



**UNIVERSITAS INDONESIA
FACULTY OF ECONOMICS AND BUSINESS
DEPARTMENT OF ECONOMICS,
REGULAR UNDERGRADUATE PROGRAM AND
INTERNATIONAL UNDERGRADUATE PROGRAM**

**MID-EXAM
INTERMEDIATE MACROECONOMICS
(MAKROEKONOMI I)
EVEN SEMESTER 2018/2019
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Duration: 3 hours
Closed Book**

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**Please answer all the problems below. Simple calculator
(without excel and other computer program) is allowed.**

PROBLEM NO 1. A Closed Economy in the Short Run (25 Points)

The following are the IS-LM equations of a representative closed-economy:

$$\text{IS: } Y = C(Y-T) + I(Y, i - \pi^e + x) + G$$

$$\text{LM: } i = \bar{i}$$

where:

Y =output; C = consumption; T =tax; I =investment; i =nominal rate of interest (policy rate); π^e =expected inflation; x =risk premium; and G =government spending.

- Briefly explain why $(i - \pi^e + x)$ is considered to be the more relevant interest rate for borrowers (investors) compared to the nominal interest rate (i). **(5 Points)**
- Suppose investors are becoming more risk averse:

- Explain what would happen to risk premium, investment, domestic demand, final output and consumption. **(6 points)**
 - Using the extended IS-LM curves, graphically show the short-run effect of this sentiment (the changes of the investor behaviour) on the level of output. **(4 points)**
- c. Let's assume the economy is experiencing recession. The government, through the central bank, will use monetary policy to restore the economy back to its previous level of output:
- What the government, through the central bank, should do in this case? Graphically show the impact of the monetary policy you suggest on the economy. **(5 points)**
 - In some cases, monetary policy is unable to restore the economy back to its previous level of output. Why this situation might happen? Graphically show the situation. **(5 points)**

PROBLEM NO 2. An Open Economy in the Short Run and The Medium Run (25 Points)

- a. Indonesia's equilibrium condition of goods and services market can be expressed by the following equation:

$$Y = C(Y - T) + I(Y, r) + G - IM(Y, \epsilon) + X(Y^*, \epsilon)$$

where:

Y=domestic output; Y= foreign output; C= consumption; T=tax; I=investment; r=real interest rate; G=government spending, ϵ = Real Exchange Rate.*

If it is assumed that the Marshall–Lerner condition holds. Explain in words the effects of a depreciation of Rupiah (domestic currency) on Indonesia's: export, import, trade balance, and output! **(5 points)**

- b. Suppose the United States (US) economy is experiencing a recession or a decrease in its level of output Y^* . To tackle the problem, the US central bank (The Fed) is to decrease its policy rate (i^*). By using IS-LM-UIP (uncovered interest parity) framework, explain in words and graphically the effect of the decrease in Y^* and i^* on domestic output (Y) and exchange rate (E) if the Bank Indonesia does not change the domestic interest rate (i)! **(10 points)**

- c. Equilibrium in the labor market (in the medium run) is determined by the real wage that is set by the wage setter and price setter. Suppose that the wage-setting equation is given by

$$W/P = 1.5 - 2u + z$$

where W is the nominal wage; P is the price level; u is the unemployment rate; and z is the minimum wage policy. Assume that the markup of the products' prices is 20% and z is 10%, and that the expected price level is equal to the actual price level.

- Write the equations that show the required condition in the equilibrium of labor market (real wage chosen in wage setting is equal to the real wage implied by price setting) and calculate the natural rate of unemployment (U_n) for this economy! **(4 points)**
- Explain in words and show graphically, what would happen to the natural rate of unemployment (U_n) if the government enacts a policy to increase the minimum wage! **(6 points)**

PROBLEM NO 3. An Economy in the Short Run to the Medium Run (25 Points)

- Explain concisely the main idea of Okun's Law and describe the law graphically. **(5 Points)**
- Use the IS-LM-PC framework to explain (verbally and graphically) the reason behinds the central bank's decision to increase policy rate (benchmark interest rate) in the period of economic boom. **(10 Points)**
- Explain verbally and graphically the stagflation condition that triggered by an increase in oil price. **(10 Points)**

PROBLEM NO 4. An Economy in the Long Run (25 Points)

Government of every country in the world makes an effort to implement various economic policies to improve their economic performance. The Government of Indonesia is also trying to boost its economic growth by investing heavily in infrastructure and human capital. In addition, the government also tries to attract as much as possible Foreign Direct Investment (FDI). Economic literature identifies three important factors that contribute to economic growth, i.e.: capital, labor and technology. Within this context, suppose that the production function of an economy follows the Cobb-Douglas production function:

$$Y = AK^{\alpha}L^{1-\alpha}$$

Where:

Y is output; *A* is technology, *K* is capital and *L* is a labor. Further assume, the saving rate is *s*, population growth rate (labor growth rate) is *n* and depreciation rate is *d*.

- Derive the steady-state level of capital-labor ratio, k^* , as a function of *s*, *n* and *d*. **(5 points)**
- Derive the golden rule steady-state capital-labor ratio, k_G , at which the maximum of steady state level of consumption is achieved. What is the meaning of the golden rule? *Hint: you have to calculate the steady state level of consumption c^* , as a function of k^* .* **(10 points)**
- Consider that the government plans to achieve a 5% growth in GDP or Gross Domestic Product (*Y*). Meanwhile the data show that $\alpha=0.4$ and the technology (*A*) grows at the rate of $\frac{\Delta A}{A} = 1.4\%$ and and labor (*L*) grows at the rate of $\frac{\Delta L}{L} = 2\%$. Calculate the required growth rate of capital (*K*) in order to achieve the government's target for GDP growth? If you are a Minister of Development Planning, what are the strategies or policies options to increase the level of capital accumulation? (Show at least two policies and explain). **(10 points)**

Unity in Development