→ Williamson (versão em inglês)

Pasta 220

terized by the condition that $I = S$ *ex ante*.[14] It slopes down because a lower interest rate stimulates investment, which requires a higher income level to generate a corresponding increase in saving. The *LM* curve represents the locus of points of (stock) equilibrium in the asset markets: with a model with only two assets, money and bonds, it matters not whether one describes that as equilibrium in the money market or the bond market. It slopes up because an increase in income raises the transactions demand for money and thus requires an increase in the interest rate to induce a corresponding reduction in speculative demand (to use the Keynesian terminology). In the short run (though a short run sufficiently long for the multiplier process to work itself out), the economy goes to an equilibrium at the intersection of the *IS* and *LM* curves.

The balance of payments can be introduced into this familiar diagram by recalling that the current account balance is lower the higher the level of income (from the multiplier analysis) is. The rate of interest, however, has no direct effect on the balance of payments: it is true that a higher interest rate might improve the current account, but it would do so by cutting income (that is, by inducing a movement along the *IS* curve) rather than directly. Hence the curve representing balance of payments equilibrium is a vertical line, labeled *BP*, at some value Y_1. There is a payments deficit to the right of *BP* and a surplus to the left. In the case shown in figure 8–11, with income at Y_e, the balance of payments would be in deficit.

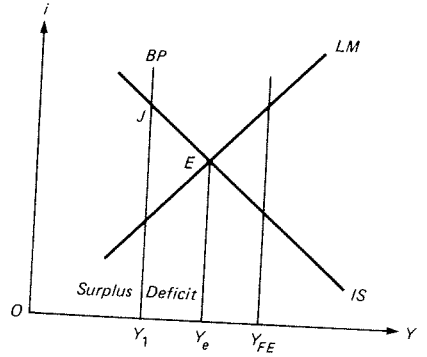

FIGURE 8–11
IS/LM/BP

14. In the extended model of an open economy with fiscal policy, the condition is of course $(I-S) + (G-T) + (X-M) = 0$.

The essential ideas of the various approaches analyzed in the preceding sections of this chapter are reflected in this model. First, there is the monetary mechanism of automatic adjustment of Hume and Polak. At the short-run equilibrium shown in figure 8–11, there is a current account deficit and hence, with no capital mobility, the country is losing reserves. As it does so, with no sterilization, the money supply falls and hence the *LM* curve shifts leftward. The process continues until the *LM* curve intersects the point *J* where *IS* crosses *BP*. At that point the balance of payments is also in equilibrium and so, with downward price rigidity, the economy is in long-run equilibrium. However, the postulated adjustment mechanism involves neither the exclusive price decline of Hume nor the possibility of a decline in prices as part of the fall in nominal income of Polak, but rather a reduction in real income as in Ohlin's analysis.

Second, consider the multiplier analysis. It has already been pointed out that the position of the *BP* curve reflects this factor. In addition, one needs to consider how the various comparative statics theorems are reflected in this model. An increase in investment pushes *IS* to the right and leaves *BP* unaffected. Since the multiplier analysis presupposes a constant interest rate, the central bank is assumed to accommodate the increase in the demand for money by expansionary open-market operations that push *LM* to the right just far enough to match the shift of *IS*. As the gap between Y_e and Y_1 increases, the balance of payment deteriorates. An increase in exports has the same effect on *IS* and *LM* but also pushes *BP* to the right (by more, though this is not obvious from the diagram), so that income still increases but the balance of payments improves.

Third, consider the elasticities approach. Since prices are not shown in figure 8–10, the effects of price changes have to be represented by shifts in the curves. A real devaluation definitely pushes *IS* to the right, though the assumption of the algebra is that this effect is neutralized by a contractionary fiscal policy (or by a contractionary monetary policy that pushes *LM* up by enough to maintain *Y* constant). It also pushes *BP* to the right provided the Marshall-Lerner condition is satisfied. However, a nominal devaluation has these effects only to the extent that it leads to a real devaluation rather than being neutralized by price changes. These effects may take several years to work themselves out, and in the interim the balance of payments may deteriorate even if income is held constant rather than being allowed to expand.

