

14.02

Problem set 6

Question 1: Multiple Choice

1-Which of the following will shift the LM curve upward?

- a) an increase in the expected future interest rate
- b) a decrease in the money supply?
- c) an increase in expected future taxes
- d) all of the above
- e) none of the above

2- If there is a sudden anticipation that interest rates will rise in the future, and the Fed wants to prevent any change in *current* output, it should:

- a) shift the IS curve rightward
- b) shift the IS curve leftward
- c) shift the IS curve leftward and the LM curve upward
- d) shift the LM curve upward
- e) shift the LM curve downward

3- In drawing the IS curve, which of the following is assumed to be given and unchanged?

- a) the current interest rate
- b) current output
- c) current labor income
- d) current taxes
- e) all of the above

4-which of the following will shift the IS curve rightward?

- a) an increase in current taxes
- b) an increase in expected future taxes

- c) an increase in expected future output
- d) all of the above
- e) none of the above

5- An expansionary monetary policy will always cause a *greater* increase in output when it is accompanied by:

- a) an increase in expected future taxes
- b) a decrease in expected future interest rates
- c) a decrease in expected future output
- d) all of the above
- e) none of the above

6- If a credible, phased-in deficit reduction is announced, and no change in Fed policy is anticipated, the current IS and LM curves will shift as follows:

- a) IS left; LM down
- b) IS right; LM down
- c) IS left; no shift in LM
- d) no shift in IS; LM up
- e) no shift in IS; LM down

7- Which of the following statements is *false*?

- a) real exchange rate measures price of foreign goods in terms of domestic goods
- b) Net exports to GDP ratio is a good indicator of openness of an economy
- c) US currency has been depreciating during the last decades (w.r.t. the Yen)
- d) US currency has been depreciating w.r.t. DM
- e) In 1994 the US was running a current account surplus but an overall Balance of Payments deficit

8- Which of the following countries has the lowest export/GDP ratio?

- a) USA
- b) Switzerland

- c) Japan
- d) UK
- e) Germany

9- Using the definition in the book for nominal exchange rate, a *nominal* appreciation of the US dollar means that

- a) German citizens can buy more US products
- b) US citizens can buy more german products
- c) the number of dollars needed to buy 1 DM is now lower
- d) the number of DM needed to buy 1 dollar is lower than before
- e) none of the above

10- Rational expectations mean that

- a) people do not make systematic mistakes
- b) people use all the relevant information available at the time of taking decisions
- c) people form their expectations looking at what happened in the past and projecting that into the future
- d) (a) and (c)
- e) (a) and (b)

Question 2: IS-LM with expectations about the future

We are going to work with the same setting as in chapter 10 of the book. The economy consists only of two periods, present and future. People have expectations about the future, and the effect of those expectations on present variables is going to be represented by including future variables into today's IS and LM. You have to consider the following equations:

$$\begin{aligned}
 (IS')Y'^e &= 1350 + bY'^e - cT'^e - dr'^e + G' \\
 (LM')M' &= Y'^e - 2r'^e \\
 (IS)Y &= 800 + \alpha Y + G - \beta T - \gamma r + \delta Y'^e - \theta r'^e - \lambda T'^e \\
 (LM)M &= Y - 2r
 \end{aligned}$$

Where

$$b = 0.5; c = 0.2; d = 0.6; M' = M = 3600; \alpha = 0.3; \beta = 0.2; \gamma = 0.4; \delta = 0.2 \\ \theta = 1.5; \lambda = 0.3; G = T = G' = T'^e = 600$$

and the (') refers to future value variables

a) Find the equilibrium values of Y'^e and r'^e i.e the equilibrium in the future (i.e solve for Y'^e from the LM' and replace in the IS' to find a value for r'^e ; then find the value for Y'^e)

b) Find the equilibrium values of Y and r (use the values you obtained in (a), plug them into IS; then solve for Y and r in the same way you did it for future values in (a))

c) Now suppose the government decides to implement a contractionary fiscal policy. To that end, the government decides to increase taxes today and in the future so that

$$T = T' = 700$$

Find the new equilibrium levels for Y and r . Are they higher or lower than before?

d) Is it possible that a contractionary fiscal policy would end up in an increase in output? What conditions would be necessary for this to happen? (no calculations, just say which coefficients should be higher/lower and why)

e) Recently the US Senate passed a Bill oriented to reduce the budget deficit in a more "aggressive" way than what the present administration has been doing. The main features of the Bill are summarized in the handout you received in class (NY Times, October 27 1995). Just in case you slept in or thought it was not worth attending, I'll give you some basic insights:

-Modification of Welfare programs, like AFDC (Aid to Families with Dependent Children) tending to decrease the amount of money these people get.

- Reduction of agricultural subsidies.
- decrease of spending in Medicare and Medicaid, by 270 \$bn during the next seven years.

What do you think would be the impact of these policies? Describe the effects in terms of people's expectations about the future (it would be a good idea for you to read the paper or watch the news to get additional information about this reform -even if you live in a bubble, this is a good opportunity to apply what you are learning to the real world, so DON'T MISS IT!!)

Question 3: PPP, real exchange rates and some other stuff...

Let's see how well you have been taught the concept of arbitrage... We studied arbitrage in the context of financial markets, but actually we can apply that concept to the goods market too. The theory of Purchasing Parity Power (PPP) states that the price of identical goods should be approximately equal even in different countries, once we correct for the exchange rate between these countries currencies

- a) How is this related to the concept of arbitrage?

We can check if PPP holds for the US and Japan. To do so we (you) will have to collect the following data for the period 1978-1991:

1)GDP deflator for Japan (this is a tough one, because it's not in the Economic Report. But I am very kind, so I'll give this series to you here: starting in 1978, the values are

82.3,84.5,88.5,91.7,93.3,94.6,96.8,98.3,100,100(base year), 100.4,102.2,104.5,106.6

2) GDP deflator for the US (check in the Economic Report)

3)Exchange rate between Dollars and Yens (same as (2))

- b) Transform the exchange rate in a way consistent with the definition in the book (i.e. Number of dollars per yen).

- c) If we wanted to put it in symbols, PPP would mean that

$$P^*E = P$$

or

$$\frac{P^*E}{P} = 1$$

Where P^* is the GDP deflator for Japan.

Construct the real exchange rate between yens and dollars for the period mentioned above. Does the theory of PPP hold? Plot real and nominal exchange rate in the same graph. Do they move together? Which one is more volatile?

d) Can you think of any reason why prices of identical goods are not the same in different countries?

e) Are the two baskets of goods in the two GDP's equivalent?