Intermediate Macroeconomics - Quiz 2

Name:_____ Student ID #_____

Part I Multiple Choices (20')

1. According to Keynesian Cross, the government purchase _____, the absolute value of tax multiplier _____
   A) Must be larger than one; must also be larger than one
   B) Must be larger than one; can be smaller than one
   C) Can be smaller than one; can also be smaller than one
   D) Can be smaller than one; must be larger than one

2. The reason that the income response to a fiscal expansion is generally less in the IS朙M model than it is in the Keynesian-cross model is that the Keynesian-cross model assumes that:____
   A) investment is not affected by the interest rate whereas in the IS-LM model fiscal expansion raises the interest rate and crowds out investment.
   B) investment is not affected by the interest rate whereas in the IS-LM model fiscal expansion lowers the interest rate and crowds out investment.
   C) investment is autonomous whereas in the IS-LM model fiscal expansion encourages higher investment, which raises the interest rate.
   D) the price level is fixed whereas in the IS-LM model it is allowed to vary.

3. The U.S. recession of 2001 can be explained in part by a declining stock market and terrorist attacks. Both of these shocks can be represented in the IS-LM model by shifting the _____ curve to the _____.
   A) *LM*; right
   B) *LM*; left
   C) IS; right
   D) IS; left

4. In a small open economy with a floating exchange rate, the supply of real money balances is fixed and a rise in government spending _____
   A) raises the interest rate, so that income must rise to maintain equilibrium in the money market.
   B) raises the interest rate so that net exports must fall to maintain equilibrium in the goods market.
   C) cannot change the interest rate so that net exports must fall to maintain equilibrium in the goods market.
   D) cannot change the interest rate so income must rise to maintain equilibrium in the money market.

5. According to the Mundell-Fleming model for a small open economy with flexible exchange rates, if the Federal Reserve cannot alter domestic interest rates, changes in the money supply could

still influence aggregate income through changes in the:_____

A) exchange rate.

B) price level.

C) level of government spending.

D) tax rates.

6. Based on the sticky-price model, the short-run aggregate supply curve will be steeper, the greater the_____

A) target nominal-wage rate.

B) target real-wage rate.

C) proportion of firms with flexible prices.

D) proportion of firms with sticky prices.

7. The Phillips curve depends on all of the following forces except: ____

A) the current exchange rate.

B) expected inflation.

C) the deviation of unemployment from its natural rate.

D) supply shocks.

8. In the case of cost-push inflation, other things being equal:

A) both the inflation rate and the unemployment rate rise at the same time.

B) the unemployment rate rises but the inflation rate falls.

C) the inflation rate rises but the unemployment rate falls.

D) both the inflation rate and the unemployment rate fall.

9. The dynamic model of aggregate demand and aggregate supply assumes that people form expectations of inflation based on:

A) forecasts optimally using all available information.

B) recently observed inflation.

C) the central bank's inflation target.

D) the difference between the nominal and real interest rate.

10. According to the Taylor principle, for inflation to be stable, the central bank must respond to an increase in inflation with ____ increase in the nominal interest rate.

A) no

B) an equal

C) a greater

D) a smaller

Part II Analytical Questions (30')

1. Consider an economy described by the following equations:

$$C = 100 + 0.6 * (Y - \overline{T})$$ (consumption function)

$$I = 200 - 1000 * r \quad \text{(investment function)}$$

$$\overline{G} = \overline{T} = 100 \quad \text{(government purchase and tax)}$$

where Y is the national income and r is the interest rate.

1) Assume $r = 10\%$, construct a graph of the Keynesian cross with national income Y ranging from 0 to 1000. What is the equilibrium income? (5')

The planned expenditure is

$$PE=0.6Y+240.$$

Hence in your graph, the PE's intercept with the vertical axel should be at 240 and its slop should be 0.6.

Equalize the planned expenditure and the actual expenditure we have

$0.6Y+240=Y$

which gives $Y^*= 600$.

