2010 EC1010 Final Solutions

April 28, 2011

Multiple Choice Questions (Based on Actual Exam)

26 B

27 A

28 B

29 B

30 D

31 B

32 D

33 B

34 C

35 A

36 B

37 B

38 D

39 A

40 A

41 D

42 D

43 C

44 A

45 A

46 D

47 A

48 D

49 D

50 B

Question 4

a.)   i.) Because government expenditure rises, while tax revenues remain the same, the government budget deficit rises. In turn, this reduces national savings and the economy's savings rate. As shown in Figure 1, this causes the savings curve to shift downwards. Because there are insufficient savings to maintain the capital level K, the capital stock falls to K'. As a result, GDP falls to Y'.

    ii.) Because GDP, Y, falls, the standard of living, $\frac{Y}{L}$ also falls (population is constant.) At the new steady state, there is no further growth in Y. As a result, the growth rate of the standard of living remains the same as before (i.e., zero.)

   iii.) Referring to Figure 2, the fall in the stock of savings causes the savings curve to shift inwards. This raises the interest rate from r to r' and thereby reduces investment demand. When investment is more sensitive to interest rate changes, the investment curve is flatter. To clear the loanable funds market, the interest rate does not have to rise as much; it rises from r to r''. Intuitively, since investment is so sensitive to interest rate changes, the interest rate has little "work" to do to clear the market.

b.) According to the quantity theory of money, inflation is $g_P = g_M - g_Y$, where g_M denotes money growth and g_Y output growth. For the figures given, inflation is $g_P = g_M - g_Y = 8 - 1 = 7\%$. The Fisher equation for the real return is $r = i - g_P$, where i denotes the nominal interest rate. As a result, to attain a required *real* return of 2%, the nominal rate i must be $r + g_P = 2 + 7 = 9\%$.

Question 5

a.)   i.) Seeing that the number of dollars per euro *rose* over this period, a euro commanded *more* dollars at the end of the period. For this reason, the euro must have *appreciated* in value.

    ii.) As the euro appreciated, exports to the U.S. would have fallen, while imports would have risen; a stronger euro makes European exports relatively expensive and imports from the U.S. relatively cheap. As a result, the current accounts of European countries would have fallen.

   iii.) Formally, the current account really is a function of the real exchange rate. If the euro appreciated, while European price levels fell, European countries would not necessarily become more uncompetitive. Falling price levels can offset any competitive loss acquired from the appreciation of the nominal exchange rate.

   iv.) To prevent an appreciation of the euro, it would have to purchase foreign currencies and sell euros on the foreign exchange market. This would reduce the supply of foreign currencies and increase the supply of euros, thereby reducing the value of the euro.

   v.) In times of uncertainty, the demand for dollars rises. That is, there is a "flight to quality," where the dollar acts as a safe-haven currency. This raises the demand for dollars, causing the dollar to appreciate. Figure 4 illustrates graphically what happens. There are two developments. First, the demand for dollars rises, causing the demand curve for dollars to shift outwards. Second, American citizens demand less of other currencies, which reduces the supply of dollars on the foreign exchange market; for this reason, the supply curve shifts inwards.

b.) Money growth in A is 4 percent, while in B it is 1 percent. According to the quantity theory of money, inflation is given by $g_P = g_M - g_Y$. Because output growth is zero in both countries, inflation is 4 percent in A and 1 percent in B. According to the theory of *purchasing power parity*, the real exchange rate, $\frac{eP}{P^*}$, equals one. Let us focus on country A. Let e denote the nominal exchange rate in A, P the price level in A, and P^* the price level in B. Thus, if P is growing at 4 percent, while P^* is growing at 1 percent, then to ensure A's real exchange rate, $\frac{eP}{P^*}$, is constant, e must be falling. That is, A's currency is depreciating relative to Bs.