Fourth, recall that the absorption approach taught us that a rightward shift of *BP* may not be sufficient to improve the balance of payments. We need to recognize that figure 8–11 has another important curve, the full employment benchmark represented by the vertical line above Y_{FE}. If Y_e

initially coincides with Y_{FE}, output cannot expand to match an increase in demand, and hence any improvement in the balance of payments is conditional on a cut in absorption. This may come about automatically either because income redistribution has a leftward impact on *IS*, or because the inflation induced by devaluation reduces the real money supply and so pushes *LM* leftward. To the extent that these forces are insufficient to eliminate the inflationary gap, the government needs to take restrictive fiscal-monetary measures to push either *IS* or *LM* (or both) to the left.

Fifth, Meade's analysis is about the combination of policies needed to secure an intersection of all four curves (*IS*, *LM*, *BP* and Y_{FE}) at the same point. Internal balance is represented by *E* being on Y_{FE}, and external balance by *E* being on *BP*. To make *E* lie on both simultaneously we need to be able to shift *BP* and at least one of the two curves *IS* and *LM*. Shifting *BP* requires an expenditure-switching policy, while shifting *IS* or *LM* requires an expenditure-changing policy. If devaluation is used as the expenditure-switching policy, it will also shift *IS* right and *LM* left. Remember that it has been argued that in some economies with limited substitution possibilities the leftward shift of *LM* may exceed the rightward shift of *IS* so that it may be appropriate to accompany devaluation by expansionary fiscal or monetary policy even if the economy is initially at full capacity.

Finally, the monetary approach has stressed the impact of devaluation on *LM*, and even argued that this may be its *only* effect, as well as reviving the idea of the automatic monetary adjustment mechanism. Monetarists tend not to be overconcerned with the possibility that this will provide insufficient instruments to achieve internal and external balance simultaneously, because they assume that price flexibility can be relied on to secure internal balance without any help from government.

The IS/LM/BP model thus provides a simple general equilibrium framework that suffices to show that the various approaches to payments theory are complementary rather than competitive. The main difference in policy conclusions between monetarists and mainstream economists, which is whether or not one needs to worry about internal balance, does not stem from any inability of orthodox theory to incorporate the behavioral relations stressed in the monetary approach, but from their differing degree of faith in the ability of price flexibility to clear markets.

Useful as the IS/LM/BP model is, however, it must be recognized that it suffers from three important limitations. First, it assumes a given price level and does not incorporate a theory of inflation. Second, it assumes static expectations—of a constant future price level, for example, so that it is possible to equate the nominal and real rate of interest. Third, it assumes given stocks of the various assets—money, bonds, and physical capital.

These assumptions can, of course, be relaxed. Indeed, we have already noted the effects of varying the stock of money in shifting LM. It is particularly interesting to consider extending the model to include a theory of inflation. Suppose, therefore, that the wage level, instead of being constant, were determined by a Phillips curve (with or without adaptive expectations). It is easy to see that, with this addition, the IS/LM/BP model will generate all the monetarist conclusions as between two positions of long-run equilibrium (with $\hat{w} = 0$). For example, the monetary mechanism of adjustment no longer implies that income would remain at the less than full employment level Y_1 produced by LM's migration to intersect BP and IS at J. The reason is that at J the unemployment would imply declining wages, which would improve competitiveness and so push both IS and BP right: equilibrium could occur only with full employment (specifically, with unemployment equal to the natural rate). Or, suppose one were to devalue from a position of long-run equilibrium. Unless the direct effects on absorption outweighed the substitution effects induced by the gain in competitiveness, income would increase and unemployment would fall below the natural rate, generating inflation, which would erode the competitive gain from devaluation. Thus the IS/LM/BP model extended by addition of a Phillips curve has long-run comparative statics properties that are essentially monetarist, while its short-run behavior is eminently Keynesian. This suggests that the relationship between monetarism and Keynesianism is one of the time span judged relevant for policy formation, with monetarists tending to dismiss the short-run and Keynesians to disregard the long-run consequences of policy.

