

Chapter 15 / *The International Disequilibrium System*¹

The fundamental proposition of classical international trade theory, that there is an automatic mechanism ensuring balance-of-payments equilibrium, enabled the classical economists to isolate the short-run, dynamic process of international adjustment from the long-run, static theory of international barter. To this analytical separation we owe many of the important theorems that have come down to us from classical economics, and on it is based a good deal of modern international trade theory. This is despite the fact that the history of international economic relations in the past 30 years has not been characterized by a persistent tendency toward balance-of-payments equilibrium; the assumption of automaticity now appears to be an anachronism.

The decline of automaticity dates from the first attempts of central banks to adjust the domestic supply of notes to accord with the needs of trade (the banking principle) instead of the requirements of external equilibrium (the bullionist principle); and although these attempts have their origin far back in history, the abandonment of the bullionist principle became widespread only after the revolution in Federal Reserve policy during the 1920's, and especially after legal or de facto recognition in post-World War II years of full employment as a primary goal of public policy.² The basic instrument of the adjustment process (monetary policy) was for several years diverted away from its original function toward the new requirement of internal balance, and no new weapon had developed to cope with the balance of payments.³ The absence of an adjustment mechanism implies a policy vacuum that gives rise to the *international disequilibrium system*, the theory of which forms the subject of this chapter.

¹ Adapted from: *Kyklos*, 14, 154–172 (1961).

² The adjustment of the money supply to accord with the “needs of trade” is quite different from the adjustment to achieve “full employment without inflation,” but both methods imply that the “bullionist principle” is abandoned.

³ Exchange-rate variations and trade controls have been used as ad hoc policies to suit the exigencies of particular situations rather than as consistent instruments of equilibration.

Other writers have examined disequilibrium systems based on stereotypes of the Keynesian model in which it is assumed (sometimes only implicitly) that monetary factors have no influence on the level of effective demand or on the rate at which capital moves internationally.⁴ Such models serve a useful purpose in isolating the employment and output effects of changes in expenditure or policy, and often indicate the type of monetary policy that is, in fact, needed to offset these effects; but the results are subject to serious misinterpretation. It has, for instance, been asserted by more than one authority that Hume's law does not apply to an economy in which there is saving and unemployment, or in which the quantity theory of money does not hold. This statement is wrong, as the following analysis proves, and it indicates that a simple exposition of these matters is needed.⁵

The chapter is divided into three parts. The following section describes the international adjustment mechanism in a sufficiently general way to incorporate as special cases the *price-specie-flow* mechanism of Hume and the *income-specie-flow* mechanism of Keynes. The subsequent part is concerned with the disequilibrium system which has developed in recent decades, and the particular kinds of central bank operations needed to maintain it. The final section discusses some of the ad hoc policies that the authorities may pursue to restore equilibrium at a time when reserves become dangerously low or unnecessarily high.

Hume's Law and the Process of Adjustment

General equilibrium in an open economy requires that the markets for goods and services, capital, money, and foreign exchange all be in balance in terms of both current and inventory excess demands. For present purposes, however, we shall suppose that it is sufficient for general equilibrium that:

1. The current supply of goods equals the current demand for goods.
2. The community is willing to hold the existing stock of money.
3. The balance of payments is in equilibrium.

⁴ The "Keynesian" models used in international trade theory are all variants of the following system:

$$X_i(y_1, \dots, y_n) = 0 \quad (i = 1, \dots, n)$$

where X_i is the excess demand for the goods of the i th country and y_1, \dots, y_n are the national incomes of the n countries. This is a *disequilibrium* system in the sense that there are no equations specifying equilibrium in the balance of payments; but it should be remembered that it is *not* the international system discussed in *Keynes' General Theory*, where the monetary mechanism of adjustment is taken into account.

⁵ It seems especially desirable to incorporate monetary elements explicitly into the theory of trade to fill a gap in analysis noted by Harberger as early as 1952 and just as evident today (see [21]). See footnote 9 for examples of the misinterpretation referred to above.

