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Макроэкономика 1 — МИЭФ, 2022 final

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SECTION 1

A. Multiple-choice questions — 40 marks

Choose **one** correct answer. Each question is worth **8 marks**.

1

An economy described by the Solow model is on its balanced growth path. Technology grows at rate $g + n$, while population grows at rate n . What is the growth rate of average labour productivity?

- (a) 0
- (b) n
- (c) g
- (d) $n + g$

2

A developing economy described by the Solow model without technological progress is converging to its balanced growth path, so its current capital-labour ratio is below the steady-state level. What happens to consumption per worker immediately after an increase in the saving rate?

- (a) It will increase
- (b) It will decrease
- (c) There will be no change
- (d) The effect is ambiguous

3

Consider the $IS - LM - BP$ model for a small open economy with perfect capital mobility and fixed prices and wages. The central bank allows the exchange rate to float freely and keeps the money supply unchanged. Greater business confidence raises I_0 in

$$I(i) = I_0 - bi.$$

What will be the effect of this permanent shock on equilibrium investment in the short run?

- (a) Positive
- (b) Negative
- (c) No effect
- (d) Ambiguous

4

In an open economy with imperfect capital mobility and a fixed exchange rate, the government keeps expenditure fixed at G_0 . Prices are fixed and investment depends only on the nominal interest rate:

$$I(i) = I_0 - bi.$$

How do tax receipts tY change in the short run after a permanent increase in the proportional tax rate t ?

- (a) tY increases
- (b) tY decreases
- (c) tY does not change
- (d) The change is ambiguous

5

The monetary base equals 44 billion and sight deposits equal 120 billion. What is the supply of liquid assets if the reserve ratio is 20%?

- (a) 120
- (b) 140
- (c) 164
- (d) 220

SECTION 2

C. Problem — 60 marks

Consider a small open economy in recession with fixed prices and wages. Profits constitute a share α of total income and are fully reinvested, so investment demand is

$$I(i, Y) = I_0 - bi + \alpha Y,$$

where i is the nominal interest rate. Only personal income is taxed at marginal rate t . Consumption is insensitive to the interest rate. The marginal propensity to consume out of current disposable income is c_1 , and z is the marginal propensity to import out of current total income.

The central bank ensures perfect capital mobility, so the domestic nominal interest rate is determined by uncovered interest parity:

$$i = i^f - \frac{E^e - E}{E} + \vartheta,$$

where i^f is the foreign risk-free interest rate.

(a) (10 marks) Define E and E^e . What does parameter ϑ mean and what does it depend on? Limit your answer to three or four sentences.

(b) (10 marks) Using

$$NX = NX_0 - zY - dE,$$

derive the goods-market equilibrium condition, the IS schedule. Explain the meaning of d .

(c) (10 marks) What does the monetary-policy rule, the MP schedule, look like in (Y, i) space under perfect capital mobility? Mind the UIP condition. Illustrate the initial equilibrium in the $IS - MP - BP$ diagram. Mark i^f on the vertical axis, assuming $\vartheta > 0$ and $E^e = E$, and mark potential output Y_n on the horizontal axis.

(d) (10 marks) Consider a permanent increase in d . Illustrate the short-run effect on output in the $IS - MP - BP$ diagram under a fixed exchange rate. How do output and its composition change in the new equilibrium? Explain in two or three sentences.

(e) (10 marks) Consider a temporary increase in d that leaves the expected exchange rate unchanged. Illustrate the short-run effect on output under a flexible exchange rate. Explain intuitively in two or three sentences.

(f) (10 marks) Finally, consider a permanent decrease in the profit share α . What happens to consumption under a flexible exchange rate? Illustrate in the $IS - MP - BP$ diagram and explain intuitively.

