

TUTORIAL 8 (Week 9)

Reading Guide: Review Chapter 7 of BOF as well as McLeay et al. 2014a and 2014b as preparation for this tutorial. You should also look over your lectures notes for Week 8.

Key Concepts: Bank creation of money; the Quantity Theory; Open market operations; The Reserve bank and interest rate targeting, Policy reaction function.

REVIEW OF CONCEPTUAL UNDERSTANDING

These are to be attempted before the tutorial. They will **not normally be covered** in the tutorial, maybe, except for a quick review, time permitting. The answers are typically found in the textbook and lecture notes.

1. How is money created in a modern economy? Consider currency, bank deposits and central bank reserves.
2. What do you understand by the open market operations?
3. How is monetary policy conducted through setting interest rates? How is it different from conducting monetary policy through setting money supply?
4. Define policy reaction function. Sketch a policy reaction function relating to the Reserve Bank's setting of the real interest rate.
5. What is fractional reserve banking?
6. What is the mechanism by which monetary policy affects the economy?

PROBLEMS

1. Real GDP is \$8 trillion, nominal GDP is \$10 trillion, M1 is \$2 trillion, and M3 is \$5 trillion.
 - a. Find velocity for M1 and for M3.
 - b. Show that the quantity equation holds for both M1 and M3.

2. An economy is described by the following equations:

$$C = 2,600 + 0.8(Y - T) - 10,000r,$$

$$IP = 2,000 - 10,000r,$$

$$G = 1,800,$$

$$NX = 0,$$

$$T = 3,000.$$

The real interest rate, expressed as a decimal, is 0.10 (that is, 10 percent).

- a. Find a numerical equation relating planned aggregate expenditure to output. Solve for short run equilibrium output. Show your results graphically using the Keynesian cross diagram.
- b. Potential output Y^* equals 12,000. What real interest rate should the Reserve Bank set to bring the economy to full employment? You may take as given that the multiplier for this economy is 5.
- c. Repeat part (b) for the case in which potential output $Y^* = 9,000$.

- d. Show that the real interest rate you found in part a sets national saving at potential output, defined as $Y^* - C - G$, equal to planned investment, IP . What does this result show about the real interest rate and the market for saving?

3. Suppose the Reserve Bank follows the following policy reaction function.

Rate of inflation, π	Real interest rate set by Reserve Bank, r
0.00	0.02 (= 2%)
0.01(1%)	0.03
0.02	0.04
0.03	0.05
0.04	0.06

For this economy, the relationship between short-run equilibrium output Y and the real interest rate r set by the Reserve Bank is given by:

$$Y = 1,000 - 1,000r.$$

Potential output is $Y^* = 960$. What can you infer about the Reserve Bank's objective for the inflation rate in the long-term?

4. An economy is described by the following equations:

$$C = 14,400 + 0.5(Y - T) - 40,000r,$$

$$IP = 8,000 - 20,000r,$$

$$G = 7,000,$$

$$X = 0,$$

$$M = 1,800$$

$$T = 8,000.$$

$$Y^* = 40,000$$

- Find a numerical equation relating planned aggregate expenditure to output and to the real interest rate.
- At what value should the Reserve Bank set the real interest rate to eliminate the output gap?

EXTEND YOURSELF

- Show graphically how the RBA controls nominal interest rate. Can the RBA control the real interest rate?
- The RBA wants to increase Australia's money supply. Describe the actions it might take, and explain how the RBA's objectives are realized. Consider both conventional and unconventional policies