We shall assume that the conditions of balance in each of the above (goods, money, and foreign exchange) markets depend only on the level of money income, the rate of interest, and the quantity of money; for simplicity, however, and also to show that the results are not dependent on the quantity theory of money, we assume that a change in the money supply affects the level of effective demand and the balance of payments only insofar as it first affects the rate of interest.⁶

The system is illustrated in Figure 15-1. The curve *XX* traces the locus of interest rates and money income levels along which there is equilibrium in

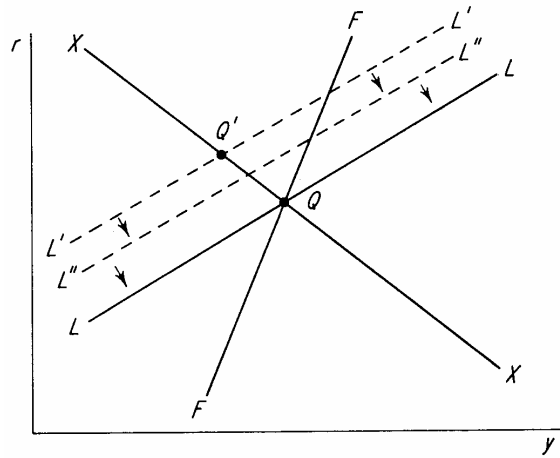


Figure 15-1.

Money income is plotted on the abscissa and the rate of interest on the ordinate. The three schedules *XX*, *FF*, and *LL* trace the conditions of equilibrium in the goods, foreign exchange, and money markets. *LL* shifts to the right or to the left depending on whether there is a surplus or deficit in the balance of payments, since the money supply depends on gold reserves. Only at *Q* are all markets in equilibrium.

⁶ The static system can be written symbolically as follows:

$$X(y, r) = 0 \tag{1}$$

$$L(y, r, m) = 0 \tag{2}$$

$$F(y, r) = 0 \tag{3}$$

where *X*, *L* and *F* denote, respectively, the excess demand for goods and services (*X* = investment – saving + trade balance), the excess demand for money, and the balance-of-payments surplus (*F* = trade balance + net capital imports); and where the three variables, *y*, *r*, and *m*, represent money income, the rate of interest, and the quantity of money. The system can be generalized by incorporating *m* into (1) and (3).

the goods market; this *internal balance* schedule has a negative slope because a rise in interest rates is deflationary and a decrease in money income is inflationary [in the sense that a hypothetical (*ceteris paribus*) decrease in money incomes creates excess demand]. The curve *FF* traces the locus of interest rates and money incomes along which there is equilibrium in the balance of payments; this *foreign balance* schedule has a positive slope because an increase in the rate of interest improves the balance of payments (by attracting capital), whereas an increase in money income worsens the balance of payments (by worsening the trade balance). The *LL* curve, on the other hand, gives the pairs of interest rates and money incomes at which there is equilibrium in the money market *for any given quantity of money*, and it occupies a different position as the quantity of money varies, moving downward to the right as the supply of money increases, and upward and to the left as the supply of money decreases.⁷ General equilibrium of the system is determined at the point *Q* common to both the *XX* and *FF* schedules, with a supply of money that will make the *LL* curve pass through *Q*.

So much for the static system. The adjustment process implies a dynamic system based on the following (admittedly oversimplified) postulates of the gold standard:

1. Money income rises or falls as there is excess demand or excess supply of goods and services.
2. The rate of interest rises or falls as there is excess demand or supply in the money market.
3. Bank reserves increase or decrease as there is a surplus or a deficit in the balance of payments (because of gold flows).
4. The money supply increases or decreases as actual bank reserves exceed or fall short of desired bank reserves.

This dynamic process can be illustrated with reference to the diagram.

⁷ The slopes of the three schedules are based on the following signs of the partial derivatives:

$$X_y < 0, X_r < 0, L_y > 0, L_r < 0, L_m < 0, F_y < 0, F_r \geq 0$$

(depending on whether capital is mobile or not).

The first five signs follow from the theory of rational behavior or empirical experience; the term F_y is negative in the Keynesian case if the marginal propensity to import is positive, and negative in the classical case if the sum of the domestic and foreign elasticities of demand exceeds unity; while the last term F_r has the indicated sign if the rate of interest does not have a predominant direct effect on the trade balance. Also, it is implicitly assumed (for simplicity) that capital movements do not directly affect spending, an assumption that would have to be modified to incorporate the modern theory of transfer in an analysis emphasizing long-run adjustment; see Chapter 2.

