

# Midterm Exam #1: 14.02

Fall 1999

Full Name:

TA Name:

Section Time:

STOP! Failure to follow these instructions could be detrimental to your grade.

The exam consists of 3 questions on 2 pages. Please answer all of the questions completely. You have 60 minutes to complete the exam, which should be enough time. **Please use three blue books for the exam, one for each set of questions.** Be sure to LEGIBLY write your *full name, section* (which should consist of your TA's name and section time), and *question number* on the front of each blue book. When finished with the exam, you must return all three blue books and this signed exam sheet to a proctor.

Show your calculations and explain all answers in your bluebooks. If you think that any question is ambiguous, then say so in your answer and explain what assumptions you made to resolve the ambiguity.

You can use a calculator, but no notes or other assistance are allowed.

GOOD LUCK!

**Question 1 True, False or Uncertain? Explain your answers in at most 5 sentences.**

1. (3 points) A contractionary monetary policy means that the FED buys bonds in the "open market", hence it is not surprising that the interest rate rises.
2. (3 points) If the owner of a junkyard purchases old cars, disassembles them, and sells the used parts, then no part of the junkyard's revenues contribute to GDP.
3. (3 points) A \$1m cut in G or a \$1m increase in T will have the same effect on output in the short-run.

## Question 2

Imagine an economy described by these behavioral equations and parameters:

$$\begin{aligned}C &= 600 - 200i + 0.4(Y - T) \\I &= 200 - 100i \\G &= 100 \\T &= 375 \\Y &= C + I + G \\(M/P)^d &= 0.9Y - 450i \\M &= 450, P = 1\end{aligned}$$

1. (4 points) Write down the expression for the IS curve by analyzing the equilibrium in the market for goods. Interpret your findings.

2. (4 points) Write down the expression for the LM curve by analyzing the equilibrium in the money market. Interpret.
3. (4 points) Solve for the equilibrium interest rate, output, consumption and investment.
4. (5 points) After many bad years, this country's economy has just undergone a fragile recovery. The government decides that the situation requires a policy boost to maintain the expansion of output and investment.. What would you advice them? Monetary or Fiscal policy?
5. (5 points) *For this question, disregard the specifics of the model from above.* Can you think of a situation when fiscal policy is completely ineffective? When monetary policy is ineffective? (*Hint: think about the slopes of the IS and the LM curve.*) Connect these slopes to the multiplier, the sensitivity of investment to the interest rate, and the slope of the money demand.

**Question 3.**

Consider an economy that has the following aggregate behavioral equations:

Consumption

$$C = 10 + 0.5(Y - T)$$

Investment

$$I = 0.1Y + 10(1 - i)$$

Government Fiscal Policy

$$G = 10$$

Taxes are collected as a constant rate on income

$$T = 0.1Y$$

Money demand

$$\left(\frac{M^d}{P}\right) = 0.05 \frac{Y}{i}$$

The level of nominal money supply is 29, the price level is 1.

1. (7 points) Determine the equilibrium output, the interest rate, and the deficit or surplus of the government. What is the value of the multiplier (of government spending on output)?
2. (8 points) Suppose the government wants to reduce the deficit sharply and decides to increase the tax rate to 0.2. Find out the new equilibrium level of output and interest rate. Provide a graphical illustration of the relation between the old and new equilibria. Does the government balance its budget? How do the different components of demand react to the tax increase? Does the multiplier change, and if so, what is its new value?
3. (4 points – short answer, no algebra required) Give an alternative way to reduce the deficit. What would be its consequence on output? Explain. Can you design an alternative program to reduce the deficit and have a much lower effect on output? Explain.