
14.02 Principles of Macroeconomics

Fall 2004

Quiz 1

Thursday, October 7, 2004
7:30 PM – 9 PM

Please, answer the following questions. Write your answers directly on the quiz. You can achieve a total of 100 points. There are 10 multiple-choice questions, followed by 2 free response questions (one weighted 50/100 points and one weighted 20/100 points). You should read all of the questions first. There is a blank page attached at the end of the quiz to be used for scratch paper.

Good Luck!

NAME: _____

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Multiple-Choice Questions (30/100 points)

Please, circle the correct answer for each of the following 10 multiple-choice questions. For each question, only one of the answers is correct. Each question counts 3/100 points.

1) Consider two economies that are identical, with the exception that one has a high marginal propensity to consume (MPC) and one has a low MPC. If the money supply is increased by the same amount in each economy, the high MPC economy will experience

- A) A larger increase in output and a smaller decrease in the interest rate.
- B) A smaller increase in output and a smaller decrease in the interest rate.
- C) A larger increase in output and a larger decrease in the interest rate.
- D) A smaller increase in output and a larger decrease in the interest rate.
- E) None of the above.

2) Which of the following policy options would simultaneously increase interest rates and decrease output?

- A) The Federal Reserve Board sells bonds through open market operations.
- B) The federal government increases its defense purchases.
- C) The Federal Reserve Board expands the money supply.
- D) The federal government increases the tax rate.
- E) Actions described in both A) and D).

3) Suppose an economy is running a government budget deficit. Assume that $C = c_0 + c_1(Y-T)$. Which one of the following will cause this deficit to become larger?

- A) Expansionary monetary policy.
- B) An increase in exports.
- C) A decrease in equilibrium GDP.
- D) A decrease in taxes.
- E) A decrease in government purchases.

4) If the interest rate is higher in the US than in the UK, then

- A) The dollar is expected to appreciate with respect to the pound.
- B) The pound is expected to appreciate with respect to the dollar.
- C) The interest rate in the US is expected to increase.
- D) The interest rate in the US is expected to decrease.
- E) Uncertain.

5) Consider a small economy where the total population is 10,000. The size of the labor force is 8,000, while the number of people employed is 7,000. What is the unemployment rate in this economy?

- A) 10%
- B) 12.5%
- C) 20%
- D) 30%
- E) 37.5%

6) Assume that $C = c_0 + c_1(Y-T)$. Suppose that taxes increase and money supply increases in such a way that output is constant in equilibrium (assume $c_1 < 1$). These policy changes will produce:

- A) An increase in investment and a decrease in private consumption.
- B) An increase in investment and a decrease in government spending.
- C) An increase in investment and an increase in private saving.
- D) A decrease in investment and an increase in public saving.
- E) Uncertain.

7) In 2000, the nominal GDP growth of a country was 8% and the real GDP growth was 4%. What was the rate of inflation for this country?

- A) - 4%
- B) 2%
- C) 4%
- D) 8%
- E) 12%

8) Suppose the United States has no exports. The only imports of the US are 200 Mercedes Benz cars worth US\$50,000 each from Germany. Germany has no imports and only exports those 200 cars to the US. Neither the US nor Germany trade with any other countries or engage in any transactions with other countries. Which one of the following statements must be true?

- A) The US has a capital account deficit.
- B) Germany has a current account deficit.
- C) Germans are buying US assets.
- D) The exchange rate of US Dollars per Euros (the currency in Germany) is bigger than 1.
- E) None of the above.

- 9) Suppose that investment (I) in the goods market is not responsive to the interest rate (that is, I does not depend on the interest rate at all). Then
- A) The IS curve is a vertical line and monetary policy is very effective in raising output.
 - B) The IS curve is a horizontal line and monetary policy is very effective in raising output.
 - C) The IS curve is a vertical line and monetary policy does not affect output in the IS-LM model.
 - D) The IS curve is a horizontal line and monetary policy does not affect output in the IS-LM model.
 - E) The IS curve still has a negative slope, but monetary policy does not affect output in the IS-LM model.
- 10) An increase in the money supply and a drop in consumer confidence will lead to
- A) A decrease in output with an ambiguous effect on the interest rate.
 - B) An increase in output and a decrease in the interest rate.
 - C) A decrease in output and an increase in the interest rate.
 - D) An ambiguous effect on output and an increase in the interest rate.
 - E) An ambiguous effect on output and a decrease in the interest rate.

Free Response Question I (50/100)

The Republic of Keynesia is a closed economy and obeys our short-run IS-LM model. Assume it starts out in equilibrium in both the goods market and the money market. Keynesia's economy is described by the following set of equations:

Goods market:

- $C = c_0 + c_1(1-t)Y$, where C is consumption; Y is income; t represents a proportional tax; and c_0 and c_1 are positive constants
- $I = b_0 - b_1i$, where I is investment; i is the interest rate; and b_0 and b_1 are positive constants
- $G = \bar{G}$, where \bar{G} is a positive constant

Money market:

- $M^d = P(m_0 + m_1Y - m_2i)$, where M^d is money demand; P is the price level; m_0 (a positive constant) represents exogenous changes to M^d ; and m_1 and m_2 are also positive constants
- Let M^s represent money supply

1. Combine the goods market equations to derive an expression for Y as a function of i (i.e. derive the IS curve). Give the definition of the IS relation. (7 points)

2. Use the money market equations to express i as a function of Y (i.e. derive the LM curve). Give intuition for why the LM curve slopes upward/downward. (7 points)

3. Graph the IS and the LM curves on the same diagram, putting i on the vertical axis and labeling the curves. Label the equilibrium interest rate and output, i_0 and Y_0 , respectively. (7 points)



4. Suppose the government increases its spending by $\Delta \bar{G}$. Which curve will shift, if any? Calculate by how much it will shift and draw a diagram that shows the impact of this policy. (9 points)



5. What will happen to investment as a result of the government policy described in part 4? (You do not need to calculate anything, just give intuition.) (5 points)

6. Suppose that the government decides to cut taxes instead of increasing spending. Analyze the effects of this expansionary fiscal policy using a diagram. (You do not need to calculate anything, just draw the diagram.) (5 points)



7. Using the IS-LM model, explain what can be done to offset the changes in the interest rate caused by increased government spending and, at the same time, keep output from declining. (In other words, suggest a way to bring the interest rate back to the level it was at before the policy in part 4 took place without causing a reduction in output). (10 points)

3. If lowering output was the main objective of the central bank (the Fed in the US) when it raised the interest rate, can fiscal policy achieve the same objective? How? (You should limit your answer to no more than two sentences) (7 points)

