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Final Exam "International Monetary Economics I"

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Question 1

a) Name and discuss two criteria for a group of countries to form a currency area. How does the Eurozone perform on these criteria compared to the United States?

Labor mobility (Mundell) can help mitigate the impact of asymmetric shocks when labor is moving from high-unemployment regions to low-unemployment regions. It plays a substantial role as a shock absorber in the US, but there is very little cross-border movements of labor in the Eurozone.

Fiscal integration (Kenen): Countries that agree on fiscal transfers in case of asymmetric shocks can mitigate the economic impact of these shocks. The US has a much higher federal budget than the Eurozone. Moreover, fiscal transfers in the Eurozone are not connected to the business cycle.

Further criteria cold be listed here as well.

b) "*Countries abandoning the Gold Standard in the wake of the Great Depression started a race of competitive 'beggar-thy-neighbor' devaluations that deepened the Depression."* Discuss.

Those countries who devaluated first could indeed compensate the lack of domestic demand with an increase in foreign demand for domestic goods via an improvement in competitiveness – which indeed reduced net export demand of countries that remained on the Gold Standard. However, those other countries sooner or later gave up the Gold Standard themselves and could thus pursue expansionary monetary policy as well. In the end, the competitiveness effects were a wash, but the monetary stimulus was not. As a consequence, what looked like "beggar-thy-neigbor" ended up supporting the recovery of the World Economy from the Great Depression.

Question 2

Consider the following model of a stationary small open economy with a flexible exchange rate:

(1) $y_t = b_0 - b_1 r_t + b_2 q_t + b_3 g_t + b_4 y_t^*$ (2) $m_t - p_t = c_0 + c_1 y_t - c_2 R_t$

(3) $r_t = R_t - (p_{t+1}^e - p_t)$ (4) $q_t = e_t - (p_t - p_t^*)$

(5) $R_t = R_t^* + (e_{t+1}^e - e_t)$

a) Compute the long-run effects of a permanent increase in the money supply

$$dm = dp = de = de^e = dp^e$$

All other variables remain unchanged.

b) Compute the short-run effects of a permanent increase in the money supply.

$$de^e = dp^e = dm$$

$$dy = \frac{(b_1 + b_2)(1 + c_2)}{(b_1 + b_2)c_1 + c_2} dm$$

$$dR = \frac{(b_1 + b_2)c_1 - 1}{(b_1 + b_2)c_1 + c_2} dm$$

$$dr = dR - dm = \frac{-1 - c_2}{(b_1 + b_2)c_1 + c_2} dm$$

$$de = dq = \left(1 - \frac{(b_1 + b_2)c_1 - 1}{(b_1 + b_2)c_1 + c_2}\right) dm$$

c) Explain the concept of exchange-rate "overshooting" and relate it to your results in a) and b).

Exchange-rate overshooting refers to the possibility that permanent changes in money supply (or other monetary variables) can have larger effects on the exchange rate in the short run than in the long run. If we compare our results from a) and b), we can easily see that whether or not the exchange rate overshoots in the short run depends on the sign of $(b_1 + b_2)c_1 - 1$. *This term reflects the direction of the response of the interest rate. If the interest rate falls, the exchange rate overshoots. If, however, output reacts to the exchange-rate stimulus strongly enough, the interest rate might actually rise in the short run, in which case the exchange rate undershoots its new long-run equilibrium value.*

Question 3

Consider two countries, North and South, forming a monetary union. Their economies can be described as follows:

(1) $y_i = -b_1 r + b_3 g_i + b_4 y_j, \qquad i,j = N,S; i \neq j$

a) The central bank adjusts the interest rate to keep the output gap of the aggregate monetary union at zero. Derive the central bank's reaction function which describes how it sets the interest rate.

$$y_N + y_S = \frac{1}{1-b_4}\left(-2b_1 r + b_3(g_N + g_S)\right) = 0$$

$$\rightarrow\ r = \frac{b_3}{2b_1}(g_N + g_S)$$

b) How does a decrease in government spending in the South affect the output gap in the North?

$$dy_N = \frac{-b_3}{2(1+b_4)}\,dg_S$$

c) How does your answer in b) change if the ZLB is binding?

$$dy_N = \frac{b_3 b_4}{1-b_4^2}\,dg_S > 0$$