Supervision 9
Exchange Rates and International Finance

Short questions (each 1.5 page max handwritten)

1. In the flexible price monetary model, a decrease in the growth rate of domestic money supply leads to an immediate downward jump in the domestic price level and a depreciation of the domestic currency because of a decrease in the domestic nominal interest rate. True or false? Explain.

2. Consider the following tradables-nontradables model for Home and Foreign. Output of tradables ($T$) and nontradables ($N$) equals $Y_S = A_S L_S$, where $L$ denotes labor, $A$ productivity, and the subscript $S \in \{T, N\}$ indicates the sector. There is perfect competition in the labor market and labor mobility within each country. The aggregate price level is given by $P = P_T^\gamma P_N^{1-\gamma}$, where $P_S$ denotes the price in sector $S$, and $0 < \gamma < 1$. The law of one price holds for tradables. Denote Foreign variables by an asterisk, and assume $\gamma = \gamma^*$. Derive the growth rate of the real exchange rate $\varepsilon$, defined as the relative price of Foreign vs Home goods, in terms of the growth rates of the productivity levels $A_T$, $A_N$, $A_T^*$ and $A_N^*$. Explain how the growth rate of the real exchange rate $\varepsilon$ is affected if the growth rates of nontradables productivity $A_N$ and $A_N^*$ in Home and Foreign both increase by $x$.

3. When there is imperfect substitutability between domestic and foreign assets, an unanticipated increase in the domestic money supply could reduce the domestic nominal interest rate while keeping the nominal exchange rate fixed. True or false? Explain.
Problem

4. Suppose the world consists of two countries, Home and Foreign. There is perfect international capital mobility between the two countries, and Home and Foreign assets are perfect substitutes. The rate of return for a Home investor on Home and Foreign assets is $H_s$ and $F_s$, respectively, where $s = 1, 2$ denotes the state of nature. State 1 occurs with probability $q$ and state 2 with probability $1 - q$. The Home investor allocates her wealth $W$ to maximize expected utility

$$U = qu(C_1) + (1 - q) u(C_2)$$

where $u(C) = -e^{-C}$, $C_s = [\alpha H_s + (1 - \alpha) F_s]W$ is consumption in state $s$, and $\alpha$ is the share of Home assets in the Home investor’s portfolio. Suppose that $W = 1$, $H_1 = 3$, $H_2 = 1$, $F_1 = 1$ and $F_2 = 2$, and $q = 1/3$. [Tripos 2008]

(a) Compare the expected rates of return on Home and Foreign assets. How do they depend on the probability $q$ of state 1?

(b) Derive the optimal portfolio share $\alpha$ from the first order condition. Explain intuitively whether it is desirable for the Home investor to engage in international portfolio diversification.

(c) Suppose now that the probability of state 1 increases. Explain how this would affect the optimal portfolio share $\alpha$ and the desirability of international portfolio diversification.

Essay question (1000 words max)

5. Are speculators irrational when they attack the currency peg of a country that still has foreign exchange reserves? [Tripos 2001]

Main reading


Supplementary references