

UNIVERSITY OF OSLO
DEPARTMENT OF ECONOMICS

Postponed exam: **ECON4330 – International Macroeconomics**

Date of exam: Wednesday, June 15, 2011

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

The problem set covers 3 pages (incl. cover sheet)

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.

Answer both questions. Most students will probably need more time on question A than on question B.

A

Consider the following model of the price specie-flow mechanism:
IS-curve:

$$Y = C(Y, W, i_*) + X\left(\frac{EP_*}{P}, Y, Y_*\right) \quad (1)$$

where

$$W = -\frac{EF_*}{P} \quad (2)$$

Phillips-curve:

$$\dot{P} = P\gamma(Y - \bar{Y}) \quad (3)$$

Accumulation of foreign debt:

$$\dot{F}_* = i_*F_* - \frac{P}{E}X\left(\frac{EP_*}{P}, Y, Y_*\right) \quad (4)$$

The symbols are:

Y output

W net foreign assets (= minus real value of foreign debt)

C consumption function

X trade balance function

P price of home goods

P_* price of foreign goods

E nominal exchange rate

i_* interest rate (domestic and foreign interest rates are equal)

F_* foreign debt measured in foreign currency

\bar{Y} equilibrium output

$\gamma > 0$ a constant parameter.

The exogenous variables are E , i_* , Y_* , P_* , and \bar{Y} . The initial conditions are $P(0) = P_0$, $F_*(0) = F_{*0}$.

The model can be summarized in two differential equations:

$$\dot{P} = \phi_1(P, F_*, x) \quad (5)$$

$$\dot{F}_* = \phi_2(P, F_*, x) \quad (6)$$

where x is a vector of all the exogenous variables.

- 1) Discuss briefly the effects of a decline in foreign output on the temporary equilibrium in the home country.
- 2) Discuss briefly the effect of a larger foreign debt on the growth rate of the foreign debt.
- 3) Assume, as is often done, that $\phi_{11} < 0$, $\phi_{12} < 0$, $\phi_{21} > 0$, and $\phi_{22} < 0$. Describe in words what it means that $\phi_{11} < 0$. Draw a phase diagram that can be used to discuss the evolution over time of the foreign debt and the price level. Explain the curves in the diagram. Explain also where in the diagram you find the stationary state and what characterizes this point. Is the stationary state stable?
- 4) Use the phase diagram to show the effects over time of a permanent fall in foreign output. What will be the long-run effects on the foreign debt, the price level, the current account and the trade balance? Describe the time paths and the mechanisms that are at work.

B

Explain what is meant by the the degree of capital mobility between currencies and discuss factors that determine the degree of capital mobility.