

Midterm 1 Exam

This exam is 70 minutes long, and is worth 70 points. Part I is multiple choice, Part II is a short answer/derivation. The points are allocated in proportion to the time you should spend on each problem. PLACE PART I, AND PART II, QUESTION 1 IN BLUEBOOK A; PLACE PART II, QUESTIONS 2 AND 3 IN BLUEBOOK B.

START BLUEBOOK A

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

1. In a closed economy, equilibrium holds when which of the following conditions is satisfied?
 - a. consumption equals saving.
 - b. output equals consumption.
 - c. total saving equals zero.
 - d. total saving equals investment.
 - e. all of the above.

2. Which of the following calculations will yield the correct measure of real GDP?
 - a. divide nominal GDP by the consumer price index.
 - b. divide the GDP deflator by the consumer price index.
 - c. multiply nominal GDP by the consumer price index.
 - d. multiply nominal GDP by the GDP deflator.
 - e. none of the above

3. Suppose the demand for money is NOT very sensitive to the interest rate. Given this information, we know that:
 - a. the IS curve should be relatively flat.
 - b. the IS curve should be relatively steep.
 - c. the LM curve should be relatively flat.
 - d. the LM curve should be relatively steep.
 - e. neither the IS nor the LM curve will be affected.

4. Based on our understanding of the model presented in Chapter 3, we know that for $t_1=0$, an equal and simultaneous reduction in G and T will cause:
 - a. an increase in output
 - b. no change in output
 - c. a reduction in output
 - d. an increase in investment
 - e. none of the above.

5. Which of the following is a component of money?
- a. coins held by the nonbank public.
 - b. bills held by banks.
 - c. checkable deposits.
 - d. all of the above.
 - e. none of the above.
6. At the current interest rate, suppose the supply of money is less than the demand for money. Given this information, we know that:
- a. the price of bonds will tend increase.
 - b. the price of bonds will tend to fall.
 - c. production equals demand.
 - d. the goods market is also in equilibrium.
 - e. the supply of bonds also equals the demand for bonds.
7. Based on our understanding of the model presented in Chapter 3, we know that an increase in c_1 (where $C = c_0 + c_1 Y_D$) will cause:
- a. the ZZ line to become steeper and a given change in autonomous consumption (c_0) to have a smaller effect on output
 - b. the ZZ line to become steeper and a given change in autonomous consumption (c_0) to have a larger effect on output
 - c. the ZZ line to become flatter and a given change in autonomous consumption (c_0) to have a smaller effect on output
 - d. the ZZ line to become flatter and a given change in autonomous consumption (c_0) to have a larger effect on output
 - e. none of the above
8. In a given year, suppose a company spends \$100 million on intermediate goods and \$200 million on wages, with no other expenses. Also assume that its total sales are \$800 million. The value added by this company equals:
- a. \$200 million.
 - b. \$300 million.
 - c. \$500 million.
 - d. \$700 million.
 - e. \$800 million.
9. In the standard IS-LM model, an contractionary fiscal policy and a expansionary monetary policy
- a. usually causes interest rates to rise.
 - b. necessarily causes output to increase.
 - c. usually causes interest rates to fall.
 - d. both b and c above.
 - e. none of the above.

10. The money demand curve will shift to the left when which of the following occurs?
- a reduction in the interest rate
 - an increase in the interest rate
 - an open market sale of bonds by the central bank
 - an increase in income
 - none of the above

PART II: Short Answers/Derivations [50 minutes total] “Box in” your answers.

1. (10 minutes) The CPI is calculated for a fixed market basket. It measures the change in the cost of the market basket from the base year until the current year. An index with the market basket fixed in the first year, like the CPI, is called a Laspeyres index. An alternative index, the Paasche Index, is based on a market basket in the end year. It measures the change in the cost of a market basket fixed in the end year. Suppose that the base is 2009, and further that the market basket contains only two items, wine and cheese, and the quantities consumed in 2009 and 2010 are

	wine	cheese
2009	10 bottles	20 wheels
2010	8 bottles	30 wheels

Suppose that the price of cheese increases from \$1.00 per wheel of cheese in 2009 to \$1.50 per wheel in 2010 and the price of wine increases from \$0.50 per bottle to \$2.00 per bottle.

- (5 minutes) Calculate the value of the Laspeyres index for 2010.
- (5 minutes) Calculate the 2010 inflation rate for the Laspeyres index.

END BLUEBOOK A

START BLUEBOOK B

PART II: Short Answers/Derivations [40 minutes total]

2. (15 minutes) Suppose in an open economy Keynesian model,

$$Y_0 = \left(\frac{1}{1 - c_1(1 - t_1) + m_1} \right) \Lambda_0 \quad \text{where } \Lambda_0 \equiv c_0 - c_1(t_0) + b_0 + GO_o + x_0 - m_0$$

- What is the change in income if only government spending is increased? Show your work.
- Define the trade balance as $TB \equiv X - IM = x_0 - m_0 - m_1 Y$. What is the impact of an increase in government spending on the trade balance? Show your work.
- Define the government budget balance as $BuS \equiv T - G = t_0 + t_1 Y - GO_o$. What is the impact of an increase of government spending on the budget balance? Show your work.

3. (25 minutes) IS-LM

Suppose the real side of a closed economy was described by the following equations:

- | | | |
|-----|---------------------|--------------------------------------------------------------------|
| (1) | $Y = Z$ | Output equals aggregate demand, an equilibrium condition |
| (2) | $Z = C + I + G$ | Definition of aggregate demand |
| (3) | $C = c_o + c_1 Y_D$ | Consumption function, c_1 is the mpc |
| (4) | $Y_D \equiv Y - T$ | Definition of disposable income |
| (5) | $T = t_0 + t_1 Y$ | Tax function; t_0 is lump sum taxes, t_1 is marginal tax rate. |
| (6) | $I = b_0 - b_2 i$ | Investment function |
| (7) | $G = GO_0$ | Government spending on goods and services, exogenous |

Where the standard LM curve is in place, *viz.*, $i = \left(\frac{\mu_0}{h} \right) - \left(\frac{1}{h} \right) \left(\frac{M_0}{P} \right) + \left(\frac{1}{h} \right) Y$

Answer the following questions, showing your work, and "boxing in" your answers.

3.1 (5 points) Derive the IS curve, with Y as a function of i .

3.2 (5 points) Solve for equilibrium income.

3.3 (5 points) What is the government spending multiplier in this economy? Be sure to show your work.

3.4 (5 points) Is monetary policy more, or less, effective in this model as compared to the model with a standard investment function where investment depends on both income and interest rates. Be sure to *explain* the economics of your answer, using a *diagram*.

3.5 (5 points) Is fiscal policy more, or less, effective in this as compared to the model with a standard investment function. Be sure to *explain* the economics of your answer, using *equations*.

END BLUEBOOK B