ECON4330 Seminar 4

For Wednesday April 21 2010

Question 1: The Dornbusch Model
  Exam Spring 2004, problem 2

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

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

$$\frac{M}{P} = m(i, Y) \tag{2}$$

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

$$\frac{\dot{E}}{E} = i - i_* \tag{4}$$

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, $C(\cdot)$ = consumption function, $x(\cdot)$ = trade balance function, $m(\cdot)$ = money demand function, $\bar{Y}$ = equilibrium output and γ is a positive constant.

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

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

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

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

5. With a higher i_* how can policy be used to stabilize E?

Question 2: Floating exchange rates in a Mundell-Fleming-Tobin model

Enclosed you find a Mundell-Fleming-Tobin type model for an economy with a floating exchange rate and imperfect capital mobility between currencies.

1. Draw a diagram that shows how output and the interest rate are determined jointly by the equilibrium conditions for the goods market, the foreign exchange market and the money market. Explain briefly what is behind the slopes of the curves.

2. Use the graph to discuss the effect on output and the trade balance of a) Increased government expenditure, G and b) An expected future depreciation $\bar{E}$.

A Mundell-Fleming-type model with floating exchange rates

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

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

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

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

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

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

$$e_e = \alpha \frac{\bar{E} - E}{E} \qquad (7)$$

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

$$\frac{B}{P} = W_p - f(r, W_p) - m(i, Y) \qquad (9)$$

$$\frac{EF_p}{P} = f(r, W_p) \qquad (10)$$

$$F_g + F_p \;=\; -F_* \tag{11}$$

Endogenous:E , i, B, Y, Y_p, R, r, ρ, , e_e, W_p, F_p

Exogenous: F_g, M, G , T P_*, i_* , Y_* , p_e
Predetermined: P, F_*, M_0, B_0, F_{p0}

For symbol definitions, see OEM Ch 3 or pages xii-xiii
X Net exports
Y_p Private disposable income (national income minus taxes)

The model is a somewhat simplified version of the one in OEM Ch 6.2 and 6.4. However, OEM Ch. 3.1 plus knowledge of standard Mundell-Fleming models should help in answering the questions.