Assignment no 4

For seminar Thusday April, 8 2011

A

Exam Spring 2004, problem 2

A version of Dornbusch's floating exchange rate model is:

(1) $\qquad Y = C(Y) + X(EP_* / P, Y, Y_*)$

(2) $\qquad \dfrac{M}{P} = m(i, Y)$

(3) $\qquad \dfrac{\dot{P}}{P} = \gamma(Y - \overline{Y})$

(4) $\qquad \dfrac{\dot{E}}{E} = i - i_*$

where Y=domestic output, Y_*=foreign output, E=exchange rate, P=domestic price level, P_*=foreign price level in foreign currency, i=domestic interest rate, i_*=foreign interest rate, C(.)= consumption function, X (.)= trade balance function, $\overline{Y}$ =equilibrium output, and γ is a positive constant.

a) Exchange rate fluctuations can be highly volatile. How does this model explain such volatility?

b) Preferably using a phase diagram, trace the long-run and transitional effects of a permanent increase in the money stock on P and E.

c) What happens to output during the transition? Also what type of path is pursued by the interest rate?

d) What would be the effects on P and E if i_* had instead increased?

e) With a higher i_* how can policy be used to stabilize E?

B

MFT-model with floating exchange rate

Below you find the equation system for a MFT-model for a small open economy. The symbols are as defined defined in OEM Ch. 6.1. $\bar{E}$ is the expected value of the exchange rate in long-run equilibrium. ε is a positive constant.

1. We are interested in studying a case where the exchange rate is floating and the central bank targets the money supply. As usual in MFT-models there is short-run price rigidity. Which variables will you treat as exogenous and which as endogenous?

2. Explain the reasoning behind the demand function for foreign currency (9) and discuss briefly the effects of i and W_p in the demand function.

3. Focus first on partial equilibrium in the foreign exchange market. Discuss the effect of i on E. (Compute the derivative). Explain what is meant by the degree of capital mobility? What is the connection between the degree of capital mobility and the effect of i on E?

4. Explain how we can draw a graph that shows how i and Y are determined. Give intuitive explanations for the slopes of the curves.

5. Discuss the effect of an increase in the foreign interest rate i_* on i and on E. How does the effect on E differ from the short-run effect of i_* that you found in exercise A? What are the reasons for the difference?

6. If the central bank wants to avoid that i_* has any short-run effect on E, what can it do within the present model? Discuss whether the measures have any problematic side effects?

The equations of the model:

$$Y = C(Y_p, W_p, \rho, \rho_*) + I(\rho, \rho_*) + G + X(R, Y, Y_*) \qquad (1)$$

$$Y_p = Y - \rho_* \frac{EF_*}{P} - T \qquad (2)$$

$$W_p = \frac{M_0 + B_0 + EF_{p0}}{P} \qquad (3)$$

$$\rho = i - p_e \qquad (4)$$

$$R = \frac{EP_*}{P} \qquad (5)$$

$$r = i - i_* - e_e \qquad (6)$$

$$e = -\varepsilon(E - \bar{E})/\bar{E} \qquad (7)$$

$$\frac{M}{P} = m(i, Y) \qquad (8)$$

$$\frac{EF_p}{P} = f(r, W_p) \qquad (9)$$

$$F_g + F_p = -F_* \qquad (10)$$