

ECON 202 Macroeconomic Theory

Fall 2024

MIDTERM

Saturday, 23 November 2024
2 hours

Please answer the following questions. Write your answers clearly on the midterm. You can achieve a total of 100 points. There are 6 short questions (30/100) and two long questions (weighed 70/100). It would help if you read all of the questions first. A blank page is attached at the end of the midterm to be used as scratch paper.

GOOD LUCK!

NAME MIDTERM ANSWERS

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) Prices for which of the following are included in the GDP deflator, but not included in the Consumer Price Index?

- ☒ A. firms' purchases of new equipment
- ☐ B. intermediate goods and services
- ☐ C. consumption of goods
- ☐ D. consumption of services

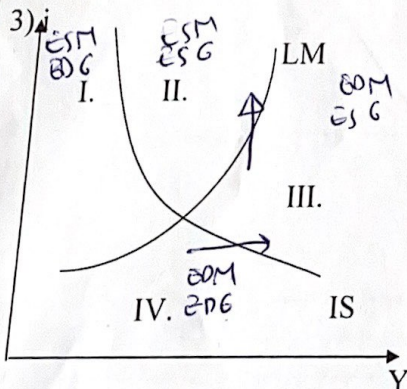
GDP bundle = all of the final goods & services in a dom. border

CPI bundle: consumer goods

2) Suppose the marginal consumption prop equals 0.6 (i.e., $c_1 = 0.6$). Given this information, which of the following events will cause the largest increase in output?

- ☒ a. G increases by 300
- ☐ b. T decreases by 300
- ☐ c. I increases by 200
- ☐ d. both a and b

a) b we know this by the goods market rule.
a) c both save goods market rule.



Following the above graph which of the statements below is wrong?

- A. At region I. there is Excess Demand In Goods Market (EDG) ✓
- B. At region II there is Excess supply in the Money Market (ESM) ✓
- C. At region III there is Excess Supply in the Goods market and Excess Demand in Money Market

Right of IS $\Rightarrow Y > AD \rightarrow$ Excess Demand of goods,

Left of IS $\Rightarrow Y < AD \rightarrow$ Excess Demand of goods,

Upside of LM $\Rightarrow i > p \Rightarrow M_d < M_s \rightarrow$ Excess Demand of money

Downside of LM $\Rightarrow i < p \Rightarrow M_d > M_s \rightarrow$ Excess Demand of money

- D) At region IV, there is Excess Demand in the Goods Market and Excess Supply in the money market.
- E. None of the above.

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) When the Producer Price Index (PPI) increases more than the Consumer Price Index (CPI) it can signal that inflation is falling down and Central Bank is fighting against it. *False*

Reverse PPI rises faster than consumer prices rise.

If the consumer prices could be effectively...

when PPI shows that CPI could increase.

2) Nominal GDP is always larger than real GDP under inflation through years, and real GDP is always larger than real GDP per capita (TRUE / FALSE)

Nom. GDP = Real GDP x GDP def.

∴ Δ Nom. GDP = ∴ Δ Real GDP + ∴ Δ GDP def. when inf. ↑

∴ ∴ Δ Nom. GDP > ∴ Δ Real GDP

Real GDP = $\frac{RGDP}{pop}$ or per 70 then RGDP > RGDP per cap

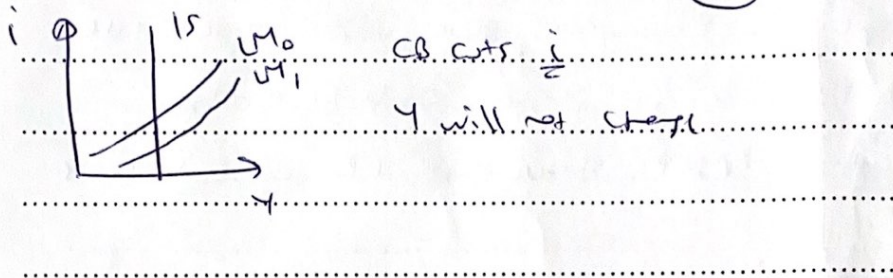
3) Suppose that the economy is characterized by the following behavioral equations:

$$C = c_0 + c_1 Y_D$$

$$Y_D = Y - T$$

$$I = b_0 + b_1 Y$$

Government spending is constant. Note that the investment increases with output only. In this setting, if CB cuts the interest rate, the output will increase much more than in the regular case (TRUE / FALSE)



LONG QUESTION 1

Goods Market (20 points)