Note that the *XX* schedule does not imply full employment if wages and prices are inflexible. To avoid complications associated with the asymmetrical effects of increases and decreases in effective demand, it is preferable, for expositional purposes, to assume either unemployment and rigid prices and wages, or full employment with flexible prices and wages.

Consider a Hume-type experiment in which a fraction of the money supply is “annihilated overnight.” From an initial equilibrium position passing through Q the LL curve shifts upward and to the left to, say, $L'L'$, raising interest rates and lowering money income, and generating a new equilibrium in the markets for goods and money at Q' . But Q' cannot be a position of overall equilibrium, because there is, at this point, a surplus in the balance of payments which stimulates a gold flow and an increase in bank reserves, which in turn induces an increase in the money supply, a decrease in interest rates, and an increase in money income. The LL curve thus begins a gradual shift back to its original position, the only one which permits general equilibrium at the point Q .

One should be careful to note, however, that the above description of the dynamic adjustment process hardly begins to exhaust the manifold possibilities inherent in the four dynamic postulates. The system may be unstable (if it is, it must be cyclically unstable); it is easily shown that the traditional criterion for stability is neither necessary nor sufficient. Even restricting the system to the case where all signs are “normal,” stability depends, at the very least, on the relative speeds of response in the three markets and on the banking reserve ratio.⁸

⁸ The most plausible simple dynamic system expressing the gold standard (with commercial banking) adjustment process mathematically might be written as follows:

$$\frac{dy}{dt} = K_1 X(y, r)$$

(money income moves in proportion to the excess demand for goods);

$$\frac{dr}{dt} = K_2 L(y, r, m)$$

(the rate of interest moves in proportion to the excess demand for money);

$$\frac{dm}{dt} = K_3 \left[\frac{\int_0^t F(y, r) dt}{a} - m \right]$$

(the money supply moves in proportion to the excess reserve position of the commercial banks, where a is the fraction of liabilities that banks want to hold in the form of gold or cash, and the integral is the accumulated gold supply in the nation). The last equation assumes that gold is used only for banking reserves.

The linearized form of this system has the following characteristic equation of the fourth order:

$$\begin{vmatrix} \partial - K_1 X_y & -K_1 X_r & 0 \\ -K_2^2 L_y & \partial - K_2 L_r & -K_2 L_m \\ -\frac{K_3}{a} F_y & -\frac{K_3}{a} F_r & \partial^2 + K_3 \partial \end{vmatrix} = 0$$

from which it can be deduced that the latent roots ($\delta_1, \delta_2, \delta_3, \delta_4$), if real, are not positive (by Descartes rule); and that whether there are complex roots with positive real parts or not depends partly on the relative values of K_1, K_2, K_3 , and a . Thus instability must be cyclical, if it exists, and stability depends on the relative speeds of adjustment and the banking reserve ratio. It can also be demonstrated that $F_y < 0$ (the traditional stability condition) is not a necessary condition for stability if capital is, to some extent, mobile.

Our main concern, however, is with the *existence* of an adjustment process under both classical and Keynesian assumptions. In the classical case of price flexibility the movement of money income implies a movement of wages and prices: The diminution of the money supply causes a rise in interest rates that induces both a fall in prices and an inflow of capital, while the resulting balance-of-payments surplus brings in the additional foreign exchange reserves necessary to support a monetary expansion and, eventually, the original level of prices; this is the *price-specie* flow mechanism of Hume. But in the Keynesian case of wage and/or price rigidity, the decreased money supply results in higher interest rates and therefore an inflow of capital and a reduction in the rate of investment and (through the multiplier) output, a process that is eventually reversed as the gold inflow (due to the inflow of capital and the reduction in imports) supplements bank reserves and permits a monetary expansion; this is the *income-specie-flow* mechanism of Keynes. The difference between the classical and Keynesian cases (apart from a difference in the mode of expression) is that the temporary change in money income is effected through variations in the price level in the one case and adjustments in the level of output in the other case. In both cases the original level of prices and output is restored.

The above analysis shows that the validity of Hume's law does not depend on full employment, zero savings,⁹ or the quantity theory of money. The classical propositions concerning the distribution of the precious metals, the tendency toward international balance, and the ultimate irrelevance of changes in the quantity of money all have counterparts in a Keynesian world of underemployment.