8.8 Summary

The orthodox theory of the current account, incorporating the income effects of the multiplier analysis and the price effects of the elasticities approach as synthesised by Meade, can be summarized in the equation

$$TB = TB(\overset{-}{Y}, \overset{+}{ep^*/p}). \tag{8.20}$$

The signs over the arguments of the function TB (. . .) represent the direction of the effects of those variables on the trade balance (that is, the signs of the partial derivatives). The negative sign over Y comes from chapter 8.2, while the positive impact of competitiveness assumes that the

Marshall-Lerner condition is satisfied. Thus (8.20) should be interpreted in a medium-run rather than short-run sense. This equation is robust to the choice of model and will be used in subsequent chapters to summarize the results of the present chapter.

Even though they do not imply any modification to the current account equation (8.20), the absorption approach and the monetary approach also contribute important perspectives. The absorption approach shows that it will normally be necessary to accompany an expenditure-switching policy like devaluation by an expenditure-reducing policy if devaluation is to improve the balance of payments and the economy is initially at full employment. With capital immobility, the monetary approach shows how monetary factors would dominate the adjustment process in the long run even though the behavioral relations and therefore the short-run properties are impeccably Keynesian.

8.9 Addendum: The Large Economy

The implication for the price-specie-flow mechanism of assuming the domestic economy to be large was noted in the text. With a large economy, the gold outflow will have a nonnegligible effect in expanding foreign reserves, and thus the foreign money supply and price level. This *reinforces* the change in competitiveness and spreads the burden of adjustment.

The changes in domestic income analyzed in the multiplier approach will produce a *foreign repercussion* if the economy is large. For example, an increase in domestic investment raises income and increases imports, which are other countries' exports. Foreign income therefore rises by a nonnegligible amount, which raises their imports and, thus, our exports and income. The multiplier is therefore larger.

The large country need not face an infinitely elastic foreign supply of imports, just as it will almost certainly not face an infinitely elastic demand for exports. The implications of assuming a finite elasticity of demand for exports were already explored in the text, where it was found that this raised the possibility that a devaluation might worsen the balance of payments, if the Marshall-Lerner condition were not satisfied. A finite elasticity of supply of imports has no such significance, as can be seen by inserting an upward-sloping supply curve in figure 8–3C or looking at the second term in equation (8.9). Another implication is the possibility that a devaluation by one country might provoke devaluation by some others.

The remaining approaches do not require any modifications other than those consequential on the points noted above (for example, a leftward rather than rightward shift of *BP* being induced by devaluation if the Marshall-Lerner condition were to fail), except for the Dornbusch model of devaluation. This was originally presented in a two-country model where prices were continously equated by arbitrage (but might alter during the adjustment process), while money supplies were slowly redistributed between countries until full equilibrium was achieved.

8.10 Bibliography

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9

Capital Mobility

THIS CHAPTER extends balance of payments analysis to include the capital account. This is a vital step under present-day conditions: it seems that more than two-thirds of the value of international transactions are nowadays on capital rather than current account. Many are speculative transactions that are essential to enable a system of floating rates to function at all (see chap. 10), but that still leaves vast flows of funds on longer maturities, which is the concern of this chapter.

The first section examines the way in which a capital flow induces an adjustment in the current account, so as to transfer real capital—that is, real resources. This is followed by two sections about alternative theories of the determinants of flows of portfolio capital: the flow theory of the late 1950s and early 1960s, and the stock theory that largely supplanted it in the late 1960s. The final section turns to the monetary approach, which is directed at explaining the balance of payments as a whole rather than either the current or capital accounts individually. It is argued that the monetary approach should be treated as a complement to rather than a competitor to the other approaches.

9.1 The Transfer Problem

Suppose that our country has a capital inflow—perhaps because its banks start to raise a stream of loans on the Eurodollar market[1] to expand their

1. See chap. 14.1 for a discussion of the Eurocurrency markets.

domestic lending. It is possible that the country already had a current account deficit that needed financing—indeed, that might well be why the government ordered a tightening of monetary policy that pushed the banks into borrowing abroad. But, in order to see how the transfer process is brought about, let us suppose that there was previously a balance on current account. Then the banks start selling the dollars that they have borrowed in order to acquire pesos to expand their loans. That means the central bank starts gaining reserves. The question at issue is: how would a constant stream of capital inflows induce an adjustment to restore payments equilibrium and achieve the transfer process that was illustrated in chapter 6.1, with a current account deficit equal to the capital account surplus?

