

Problem set no 5

For seminar Wednesday April 28 2010

Questions 1 - 5 are for the seminar. Questions 6 and 7 you may want to consider later.

Consider the following model of the specie-flow mechanism:

IS-curve:

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

Phillips-curve:

$$\dot{P} = P\gamma(Y - \bar{Y}) \quad (2)$$

Accumulation of foreign debt:

$$\dot{F}_* = i_*F_* - \frac{P}{E}X\left(\frac{EP_*}{P}, Y, Y_*\right) \quad (3)$$

Endogenous variables: Y , P and F_*

Exogenous variables: E , i , i_* , Y_* , P_*

Initial conditions: $P(0) = P_0$, $F_*(0) = F_{*0}$

- 1) Explain in relation to the model what is meant by a temporary equilibrium and a stationary equilibrium.
- 2) The model can be summarized in two differential equations:

$$\dot{P} = \phi_1(P, F_*, x) \quad (4)$$

$$\dot{F}_* = \phi_2(P, F_*, x) \quad (5)$$

where x is a vector of all the exogenous variables.

Assume $\phi_{11} < 0$, $\phi_{12} < 0$, $\phi_{21} > 0$. State briefly the conditions for stability of the stationary state. Discuss the sign of ϕ_{22} and what it means for stability.

- 3) Assume that $\phi_{22} > 0$, but that the stability conditions are satisfied. Draw a phase diagram for this case. Explain how you derive it.
- 4) Suppose the economy is initially in a stationary state. Then there is a permanent increase in the demand for the country's exports. What effect does this have on the time paths of the current account, the foreign debt, output and prices? Use the phase diagram and tell the history in words.
- 5) Would you advice the government to change the exchange rate in response to the increase in export demand?

- 6) Discuss briefly what is meant by "purchasing power parity". Does the model above display "purchasing power parity"?
- 7) Exporting firms sometimes follow a strategy called "pricing to market". Explain how this deviates from the assumptions behind the model above. If time, comment briefly on how pricing to market might change the analysis above.