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Mock exam Open Economy Macroeconomics

Instructions.

- To be handed in on Tuesday 14 November (voluntary). Answers will be provided Tuesday 21 November

- The exam consists of two parts: A and B. Both parts carry equal weights. You should answer both parts. Part A consists of four questions, of which you shall answer three. You can choose yourself which question you will leave out. Answer briefly, intuitively and precisely. Part B consists of one question. Answer in depth and in detail.

PART A

1. An investor holds an optimal portfolio of foreign and local currency denominated assets. Let f be the foreign currency share of her portfolio. It can be written as the sum of of the *minimum-variance portfolio* and the *speculative portfolio*: $f = f_M + f_S$. Explain these components. What happens to f if (i) the investor becomes more risk averse? (ii) exchange rate volatility increases?

2. Explain the difference between uncovered interest rate parity and covered interest rate parity. Do these parity conditions hold in practice?

3. Consider a small open endowment economy. Assume that the representative household has perfect foresight and maximises an intertemporally additive utility function over an infinite horizon. The discount factor β is equal to $1/(1+r)$ where r is the exogenous world real interest rate. Show that the optimal current account balance can be written

$$CA_t = Y_t - \widetilde{Y}_t$$

where $\widetilde{Y}_t$ is the permanent level of the endowment Y_t defined as

$$\widetilde{Y}_t \equiv \frac{r}{1+r} \sum_{s=t}^{\infty} \left(\frac{1}{1+r}\right)^{s-t} Y_s$$

Interpret the current account equation.

4. Explain how a country can gain from international borrowing and lending.

PART B

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

$$Y = C(Y) + X\left(\frac{SP^*}{P}, Y, Y^*\right) \tag{1}$$

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

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

$$\frac{\dot{S}}{S} = i - i^* \tag{4}$$

where Y is domestic output, Y^* is foreign output, S is the nominal exchange rate (an increase in S is a depreciation of the domestic currency), P is the domestic price level, P^* is the foreign price level (in foreign currency), M is the money supply, i is the domestic nominal interest rate, i^* is the foreign nominal interest rate, $C(\cdot)$ is a consumption function, $X(\cdot)$ is the trade balance function, $\overline{Y}$ is equilibrium output, and γ is a positive constant

a. Briefly explain the equations of the model

b. The initial value of the domestic price level is given from history. How is the initial value of the exchange rate pinned down?

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

d. Preferably using a phase-diagram, trace the long-run and transitional effects of an unanticipated permanent increase in the money stock on P and E. What are the long-run and transitional effects on Y and i?