The short answer is "it all depends," but an understanding of chapter 8 takes one further than this rather unhelpful answer to identify *on what* it depends. For example, if the central bank sterilizes the monetary consequences of the reserve accumulation resulting from the capital inflow, then there will be no further adjustments. The firms that are able to expand their spending by using the resources borrowed abroad will be counterbalanced by those that have to reduce their spending in consequence of the reduction in domestic credit involved in sterilization. When a country is initially in internal balance and the government seeks to perpetuate that by sterilizing the capital inflow, the consequence is to frustrate the transfer. There is a limit to the extent to which sterilization is feasible; it is set by the stock of domestic assets that the central bank can sell and the willingness of the private market to buy such assets at interest rates the authorities are prepared to tolerate. Within that limit, however, which is quite wide in countries with well-developed capital markets, adjustment can be prevented.

Suppose, instead, that the central bank does not sterilize. Then autonomous expenditure will rise, presumably by the amount of the capital inflow. Imports rise, thus transferring at least a part of the capital inflow. Will the whole of the inflow be transferred? Initially no, if there is unemployment. (Why?) Quickly yes, if there is full employment, as inflation reduces competitiveness and brings expenditure switching toward foreign goods. Eventually yes in any event, as the monetary mechanism of adjustment comes into play.

Or suppose that the authorities want to preserve internal balance, including the prevention of inflation, but they wish to secure the inward transfer. What policies would be necessary? The answer is given by the Meade analysis in chapter 8.5. The inflow on capital account means that payments balance now occurs in the part of figure 8–7 where the current balance is in deficit; that is, the external balance curve moves to the right. Preservation of internal and external balance therefore requires a combination of an

expenditure-increasing policy (such as allowing the capital inflow to increase the money supply) and an expenditure-switching policy (revaluation or tariff reduction) to prevent the reflation creating excess demand for home-produced goods.

It is also worth referring back to figure 6–2 to see the changes that occur in the dependent economy model between the position of balanced trade in figure 6–2A and that of a trade deficit in figure 6–2B. With full employment both before and after the transfer is effected, the two changes needed to secure transfer are an expansion in absorption and an increase in the relative price of nontraded goods. These are precisely the changes that the analysis of the previous paragraph showed to be necessary, when we recognize that expenditure-switching policies are those that change the relative price of nontraded goods. (There will also be a terms-of-trade change in the case of the country with less than infinitely elastic demand for its exports.) And the previous paragraph argued that such expenditure switching would occur automatically as a result of inflation if it were not pursued deliberately by revaluation or equivalent policies.

Ensuring that transfer occurs therefore requires no more than an application of the analysis of chapter 8. Why then should it have been conceived as a problem? For two general reasons. First, because governments have sometimes willed the ends without willing the means; they have wished to change the trade balance while preserving internal balance and fixed exchange rates. That is just not possible, except by luck (which is, admittedly, the politician's favorite policy weapon). Second, because we have considered the easy case of securing an inward transfer to match a capital inflow, rather than the difficult case of creating a surplus to match a capital outflow (or reparations payments). That requires a cut in absorption and a fall in real wages, which is, not surprisingly, usually conceived to be a problem by the country involved.

9.2 The Flow Theory

As noted in chapter 7.2, capital flows take various forms—direct investment, export credits, amortization, and portfolio movements. It is the last of these that are responsive to short-run macroeconomic conditions and which have therefore formed the focus of theoretical interest in attempts to explain the capital account. The transfer of capital resulting from direct investment is incidental to a decision to exploit an investment opportunity; given the

long-run time perspective that a firm needs to employ when reaching investment decisions, these are unlikely to be strongly dependent on the current conjunctural situation. Export credits extended and received depend principally on trade volumes, especially of capital goods. Amortization is largely determined by the pattern of past capital movements. Moreover, to the extent that any of those elements are variable in response to current economic conditions, the variations will tend to move with the flow of portfolio capital. Thus we can restrict our theoretical analysis to the latter case.