Question 6

i.) According to the *Taylor rule*, the central bank would reduce interest rates if output was below potential or if inflation was below target inflation.

ii.) To reduce interest rates, the FED raises the monetary base. Specifically, it purchases bonds from banks and gives them currency in return. In turn, this raises the level of

funds they can place in the federal funds market, which reduces the interest rate banks pay for funds.

iii.) *Not covered in 2010/2011.*

iv.) See Figures 5 and 6. The economy starts off with a negative output gap; the short-run equilibrium is always at the intersection of the SRAS and AD curves. This is at point Y_1 in Figure 6. When the FED raises interest rates, borrowing becomes more expensive, causing investment and consumption demand to fall. This shifts the AD inwards.

v.) See Figure 7. The shift inwards of the AD curve causes output to fall to Y_2 in the short-run. Over the long run, the recession will place downward pressure on costs and prices, causing the SRAS curve to shift downwards. It will continue to shift as long as output lies below potential.
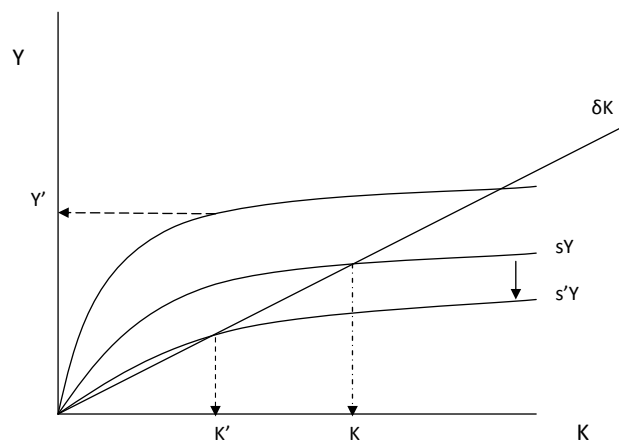
Figure 1: LARGE GOVERNMENT DEFICITS LEAD TO A FALL IN THE NATIONAL SAVINGS RATE. THE CAPITAL STOCK FALLS FROM K TO K', WHILE OUTPUT FALLS TO Y'
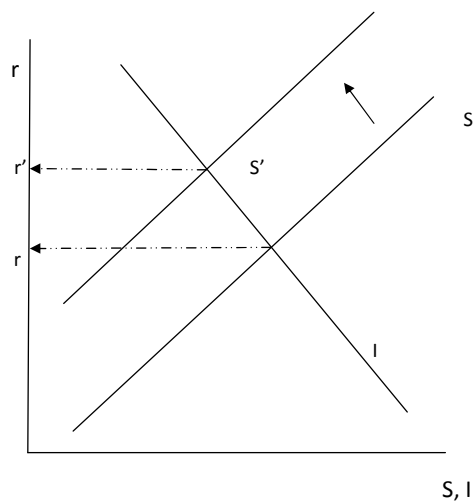

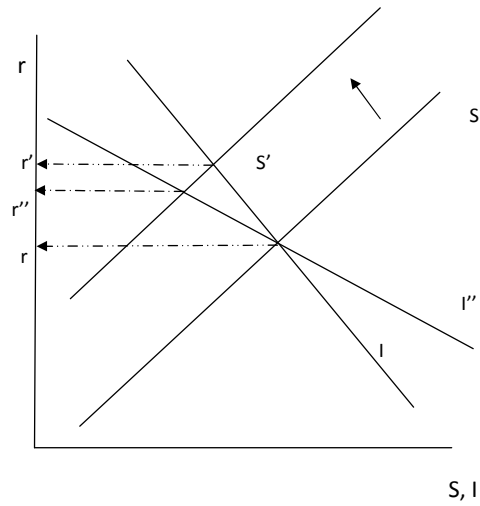Figure 2: GOVERNMENT DEFICITS LEAD TO A REDUCTION IN NATIONAL SAVINGS

