

# EC1010: Solutions: Tutorial Questions 6

March 13, 2010

1. According to the equation of exchange,  $MV = PY$ , if  $M$  doubles, while  $V$  and  $P$  are fixed, then  $Y$  also doubles. In the short-run, therefore, money can affect output. According to the quantity theory, prices would double in the long run, while  $Y$  would revert to potential output.
2. If a country is using a lot of resources for investment, then a current account deficit is not necessarily a bad thing. However, if a country is consuming a lot, and running a current account deficit to consume even more, than that situation is problematic: in this case the country is consuming beyond its means, and the country's capital stock will eventually fall. By contrast, if a country is investing a lot, it will be easier to pay off the international debt it runs up (since output will be higher.)
3. Recall that the current account measures trade in *goods*, while the capital account measures *capital flows*. If the U.S. current account deficit is 100, then China must have a current account *surplus* of 100. The fact that the U.S. runs a current account deficit implies that it will have capital inflows of 100: the Chinese will use its export revenues to invest in the U.S. economy. Hence its *capital account surplus* is 100. Conversely, in China there will be a capital *outflow* of 100, as it uses its export revenues to purchase U.S. financial assets. Thus China will have a capital account *deficit* of 100. For each country, the sum of the current account and the capital account is zero.
4. In this case, we would have a situation as follows: China would have a current account surplus of 100. Private citizens would use 80 to invest in the U.S., implying that the Chinese capital account (deficit) is -80. (Note that the capital account only measures capital flows caused by the *private* sector.) The Chinese government would print money to purchase the remaining 20, so foreign exchange reserves would rise by 20. In this case we would write: Current Account + Capital Account = Change in Reserves, implying  $100 + (-80) = 20$ . This is the balance of payments equation.<sup>1</sup>

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<sup>1</sup>With no intervention, the balance of payments equation is just Current Account + Capital Account = 0, which is the case in Question 3.

5. See Figure 1. Because financial returns are now relatively low in the home country, capital inflows would fall, which would lower demand for domestic currency, causing the demand curve to shift inwards. Because domestic citizens would take advantage of higher returns abroad, capital outflows would also rise. This would increase the supply of domestic currency in the foreign exchange market; the supply curve would shift outwards. Both developments act to weaken the domestic exchange rate.
6. A greater demand for imports implies that the supply of domestic currency rises, as domestic residents sell domestic currency in their attempt to purchase foreign currency. This causes the supply curve to shift outwards, which lowers the value of the home currency. As a result, the exchange rate would be *countercyclical*; i.e., it falls in a boom. If, however, a boom induces inflows of capital, then the demand for domestic currency would rise, shifting the demand curve outwards. Figure 2 illustrates the situation now. Overall, the domestic exchange rate could either rise or fall, depending on the magnitudes of the respective shifts. For this reason, we cannot say whether the exchange rate whether the exchange rate is procyclical or countercyclical.
7. See Figure 3. A rise in the price of domestically produced goods has two effects. Firstly, export demand will fall, which causes the demand for home currency to fall. Second, import demand will rise, as domestic residents import relatively cheaper goods from abroad. In turn, this causes the supply of euros to rise in the foreign exchange markets. As a result of these developments, the value of the domestic currency would fall.
8.
  - a.) A greater money supply would ultimately lead to a greater supply of domestic currency on foreign exchange markets; in turn, this would lead to a depreciation of the currency.
  - b.) If people expect deflation, expenditure would likely fall today, as people postpone purchases until prices fall.
  - c.) A weaker yen raises the price of domestic imports: now domestic residents must pay a lot more in terms of domestic currency for a good denominated in foreign currency. By raising the price of imports—and assuming consumers still purchase some imports—the domestic price level could rise. By raising export demand, a weaker currency could also raise the price of domestically produced goods.
  - d.) Central banks typically intervene to weaken the domestic currency, so as to make domestically produced goods more competitive. A weaker currency makes home produced goods cheaper to foreigners, and would thereby raise export demand, and boost the domestic export industry.
9.
  - a.) Because one dollar bought more Hong Kong dollars, the Hong Kong dollar *depreciated* in value. Equivalently, the U.S. dollar *appreciated* in value.
  - b.) Because a weak currency tends to raise exports and lower imports, the current account balance would have improved.