In explaining movements of private portfolio capital, economists have typically given pride of place to interest rates. This was already true when economists first began to analyze capital flows seriously in the closing years of the gold standard. They observed that interest rates were normally higher in the peripheral or developing countries of that time (notably the countries of recent settlement) than in the European capital-exporting countries, thus inducing a flow of long-term capital from the center to the periphery to exploit international differences in thrift and productivity. They also observed that the rules of the game involved countries in deficit raising their interest rates, which quickly drew in funds from abroad and stemmed the gold loss by adjusting the capital account long before the monetary contraction involved in raising interest rates could have had any impact on the current account. That is not to argue that the current account adjustment was an unimportant part of the mechanism: if the high interest rates were maintained for long they would reduce real income and possibly prices, thus ensuring that the current account would adjust for the reasons studied in chapter 8. The existence of this backstop presumably helped sustain the general confidence that exchange rates could and would remain constant which gave high interest rates their power to attract capital inflows and thus to obviate the need for costly current account adjustment.

Although the gold standard suffered from occasional financial panics, it functioned blissfully in comparison to the period following the collapse of 1931. Any semblance of an international capital market disappeared, and such international capital flows as occurred took the form of flows of "hot money" seeking to avoid an impending devaluation or political persecution. When there is no confidence that the exchange rate will be maintained, interest rate increases are powerless to stem a capital flight. (A 10 percent devaluation one week hence would require an interest rate at an annual rate of about 14,000 percent for that week[2] to compensate a holder for not selling!) The collapse of a rational international capital market was so complete that when the wartime allies were planning how to reconstruct the

2. $(1.1)^{52} = 142$, or over 14,000 percent per annum.

postwar world economy they decided to create the World Bank—to provide an official substitute for the private market whose disappearance was taken to be permanent.

There was therefore not much capital mobility to merit great attention or explanation when James Meade was writing his opus *The Balance of Payments* in the late 1940s, which is presumably why he gave his book that title even though its subject matter was largely restricted to an analysis of the current account. In such treatment as capital flows did receive, one can find three ideas: (1) the notion that some capital flows can be treated as exogenous, which, it was argued above, still holds good; (2) the idea that variations in the capital account have a tendency to reinforce those in the current account, as a deterioration in the latter ignites the fear of devaluation and provokes a speculative run (to the extent that this is true, capital flows do not finance swings in the current account and open up the possibilities of welfare gain illustrated in chapter 6, but rather serve to amplify the payments variations that have to be financed through the reserves in order to stabilize absorption as shown in figure 6–5C); (3) the old idea dating back to the gold standard literature that capital would flow in response to differential interest rates.

When the private international capital market confounded expectations by reviving in the 1950s, that last idea was the natural one (or the only one around) for explaining endogenous, noncrisis capital movements. Without really thinking too much about what they were doing, economists began writing capital flow equations of the form

$$\dot{F} = f(\overset{+}{i}, \overset{-}{i^*}), \tag{9.1}$$

where F is the stock of net foreign liabilities of the private sector, and $\dot{F}$ is therefore the net inflow of capital.[3] Equation (9.1) says that the inflow of capital depends positively on the domestic interest rate and negatively on the foreign interest rate.[4] This is called the flow theory because it postulates a relationship between the flow of capital and the level of interest rates. One can, of course, add a term representing direct investment and subtract a term representing amortization payments without altering anything fundamental, provided that both are exogenous with respect to the level of short-run endogenous variables like interest and income (as it was previously argued they are).

3. Note that the nomenclature of chap. 7 has been reversed: F is now being used to signify foreign *liabilities* rather than *assets*.

4. This specification is crucially dependent on the assumption that the exchange rate is fixed and expected to remain so. With a flexible exchange rate the relevant comparison is between i and $i^* + E\hat{e}$, where $E\hat{e}$ is the expected rate of depreciation (see chap. 10.4).

Consider next what happens when we insert (9.1) into an equation for the balance of payments, utilizing the model of the current account developed in the previous chapter:

$$\dot{R} = TB(Y, ep^*/p) + f(i, i^*). \tag{9.2}$$

This has an important consequence in terms of the IS/LM/BP analysis. Instead of being vertical as before, the *BP* curve is now positively sloping as shown in figure 9–1, assuming that we interpret external balance as a zero change in reserves ($\dot{R} = 0$). The reason is that, while an increase in income will still worsen the current account, this can now be offset by an increase in the domestic interest rate, which will attract a capital inflow and thus preserve balance of payments equilibrium.

