

Midterm 2 Exam

This exam is 70 minutes long, and is worth 70 points. Part I is multiple choice, Part II is a short answer. The points are allocated in proportion to the time you should spend on each problem.

PART I: Multiple Choice [20 minutes total, 2 points each]. Do NOT explain.

1. In the long run, increases in the money supply
 - a) increase GDP by increasing investment.
 - b) increase inflation.
 - c) decrease GDP by reducing the real wage and thus labor supply.
 - d) increase the real wage.
 - e) both b and c.

2. Assuming no impact on the capital stock, the *long-run* impact of a one-time permanent decrease in defense spending includes
 - a) a decrease in actual GDP.
 - b) an increase in potential GDP.
 - c) a decrease in inflation.
 - d) no change in GDP.
 - e) both b and c.

3. When the interest rate on bonds is zero, then:
 - a) money and bonds are perfect substitutes.
 - b) money and bonds are perfect complements.
 - c) the LM curve becomes horizontal.
 - d) fiscal policy is necessarily perfectly ineffective.
 - e) both a and c.

4. Which of the following is a financial liability of the private financial sector?
 - a) Holdings of currency
 - b) Deposits in demand and savings accounts
 - c) Reserves
 - d) Holdings of government bonds
 - e) All of the above

5. Which of the following is a liability for the Fed?
 - a) Government bonds
 - b) Reserves
 - c) Currency in circulation
 - d) Individuals' deposits in member banks
 - e) both b and c

6. Suppose the reserve requirement is 5 percent and banks routinely hold no excess reserves, and individuals hold no currency. If the Fed sells \$200 million in government bonds in an open market operation, then the money supply

- a) increases by \$4 billion.
- b) decreases by \$4 billion.
- c) increases by \$100 million.
- d) decreases by \$100 million.
- e) none of the above.

7. The price adjustments of a dynamic model are founded on the intuition that

- a) upward pressure should be exerted on prices if actual GDP exceeds potential GDP.
- b) downward pressure should be exerted on prices if actual GDP falls short of potential GDP.
- c) downward pressure should be exerted on prices if unemployment in excess of the natural rate puts downward pressure on wages.
- d) upward pressure should be exerted on prices if employment above potential employment portends upward pressure on wages.
- e) all of the above.

8. Which of the following influences the opportunity cost of holding cash balances in a checking account?

- a) any service charges that might be applied in maintaining the account
- b) the difference between the real rate of interest and the rate paid on checking deposits
- c) the difference between the nominal rate of interest and the rate paid on checking deposits
- d) both a and b
- e) both a and c

9. When the Fed pays interest on excess reserves, then:

- a) the private banks will always hold lots of excess reserves.
- b) the private banks holdings of excess reserves will depend on the rate of interest it can charge on loans.
- c) the private banks holdings of excess reserves will depend on the rate of interest on Treasury bonds.
- d) the money supply will be a relatively constant multiple of the money base.
- e) both b and c.

10. Suppose the government is considering a tax cut to stimulate the economy. For a given tax cut of \$100 billion dollars per year, the impact on consumption will be larger if

- a) the cut is considered permanent.
- b) the cut is considered temporary.
- c) the cut is given to people who cannot borrow easily.
- d) the cut is undertaken simultaneously with an decrease in government spending on goods and services.
- e) both a and c.

PART II: Short Answer [50 minutes total]

1.1. (6 minutes) Carefully indicating the curve shifts (using one fully labeled IS-LM/AD-AS diagram), show what happens in the short run if autonomous consumption falls sharply in period 1. You can assume $\pi_t^e = 0$ for all t. Call the initial equilibrium income $Y_0 = Y^*$ and the initial price level P_0 . Price adjustment is described by:

$$\pi_t = \pi_t^e + f \left(\frac{Y_{t-1} - Y^*}{Y^*} \right)$$

1.2. (6 minutes) Using graphs and words, indicate what path the economy takes to long run equilibrium in the above model, assuming neither the government nor the central bank (Fed) takes any action. Briefly explain *why* the economy takes this path.

1.3 (8 minutes) Suppose autonomous consumption collapses in period 1 as in Question 1.1, but now the Fed responds by increasing the money supply to try to keep output at potential. Does the Fed have to shift the AD curve by the same distance the AD curve shifted in period 1? Briefly explain what path the economy takes in both the short run and long run. Be sure to use a graph in your answer.

2. Consider the CC-LM model, wherein the CC schedule is given by equations (5) and (7), and the LM is given by equation (4):

$$Y = \bar{\alpha}(A_0 - dR - \gamma\rho) \quad (5)$$

$$\rho = \varphi_0 + \varphi_1 R + \varphi_2 Y - \varphi_3 \left(\frac{m(\text{Res})(1-r)}{P} \right) + \varphi_4 Z \quad (7)$$

$$R = \frac{\mu}{h} - \frac{1}{h} \left(\frac{m(\text{Res})}{P} \right) + \frac{k}{h} Y \quad (4)$$

2.1 (5 minutes) Show graphically what happens if the Fed increases reserves by open market operations, and allows the changes in money base to increase money supply.

2.2 (5 minutes) Explain what happens to the bank lending rate, and the quantity of loans made.

3. Given the following economy:

$$Y = AD \equiv C + I + G$$

$$C = a + bY_d$$

$$Y_d \equiv Y - T$$

$$T = TA_0$$

$$I = e_0 - dR$$

$$G = GO_0$$

$$M^s/P = M^d/P$$

$$M^s/P = M_0/P_0$$

$$M^d/P = kY - hR + j(\$Wealth/P_0)$$

$$\$Wealth \equiv M + B$$

$$BuD \equiv G - T ; \text{ the price level is fixed}$$

3.1 (8 minutes) Algebraically, derive the equilibrium income. Show your work!

3.2 (6 minutes) Show graphically what happens if the government runs a budget deficit, starting from initial budget balance.

3.3. (6 minutes) Show graphically what happens if the Fed completely monetizes the change in government debt that occurs in your answer to 3.2.