Final Exam–Economics 280C

Spring 2005

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Instructions. Please read each question carefully before you start to answer it. You must answer all questions. You have three hours.

1. This question concerns theories of currency crisis.

   (a) It is sometimes claimed that speculative attacks on currencies occur only because governments pursue policies inconsistent with the long-term sustainability of a fixed exchange parity. Describe a model in which this is the case.

   (b) Do you agree with the claim in part (a)? Can you describe situations in which speculators' actions, in and of themselves, bring about a crisis that might not have occurred otherwise?

   (c) In models where expectations drive outcomes, such as in part (b), can speculators' actions collapse a fixed exchange rate regime no matter how strong the "fundamentals" in the economy are?

   (d) In models where expectations drive outcomes, such as in part (b), are there *necessarily* multiple equilibria? Discuss, using a specific model. If there is a unique equilibrium, does that mean that the claim of part (a) is valid?

2. (The Dornbusch model with an interest-rate rule) Most central banks operate by setting a nominal short-term interest rate rather than by setting the level of the money supply. These days, the interest-rate rule is designed so as to offset inflationary shocks. Accordingly, consider the following discrete-time, stochastic version of the Dornbusch model with rational expectations, where u_t is a conditional mean-zero random "monetary" shock to the domestic interest rate:

$$\text{interest-rate policy rule:} \quad i_t = i^* + \beta\left(\mathrm{E}_t\{p_{t+1} - p_t\}\right) + u_t, \quad \mathrm{E}_t\left\{u_{t+1}\right\} = 0$$

$$\text{aggregate output:} \quad y_t = \delta(e_t - p_t)$$

$$\text{price adjustment:} \quad p_{t+1} - p_t = \theta y_t$$

$$\text{uncovered interest rate parity:} \quad i_t = i^* + \mathrm{E}_t\{e_{t+1} - e_t\}.$$

(Think of the variables above as deviations from trends, and assume the foreign price level p^* is constant and normalized to equal zero.) Noticethat we do not need to write down the money-market equilibrium condition, since, given the price level and output, a central bank setting the interest rate has no choice but simply to supply the amount of money necessary in order that the money market clear at the desired rate (i.e., the money supply becomes endogenous). As usual, the price level is a predetermined (non-jumping) variable (and thus it is perfectly predictable, $\mathrm{E}_t\left\{p_{t+1}\right\} = p_{t+1}$).

(a) Express the model as a single difference equation describing the expected change in the real exchange rate $q = e - p$. Hint: Start by thinking about the date t expected values of the date $t+1$ equilibrium values.

(b) Solve that difference equation for q_t by successive forward substitutions. That is, your expression for $\mathrm{E}_t\{q_{t+1}\}$ derived in part (a), if pushed one period ahead, gives an equation for $\mathrm{E}_t\{q_{t+2}\}$ in terms of $\mathrm{E}_t\{q_{t+1}\}$ and $\mathrm{E}_t\{u_{t+1}\}$. Solve this second equation for $\mathrm{E}_t\{q_{t+1}\}$ and substitute the result into your expression from (a). Now repeat, using the expression for $\mathrm{E}_t\{q_{t+3}\}$ to eliminate $\mathrm{E}_t\{q_{t+2}\}$ from what you have just derived; and continue.

(c) On the assumption that $\beta > 1$, what is your solution for q_t? Intuitively, what does $\beta > 1$ mean in terms of the interest-rate policy rule above?

3. The U.S. is running a record current-account deficit.

(a) Sometimes it is claimed that the deficit arises because foreigners simply wish to hold U.S. assets. In a simple portfolio-balance model with imperfect substitutability between dollar and foreign-currency assets, describe how an increase in foreign demand for dollar assets would affect the exchange rate, current account, and long-run net external debt of the U.S. Assume central banks hold interest rates constant. [Hint: In class we did the case where foreigners hold no domestic assets. If it makes life easier, however, you can assume foreigners own an exogenous amount D_F of the total domestic outside debt D; then look at what happens when D_F unexpectedly rises.]

(b) In this model, how would you determine the degree of currency depreciation that would occur as the economy moves from its initial equilibrium (after the increase in foreign demand) to its long-run equilibrium?

(c) What other factors might enter into your calculation of how the overall *real exchange rate* of the dollar would change during the adjustment from the initial position to the long run equilibrium with a balanced current account?

(d) Briefly describe a model suggesting that the terms of trade change predicted by part (b), which holds the range of export goods constant, overstates the true long-run change.