

Problem Set 2

Due at the beginning of lecture, Friday, October 17

1. Consider the following IS-LM model:

$$C = 1200 + 0.9 Y_d$$

$$I = 0.2 Y - 20,000 i$$

$$G = 2000$$

$$T = (1/3) Y$$

$$(M/P)^d = Y - 100,000 i$$

$$M/P = 6000$$

- (a) Derive the equation for the IS curve (it will be easiest if you write this with Y on the left-hand side and all else on the right-hand side).
 - (b) Derive the equation for the LM curve (again, put Y on the left-hand side).
 - (c) Solve for the equilibrium interest rate (note that 0.01 is 1%).
 - (d) Solve for equilibrium real output.
 - (e) Solve for the equilibrium values of C and I . Verify that your answer for Y is correct by adding C , I and G together.
2. Use the IS and LM curves that you derived for Problem 1 to answer the following.
- (a) Calculate the changes in Y and i if G increases by 400. Calculate the change in I . Explain the effects of expansionary fiscal policy using your results to illustrate.
 - (b) Leave G equal to 2000 and let M/P rise by 2000 instead. Find the change in Y and i caused by the increase in M/P . Explain the effects of expansionary monetary policy using your results to illustrate.
3. Problem 3, Chapter 5 of Blanchard, p. 106.
4. Use the model of Problem 3 to answer this question.
- (a) Use your expression for equilibrium output to show how the effect of an increase in G on output depends on the parameter d_2
 - (b) An increase in the ratio d_2/d_1 means that money demand is more sensitive to the interest rate. Use this interpretation to explain the result you found in part (a). Also use an IS-LM diagram to illustrate your answer.
 - (c) Show how the short-run effect of an increase in M depends on the parameter b_2 using your equation and a diagram. Explain why an increase in M has a larger effect on output if b_2 is larger.
5. Problem 3, Chapter 6 of Blanchard, p. 131.
6. Problem 8, Chapter 6 of Blanchard, p. 132.