This is not to assert that balance of payments disequilibria cannot exist in modern times! But the source of their existence does not directly depend on the degree of price flexibility, the rate of saving, or the level of employment.

Monetary Policy and Sterilization Operations

The automatic nature of the adjustment mechanism described in the preceding section depends on the link between the balance of payments and the money supply. Under the pure gold standard the link is direct (gold *is* the money supply); under the gold standard with fractional reserve banking, the

⁹ See Kindleberger ([40], pp. 181 and 194) for the view that Hume's law is valid only under conditions of no savings, and Scammell ([95], p. 44) (among others) for the belief that price effects are necessary to complete the adjustment process when saving exists. Both these positions are based on foreign trade multiplier theory and a complete neglect of the monetary mechanism. But they could be rescued if it were assumed that changes in the quantity of money had no effect on spending or interest rates; this would be the case under the extreme Keynesian assumption of the liquidity trap. See, on the other hand, the description of the adjustment process under both classical and Keynesian assumptions in Scitovsky ([96], chap. 2).

link depends on the stability of the ratio between gold and bank deposits; under the gold standard (or, more generally, the fixed-exchange-rate system), with commercial banking and also fiduciary note issues of the central bank, the link depends on the stability of both the ratios of cash to commercial bank deposits, and gold and foreign exchange reserves to cash. It is the variability of the latter ratio that ruptured the link between the balance of payments and the money supply and gave rise to the “disequilibrium system.”

The de facto abandonment of a fixed cash-gold (and foreign-exchange-reserves) ratio is the result of monetary policies designed to ensure full employment and price stability. A balance-of-payments disequilibrium has, it is true, an automatic effect on the supply of cash because of the central bank's fixed-exchange-parity policy, but this effect can be canceled and typically is canceled if the change in the liquidity situation implied by balance-of-payments considerations conflicts with the monetary policy needed for internal balance. Institutional arrangements vary according to country: In some the liquidity effect is automatically canceled by offsetting open market purchases; in others, the liquidity effect is canceled at the discretion of the central bank. In both cases, however, the end result is the same: External disequilibrium affects the money supply only if this coincides with the internal-balance policy of the monetary authorities.

There are three main devices used to offset the liquidity effects of external disequilibrium—apart from changes in government expenditure or taxes. The central bank may alter reserve requirements, shift government deposits between the central bank and the commercial banks, or buy and sell Treasury bills. In the latter case there usually remains some liquidity impact on the economy.¹⁰ Suppose, for example, that from the following position of the central bank and the commercial banks:

Central Bank			
Treasury bills	200	Treasury deposits	100
	—	Commercial bank deposits	<u>100</u>
	200		200
Commercial Banks			
Central bank deposits	100	Deposits	1000
Treasury bills	200		
Other assets	<u>700</u>		—
	1000		1000

¹⁰ This subject is treated in Sayers ([94], chap. 6).

(where the cash ratio of the commercial banks is 10 per cent, and the money market assets ratio is 20 per cent), the equilibrium is disturbed by a foreign deficit of 50 (ignoring how it came about). Private persons will be buying foreign exchange from the Treasury through the commercial banks and the central bank. At the end of the period of the transaction, Treasury deposits are up 50, commercial bank deposits are down 50 at the central bank, and private deposits are down 50 at the commercial banks, leading to the following disequilibrium situation:

Central Bank			
Treasury bills	200	Treasury deposits	150
	—	Commercial bank deposits	<u>50</u>
	200		200
Commercial Banks			
Central bank deposits	50	Deposits	950
Treasury bills	200		
Other assets	<u>700</u>		—
	950		950

(The cash ratio is down to little more than 5 per cent and the money market assets ratio is up slightly.) The commercial banks must now sell Treasury bills to recoup their cash reserves, while the Treasury buys Treasury bills (with the money accumulated from the initial sale of foreign exchange) to prevent this from lifting interest rates. The final situation might look as follows:

Central Bank			
Treasury bills	195	Treasury deposits	100
	—	Commercial bank deposits	<u>95</u>
	195		195
Commercial Banks			
Central bank deposits	95	Deposits	950
Treasury bills	155		
Other assets	<u>700</u>		—
	950		950

(In effect, the Treasury has bought 45 Treasury bills from the commercial banks and 5 from the central bank.) In the final position the cash ratio of the commercial banks is the same as it was originally, but private deposits are down 50 at the commercial banks, and the money market assets ratio has gone down from 20 per cent to just a little over 16 per cent, leaving some deflationary effect after the neutralization policy.

