In the text, we assumed that net exports depend only on the exchange rate. This is analogous to the usual story in microeconomics in which the demand for any good (in this case, net exports) depends on the price of that good. The "price" of net exports is the exchange rate. However, we also expect that the demand for any good depends on income, and this may be true here as well: as income rises, we want to buy more of all goods, both domestic and imported. Hence, as income rises, imports increase, so net exports fall. Thus, we can write net exports as a function of both the exchange rate and income:

$$NX = NX(e, Y).$$

Figure 13-19 shows the net exports schedule as a function of the exchange rate. As before, the net exports schedule is downward sloping, so an increase in the exchange rate reduces net exports. We have drawn this schedule for a given level of income. If income increases from Y_1 to Y_2, the net exports schedule shifts inward from $NX(Y_1)$ to $NX(Y_2)$.

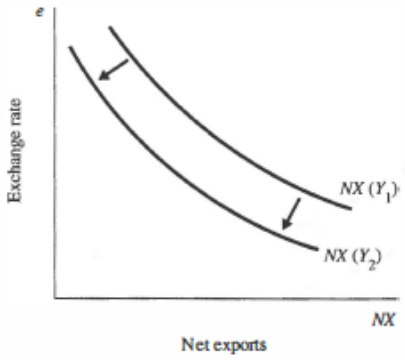


Figure 13-19

a. Figure 13-20 shows the effect of a fiscal expansion under floating exchange rates. The fiscal expansion (an increase in government expenditure or a cut in taxes) shifts the IS^* schedule to the right. But with floating exchange rates, if the LM^* curve does not change, neither does income. Since income does not change, the net-exports schedule remains at its original level $NX(Y_1)$.

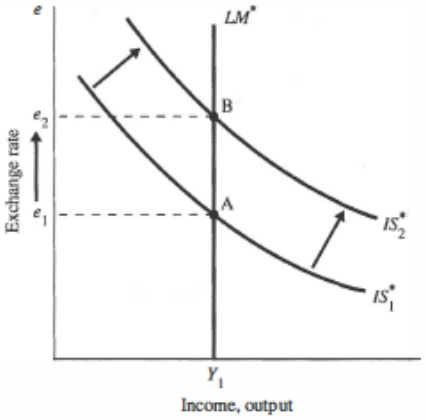


Figure 13-20

The final result is that income does not change, and the exchange rate appreciates from e_1 to e_2. Net exports fall because of the appreciation of the currency.

Thus, our answer is the same as that given in Table 12–1.

b. Figure 13-21 shows the effect of a fiscal expansion under fixed exchange rates. The fiscal expansion shifts the IS^* curve to the right, from IS_1^* to IS_2^*. As in part (a), for unchanged real balances, this tends to push the exchange rate up. To prevent this appreciation, however, the central bank intervenes in currency markets, selling dollars and buying foreign exchange. This increases the money supply and shifts the LM^* curve to the right, from LM_1^* to LM_2^*.

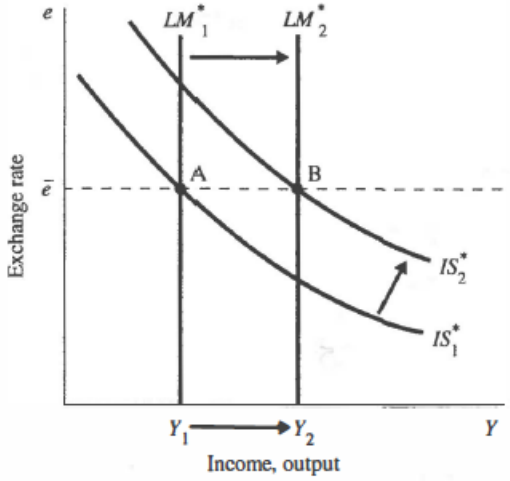


Figure 13-21

Output rises while the exchange rate remains fixed. Despite the unchanged exchange rate, the higher level of income reduces net exports because the net-exports schedule shifts inward.

Thus, our answer differs from the answer in Table 13-1 only in that under fixed exchange rates, a fiscal expansion reduces the trade balance.

5. We want to consider the effects of a tax cut when the LM^* curve depends on disposable income instead of income:

$$M/P = L[r, Y - T].$$

A tax cut now shifts both the IS^* and the LM^* curves. Figure 13-22 shows the case of floating exchange rates. The IS^* curve shifts to the right, from IS^*_1 to IS^*_2. The LM^* curve shifts to the left, however, from LM^*_1 to LM^*_2.

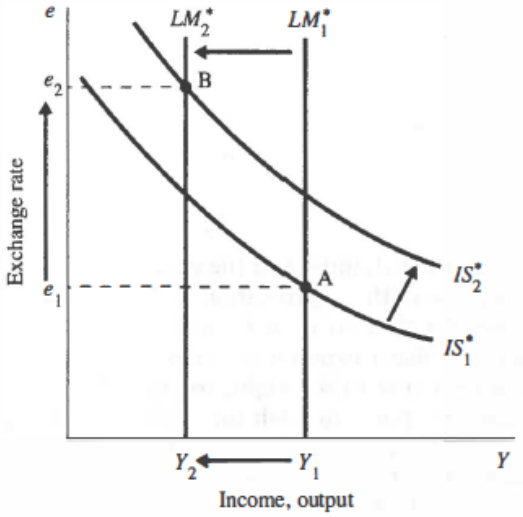


Figure 13-22

We know that real balances M/P are fixed in the short run, while the interest rate is fixed at the level of the world interest rate r^*. Disposable income is the only variable that can adjust to bring the money market into equilibrium: hence, the LM^* equation

determines the level of disposable income. If taxes T fall, then income Y must also fall to keep disposable income fixed.

