EE 452: International Monetary Economics
Fall 2014

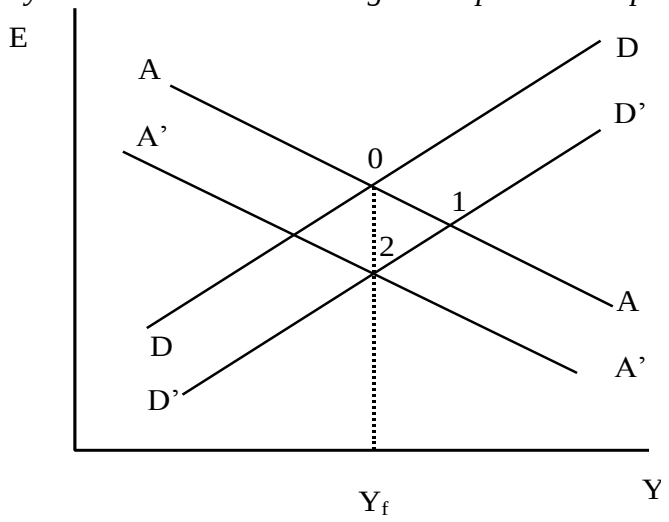
Answer Key to Homework 3

1. How does the DD schedule shift if there is a decline in investment demand?

A decline in investment demand decreases the level of aggregate demand for any level of the exchange rate. Thus, a decline in investment demand causes the DD curve to shift to the left.

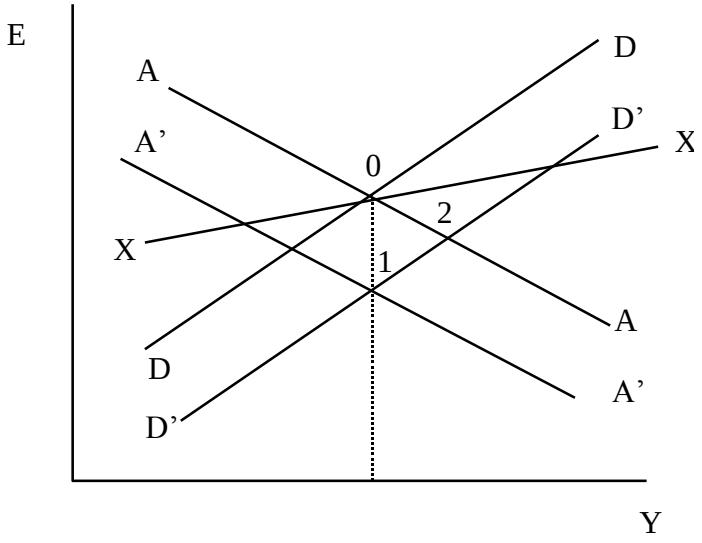
2. Suppose the government imposes a tariff on all imports. Use the DD-AA model to analyze the effects this measure would have on the economy. Analyze both temporary and permanent tariffs.

A tariff is a tax on the consumption of imports. The demand for domestic goods, and thus the level of aggregate demand, will be higher for any level of the exchange rate. This is depicted in figure 16-1 as a rightward shift in the output market schedule from DD to D'D'. If the tariff is temporary, this is the only effect and output will rise even though the exchange rate appreciates as the economy moves from point 0 to point 1. If the tariff is permanent, however, the long-run expected exchange rate appreciates, so the asset market schedule shifts to A'A'. The appreciation of the currency is sharper in this case. If output is initially at full employment then there is no change in output due to a permanent tariff.



3. Suppose there is a permanent fall in private aggregate demand for a country's output (a downward shift of the entire aggregate demand schedule). What is the effect on output? What government policy response would you recommend?

A permanent fall in private aggregate demand causes the DD curve to shift inward and to the left and, because the expected future exchange rate depreciates, the AA curve shifts outward and to the right. These two shifts result in no effect on output, however, for the same reason that a permanent fiscal expansion has no effect on output. The net effect is a depreciation in the nominal exchange rate and, because prices will not change, a corresponding real exchange rate depreciation. A macroeconomic policy response to this event would not be warranted.



4. How does fiscal expansion affect a country's current account under a fixed exchange rate?

By raising output, fiscal expansion raises imports and thus worsens the current-account balance. The immediate fall in the current account is smaller than under floating, however, because the currency does not appreciate and crowd out net exports.

5. Explain why temporary and permanent fiscal expansions do not have different effects under fixed exchange rates, as they do under floating.

The reason that the effects of temporary and permanent fiscal expansions differ under floating exchange rates is that a temporary policy has no effect on the expected exchange rate while a permanent policy does. The AA curve shifts with a change in the expected exchange rate. In terms of the diagram, a permanent fiscal expansion causes the AA curve to shift down and to the left which, combined with the outward shift in the DD curve, results in no change in output. With fixed exchange rates, however, there is no change in the expected exchange

rate with either policy since the exchange rate is, by definition, fixed. In response to both temporary and permanent fiscal expansions, the central bank must expand the money supply (shift AA out) to prevent the currency from appreciating (due to the shift out in the DD curve). Thus, Y goes up and E does not change after a permanent or temporary fiscal expansion when exchange rates are fixed.

6. Using the DD-AA model, analyze the output and balance of payments effects of an import tariff under fixed exchange rates. What would happen if all countries in the world simultaneously tried to improve unemployment and the unemployment by imposing tariffs?

An import tariff raises the price of imports to domestic consumers and shifts consumption from imports to domestically produced goods. This causes an outward shift in the DD curve, increasing output and appreciating the currency. Since the central bank cannot allow exchange rates to change, it must increase the money supply, an action depicted in the diagram as an outward shift in the AA schedule. Corresponding to this monetary expansion is a balance of payments surplus and an equal increase in official foreign reserves.

The fall in imports for one country implies a fall in exports for another country, and a corresponding inward shift of that country's DD curve necessitating a monetary contraction by the central bank to preserve its fixed exchange rate. If all countries impose import tariffs, then no country succeeds in turning world demand in its favor or in gaining reserves through an improvement in its balance of payments. Trade volumes shrink, however, and all countries lose some of the gains from trade.

7. Explain how a central bank can perform a sterilized exchange rate intervention and what would happen to domestic money supply, central bank's domestic assets, and central bank's foreign assets in the following situations

   a. The central bank realizes that the value of the local currency is too weak.

The central bank will perform a sterilized sale of foreign assets (sell foreign assets and buy domestic assets). This will not change the country's level of money supply, raise the central bank's holding of domestic assets and lower the level of its foreign assets.

   b. Domestic output rises.

This should put appreciating pressure to the local currency value. Central banks would perform a sterilized purchase of foreign assets to alleviate the appreciating pressure on the local currency. Level of foreign assets rise while central bank's holding of domestic assets diminishes. Money supply is at constant level.

c. Foreign country's output falls, assuming that they have floating exchange rate.

That would also put the appreciating pressure on the local currency against the foreign currency. The process will be the same as b).

8. Use a diagram to explain how a central bank can alter the domestic interest rate, while holding the exchange rate fixed, under imperfect asset substitutability.

The monetary authorities can combine a change in the money supply with a purchase or sale of its foreign assets to keep the exchange rate fixed while altering the domestic interest rate. For example, the monetary authorities lower domestic interest rates by increasing the money supply. To maintain a fixed value of the exchange rate, the monetary authority would also sell foreign assets and purchase domestic assets. In the figure below, the increase in the money supply lowers the interest rate from R0 to R'. The purchase of domestic assets and sale of foreign assets, while having no further effect on the money supply, lowers the risk premium, shifts the interest parity schedule from II to I'I' and maintains the exchange rate at E0.