Virtually all the properties of the IS/LM/BP model with a positively sloping *BP* curve are the same as those of the model with a vertical *BP* curve studied in chapter 8.7. For example, figure 9–1 shows a deficit; this means that reserves would be falling, so unless the central bank is creating credit the *LM* curve will be shifting left, which will continue until it passes through the *IS/BP* intersection.

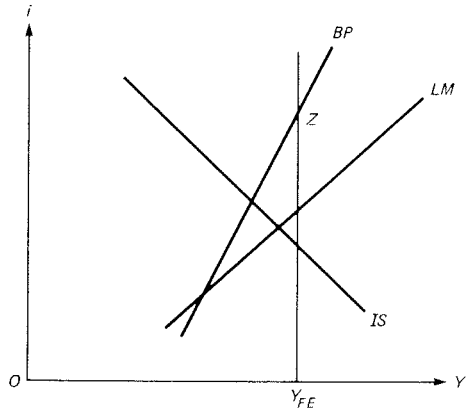

FIGURE 9–1
IS/LM/BP with Capital Mobility

When analyzing the IS/LM/BP model without capital mobility, we argued that in order to achieve simultaneous internal and external balance it was essential to have at the disposal of the authorities an instrument for securing expenditure switching. The reason was that both the internal balance curve (Y_{FE}) and the external balance curve (*BP*) were vertical, and

hence, unless they happened to coincide, an instrument to shift *BP* to make them coincide was indispensable to satisfactory policy management. However, with *BP* no longer vertical in the case with capital mobility, there is a point (*Z* in figure 9–1) where it intersects with Y_{FE}. Robert Mundell argued that this implied that it would be possible to attain internal and external balance simultaneously by an appropriate choice of fiscal and monetary policy, without any need for exchange rate changes or some other expenditure-switching policy. In the case shown in figure 9–1, one needs an expansionary fiscal policy to push *IS* up till it passes through the point *Z*, combined with a restrictive monetary policy to push *LM* up till it too passes through *Z*. That particular "mix" of fiscal and monetary policy (two instruments, which now have differential effects on the two objectives) can secure the two targets of internal and external balance.

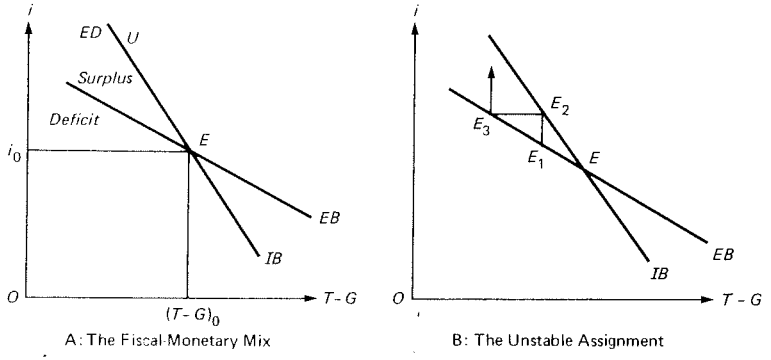

FIGURE 9–2
The Fiscal-Monetary Mix and the Assignment Problem

The same analysis can be presented in a diagram similar to the one that Mundell himself used. Figure 9–2 shows the fiscal surplus, representing fiscal policy, on the horizontal axis, and the interest rate, representing monetary policy, on the vertical axis. Suppose we have a point (like *E*) of internal balance. If the fiscal surplus were increased, this would have a contractionary effect on demand; to preserve internal balance, we would need to counteract this with a more expansionary monetary policy. The internal balance curve therefore slopes down, with points of unemployment (U) above it and excess demand (ED) below it. Now consider a point (again like *E*, by coincidence) of external balance. A tighter fiscal policy would

increase the current surplus,[5] hence to preserve external balance one would need to loosen monetary policy, which would decrease the current surplus *and* the capital surplus. The external balance curve therefore also slopes down, with a surplus above and a deficit below. Moreover, it is less steep than the internal balance curve. The reason is that income and therefore the current account remain constant along *IB*, while the change in the interest rate means that the capital account and therefore the overall balance of payments alter; specifically, as one goes down *IB* the capital inflow falls, which means that at some point one goes from surplus to deficit (as shown), which is possible only if *IB* is steeper than *EB*. Given that the two curves have different slopes, a point of intersection *E* exists. The policy mix $(T - G)_0, i_0$ corresponding to *E* is that which would shift *IS* and *LM* to intersect at *Z* in figure 9–1.