Whatever is the technique employed by the monetary authorities to divorce the money supply from the balance of payments, the result is to impede the operation of the adjustment process. This is shown in Figure 15-2. Assume that the initial equilibrium Q is disturbed by an increase in foreign interest rates; this causes a greater outflow, or a smaller inflow of capital at the same domestic rate of interest, shifting the foreign balance schedule upward and to the left to, say, $F'F'$. Only at the higher interest rate, and lower money income, represented by the new equilibrium Q' can equilibrium in both the home market and the balance of payments be restored. This point would automatically be reached if the authorities allowed the adjustment process to go on unimpeded; the LL curve through Q (not drawn) would shift upward and to the left until the point Q' is reached.

With a policy of neutralization, however, the LL curve stays approximately in its original position (through Q). The *partial* equilibrium Q is therefore

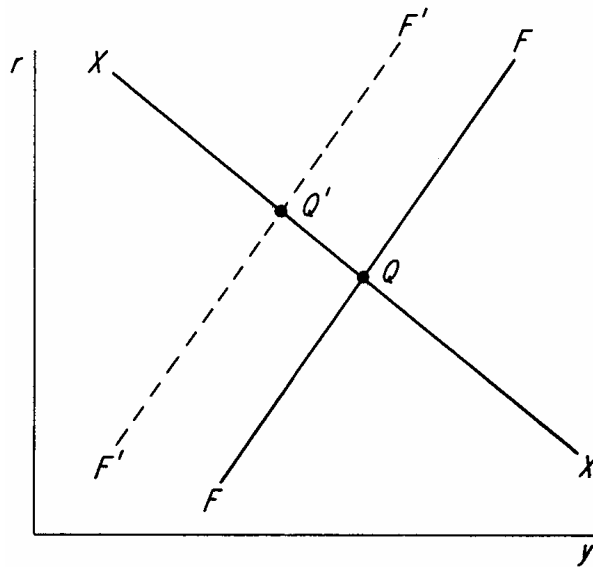


Figure 15-2.

An increase in foreign interest rates causes an increased capital outflow and therefore shifts the FF schedule north-west. But the authorities will prevent income from falling (to that represented by Q') by maintaining the supply of money through neutralization operations.

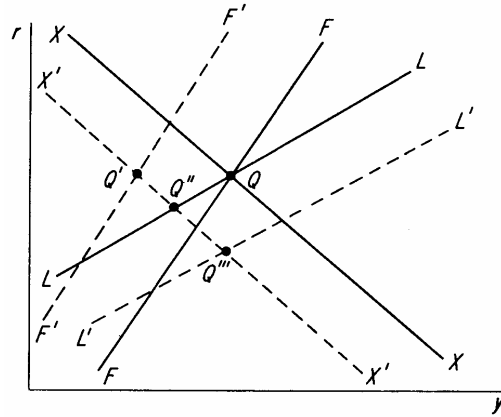


Figure 15-3.

A fall in exports shifts the two schedules to $X'X'$ and $F'F'$. The adjustment process would lead to the point Q' , whereas neutralization operations would establish Q'' as “equilibrium.” However, the central bank will usually go further than neutralization, increasing the supply of money to make Q''' the new “equilibrium.”

maintained with equilibrium in the goods and money markets but disequilibrium in the balance of payments. This situation will continue as long as the central bank or Treasury can maintain the money supply and continue to run down its foreign exchange reserves.¹¹

The neutralization policy in the above case coincides with the policy of stabilizing national income—failure to neutralize the gold outflow would result in the lower level of employment and output represented by the equilibrium Q' . More usually, however, the central bank will have to reinforce or

¹¹ It is worth being explicit about the exact equations ensuring quasi-equilibrium under the sterilization operation. If there is to be no inventory accumulation by firms it is necessary that

(1) saving – investment = trade balance surplus

The balance-of-payments identity is that

(2) trade balance surplus – net capital exports = increase in foreign reserves. For equilibrium in the market for new securities we have, with no hoarding,

(3) investment – saving = net capital imports + new bank lending. Also, for the banking sector, including the central bank, we have

(4), (5) new bank lending + increase in foreign reserves = increase in money supply = 0, since monetary equilibrium, abstracting from growth, requires that the money supply be constant.

