternative interpretation for why central bankers dislike losing a large volume of reserves is possible, ascribing to them perfectly rational reasons. Perhaps they dislike large reserve losses, irrespective of their actual stock of reserves and its super-adequacy according to all the criteria that economists have ever dreamed up, because losing a lot of reserves

starts a whispering campaign in the foreign exchange market.⁷ Perhaps it is liable to provoke the chartists to run on the currency. Perhaps it is therefore quite rational to seek to avoid such a situation arising, by the simple expedient of gradually building up reserves to higher and higher levels rather than allowing reserves to fall.

Suppose therefore that a central bank has a quite rational fear of losing reserves because of the danger that the market will interpret this as the beginning of a run. Specifically, suppose that the historically highest level of reserves attained is regarded as a minimum below which it would be imprudent to allow reserves to fall. Any gain in reserves is not then regarded as giving an increase in security, because it carries with it a need to hold this higher level of reserves indefinitely.

The implication of this is that a capital inflow cannot be “stored” for future use. If a country wishes to use capital inflows in order to increase investment (as the East Asian countries did prior to the 1997 Asian crisis), they need to run a *simultaneous* current account deficit. A capital inflow which is not matched by a current account deficit is useless: not only does the necessary reserve level increase *pari passu* with the capital inflow so that the whole of the latter is unavailable to increase investment, but any subsequent capital outflow gives rise to a need for a current account surplus in order to prevent an erosion of confidence. Similarly any current account surplus does not allow the country to invest the proceeds abroad, but requires that they be permanently locked up in low-yielding reserves unless they are invested simultaneously so that there is no reserve increase.

One should not take these implications too literally. But the reasoning does suggest that the large payments imbalances that have been recorded in East Asia in recent years may not have done much to contribute to economic welfare. Conventional thinking suggested that countries were paying a high price in terms of foregone interest income and difficulty in combating inflation for the extra security provided by higher levels of reserves (though some believe that this was mitigated by encouraging export-led growth). If it transpires that the additional security is in large part illusory, the policy will appear

⁷ Yes, perhaps I have been led to this supposition by reports of the foreign exchange markets becoming suspicious of some of the East Asian currencies in recent months.

expensive indeed. It will provide yet another reason for believing that the price paid for avoiding capital controls is excessive.

Conclusion

It is only realistic to accept that monetary policy is going to be more difficult to conduct in the era of capital mobility than it would be if capital was securely constricted to its country of origin. There is indeed an inherent “trilemma”, which asserts that capital mobility, a managed exchange rate, and domestically-oriented monetary policy are inconsistent. But it is only a weak form of the trilemma which is empirically valid: it is not true that under capital mobility and a managed exchange rate it is impossible to conduct any monetary policy at all directed to domestic stabilization. Monetary policy is more difficult, and more costly, than it would be without capital mobility, but it is not impossible.

Various possible instruments for assisting in the conduct of monetary policy were discussed. One of them is to use fiscal policy, which was argued makes eminent economic sense but may be politically difficult. Another is to adopt a target for the real exchange rate, a reference rate. Others involve the imposition or maintenance of some form of capital controls. While the traditional mechanisms of banning or administrative decision have severe disadvantages, there are other forms which aim to give incentives to act in the social interest to the responsible agent and leave the ultimate decision to him/her. Since these do not seem to have strong costs while the benefits are substantial, the reasons for resisting use of such mechanisms are not clear. The reasons for wanting to employ capital controls are even stronger if it is true that market participants come to expect a country to have a level of reserves that is related to the highest level previously attained (a hypothesis consistent with the famous “Mrs Machlup’s wardrobe theory of reserves”).

References

- Bartolini, Leonardo, and Allan Drazen, 1997. "Capital Account Liberalization as a Signal", *American Economic Review*, 87(1), March, pp. 138-54.
- Catte, Pietro, Giampaolo Galli, and Salvatore Rebecchini. 1994. "Concerted interventions and the dollar: an analysis of daily data". In P.B. Kenen, F. Papadia, and F. Saccomanni, eds., *The International Monetary System* (Cambridge: Cambridge University Press).
- De Grauwe, Paul, and Marianna Grimaldi (2006). *The Exchange Rate in a Behavioral Finance Framework*. (Princeton: Princeton University Press.)
- Dominguez, Kathryn M., and Jeffrey A Frankel. 1993. *Does Foreign Exchange Intervention Work?* (Washington: Institute for International Economics.)
- Edwards, Sebastian, 1999. *How Effective are Capital Controls?* NBER Working Paper no. 7413.
- Fischer, Bernard, and Helmut Reisen, 1992. *Towards Capital Account Convertibility*. Policy Brief 4. Paris: OECD Development Centre.
- Labán, Raúl, and Felipe Larrain, 1997. "Can a Liberalization of Capital Outflows Increase Net Capital Inflows?", *Journal of International Money and Finance*, 16(3), June, pp. 415-31.
- Obstfeld, Maurice, Jay C. Shambaugh, and Alan M. Taylor, 2005. "The Trilemma in History: Tradeoffs Among Exchange rates, Monetary Policy, and Capital Mobility", *Review of Economics and Statistics*, 87(3), August, pp. 423-38.
- Machlup, Fritz, 1966. *The Need for Monetary Reserves*, Princeton Reprints in International Finance, no. 5, reprinted from *Banca Nazionale del Lavoro Quarterly Review*, no.78, Sep.
- Mundell, Robert A., 1962. "The Appropriate Use of Monetary and Fiscal Policy under Fixed Exchange Rates", *IMF Staff Papers*, March, pp. 70-79.
- Prasad, Eswar S., Kenneth Rogoff, Shang-Jin Wei, and M. Ayhan Kose. 2003. Effects of Financial Globalization on Developing Countries: Some Empirical Evidence. Occasional Paper 220. (Washington: International Monetary Fund.)
- Sarno, Lucio, and Mark P. Taylor, 2001. "Official Intervention in the Foreign Exchange Market: Is It Effective and, If So, How Does It Work?" *Journal of Economic Literature*, 39(3), pages 839-868, September.
- Shambaugh, Jay C., 2004. "The Effect of Fixed Exchange Rates on Monetary Policy", *Quarterly Journal of Economics*, February, pp. 301-52.

Williamson, John, 1971. "On the Normative Theory of Balance-of-Payments Adjustment", in G. Clayton, J.C. Gilbert, and R. Sedgwick, eds., *Monetary Theory and Monetary Policy in the 1970s* (London: Oxford University Press).

_____, 2000. *Exchange-Rate Regimes for Emerging Markets: Reviving the Intermediate Option*. (Washington: Institute for International Economics.)

_____, 2007. *Reference Rates and the International Monetary System* (Washington: Peterson Institute for International Economics.)

Zee, Howell H., 1999. "Retarding Short-Term Capital Inflows Through a Withholding Tax." (Washington: International Monetary Fund.)