Econ 340
Spring 2008

Problem Set 4

Chapter 13: Questions 4, 6, 10, 13; Quantitative Problems 2, 4, 8

4. The theory of purchasing power parity states that exchange rates between any two currencies will adjust to reflect changes in the price levels of the two countries. If one country's price level rises relative to another's, its currency should depreciate (the other country's currency should appreciate). This theory predicts that the value of the euro will fall 5% in terms of dollars.

6. If one country becomes more productive than other countries, businesses in that country can lower the prices of domestic goods relative to foreign goods and still earn a profit. As a result, the demand for domestic gods rises, and the domestic currency tends to appreciate. Even though the Japanese price level rose relative to the American, the yen appreciated because the increase in Japanese productivity relative to American productivity made it possible for the Japanese to continue to sell their goods at a profit at a high value of the yen.

10. The dollar will depreciate. A rise in nominal interest rates but a decline in real interest rates implies a rise in expected inflation that produces an expected depreciation of the dollar that is larger than the increase in the domestic interest rate. As a result, the expected return on foreign deposits rises by more than the expected return on domestic deposits. R^F shifts rightward more than R^D, so the equilibrium exchange rate falls.

13. The dollar will depreciate. The drop of expected inflation in Europe, which leads to a decline in the foreign interest rate (which is smaller than the drop in expected inflation), leads to a rise in the expected return on foreign deposits because the expected franc appreciation is greater than the decline in the foreign interest rate. The resulting rise in the expected return on foreign deposits shifts the RET^F schedule out to the right and the equilibrium U.S. exchange rate falls.

Quantitative Problems

2. An investor in England purchased a 91-day T-bill for \$987.65. At that time, the exchange rate was \$1.75 per pound. At maturity, the exchange rate was \$1.83 per pound. What was the investor's holding period return in pounds?

Solution: The bond cost \$987.65/\$1.75 = £564.37.
At maturity, the \$1,000 is worth \$1,000/\$1.83 = £546.45.
The holding period return is (546.45 – 564.37)/564.37 = –0.0317.

4. The current exchange rate is 0.93 euros per dollar, but you believe the dollar will decline to 0.85 euros per dollar. If a euro-denominated bond is yielding 2%, what return do you expect in U.S. dollars?

   Solution: % change in currency = (0.85 – 0.93)/0.93 = –0.086
   Total investment return = 0.02 –(–0.086) = 10.6%

8. In 1999, the euro was trading at $0.90 per euro. If the euro is now trading at $1.16 per euro, what is the percentage change in the euro's value? Is this an appreciation or depreciation?

   Solution: % Change = (1.16 – 0.90)/0.90 = 28.88%
   The dollar has appreciated by 28.88%