Mundell used his model to analyze what he called the *assignment problem:* whether one should direct, or assign, monetary policy to pursue the internal balance target and fiscal policy to the external balance target, or vice versa. If one assigned monetary policy to internal balance, one would tell the central bank to increase interest rates whenever there was excess demand and cut them whenever unemployment developed. Similarly, assigning fiscal policy to external balance would mean telling the Treasury (or Ministry of Finance, as the case may be) to increase the budget deficit whenever the balance of payments was in surplus and to decrease it when there was a payments deficit. Figure 9–2B shows what would happen with this assignment. Suppose the economy were initially at E_1. The Treasury would be happy, but the central bank would be duty bound to fight the inflation caused by excess demand, which it would do by raising the rate of interest till the excess demand was eliminated. That would leave the Treasury facing the embarrassment of a payments surplus, which it would fight by cutting taxes or increasing government spending till the economy reached E_3. Thereupon the central bank would embark on another round of raising interest rates . . . with the economy moving steadily away from the optimal mix at *E*. The moral is that one should assign each instrument to the objective over which it has relatively most influence: monetary policy to external balance and fiscal policy to internal balance. That guarantees that uncoordinated policy actions by the central bank and the Treasury will lead the economy to converge to the point *E*.

How much sense does this analysis make? Consider first the idea of

5. Or reduce the current deficit. This symmetry is henceforth taken for granted rather than constantly reiterated. I am deliberately avoiding the common but pernicious shorthand "improving the current account"—a larger surplus or smaller deficit is not necessarily to be desired.

assigning instruments to targets. If one is going to assign instruments to targets at all, then certainly Mundell's analysis shows how it should be done and the dangers of doing it wrongly. But the idea of assignment is suspect: achieving simultaneous internal and external balance is a general equilibrium problem which demands a general equilibrium solution, in the form of a simultaneous choice of policy instruments. With perfect information, this would enable the authorities to guide the economy straight to E and avoid the zig-zag approach involved in even the stable assignment. The notion that this cannot be done because the two instruments are controlled by different sets of bureaucrats is not very convincing: they can after all call each other. (Even the most undeveloped of countries have telephones between the Treasury and the central bank.) A more persuasive defense is that the authorities do not have perfect information and therefore cannot lead the economy straight to E. They have to feel their way in that direction, and in doing that they need a rule as to when each policy should be adjusted. But even with imperfect information, one can argue that the authorities should sit down together and seek a strategy that takes account of the moves the other is about to make, which means that an assignment is primarily of public relations rather than of operational significance.

Consider next the idea of determining the mix of fiscal and monetary policy by the desire to secure simultaneous internal and external balance. The fundamental problem with this proposal was long ago identified by Mundell (among others): that it leaves the *composition* of the balance of payments—its division between current and capital accounts—at the mercy of what are essentially arbitrary forces. Suppose that the equilibrium E shown in figure 9–2 were a position in which there was a capital inflow financing a current account deficit consistent with the forces of thrift and productivity analyzed in chapter 6, when suddenly the price of a major import good (like oil) increased (with no expectation that it would subsequently fall). The worsening of the terms of trade would push EB up and IB down, and E would in consequence move up and to the left, indicating that the appropriate policy mix would be tighter monetary and easier fiscal policy. The country would maintain its level of output and absorption constant, and would finance rather than seek to adjust away the increase in its current account deficit. It would borrow, to sustain consumption (for the higher interest rate would even be tending to reduce investment), and then borrow some more to pay the interest. That is the road to ruin, not the rational intertemporal reallocation of consumption that capital mobility offers in accordance with the analysis of

chapter 6. The problem is that the 'mix' involves having the current account (at full employment and your present exchange rate) determine the capital account, whereas the classical analysis depends on exactly the reverse. The conclusion is inescapable: it is absolutely essential to have some mechanism to secure current account adjustment in the medium term, rather than to finance any old deficit or surplus that arises from chance events.