It follows from these five equations that every market is in equilibrium when the banks exactly take up the net excess of new securities offered by the private sector over and above what is subscribed to by foreigners, so that the counterpart of the balance of payments deficit is the additional credit creation by the banking system.

offset the neutralization policy by further operations in the open market. Suppose, for instance, that there arises a depression in the rest of the world which lowers demand for the exports of the country under consideration. The reduction in exports has multiplier effects on income, and it worsens the trade balance, thus shifting both the FF and XX curves to the left. In the absence of neutralization the automatic adjustment mechanism would carry the new equilibrium to the point Q' in Figure 15-3, at a lower level of output and employment. But even with a policy of neutralizing the external deficit (thus maintaining a constant money supply), the fall in export markets would lead to a lower level of output and employment, as implied by the point Q'' . The central bank will, in this instance, reinforce its neutralization policy by further open market operations to preserve the original level of output and employment. The money supply must be increased to the point where the LL curve shifts to $L'L'$ to intersect the internal balance schedule at the point Q''' . At this point there is, of course, a balance-of-payments deficit greater than that represented by Q'' .

Occasionally, the adjustment process will lead to the desired income without interference; the central bank will then have to abandon the neutralization policy, or offset it by open market operations (or changes in reserve requirements) in the opposite direction. One such case is represented in Figure 15-4, where it is assumed that capital is immobile (the FF curve is vertical). Suppose now that there is domestic contraction (reduced home demand for domestic goods). Neutralization policy would then lead to a new equilibrium at Q' ,

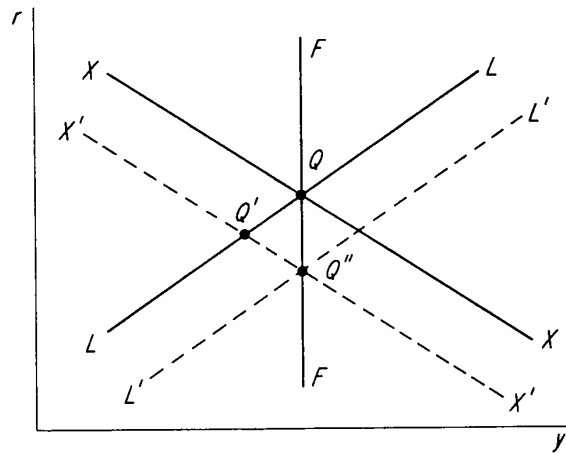


Figure 15-4.

A domestic recession shifts the internal balance schedule to $X'X'$. "Neutralization" would lead to a lower income as at Q' , while the adjustment process preserves the original level of income at the point Q'' .

whereas the automatic adjustment process would restore the original level of money income at Q'' . The central bank would thus have to offset the neutralization policy by increasing the money supply to the point where LL' intersects XX' at the original level of money income represented by Q'' .

The above examples¹² suffice to illustrate the nature of the disequilibrium system, and why it has arisen. Of paramount importance today is the stabilization of money income (apart from growth); and any change in the economic situation that threatens to affect it will be met by corrective monetary steps even if this policy adversely affects external balance. Many countries may therefore remain in external disequilibrium for a considerable period of time, taking no explicit policy steps to correct the situation, and preventing the adjustment process from having its natural corrective influence.

To maintain this situation requires a substantial level of foreign exchange reserves in deficit countries, and a willingness to make unrequited capital exports in surplus countries. If this disequilibrium policy evens out—so to speak—over the business cycle, no long-run difficulty exists if international liquidity is sufficient. But any secular change in the competitive situation, or a persistent tendency in some countries to inflate at faster rates than other countries, must eventually bring the day of reckoning, and either an abandonment of income stabilization, or further policy steps, some of which are considered in the next section.