2) Derive the IS curve. (Hint: equalize the planned expenditure and actual expenditure to obtain an equation that relates Y and r.) (5')

The IS curve can be derived as

$$0.4Y + 1000r = 340.$$

3) Assume the money demand function in this economy is

$$\left(\frac{M}{P}\right)^d = Y - 1000 * r.$$

Given the money supply is 1450 and the price level is 2, derive the LM curve for this economy. Based on the IS curve and LM curve you have derived, what are the equilibrium income and the equilibrium interest rate? (5')

The LM curve can be derived a

$$725=Y-1000*r$$

Combining the IS curve and the LM curve we obtain the equilibrium income is

$Y^*=1065/1.4=760.7$

$r^*=3.57\%$

4) Suppose the government purchase $\overline{G}$ is raised from 100 to 150, **how much** will this shift the IS curve to the right? What are the new equilibrium income and equilibrium interest rate? You will see that the change in equilibrium income is less than the shift of the IS curve, why? (5')

This will shift the IS curve to the right by

$$\frac{50}{1-0.6} = 125.$$

The new equilibrium income and interest rate are

$$Y^*=1115/1.4=796.4$$

r*=7.14%

The change in equilibrium income is less than the shift of the IS curve. This is because of the crowding out effect of investment: rising interest rate reduces the investment and hence reduces the aggregate income.

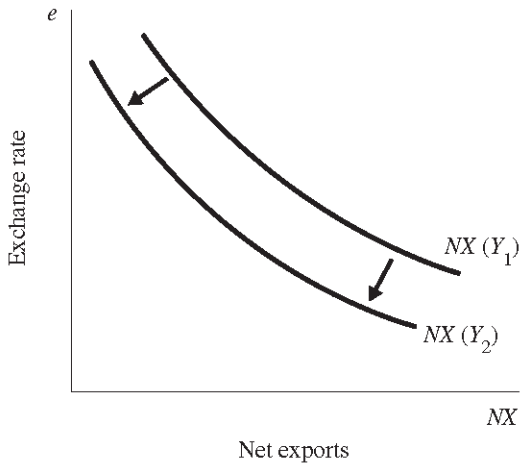
3. Suppose that higher income implies higher imports and thus lower net exports. That is, the net exports function is $NX = NX(e, Y)$. Examine the effects in a small open economy of a fiscal contraction on income and the trade balance under the following.

a. A floating exchange rate. (5')

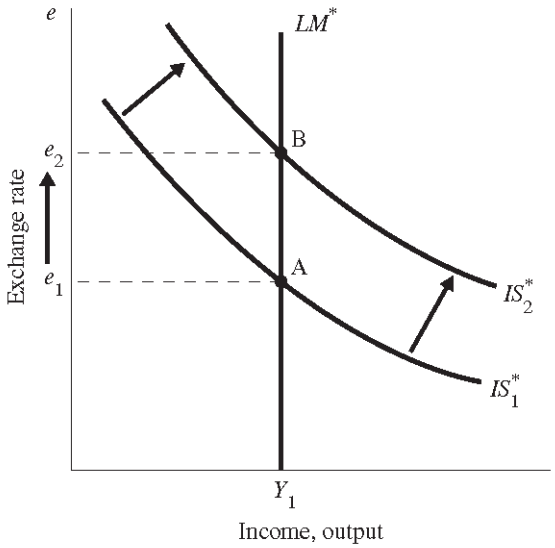
b. A fixed exchange rate. (5')

Answer:

As before, the net exports schedule is downward sloping, so an increase in the exchange rate reduces net exports. We have drawn this schedule for a given level of income. If income increases from $Y1$ to $Y2$, the net exports schedule shifts inward from $NX(Y1)$ to $NX(Y2)$.



a). The fiscal expansion (an increase in government expenditure or a cut in taxes) shifts the IS^* schedule to the right. But with floating exchange rates, if the LM^* curve does not change, neither does income. Since income does not change, the net-exports schedule remains at its original level $NX(Y1)$. The final result is that income does not change, and the exchange rate appreciates from $e1$ to $e2$. Net exports fall because of the appreciation of the currency.



b). The fiscal expansion shifts the *IS** curve to the right, from *IS* to *IS* . As in part (a), for unchanged real balances, this tends to push the exchange rate up. To prevent this appreciation, however, the central bank intervenes in currency markets, selling dollars and buying foreign exchange. This increases the money supply and shifts the *LM** curve to the right, from *LM**1 to *LM*2* . Output rises while the exchange rate remains fixed. Despite the unchanged exchange rate, the higher level of income reduces net exports because the net exports schedule shifts inward.