- c.) See Figure 4. With flexible exchange rates, a rise in capital inflows to Hong Kong, would raise the demand for Hong Kong dollars, causing it to appreciate in value.
- d.) See Figure 5. To counter the rise in the exchange rate, the monetary authority would print money and sell it on the foreign exchange market. This increase in supply of domestic currency would lower the value of the exchange rate again; the bank continue doing this until the exchange rate reverts to its initial pegged rate,  $e^*$ .

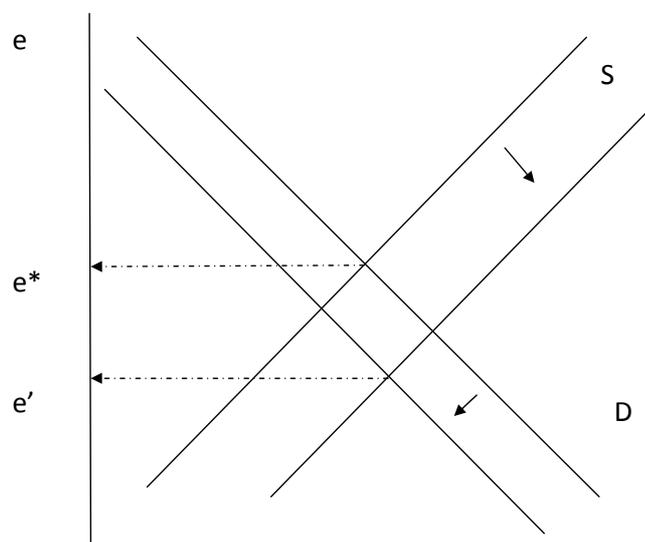


Figure 1: HIGHER INTEREST RATES ABROAD CAUSE CAPITAL OUTFLOWS FROM DOMESTIC ECONOMY (INCREASING SUPPLY OF DOMESTIC CURRENCY) AND A FALL IN CAPITAL INFLOWS (LOWERING DEMAND FOR DOMESTIC CURRENCY.) FOR BOTH REASONS, THE DOMESTIC CURRENCY FALLS IN VALUE; I.E., IT DEPRECIATES.

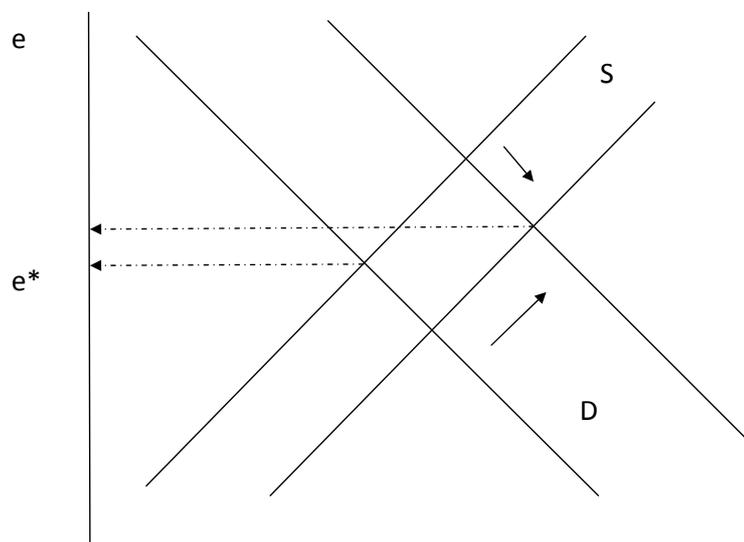


Figure 2: RISE IN IMPORT DEMAND BY DOMESTIC RESIDENTS (INCREASING SUPPLY OF DOMESTIC CURRENCY) AND RISE IN CAPITAL INFLOWS BY FOREIGNERS (INCREASING DEMAND FOR DOMESTIC CURRENCY.) DEPENDING ON MAGNITUDES OF THE SHIFTS, THE CURRENCY MAY EITHER RISE OR FALL.