Can one, however, justify the mix as a short-term policy expedient, to finance the current account while longer-term adjustment measures are brought into play? In general, the answer is no. Figure 6–5C showed how the accumulation and decumulation of reserves over time could enable a country to smooth the path of absorption despite fluctuations in income. Reserves raised welfare by being used, not by being maintained constant. The whole point of holding reserves is to act as a buffer stock that can be allowed to fluctuate to help stabilize some other variables that have some real significance for economic welfare, like output or absorption. In short, the target of external balance should *not* be interpreted as a constant level of reserves, certainly not in a short-run sense.

There is just one case in which the "mix" analysis comes into its own, and that is when a country cannot afford to run down its reserves any more. In that case it is better to raise interest rates to attract a capital inflow than to allow the waste of unemployment to eliminate the current deficit. But that in no way undermines the need to ensure that there is a mechanism to secure adjustment in the current account over the medium run.

If we are denying ourselves the easy option of defining external balance as a zero change in reserves, how *should* it be defined? The natural criterion is to go back to the analysis of chapter 6 and define it as the current account surplus or deficit that is needed to transfer the capital outflow or inflow dictated by the real forces of thrift and productivity. That means that the payments target in the IS/LM/BP analysis is again vertical, as in figure 8–10, rather than sloping, as in figure 9–1, and so attaining payments objectives requires the use of an expenditure-switching policy. This should, however, be interpreted as a medium-run target, with short-run payments variations being accepted and financed through reserve changes.

There is one special (though famous) case that requires separate analysis before we leave the flow theory, since it leads to conclusions that are qualitatively different from those yielded by the case of no capital mobility. This is the case of perfect capital mobility, shown by a horizontal BP curve in figure 9–3. Perfect capital mobility requires that domestic and foreign bonds are considered perfect substitutes by wealth owners. Consequently,

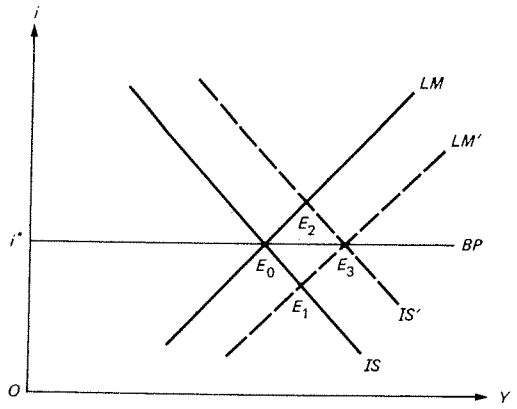

FIGURE 9–3
IS/LM/BP with Perfect Capital Mobility

any excess of the domestic interest rate over the foreign interest rate would attract a flood of capital inflows (or any deficiency would provoke a rush to sell domestic assets), implying that *BP* is horizontal.

Suppose that the central bank tried to expand income through an expansionary monetary policy, shifting the *LM* curve to *LM′*. Since *IS* is unchanged, the new equilibrium would be at E_1 with the new higher money supply. But E_1 involves a lower interest rate than i^*, which means that investors would rush to sell domestic bonds, and then domestic money, to buy foreign exchange to buy foreign bonds. This would continue till *LM′* returned to *LM* and i returned to i^*. The conclusion is simple: with perfect capital mobility (and a fixed exchange rate), monetary policy has no power to influence the level of income. But it is an admirable instrument to influence the level of reserves, since it can control them with zero cost in terms of forcing deviations from domestic objectives.

Suppose, on the other hand, that the government attempted to expand income by adopting an expansionary fiscal policy, pushing *IS* to the right to *IS′*. Without capital mobility, the new equilibrium would be at E_2. But E_2 involves an interest rate above i^*, which is not feasible: it would attract a vast capital inflow that would push *LM* to the right, until it reached the point E_3 where *IS′* cuts *BP*. Thus fiscal policy becomes more potent in influencing income: it attracts a capital inflow that increases the money supply and so avoids the rise in the interest rate that otherwise dampens the rise in income.