IFEEK特別演習IIB: 2018年度

Problem Set 2: Money and Open Economy

Q1. Explain the following terms.

(a) Nominal variables

(b) Real varialbes

(c) Nominal interest rate

(d) Real interest rate

(e) The Classical Dichotomy

(f) Neutrality of money

Q2. Answer the following.

(a) What is the quantity theory of money?

(b) Suppose that the velocity of money is constant. Real GDP grows by 5 percent per year, the money stock grows by 14 percent per year, and the nominal interest rate is 11 percent. What is the real interest rate? (Hint: Use the quantity equation and the Fisher equation)

Q3. Answer the following

(a) How are nominal and real exchange rates different?

(b) What are the net capital outflow and the trade balance? How are they related? (Hint: Consider the national income accounts identity)

(c) How are small and large open economies different?

Q4. Consider an economy described by the following equatins:

$$
\begin{aligned}
&Y = C + I + G + NX \\
&Y = 5,000 \\
&G = 1,000 \\
&T = 1,000 \\
&C = 250 + 0.75(Y - T) \\
&I = 1,000 - 50r \\
&NX = 500\varepsilon - 500 \\
&r = r^* = 5
\end{aligned}
$$

where NX is net exports, ε is the exchange rate (in units of domestic currency per foreign currency, e.g. ¥100/$) and r^* is the world interest rate.

(a) Solve for national saving, investment, the trade balance, and the equilibrium exchange rate.

(b) Suppose now that G rises to 1,250. Solve for national saving, investment, the trade balance, the equilibrium exchanage rate. Explain what you find.

(c) Now suppose that the world interest rate rises from 5 to 10 percent (G is again 1,000). Solve for national saving, investment, the trade balance, and the equilibrium exchange rate. Explain what you find.

Q5. Consider two countries, rich and poor, with the same production function $Y = AK^{\alpha}L^{1-\alpha}$. Assume $K_{\text{rich}} > K_{\text{poor}}$ with identical A and L.

(a) Calculate the marginal product of capital (MP_K). Is MP_K in the rich lower or higher than in the poor economy?

(b) Is your answer to (a) consistent with the fact that capital flows into the US from less developed economies, such as Russia and China?