

ECON 202 Macroeconomic Theory Fall 2011
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MIDTERM I

Thursday, 3 November 2011
17:40-19:30 in G110

Please answer the following questions. Write your answers clearly on the midterm. You can achieve a total 100 points. There are 6 short questions followed by two long questions (weighed 70/100). You should read all of the questions first. There is a blank page attached at the end of the midterm to be used as scratch paper.

GOOD LUCK!

NAME

NUMBER

(This table is for the instructor use only)

	Total
Short Questions	
Long Questions	
Total	

SHORT QUESTIONS (30 points)

Multiple Choices (5 points each)

(For partial points write your explanation)

1) Consider a closed economy where $T=G$, $I>0$. Then, private saving is:

- A) Equal to public saving.
- B) Cannot answer this question with the available information.
- C) Bigger than public saving.
- D) Bigger than investment.
- E) Smaller than public saving.

$$S + (T-G) = I$$

$$T-G=0$$

$$S=I > 0 > (T-G) = 0$$

2) Which of the following combinations of monetary and fiscal policies is sure to decrease interest rates?

- A) Increase MS, Increase T
- B) Increase MS, Decrease T
- C) Decrease MS, Increase T
- D) Decrease MS, Decrease T

3) The money multiplier

- A) May be equal to 1 if and only if people decide not to deposit their money in banks.
- B) May be equal to 1 if and only if banks put in reserves all the deposits they

get.

C) May be equal to 1 if and only if people decide to have all their money in currency or banks don't lend or buy bonds with the deposits they get.

D) Must always be greater than 1.

Money multiplier= $1/c + \theta (1-c)$,

When $c=1$ or $\theta=1$ the multiplier is equal to 1.

Please state whether the following two statements are **TRUE or FALSE** (there is no uncertain choice) with a short explanation (3 or 4 lines).

Each question counts 5 points. 3 points for TRUE/FALSE answer, 2 points for explanations.

1) During a given year, the following activities occur:

- i) A silver mining company pays its workers 200,000TL to mine 75 kg of silver. The silver is then sold to a jewelry manufacturer for 300,000TL.
- ii) The jewelry manufacturer pays its workers 250,000TL to make silver necklaces, which it sells directly to customers for 1,000,000TL.

GDP in this economy is 1,300,000TL according to the value added approach. (TRUE / FALSE)

$(300,000) + (1,000,000 - 300,000) = 1,000,000\text{TL}$.

2) Assume we have a fixed basket of 5 apples and 2 oranges. Base year=1990. CPI in 2011 is 0.5 which means it is twice expensive to buy the same bundle in 2011 compared to 1990. (TRUE / FALSE)

	1990	2011
Price of Apples	2TL	4TL
Price of Oranges	2.5TL	5TL

$$\begin{aligned}\text{CPI} &= \text{Cost of the bundle in 2011} / \text{Cost of the bundle} = (4*5 + 5*2) / \\ & (2*5 + 2.5*2) \\ & = 30/15 = 2\end{aligned}$$

3) Suppose that the economy is characterized by the following behavioral equations:

$$C = c_0 + c_1 Y_d$$

$$Y_d = Y - T$$

$$I = b_0 + b_1 Y$$

Government spending is constant. Note that the investment increases with output. The new multiplier will be larger when b_1 is bigger and the IS relation is a vertical line in this setting as the investment does not depend on interest rates. . (TRUE / FALSE)

Multiplier = $1/(1 - c_1 - b_1)$. When b_1 increase the multiplier increases.

IS relation

$$Y = c_0 + c_1 Y + b_0 + b_1 Y + G$$

IS curve will be vertical as Y is not a function of i .

LONG QUESTION 1

Goods Market (25 points)

Suppose the Turkish economy is represented by the following equations:

$$C = 1000 + 0.75 Y_d$$

$$I = 850$$

$$G = 2500$$

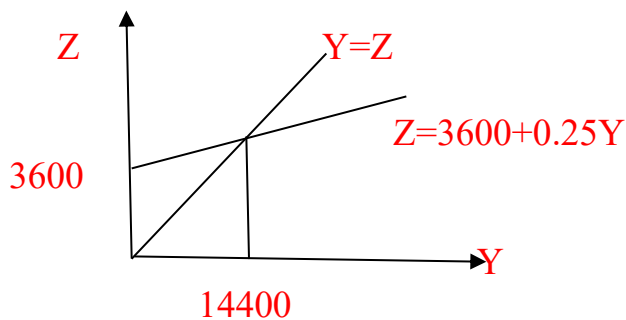
$$T = 1000$$

- a) Given the above variables calculate the equilibrium output in the goods market. Secondly, illustrate the equilibrium output in a graph. (10 points)

