EC1010 Midterm Solutions

March 11, 2011

Multiple Choice Questions

1. D: The real interest rate is $r = i - \pi = 6 - 9 = -3\%$.

2. B: A higher minimum wage means the wage will not clear the labour market, inducing a rise in structural unemployment. Because the NAIRU comprises both structural and frictional unemployment, the NAIRU will therefore rise.

3. A: The *price level* P is the average price of all goods in an economy, so a rise in the price of oil will cause P to *rise.* As a result, the real wage, $\frac{W}{P}$, will *fall.*

4. A: Continual increases in labour demand—arising from profit maximization—raise the real wage. Although falling price levels raise real wages, the price level tends to *rise* over time, not fall.

5. E: Historically, investing in stocks provides the best returns over the long run. As noted in lecture, a rough rule of thumb is to invest $(100 - x)\%$ of your wealth in the stock market, where x denotes your age.

6. D: The efficient market hypothesis claims that stock market prices are correct and embody all available information. Answer D is consistent with the hypothesis; namely rising prices reflect the expectation of higher future profits and dividends—and hence economic recovery.

7. D: This follows from the formula $S_I = -NX$. Here, $S_I = 40$, implying NX (i.e., the current account) is -40.

8. A: This largely follows by a process of elimination. For a small open economy, investment remains unaffected by changes in national savings, ruling out C and D. The change gives no reason to expect Okun's law will fail, ruling out E. Because the change reduces national savings, but investment must remain the *same*, capital inflows must increase (or capital outflows must fall.) For this reason, A is the only consistent answer.

9. E: According to the equation of exchange, $MV = PY$, a doubling of V with Y and M fixed, doubles the price level P.

10. D: According to the classical dichotomy, a rise in the money supply should have no effect on any real variable, including the capital stock.

11. E: According to the quantity theory of money, $g_P = \pi = g_M - g_Y = 2 - 6 = -4\%$. Therefore inflation is negative and prices are falling, implying the economy is experiencing *deflation.*

12. B: One implication of the New Growth Theory is that more people lead to more innovation. All answers aside from B are either unrelated to the theory or contradict its implications.

13. B: China has a policy of weakening its currency to make its exports relatively cheaper for foreigners. Because this policy makes other countries' exports relatively unattractive, it is the source of considerable international tension.

14. C: All other options are correct. Rather than pursuing interventionist policies, Hong Kong pursued free market ones.

Question 1

a) i.) According to the Solow model, countries with a higher savings rate have a higher level of GDP (see Figure 1 below.) In the model, because savings are used to finance investment, the savings rate equals the investment rate. Consistent with the evidence, therefore, the Solow model predicts that countries with a higher investment rate have a higher output per person.[1] Namely, a higher investment rate raises the capital stock and, in accord with the production function, the level of output.

ii.) Assume the city of Hiroshima initially has a steady state capital stock of K, as shown in Figure 2 below. The destruction of the capital stock causes capital to fall to K'. However, at this point, savings exceed depreciation, so the capital stock, and hence output, rise. This continues to occur until the economy reverts back to its initial position.

b) Because economy A has a higher level of total factor productivity, it has a higher steady state standard of living than B. Since A and B both currently have the same standard of living and output, A must therefore be further from its steady state. Because an economy's growth rate is increasing in the distance to steady state, A is growing faster.

Question 2

a) i.) Foreigners remove some of the savings from other countries and bring them to the U.S. Because this increases the U.S. stock of savings, it causes a fall in U.S. interest rates; as shown in Figure 3, the interest rate falls to r'.

ii.) When foreigners bring their savings to the U.S., they convert their foreign denominated funds to U.S. dollars; i.e., to purchase a savings instrument such as a U.S. Treasury, they need dollars. As a result, the demand for dollars rises, and as shown in Figure 4, the dollar appreciates in value to e'. In turn, this makes dollar denominated U.S. goods more expensive for foreigners. For this reason, U.S. exports become more expensive and should therefore fall.

b) The observation is largely consistent with the *permanent income hypothesis.* According to this theory, when a consumer receives a temporary increase in income, an equal share of that income will be consumed each year for the rest of his life. As a result, consumption should change relatively little at the time the extra income is received. This is broadly consistent with Figure 2, which shows no consumer response to the stimulus in 2008 and a small response in 2009.

[1] As noted in notes, differences in population do not affect the main insights of the model.