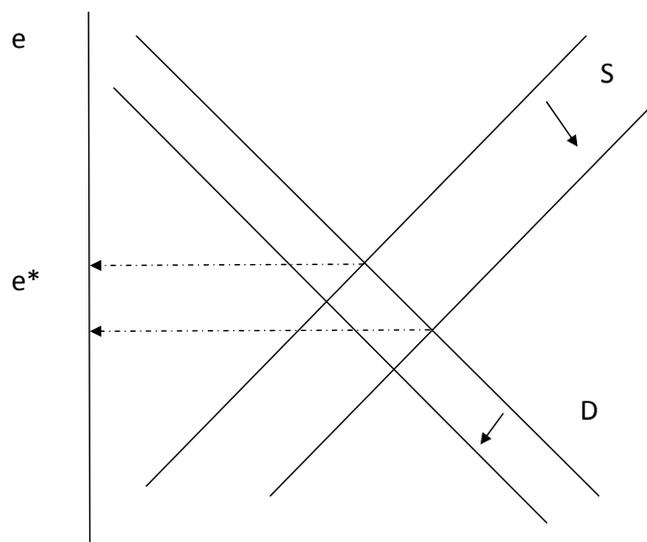


Figure 3: A RISE IN THE PRICE OF DOMESTICALLY PRODUCED GOODS RAISES IMPORT DEMAND (INCREASING SUPPLY OF DOMESTIC CURRENCY) AND LOWERS EXPORT DEMAND (REDUCING DEMAND FOR DOMESTIC CURRENCY.) BECAUSE OF THESE DEVELOPMENTS, THE CURRENCY FALLS IN VALUE.

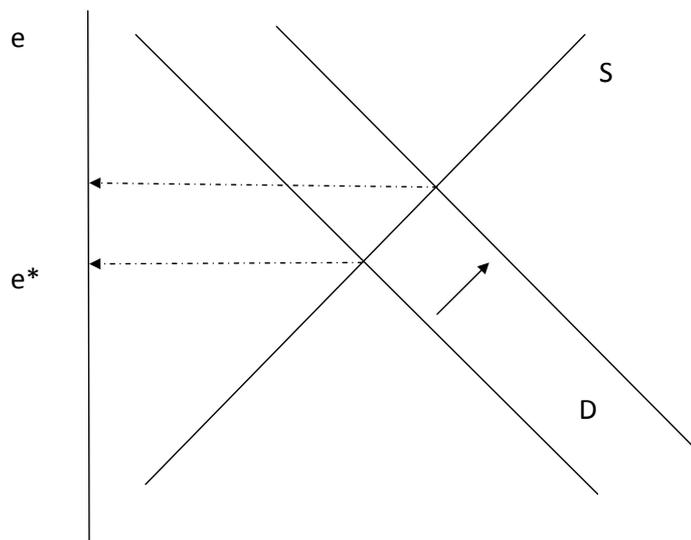


Figure 4: FLEXIBLE EXCHANGE RATES: A RISE IN CAPITAL INFLOWS RAISES DEMAND FOR DOMESTIC CURRENCY, CAUSING IT TO APPRECIATE.

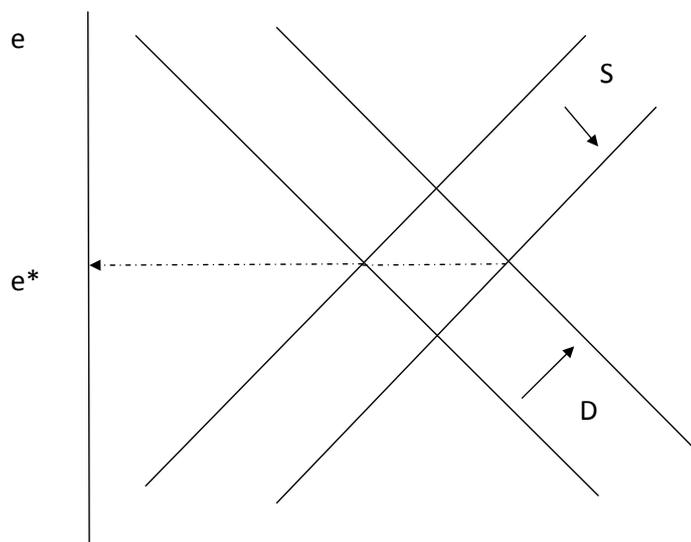


Figure 5: FIXED EXCHANGE RATES: INTERVENTION BY MONETARY AUTHORITY TO KEEP THE EXCHANGE RATE FIXED AT  $e^*$ . THE MONETARY AUTHORITY PRINTS MONEY AND USES IT TO PURCHASE FOREIGN CURRENCY IN THE FOREIGN EXCHANGE MARKET. THIS INCREASE IN SUPPLY OF DOMESTIC CURRENCY LOWERS THE VALUE OF THE EXCHANGE RATE  $e$ .