

Course name: Intermediate Macroeconomics
Course code: EC2201
Type of exam: Retake
Semester: Spring 2015
Examiner: Anna Seim
Number of credits: 7,5 credits (hp)
Date of exam: Saturday, April 25, 2015
Examination time: 5 hours (09:00-14:00)

Write your identification number on each paper and cover sheet (the number stated in the upper right hand corner on your exam cover).

Use one cover sheet per question. Explain notions/concepts and symbols. If you think that a question is vaguely formulated, specify the conditions used for solving it. Only legible exams will be marked. **No aids are allowed.**

Question 4 may be answered in Swedish or English. All other questions should be answered in English.

The exam consists of 5 questions, worth 100 points in total. The maximum points on each question are stated within parenthesis. For the grade E 45 points are required, for D 50 points, C 60 points, B 75 points and A 90 points.

Only students who have NOT received course credit from the seminar exercises should answer Question 5. Students who have obtained course credit automatically receive 10 points on that question, and get no extra points from answering it.

Your results will be made available on your "My Studies" account (www.mitt.su.se) on the 18th of May at the latest.

Good luck!

Question 1: Short questions (25 points in total)

Provide short answers to all of these questions (5 points each).

- Using Mankiw's long-run model that we discussed in Lecture 1, explain how saving, investment and net exports are related in an open economy where the world interest rate is treated as exogenous. Consider an economy that begins with balanced trade and analyse the effects of a domestic tax cut. Illustrate your answer in a diagram. (5 points)
- Derive an equation explaining the Fisher effect in open economies and interpret the expression. On which two central theories is the Fisher effect based? (5 points)
- Consider an economy where production is given by the Cobb-Douglas function

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

where A is total factor productivity, K is capital, L is labour and $0 < \alpha < 1$. Derive an expression for growth in labour productivity, i.e. output per worker, and interpret your results. (5 points)

- State the Taylor rule and interpret the expression. What is meant by the Taylor principle? (5 points)
- Consider Mankiw's simple search model of the labour market. Derive an expression for the unemployment rate in a steady state where the flows into and out of unemployment are equally large, so that unemployment and employment remain constant from period to period. What causes the steady-state unemployment rate to decrease in this model? (5 points)

Question 2: Economic Policy under Floating and Fixed Exchange Rates (25 points)

- Consider a small open economy with a flexible exchange rate. Use the AA-DD model of Krugman, Obstfeld and Melitz to analyse the short-run effects of a temporary increase in the money supply on output, the interest rate, prices, net exports and the nominal and real exchange rates. Illustrate your answer diagrammatically and explain the mechanisms. (6 points)
- Under the same assumptions as above, use the AA-DD model to analyse the short-run effects of a temporary tax cut on output, the interest rate, prices, net exports and the nominal and real exchange rates. Illustrate your answer diagrammatically and explain the mechanisms. (6 points)
- Assume that the central bank instead maintains a fixed exchange rate. How does this affect the analysis in a and b? Motivate your answer using diagrams and explain the intuition for each type of policy. (6 points)
- Assume a floating exchange rate. Briefly discuss pros and cons of monetary and fiscal policy measures as stabilisation tools. Please write no more than 1 page. (7 points)

Question 3: Forward-looking consumers (20 points)

Consider the two-period model of intertemporal consumption that we discussed in Lecture 9.

- a. Derive the individual's intertemporal budget constraint. Draw the budget constraint in a diagram and explain the intuition behind it. (6 points)
- b. The intertemporal budget constraint indicates that it is typically more expensive to consume in period 1 than in period 2. Why? What is the condition required for this to obtain? (2 points)
- c. How does the budget line illustrated in question a change if the individual is credit constrained? A diagrammatical explanation is enough here, no derivation needed. (4 points)
- d. Assume that there are no credit constraints and that the consumer is initially a borrower so that $C_1 > Y_1$. What happens if there is a decrease in the interest rate? You can assume that the consumer remains a borrower after the decrease in the interest rate. Illustrate your answer in a diagram and explain the intuition. (8 points)

Question 4: The European Debt Crisis (20 points)

Please be brief and to the point. Write no more than 4 pages. Only legible answers will be considered. This question may be answered in English or Swedish.

In the aftermath of the global financial crisis, Europe has been plagued by a severe debt crisis. Your task is to discuss the following:

- What were the key factors behind the European debt crisis?
- Explain how budget deficits affect debt dynamics and why government debt may quickly become such a large problem.

When answering these questions, try to provide examples from the Euro area and actual events in recent years.

Question 5: (10 points)

This question should only be answered by students who have not obtained credit by attending the seminar series.

Consider the version of the Solow model where there is population growth but no technological progress.

- a. Explain how the capital stock and output per worker are determined in the steady state. Illustrate your answer in a diagram. (5 points)
- b. Analyse the effects of a decrease in the population growth rate. Illustrate your answer in a diagram. (3 points)
- c. What is the main criticism of the Solow model? (2 points)