Alternative Means to Equilibrium

It is seldom possible to determine the appropriate policy for correcting an external disequilibrium without first examining the nature of the equilibrium situation in other markets. In Figure 15–5 there are four quadrants, A , B , C , and D , labeled according to whether there is unemployment or inflationary

¹² The techniques used in this section can also be applied to a much neglected aspect of the transfer problem the theory of which, despite its popularity in the literature, is still incomplete. It is clear that many transfers between governments, or from governments to international agencies, in recent years have not been accompanied by increased taxation in the transfer or decreased taxation in the transferee (witness the payments of many countries to the IMF after the 1958 increase in quotas, as only one example), the situation necessary to make the traditional Ricardo-Ohlin stereotype of transfer valid. On the contrary, many transfers have been effected between countries simply by means of an exchange of reserves. Thus a transferring country might maintain, for a period of time before the transfer is to be made, a tighter monetary policy and a lower rate of price-level increases in order to build up reserves (this, of course, will have some effect on spending) and then transfer the increased reserves to the transferee. In terms of the diagrams, the tighter monetary policy effects a movement upward and to the left along the XX curve to create an external disequilibrium until enough reserves have been accumulated to make the transfer. Since this policy will also result in a lower terms of trade, or a reduced level of employment, in the transferring country, this stereotype lends increased support to the logic of Keynes's position in his controversy with Ohlin in the inter-World War period.

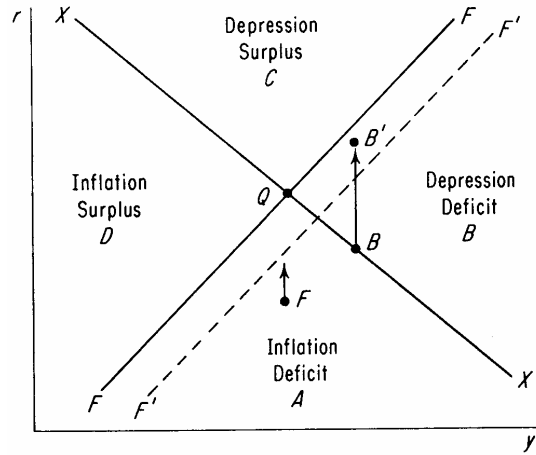


Figure 15-5.

The four quadrants outline the four types of disequilibrium. The point F was roughly the position of France before devaluation in 1958, and also the kind of disequilibrium applying in Europe after World War II. The point B represents the United Kingdom in the summer of 1957 before the rise in bank rate in September to establish the point B' with some unemployment.

pressure in the goods-and-services market, and a deficit or surplus in the balance of payments: Quadrant A was the situation applying to Britain, France, Italy, and Canada in the early post-World War II years; quadrant B applied to Britain in the late 1920s and early 1930s as well as the United States in recent years; quadrant C applied to the United States in the 1930s and to the Federal Republic of Germany in the early 1950s; and quadrant D applied to the Federal Republic in recent years, Italy in 1958-1959, and the United States in the late 1940s and early 1950s.¹³

¹³ See Harrod ([23], chap. 152) for a similar treatment. This characterization is complicated by the asymmetrical nature of changes in money income. An economy, with external deficit and deflationary tension, could be brought back into "equilibrium" by a reduction in money income; but it would not be a full employment level of income because downward movements of money income in manufacturing countries are almost always accompanied by increasing unemployment. On the other hand, an economy with external surplus and inflationary pressure needs a rise in money income to restore equilibrium: This would imply a desirable increase in output and employment if the initial situation were one of unemployment, but an undesirable increase in wages and prices if the economy were already at full employment. In other words, reductions in money income must always be ruled out if full employment gets top priority; while increases in money income are always desirable for an underemployed economy, and permissible or not for a fully employed economy depending on the attitude of the authorities toward a higher price level.

In exceptional cases monetary policy alone is sufficient to restore internal and external balance. Consider point F in Figure 15–5; at F there is inflationary pressure and external deficit, a situation applying to France before the devaluation in late 1958. In the absence of government action, money income would increase through a rise in prices, and the external deficit would be aggravated. The correct policy here is a simple increase in the rate of interest, a policy that relieves both inflationary pressure and corrects the external deficit.