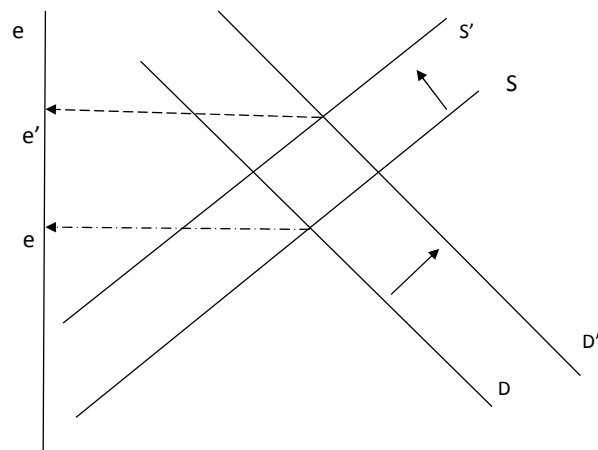Figure 3: A more elastic investment curve causes a smaller rise in the interest rate (to r'')

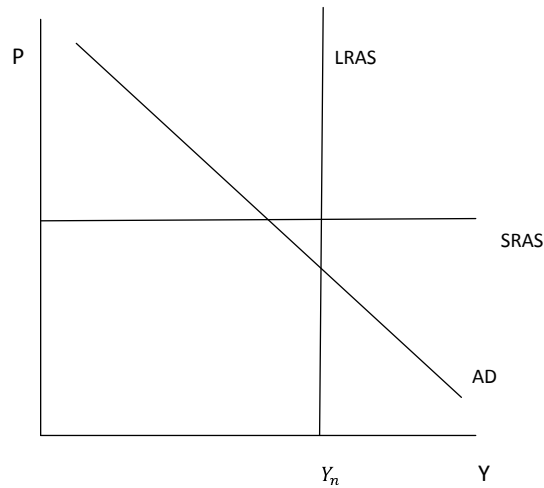Figure 4: A flight to quality, causing an appreciation of the dollar from e to e'

Figure 5: THE ECONOMY STARTS OFF AT THE INTERSECTION OF THE AD AND SRAS CURVES. BECAUSE THIS POINT LIES BELOW POTENTIAL, THE ECONOMY IS IN RECESSION.
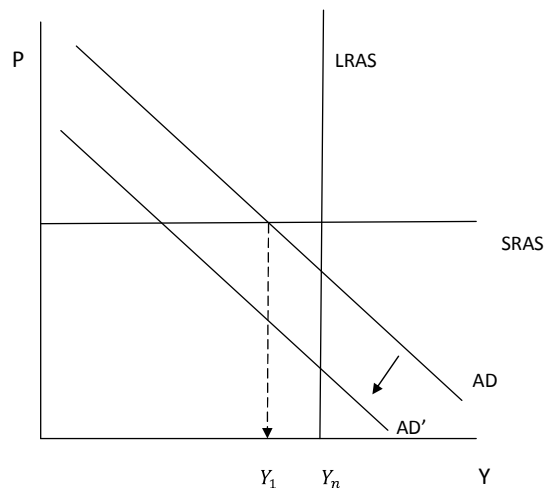

Figure 6: HIGHER INTEREST RATES LEAD TO A SHIFT INWARDS OF THE AD CURVE TO AD'. OUTPUT FALLS BELOW ITS INITIAL VALUE Y_1. (IT FALLS TO Y_2 IN FIGURE 7)
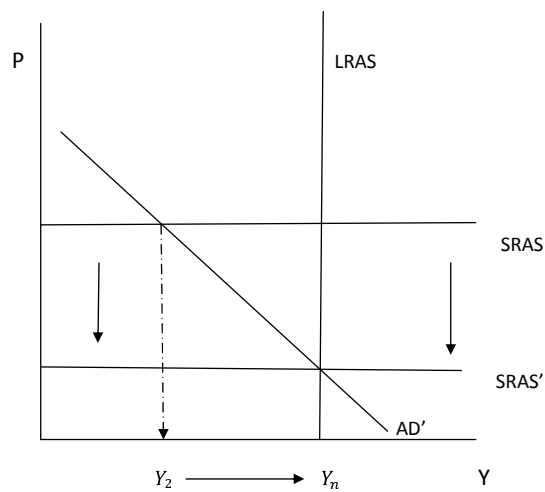
Figure 7: THE RECESSION REDUCES COSTS, CAUSING PRICES TO FALL. IN THE LONG RUN, THE ECONOMY REVERTS TO POTENTIAL; THIS IS THE NATURAL RATE HYPOTHESIS.