

Exercise Sheet 4

Exercise 1

Suppose the exchange rate between USD and the British pound is 1.6 USD per GBP. The expected exchange rate in 12 months is 1.568 USD per GBP. The nominal (12 months-) interest rate on USD is 2.5% and the nominal interest on GBP 6%.

- a) What is the expected effective return of investing in US bonds and in British bonds respectively for an American investor? What is the risk premium on British pounds?
- b) What must be the 12 months forward rate (given as USD per GBP) between USD and GBP, given that covered interest parity holds?
- c) Show that the the risk premium on the British Pound can be computed only by comparing the forward rate with the expected future spot rate (if covered interest parity holds).
- d) Suppose a U.S. firm sold software to Britain. They get 5m GBP in 12 months. If the owner of the firm is risk neutral, would he hedge the foreign-exchange risk by selling the 5m GBP forward?

Exercise 2

A Swiss firm sells machines to the U.S. The contract states that they will receive a payment of 10m US Dollar in 6 months. The current spot rate is 0.93 CHF per USD. The 6 months forward rate is 0.91 CHF per USD. In order to find out whether they should hedge the foreign-exchange risk, the firm asks research units of two banks for their exchange rate forecasts.

- a) Bank A forecasts that the exchange rate in 6 months will be at 0.90 CHF per USD. What would the firm do if they believe this forecast?
- b) Bank B forecasts that the exchange rate will be at 0.98 CHF per USD. What would the firm do if the believe this forecasts?

- c) The exchange rate in 6 months turned out to be 0.92 CHF per USD. Which forecast was the better one for the firm? Which one was better from a statistical point of view?

Exercise 3

If uncovered interest parity holds, then a higher interest rate in a country is associated with an expected depreciation of this country's currency. Imagine that all over the world, interest rates are low. Now, the central bank of country A unexpectedly increases the interest rate. What do you think happens to the exchange rate of country A's currency the day the central bank announces the change? Is this a contradiction to uncovered interest parity?