$$Y = Z = C + I + G = 1000 + 0.75(Y - 1000) + 850 + 2500$$

$$Y = 3600 + 0.25Y$$

$$Y^* = 14,400$$

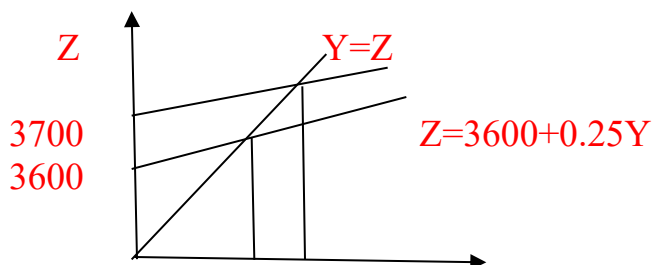


- b) Now assume that consumer confidence increases resulting in an increase in autonomous consumption by 100 (c_0 increases from 1000 to 1100). I) Find the new equilibrium output level using the concept of multiplier. (4 points) II) Explain why is the change in output larger than 100 (why is the multiplier larger than one intuitively?) (3 points) III) Show the changes in an appropriate graph. (3 points)

$$\text{Mult} = 1 / 1 - 0.75 = 4 > 1$$

$$\text{Change in } Y = 4 * \text{Change in } G = 400$$

$$Y_{\text{new}} = 14800$$



14400 14800 Y

- c) What is the savings function? Explain the function intuitively by showing marginal propensity to save and autonomous savings and mentioning what do they mean? (5 points)

$$S=YD-C=-1000+0.25YD$$

-1000 is the autonomous savings.

0.25 is the marginal propensity to save. It shows that when disposable income increases by 1TL savings increase by 25 Kuruş.

Money Market (10 points)

Write down the equilibrium condition in the money market and show it in a graph and explain in two sentences. (5 points)

Explain what happens to interest rate and the price of bonds if Central Bank buys government bonds in the open market. For full credit mention how and why the change in interest rate occurs. (5 points)

Check for the Chapter 4 in the book.

Labor Market (10 points)

Suppose that the markup of goods prices over the marginal cost is 5%, and that the wage setting equation is $W=P(1-u)$, where u is the unemployment rate.

- a) What is the real wage, as determined by the price setting equation? (3 points)

$$\text{WS: } W=P(1-u)$$

$$\text{PS: } P=(1+Mu)W=1.05W$$

$$1-u=1/1.05=W/P= \text{nealy } 0.95$$

- b) What is the natural rate of unemployment? (3 points)

$$1-u=0.95, u=\text{nearly } 0.05$$

- c) Suppose that the markup of prices over costs increases to 10%. What happens to natural rate of unemployment? Explain the logic behind your answer. (4 points)

When markup increases we know that WS equation shifts out and natural rate of unemployment rises. We know that when markup increases price level rises as well as prices are a markup over wages. When price level rises, people will start to expect higher prices and ask for higher wages, to have the same real wages firms need to fire some workers and increase the unemployment rate.

LONG QUESTION 2

IS-LM Model (25 points)

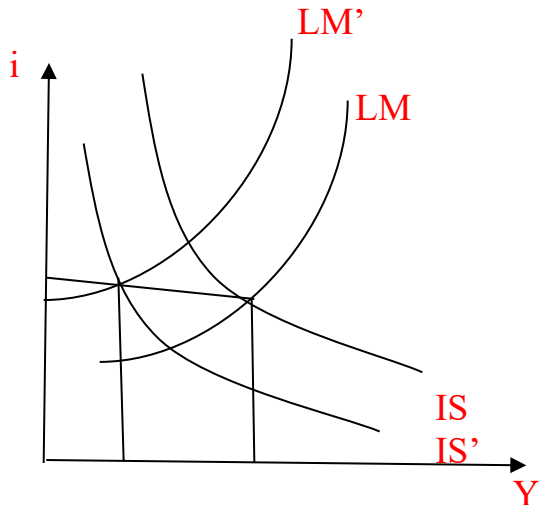
Recent Turkish Economic News:

The Turkish government announced a rise in taxes in alcoholic drinks, tobacco, fuel, automobiles and communication. (Oct 13, 2011)

Erdem Başçı, Chairman of Central Bank of Turkey recently announced that inflation is on the rise and therefore CB will engage in contractionary monetary policy. (Oct 26, 2011) (Here let's assume the CB had already engaged in contractionary monetary policy)

Let's say that you are chatting with a friend on the recent economic incidents. Explain your friend the effect of this policy mix on the

equilibrium output level (real GDP), the interest rate, consumption and investment levels? Explain the changes using and IS-LM curve. (Note: For full credit show the changes on graph and explain the reasons of the change in the variables intuitively. Do not forget to label the axis and the curves.)



Interest rates might increase or decrease but output level decreases for sure. Consumption falls as the output level falls. If interest rates do not change investment falls down as the output level falls down.

When there is contractionary monetary policy interest rates increase but when there is a tax cut YD falls consumption falls so will the demand and equilibrium output as Y falls MD falls and interest rate falls so the last effect on interest rate is unknown. But when T rise YD falls and C falls Y falls.

After the contractionary monetary policy interest rates rise Investments fall and the output level fall. So the net effect on output is a fall.

BONUS QUESTION:

Talk about the recent (since the beginning of the term) Central Bank of Turkey

monetary policy acts. Explain what kind of monetary policies (expansionary/contractionary) had been implemented, which tools had been used to implement them and briefly talk about the reasons of those policies.

(5 points, I will give 0, 2.5 or 5 points in this part)

Scratch Paper