But a simple policy (involving a change in only one instrument) would not generally be sufficient; in the diagram only those disequilibria characterized by points on a vertical line through Q can be corrected by monetary policy alone; all other points necessitate at least a dual policy. Consider, for example, the situation in the United Kingdom in the summer of 1957: there was approximate internal balance at reasonably full employment, but also an external deficit that had been aggravated by speculation against the pound in favor of the mark. This situation is represented by the point B . Now, in late September the authorities raised the bank rate to 7 per cent, an action that corrected the speculative outflow (shifting the FF curve to the right) and converted the external deficit into a surplus. But this policy did not restore over-all balance; it resulted in some deflationary tension and unemployment. (The new situation is represented by the point B' .) To prevent changes in money income, then, an additional policy should have been pursued; the monetary instrument is not sufficient.

Consider now a situation where, say, the United States, has initial full employment and balance-of-payments equilibrium, and assume that this equilibrium is disturbed by a round of price and wage increases surpassing that of foreign countries. From point Q in Figure 15–6 the price level rises and the central bank eases the monetary situation to prevent this increase from being manifested in unemployment, establishing a new equilibrium in the goods market at the point Q' . But Q' is a point of balance-of-payments deficit, and if this is large, and threatens to continue, speculative capital outflows from the United States will occur, further aggravating the situation (shifting the FF schedule progressively upward and to the left), and ultimately demanding corrective action. What is the range of policy choices available?

1. By far the simplest corrective action is a reduction in foreign aid or private capital exports, reduction in the latter being effected by, say, removal of government subsidies and insurance to capital exporters. This shifts the FF schedule downward and to the right, establishing Q' as a point of balance-of-payments equilibrium. This policy has the advantage of simplicity, but it might conflict with other political and economic goals of the United States.

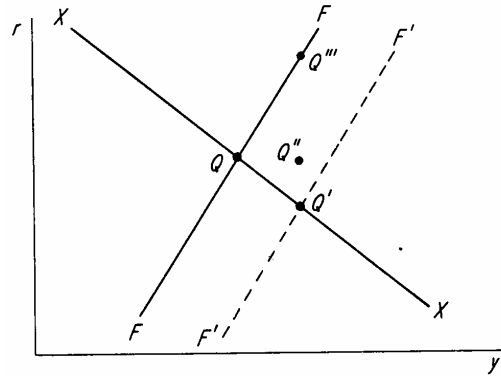


Figure 15-6.

Wage increases and easy money lead to the situation at Q' . A reduction in foreign aid would shift FF to $F'F'$; devaluation or trade control would shift both curves so that they intersect at Q'' ; while increased local expenditure combined with tight money would effect the equilibrium Q''' .

2. Any policy that acts directly on the balance of trade, as distinct from the balance of payments on capital account, shifts both the internal balance and foreign schedules. Tariffs, quotas, export subsidies, and devaluation would result in a new intersection of the two schedules at a point such as Q'' , necessarily above Q' . These policies would therefore have to be accompanied by tighter monetary policy to prevent the inflationary pressure of the improved trade balance from being dissipated in price increases. (Another way of saying the same thing is that a tighter monetary policy would create recessive tension that could be alleviated by policies that improve the trade balance.)
3. Somewhat paradoxically, an increase in government spending (on home goods) or a reduction in taxes (which affects primarily spending on home goods)—in short, a budget deficit—would provide another means of reestablishing equilibrium. Both these policies create inflationary pressure (shifting the XX curve upward and to the right) and therefore permit a higher rate of interest—hence a greater capital inflow (or smaller outflow)—consistent with full employment. To put it differently, an increase in the rate of interest to the point Q''' would restore external equilibrium but cause unemployment; the increase in government spending or the reduction in taxes can then be thought of as ordinary fiscal policy designed to maintain full employment.¹⁴

¹⁴ This policy mix is developed more explicitly in the following chapter.

Two limitations of this policy are at once evident. In the first place the deficit has been cured by borrowing, usually a temporary solution. And second, the domestic rate of investment is lower (because the rate of interest is higher) than at Q , a factor that may conflict with the policy aim of maximizing the rate of growth of the private sector of the economy.

4. Finally, one could consider various devices aimed at altering the private flow of short-term funds between countries: official transactions in the forward exchange market, differential treatment of foreign domestic bank deposits, and different interest rates paid on foreign-held and domestically held Treasury bills. These devices are usually only temporary expedients and are often difficult to enforce.