In Figure 13-22, we move from an original equilibrium at point A to a new equilibrium at point B. Income falls by the amount of the tax cut, and the exchange rate appreciates.

If there are fixed exchange rates, the IS^* curve still shifts to the right; but the initial shift in the LM^* curve no longer matters. That is, the upward pressure on the exchange rate causes the central bank to sell dollars and buy foreign exchange; this increases the money supply and shifts the LM^* curve to the *right*, as shown in Figure 13-23.

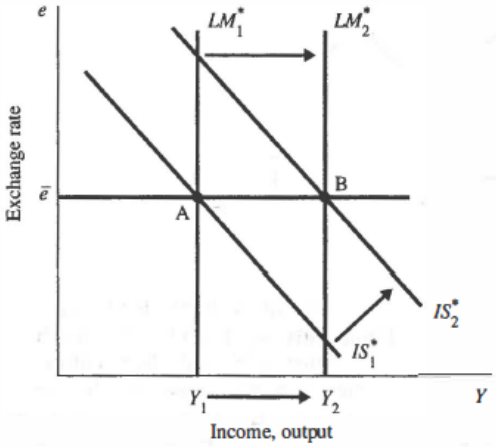


Figure 13-23

The new equilibrium, at point B, is at the intersection of the new IS^* curve, IS_2^*, and the horizontal line at the level of the fixed exchange rate. There is no difference between this case and the standard case where money demand depends on income.

7. Since people demand money balances in order to buy goods and services, it makes sense to think that the price level that is relevant is the price level of the goods and services they buy. This includes both domestic and foreign goods. But the dollar price of foreign goods depends on the exchange rate. For example, if the dollar rises from 100 yen/dollar to 150 yen/dollar, then a Japanese good that costs 300 yen falls in price from \$3 to \$2. Hence, we can write the condition for equilibrium in the money market as

$$M/P = L(r, Y),$$

where

$$P = \lambda P_d + (1 - \lambda)P_f/e.$$

a. A higher exchange rate makes foreign goods cheaper. To the extent that people consume foreign goods (a fraction $1 - \lambda$), this lowers the price level P that is relevant for the money market. This lower price level increases the supply of real balances M/P. To keep the money market in equilibrium, we require income to rise to increase money demand as well.

Hence, the LM^* curve is upward sloping.

b. In the standard Mundell–Fleming model, expansionary fiscal policy has no effect on output under floating exchange rates. As shown in Figure 13-24, this is no longer true here. A cut in taxes or an increase in government spending shifts the

IS^* curve to the right, from IS_1^* to IS_2^*. Since the LM^* curve is upward sloping, the result is an increase in output.

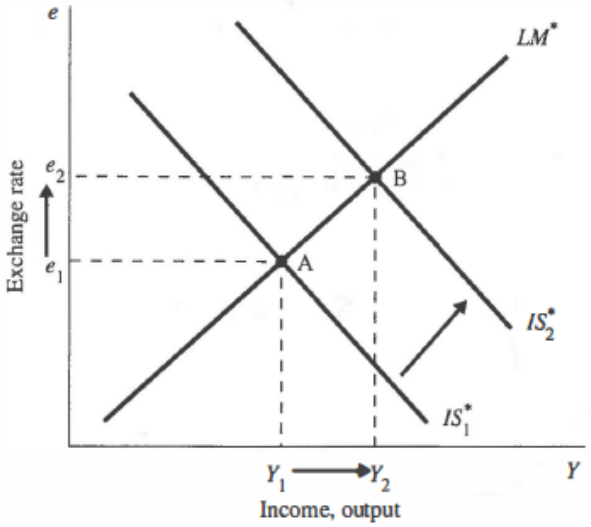
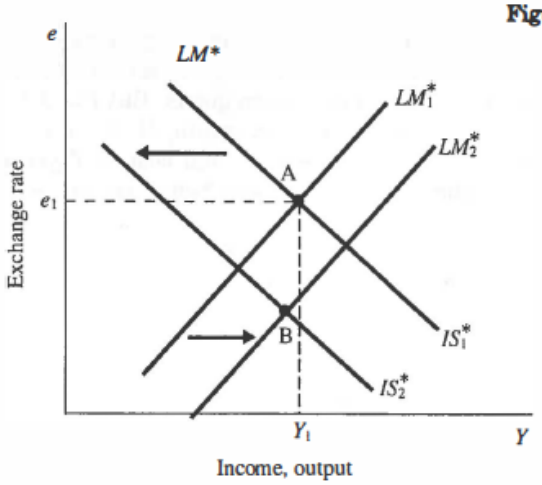


Figure 13-24

c. The increase in the risk premium raises the interest rate for this country, lowering money demand at any given exchange rate and thereby shifting the LM^* curve to the right. Intuitively, if real-money balances are fixed, then real-money demand must remain fixed. The decline in money demand caused by the increase in the interest rate must be offset by an increase in money demand caused by an increase in income. The reduction in money demand caused by the increase in the interest rate leads to a higher level of income for any given money supply. The higher interest rate also reduces investment spending at any given exchange rate, shifting the IS^* curve to the left. As shown in Figure 13-25, the exchange rate falls and output may either rise or fall depending on the size of the shifts.

Figure 13-25



If money demand is not very sensitive to the interest rate and investment is very sensitive to the interest rate, then IS^* will shift by more than LM^* and output will decline. Compared to the traditional Mundell–Fleming model, where LM^* is vertical, output can fall here, whereas it does not fall in the traditional model but instead always rises. This model gives the more realistic result that both the exchange rate and output are likely to decline when the risk premium rises.