



Department of Economics

Course name: Intermediate Macroeconomics
Course code: EC2201
Examiner: Anna Seim
Number of credits: 7,5 credits (hp)
Date of exam: Wednesday March 18, 2015
Examination time: 5 hours (14:00-19:00)

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 Monday, March 30, at the latest. The exam review will be held on Tuesday, March 31, at 12.00, in lecture hall E10.

Good luck!

Question 1: Short questions (25 points in total)

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

- Using the long-run model that we discussed in Lecture 1, explain how saving, investment, net exports and the real exchange rate are related in a small open economy. What happens to the real exchange rate if there is a decrease in government spending? Illustrate your answer in a diagram. (5 points)
- Explain mathematically what is meant by the monetary approach to the exchange rate. (5 points)
- Consider the simplest version of the Solow model with no population growth and no technological progress. Explain what is meant by the golden rule level of capital. Derive a condition for when this level of capital is reached and illustrate your answer in a diagram. (5 points)
- Mankiw notes that financial crises typically comprise 6 stages. In the first stage, asset prices tend to rise rapidly, and often in excess of the asset's fundamental value. What are the remaining 5 stages? Write a sentence explaining each of them. (5 points)
- Consider a two-period model of a forward-looking consumer who trades off consumption in period 1 and consumption in period 2. Illustrate the optimal choice of the consumer in a diagram, assuming that the consumer is initially a saver. Illustrate the effects of a decrease in the interest rate. Assume that the consumer remains a saver also after the interest rate decrease. (5 points)

Question 2: Fiscal Policy (25 points)

- Use the AA-DD model of Krugman, Obstfeld and Melitz to analyse the short-run and long-run effects of a *temporary* increase in government spending on output, the interest rate, prices, net exports and the nominal and real exchange rates. Illustrate your answer diagrammatically and explain the mechanisms. (10 points)
- Use the AA-DD model to analyse the short-run and long-run effects of a *permanent* increase in government spending on output, the interest rate, prices, net exports and the nominal and real exchange rate. Explain the mechanisms and illustrate your answer using diagrams. (10 points)
- Consider a two-period model of government revenue and expenditure, where the budget deficit in period 1 is given by:

$$D = G_1 - T_1$$

and taxes in period 2 are given by:

$$T_2 = (1 + r)D + G_2$$

where r is the interest rate, G is government consumption and T is taxes. Derive the government's intertemporal budget constraint. Also, explain the intuition behind the concept of Ricardian Equivalence. (5 points)

Question 3: The Labour Market (20 points)

- a. 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. (6 points)
- b. What causes the steady-state unemployment rate to increase in this model? (2 points)
- c. Why are job-finding rates likely to be lower for the long-term unemployed? (3 points)
- d. In models of real wage rigidity, unemployment arises because the real wage is higher than the wage implied by labour supply being equal to labour demand. Discuss factors that can give rise to such real wage rigidity. (5 points)
- e. Illustrate the equilibrium rate of unemployment in a diagram depicting labour demand and labour supply and a constant labour force. (2 points)
- f. Do you think wages are equally rigid upwards and downwards? Why/Why not? (2 points)

Question 4: The Swedish inflation target (20 points)

This question is an essay question. Please try to be brief and to the point. You should write no more than 4 pages in total. This question may be answered in English or Swedish.

The Swedish Central Bank (The Riksbank) has been pursuing a flexible inflation target since 1995. Specifically, the CPI inflation rate is not allowed to exceed 2 percent annually.

Your task is to discuss the following aspects of the inflation target:

- What are the benefits of inflation targeting?
- In general, why is commitment thought to be better than discretion when making monetary policy decisions?
- In his guest lecture, Martin Flodén talked about the Riksbank's choice of a target level of 2 percent. Are there any arguments for setting a target rate higher than the current 2 percent? Are there any problems associated with raising the target level once that it has been set?
- Discuss the tools that the Riksbank can use to reach the inflation target. Distinguish between normal times and extreme situations such as the current one.

Question 5: Credit Question (10 points)

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

Mankiw's dynamic AS-AD model is a simplified version of a Dynamic Stochastic General Equilibrium (DSGE) model. In this model, shocks have dynamic effects and the central bank sets the nominal interest rate according to a Taylor rule.

- a. Write down the formula for the Taylor rule and interpret the expression. (4 points)
- b. What does the Central Bank's response imply for the relationship between the real interest rate and inflation? Explain why the relationship is crucial for the stability of the economy. (4 points)
- c. How is the long-run equilibrium defined in this model? Note that you do not need to solve for the long-run equilibrium, just state the definition. (2 points)