Solution for Problem Set 5

1. (Chap 18). Show how a temporary increase in government spending ultimately affects the central bank’s balance sheet under a fixed exchange rate. How are the central bank’s transactions in the foreign exchange market reflected in the balance of payments accounts? Assume that the current account is constant, and ignore the capital account and statistical discrepancy.

**Answer:** A temporary government spending will reduce the exchange rate or make the domestic currency appreciate (i.e., shifts the DD curve to the right). Under a fixed exchange rate, the central bank has to increase the holding of foreign asset to keep the exchange rate fixed. In the BOP, official reserve increases. Since the current account is assumed to be constant, in the BOP, there must be a reduction of the level of foreign asset held by the private sector.

2. (Chap 18).

(a) Explain why temporary and permanent fiscal expansions do not have different effects on output and employment under fixed exchange rates, as they do under floating.

(b) What are the differences in terms of the impact on current account and composition of the aggregate demand between temporary and permanent fiscal expansions under fixed exchange rate regime?

**Answer:**

(a). The temporary and permanent fiscal policies in the short run are the same, therefore they have the same effects on the output and employment. In particular, the output will increases since both DD and AA curves shift to the right (see Figure 18-3). In the long run, due to the "temporary" feature, the temporary fiscal expansion will shrink to zero, thus DD and AA curves will shift back to the original position (we assume that the starting point is at full-employment). While, for the permanent fiscal expansion, since the output after the short-run adjustment is higher than the full-employment level, the domestic price will increase, which will further shift the DD and AA curve back to the original position (full-employment). Hence, both policies do not have different effects on output and employment under fixed exchange rates.

(b). We only discuss the long run case. For the temporary one, comparing to the equilibrium before the policy, there is no change of current account and the composition of the aggregate demand. But for the permanent case, the G component in aggregate demand increases permanently. And according to the analysis in (a), the price level $P$ in the long run in this case increases, meaning that the real exchange rate $(q = E \frac{P^*}{P})$ decreases given $E$ fixed. As a result, domestic goods become relatively expansive (in terms of real value) which will reduce the current account. In sum, in the permanent case, CA decreases and G increases, while output keeps constant.
3. (Chap 18).

In a three-country world, a central bank fixes one exchange rate but lets the others float. Can it use monetary policy to affect output? Can it fix both exchange rates?

**Answer:** Under the reserve currency standard, if the domestic currency is not the international reserve currency, then the monetary policy is ineffective. Under the gold standard, the monetary policy is effective, in particular, an expansionary policy will increase the domestic output.

No, it cannot fix both exchange rates, unless the other fixed rate it imposes is the same as the rate imposed by other countries. This is because if the fixed exchange rate imposed by this country is different from the rate imposed by other country, it will incur arbitrage transactions.

4. (Chap 19)

You are an economic adviser to the government of China in 2008. The country has current account surplus and is facing gathering inflationary pressures.

(a). Show the location of the Chinese economy on a diagram like Figure 19-1.

(b). What would be your advice on how the authorities should move the renminbi’s exchange rate?

What would be your advice about fiscal policy? In that regard, you have three pieces of data: First, the current account surplus is big, in excess of 9 percent of GDP. Second, China currently provides a rather low level of government services to its people. Third, China’s government would like to attract workers from the rural countryside into manufacturing employment, so Chinese officials would prefer to soften any negative impact of their policy package on urban employment.

(a). Since the current account surplus is huge, the external imbalances is more severe. The inflationary pressures indicate that the economy has overemployment. Therefore, the location of the Chinese economy is in Zone 1 (see the point 2).
(b). To maintain the external balances, the Chinese government may reduce the exchange rate or appreciate RMB. The appreciation will reduce the output as the external demand (current account) decreases. To avoid the reduction in employment, the Chinese government may increase the government spending by raising the level of government services. In addition, it can reduce the corporate tax rate to stimulate the employment rate in manufacturing sector. The above policy package will move the initial state (point 2) to the balanced state (point 1), i.e., E decreases and A (=C+I+G) increases.