Suppose the following equations represent the Macronesia economy:

$$C = a + bY_D$$

$$I = c + dY - ei$$

$$T = ty$$

$$G = G_0$$

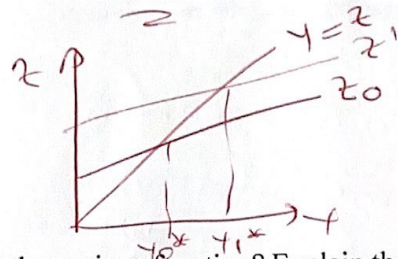
- a) Given the above variables calculate the equilibrium output in the goods market. Secondly, illustrate the equilibrium output in a graph.

$$\begin{aligned}
 Y &= C + I + G \\
 Y &= a + b(Y - ty) + c + dY - ei + G_0 \\
 Y &= a + bY - bty + c + dY - ei + G_0 \\
 Y + bty - dY &= a + c - ei + G_0 \\
 \{1 + b(1 - t) - d\} Y &= A_0 \\
 Y^* &= \frac{A_0}{1 + b(1 - t) - d}
 \end{aligned}$$

- b) Now assume that business confidence in this economy increases by f
- Find the new equilibrium output level using the concept of multiplier.
 - Explain why the change in output is larger than f (why is the multiplier larger than one intuitively?)
 - Show the changes in an appropriate graph.

$$I) \frac{1}{1-b(1-t)-d} = \frac{\Delta Y}{\Delta I_0}$$

II) when $I_0 \uparrow$ by f $Y \uparrow$ more
 so $I_0 \uparrow$ $\Rightarrow$ $Y \uparrow$ then $C \uparrow$ $I \uparrow$
 and $Y \uparrow$ & $Y \uparrow$



- 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?

$$S = Y_d - C$$

$$= Y_d - a - bY_d$$

$$S = (1-b)Y_d - a$$

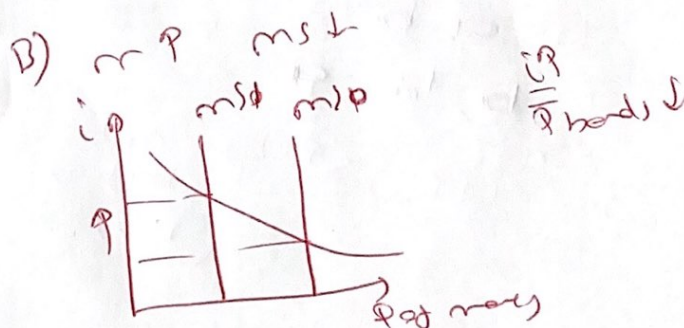
when $Y_d \uparrow$ $SP \uparrow$ by mps which is $(1-b)$

Money Market (15 points)

Yesterday, the Central Bank for Turkiye announced no change in the policy interest rate, which is the one week repo rate, and kept it at 50%. Also, the rate for short-term Turkish lira deposits was increased from 15 percent to 17 percent. The Turkish lira facility for foreign currency deposits was reduced from 5 percent to 4 percent.

- Comment on the news above using the money market knowledge you have
- Considering that only Turkish lira deposits show the impact of an increase in required reserve ratios on the money market equilibrium. Would it result in a change in the equilibrium interest rate and the price of bonds? Why or why not?
- How else could the central bank achieve a similar impact on the money market by increasing the reserve requirement?

A) $r \approx r^e$ $\rightarrow$ no contraction
 MS can change with
 a) OM
 b) r change
 c) dd "
 d) a unit factor
 eq. r



C) OM for ex open market sell / MS $\downarrow$
 Deposit $r \uparrow$

LONG QUESTION 2

IS-LM Model (35 points)

Consider that the policymakers try to fight against inflation and a high budget deficit in an economy.

- What kind of policy mix would be implemented to solve both problems and why? (10 points)
- Show the impact of the policy change on an IS-LM model and show the impact on interest rate, output, consumption, and investments (15 points)
- Assume this part is separate from the question above. If money demand is irresponsive to the changes in interest rates in an economy would the fiscal policy more or less effective in changing the output level? What would be the amount of crowding out? (10 points)

a) fight against inflt $\left. \begin{matrix} MS \downarrow \\ LP \end{matrix} \right\}$ mon contr.

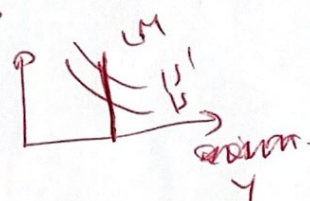
High deficit $\rightarrow (G-T) \downarrow$ } fiscal contr.



$i \uparrow$
 $Y \downarrow$
 $I \downarrow$
 $C \downarrow$

If mon policy
(e) effective
IS will shift to IS'
 $\downarrow Y \uparrow I$

c) mon irresponsive $\frac{M_d}{P} = Y$
 $M = YP$
 $\frac{M}{P} = Y$



Fiscal policy
(e) effective
& full crowding out

(PS) $\downarrow$

BONUS QUESTION:

What is the inflation rate in your home country?
Explain three most exciting economic news we talked in class this term

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

Inflation 47.09