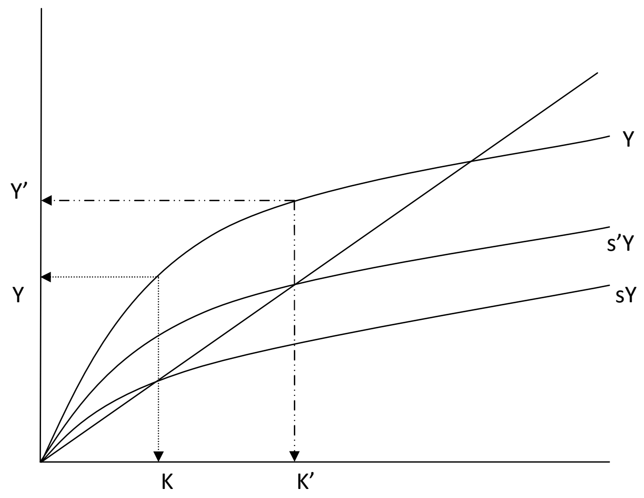

Figure 1: Higher Savings Rates lead to higher output

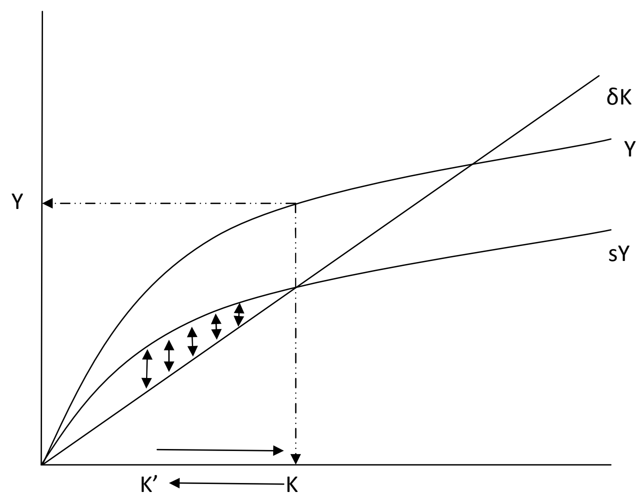

Figure 2: Destruction of the Capital Stock in Hiroshima

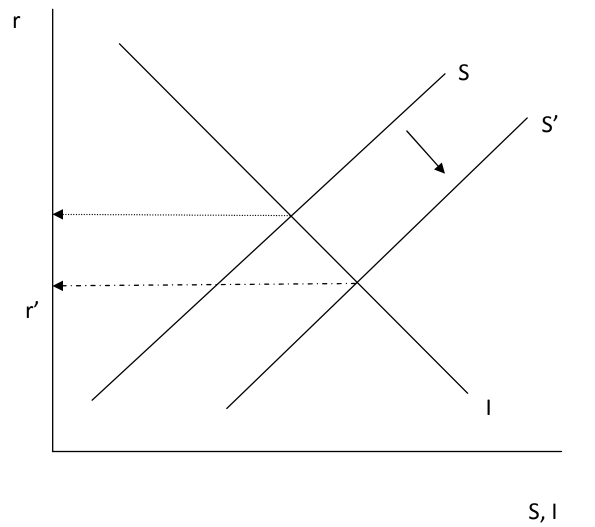

Figure 3: An increase in Foreign Savings reduces the U.S. interest rate to r'.

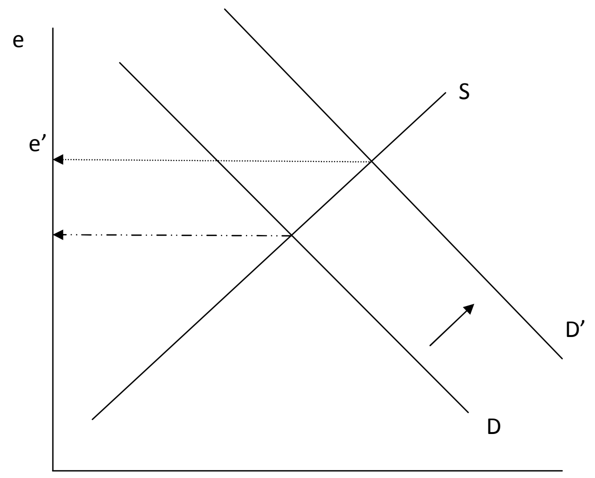

Figure 4: Foreigners increase their demand for dollars, causing an appreciation of the dollar to e'.