UNIVERSITY OF OSLO
DEPARTMENT OF ECONOMICS

Postponed exam: **ECON4325 – Monetary Policy and Business Fluctuations**

Date of exam: Thursday, August 13, 2009

Time for exam: 09:00 a.m. – 12:00 noon

The problem set covers 2 pages

Resources allowed:
- No resources allowed

The grades given: A-F, with A as the best and E as the weakest passing grade. F is fail.

The exam consists of two parts: A and B. Both parts carry equal weight, and you are supposed to answer both.

PART A

Problem 1

Give a brief account of the stylized facts on the effects of monetary policy. What kind of evidence are the stylized facts based on?

Problem 2

Explain briefly what the credit channel of monetary policy is. Describe briefly an example with adverse selection, and one example with morale hazard.

Problem 3

Describe briefly the main implications for monetary policy of taking into account rigidity of nominal wages, in addition to an assumption of price rigidity.

Problem 4

Within the New Keynesian framework, is it optimal to stabilise the economy as much as possible? Justify your answer.

PART B

Consider the following "New Keynesian" model:

(1) $\pi_t = \beta E_t \pi_{t+1} + \kappa\left(y_t - y^n{}_t\right)$

(2) $y_t = E_t y_{t+1} - \sigma(i_t - E_t \pi_{t+1} - \rho)$

where π_t is the rate of inflation, y_t is output, i_t is the nominal interest rate, β, κ, σ and ρ are parameters, and E_t is the expectations operator. Lower case letters denote logs.

Monetary policy is described by a simple rule of the form

(3) $$i_t = \rho + \Phi_\pi \pi_t$$

where $\Phi_\pi > 1$. Labour productivity is given by

(4) $$y_t - n_t = a_t$$

where n_t is employment and a_t is an exogenous technology parameter that evolves according to

(5) $$a_t = \rho_a a_{t-1} + \varepsilon_t$$

where $\rho_a \in [0,1)$ and ε_t is an i.i.d. process.

The underlying RBC model is assumed to imply a natural level of output proportional to technology

(6) $$y^n_t = \Psi_y a_t$$

where $\psi_y > 1$.

a. Explain in words the economic implications of and motivation for (1) and (2).
b. Determine the equilibrium response of output, employment, inflation and the natural rate of interest to a technology shock. (Hint: guess that each endogenous variable will be proportional to the contemporaneous value of technology.)
c. Describe how those responses depend on the value of Φ_π and κ. Provide some intuition. What happens when $\Phi_\pi \to \infty$? What happens as the degree of price rigidity changes?
d. Analyze the joint response of employment and output to a technology shock and discuss briefly the implications for assessment of the role of technology as a source of business fluctuations.