Econ 371: Answer Key for Problem Set 3
(Chapter 15)

Instructor: Kanda Naknoi

March 3, 2005

Note: These are true-false questions. Although the problem set did not require you to explain your reasons, it is important to verify them with the answer key. The keywords in each questions are underlined as well. (1 point each)

1. The relative purchasing power parity states that exchange rate depreciation must be the same as expected inflation differentials.
   ANSWER: False
   CORRECT STATEMENT: The relative purchasing power parity states that exchange rate depreciation must be the same as actual inflation differentials. This is directly from the definition of the relative purchasing power parity,
   \[ \frac{E_t - E_{t-1}}{E_t} = \pi_t - \pi^*_t \] (1)

2. The Fischer effect implies that a rise in the expectation of the U.S. inflation rate will raise the real interest rate on dollar deposits.
   ANSWER: False
   CORRECT STATEMENT: The Fischer effect implies that a rise in the expectation of the U.S. inflation rate will raise the nominal interest rate on dollar deposits. In other words, it requires that real interest rate which is inflation adjusted return must be constant.

3. The absolute purchasing power parity assumes that real exchange rate is unity.
   ANSWER: True
   Real exchange rate \( q \) is defined as the price of foreign consumption basket in terms of the domestic one.
   \[ q_{EU/US} = \frac{E_{sy}P_{EU}}{P_{US}} \] (2)
The absolute purchasing power parity states that the price level is identical in all countries,

\[ \frac{E_s}{E} P_{EU} = P_{US} \]  \hspace{1cm} (3)

Substituting Equation (3) into (2) gives \( q = 1 \).

4. The monetary approach of long run exchange rate determination predicts that the time path of exchange rate is the same as that of domestic inflation.

\text{ANSWER: False}

\text{CORRECT STATEMENT: The monetary approach of long run exchange rate determination predicts that the time path of exchange rate is the same as that of domestic price level relative to foreign price level. (See Equation (3)) An alternative way is to make a statement based on the rate of change: The monetary approach of long run exchange rate determination predicts that the time path of exchange rate depreciation is the same as that of the difference between domestic and foreign inflation. (See Equation (1))}

5. The monetary approach completely ignores the role of goods market in long run exchange rate determination.

\text{ANSWER: False}

\text{CORRECT STATEMENT: The monetary approach does not ignore the role of goods market in long run exchange rate determination. First of all, the monetary approach comes from the purchasing power parity which uses goods prices to determine exchange rate. Second, changes in output supply can influence exchange rate through their effects on the aggregate money demand.}

6. According to the monetary approach, a permanent rise in nominal interest rate causes exchange rate to appreciate.

\text{ANSWER: False}

\text{CORRECT STATEMENT: According to the monetary approach, a permanent rise in nominal interest rate causes exchange rate to depreciate. This is because it will lead to a reduction in money demand. To clear money market, price level has to rise to reduce money supply in real term. According to the monetary approach, a rise in price level causes exchange rate to depreciate.}

7. Balassa-Samuelson theory implies that a country’s currency will experience real exchange rate appreciation when its economic growth is biased towards traded sector.

\text{ANSWER: True}
Balassa-Samuelson theory predicts that when economic growth is biased towards traded sector, price level of that country will increase in real term, i.e. in terms of its trading partners. This is precisely an appreciation of the national currency in real term with respect to other currencies. (See also the case study on Japan in pages 419-421).

8. According to the general theory of long run exchange rate determination, real exchange rate depends on nominal exchange rate.

ANSWER: False

CORRECT STATEMENT: According to the general theory of long run exchange rate determination, nominal exchange rate depends on real exchange rate. The general theory decomposes the exchange rate into two components as follows:

\[ E_{S/E} = q_{EU/US} \left( \frac{P_{US}}{P_{EU}} \right) \]  

(4)

By economic theory, the first component \( q_{EU/US} \) is influenced by real factors such as demand and supply changes in goods markets. In contrast, the second component \( P_{US}/P_{EU} \) is influenced by nominal or monetary factors such as changes in money supply and demand conditions.

As a mathematical equation, we can rearrange Equation (4) to obtain the definition of real exchange rate as a function of nominal exchange rate. However, from an economic point of view, a mathematical equation does not tell us about the direction of causality unless we impose an economic theory on it. The definition of real exchange rate only summarizes the relationship of what we observe in the data. It does not imply that real exchange rate is driven by nominal exchange rate.

9. According to the general theory of long run exchange rate determination, nominal exchange rate depends on real exchange rate.

ANSWER: True

(See explanation in Question 8.)

10. According to the general theory of long run exchange rate determination, a permanent rise in nominal interest rate causes exchange rate to appreciate.

ANSWER: False

CORRECT STATEMENT: According to the general theory of long run exchange rate determination, a permanent rise in nominal interest rate causes exchange rate to depreciate. According to the general theory in Equation (4), nominal interest rate affects exchange rate through the second component. The mechanism is the same as that in Question 6.