UNIVERSITY OF OSLO
DEPARTMENT OF ECONOMICS

Postponed exam: ECON4325 – Monetary policy and business fluctuations

Date of exam: Wednesday, August 17

Time for exam: 9:00 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 weights. You should answer both parts.

Part A consists of four questions, of which you shall answer three. You can choose yourself which question you will leave out. Answer briefly, intuitively and precisely.

Part B consists of one question. Answer in depth and in detail.

PART A

Question 1

Explain briefly how one can extract trend and business cycles from the data. Describe some important stylized facts of business cycles that are common in most countries.

Question 2

Identify briefly some of the main criticism against the real business cycle models and explain how the proponents of the theory have tried to counter this criticism.

Question 3

Distinguish between price inertia and inflation inertia. Briefly discuss the effectiveness of policy in stabilizing the real economy if there is inflation inertia.

Question 4

Characterize and contrast a targeting regime and an instrument rule. Give examples of both.

PART B
Monetary policy

Consider an economy in which supply is given by:

$$y = \pi - E\pi + \varepsilon \qquad (1)$$

where y is logarithm of output, π is inflation, $E\pi$ is expected inflation and ε is white noise with mean zero and variance σ^2. Private sector forms its expectations about inflation before the political authorities determine inflation. The political authorities determine inflation after they have observed realised ε, while the private sector never observes ε.

The political authorities determine inflation and wish to minimise the following loss function:

$$L = \pi^2 + (y - y^*)^2, \qquad y^* > 0 \qquad (2)$$

where y^* is the authorities target level for output.

a) Assume the political authorities do not commit themselves to any particular policy on inflation. Find an expression for inflation. What will the associated level of output and the expected value of the authorities loss function (*EL*) be in this case?

b) Suppose the authorities can pre-commit to follow a linear policy rule for inflation:

$$\pi = a + b\varepsilon \qquad (3)$$

and that this is known to the private sector. What are the optimal values of *a* and *b* (that is, those that minimise *EL*)?

c) What will the associated values for inflation, production and expected value for the loss function (*EL*) be? Compare with the results in question a).

d) Suppose instead that before the private sector forms its expectations, the political authorities delegate the setting of monetary policy to an independent Central Bank that dislikes inflation. Write down an example of the Central Bank's loss function in this case. Do you agree with the argument that an independent central bank will imply lower inflation without any costs to the real economy? Motivate you answer.