UNIVERSITY OF OSLO
DEPARTMENT OF ECONOMICS

Term paper in: **ECON4330 – Open economy macroeconomics**

Handed out: Wednesday, October 11, 2006

To be delivered by: Friday, October 27, 2006   **before 02:00 p.m.**

Place of delivery: Department office, 12th floor

Further instructions:
- This term paper is **compulsory**. Candidates who have passed the compulsory term paper in a previous semester, does not have the right to hand in the term paper again. This is so, even if the candidate did not pass the exam.
- You must use a printed front page, which will be found at
  http://www.oekonomi.uio.no/info/EMNER/Forside_obl_eng.doc
- **Note:** The students can feel free to discuss with each other how to solve the problems, but each student is supposed to formulate her/his own answers. Only single-authored papers are accepted, and papers that for all practical purposes are identical will not be approved.
- It is of importance that the term paper is delivered by the deadline (see above). Term papers delivered after the deadline, **will not be corrected**.*)
- All term papers must be delivered to the place given above. You must not deliver your term paper to the course teacher or send it by e-mail.
- If the term paper is not accepted, you will be given a new attempt. If you still not succeed, you will not be permitted to take the exam in this course. You will then be withdrawn from the exam, so that this will not be an attempt.

*) If a student believes that she or he has a good cause not to meet the deadline (e.g. illness) she or he should discuss the matter with the course teacher and seek a formal extension. Normally extension will only be granted when there is a good reason backed by supporting evidence (e.g. medical certificate).

Compulsory term paper Open Economy Macroeconomics Fall 2006

Note: You are required to answer question 1 and **at least one of** questions 2 and 3. You are expected to use a formal model and state the assumptions underlying the model.

1. The foreign exchange market has been hit by a shock, which has caused the exchange rate E to depreciate below its expected equilibrium level. Discuss in the context of the "simple portfolio model" of chapter 1 of Rødseth (2000) how, and with what degree of success, the central bank could act to restore the equilibrium level when there is: (a) zero capital mobility; (b) intermediate capital mobility; and (c) infinite capital mobility. Also briefly describe the link between the risk premium and capital mobility.

2. Consider the two-country two-period model with investment discussed in chapter 1 of Obstfeld&Rogoff (1996). Assuming isoelastic preferences; what determines the slopes of the saving and investment schedules? How is the world real interest rate determined? When is it optimal for a country to run a first-period current account deficit. What factors cause the equilibrium real interest rate to move? To what extent is this model relevant for explaining the large U.S. current account deficits and the low levels of world real interest rates of recent years?

3. Consider the stochastic version of the infinite-horizon small open endowment economy in chapter 2 of Obstfeld&Rogoff (1996). The period utility function is quadratic and the subjective discount factor β satisfies $\beta(1 + r) = 1$, where r is the exogenous world real interest rate. What do we mean by rational expectations? Show that the consumption Euler equation together with the rational expectations assumption imply that consumption follows a random walk. How would you test this hypothesis empirically? What do we mean by certainty equivalence? Does certainty equivalence hold in this model? The endowment Y_t follows the process

$$Y_t - \overline{Y} = \rho \left(Y_{t-1} - \overline{Y} \right) + \varepsilon_t,$$

where the disturbance ε_t has expectation zero and is serially uncorrelated. Assume that $\beta = 0.99$ and that the initial net foreign asset position of the economy is zero. Compute the dynamic responses up to twenty periods of output, consumption, net foreign assets and the current account balance following an unexpected one unit negative output innovation in period t ($\varepsilon_t = -1$) when (a) $\rho = 0$; (b) $\rho = 1$; and (c) $\rho = 0.85$. In each case state which variables are stationary (i.e., revert to their original levels after the shock) and which variables are nonstationary (i.e., shift permanently). Explain the economic intuition behind the results.

Good luck!