



Department of Economics

Course name: Intermediate Macroeconomics
Course code: EC2201
Examiner: Lars Calmfors
Number of credits: 7,5 credits (hp)
Date of exam: 16 March 2016
Examination time: 5 hours (09-14)

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.**

The exam consists of 5 tasks. Tasks 1 and 4 are worth 20 points each, tasks 2 and 3 are worth 25 points each and task 5 is worth 10 points – 100 points in total. 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 a course credit from the seminar exercises should do task 5. Students who have received a course credit should not do task 5 (and cannot get any extra points from doing it).

Your results will be available on your “My Studies” account (www.mitt.su.se) on Wednesday 30 March at the latest. The exam review session will take place on Thursday 31 March at 15-17 in lecture hall D9.

Good luck!

Question 1 (Maximum 20 points)

Give short answers (maximum two pages per question).

- (a) Take the version of the Solow model with both population growth and labour-augmenting technological progress. Analyse and characterise the steady state. What will be the growth rates of output, output per capita and output per efficiency unit of labour? (Maximum 5 points)
- (b) What is meant by the Fisher effect? Show mathematically how it is derived from interest rate parity and purchasing power parity. (Maximum 5 points)
- (c) Define the concept of real exchange rate. How does the current account (net exports) depend on the real exchange rate? Why is it difficult to change the real exchange rate for a country with a fixed exchange rate or without an own currency (like in the Eurozone)? (Maximum 5 points)
- (d) Derive the equation for the intertemporal budget constraint in Fisher's two-period model. (Maximum 5 points)

Question 2 (Maximum 25 points)

Use the AA-DD-model in Krugman-Obstfeld-Melitz to answer the following questions. Make sure that you explain the economic mechanisms in addition to using diagrams and/or mathematics.

- (a) Assume that the nominal exchange rate is fixed. How are output and the exchange rate affected in the short run if there is a temporary fall in investment demand? Can fiscal policy be used to stabilise output? Can monetary policy be used to stabilise output? (Maximum 6 points)
- (b) Assume now instead that the nominal exchange rate is flexible. How are output and the exchange rate then affected in the short run by a temporary fall in investment demand? How does the macroeconomic outcome differ from that in (a)? (Maximum 6 points)
- (c) Can fiscal policy be used in (b) to stabilise output? Can monetary policy be used in (b) to stabilise output? What are the arguments for and against using fiscal policy? What are the arguments for and against using monetary policy? (Maximum 7 points)
- (d) Assume now that the fall in investment demand is permanent. How are output and the exchange rate then affected in the short run and in the long run under a flexible exchange rate? (Maximum 6 points)

Question 3 (Maximum 25 points)

- (a) Write out the equation for the Taylor rule for monetary policy. Explain and interpret the equation verbally. What does the rule say about how the real interest rate reacts to a rise in inflation (the Taylor principle)? (Maximum 6 points)
- (b) Write out the equation for the dynamic aggregate supply (DAS) curve. Draw a diagram showing the curve. Explain how the curve should be interpreted. (Maximum 5 points)
- (c) Derive the equation for the dynamic aggregate demand (DAD) curve. Draw a diagram showing the curve. Give a verbal explanation for the slope of the curve. (Maximum 7 points)
- (d) Assume that the economy starts in a long-run equilibrium with output at its natural (equilibrium) level and inflation equal to the central bank's inflation target. Assume then that the economy is exposed to a negative demand shock. The shock lasts two periods and then disappears. Analyse, using the DAS-DAD model, how the economy is affected, that is the adjustment path back to long-run equilibrium. The analysis should be diagrammatical, but you should also explain the economic mechanisms. (Maximum 7 points)

Question 4 (Maximum 20 points)

There has recently been a large inflow of refugees into Sweden. As a consequence government expenditure is projected to increase substantially. Discuss the likely effects of these developments on actual and equilibrium unemployment rates in the short run and in the longer run. Do you see any problems for the fiscal balance? What fiscal and employment policies would you recommend? **Note that you need not agree with the views of the lecturer in the course; what counts is that you give a well-motivated answer!**

Task 5 (Maximum 10 points)

THIS TASK SHOULD BE SOLVED ONLY BY THOSE WHO DO NOT HAVE A COURSE CREDIT FROM THE SEMINAR EXERCISES. THOSE WHO HAVE A CREDIT DO NOT OBTAIN ANY POINTS FROM THIS TASK.

Assume that production in the economy is determined by a Cobb-Douglas production function with total factor productivity, labour and capital as arguments. Derive the profit-maximising levels of employment and capital. Show how the income shares of labour and capital are related to the parameters in the Cobb-Douglas function.