

Guide for the external sensor

Final exam International Finance SFB 12614 at Østfold University College on May 4, 2022.

Exercise 1:

- a) On the horizontal axis we measure the spot price and on the vertical axis we measure the profit or loss.
- b) The student must identify the diagram to be the profit diagram of the buyer of a call option.
- c) This is about identifying the mathematical function that is associated with the given profit diagram: $(S_T - E) - \text{premium}$ and correctly defining all the symbols.
- d) Here the student is to correctly explain the horizontal portion of the profit diagram and the increasing portion.
- e) The terms can be indicated as areas in the graph or explained as a narrative.

Exercise 2:

Precision is required in this exercise. This means all symbols used have to be explained. Pay particular attention to the subscripts and superscripts of 'F'. A particular form of the exchange relation is asked for. This can be used from the beginning or can be transformed at the end.

Exercise 3:

- a) There are a number of ways to give a correct solution:
One is to calculate the cross rates of Barclays and Citibank's quotes and realize that this is not identical with what Dresdner Bank quotes. This tells us that there is an opportunity for inter-market arbitrage.
- b) The student must decide on a starting amount and currency.
Let's say we start with US\$ 1 000 000.
Then visit the banks with their quoted exchange rates in the sequence Citibank (to change US dollars into Euros), Dresdner Bank (to change Euros into U.K. Pounds), Barclays Bank (to change the U.K. Pounds back into dollars).

Compare the initial US\$ amount 1 000 000 with the ending US\$ amount and conclude that you made a profit (US\$ 10 857.00) in this case.

Exercise 4.

Here you get the same numerical result in (b) and in (e) as you should as we are speaking about the same exchange relation all the time, only represented in different ways.

The numerical result of -4.651165% is obtained in (b) and (e). The foreign currency sells forward at a discount because we computed a negative number. The foreign currency here is the U.K. Pound.

The student is required to write down the general formula in (a) and(d).

In (a) we have an indirect quote, and in (d) we have a direct quote. The formulas are different. For the direct quote we have to transform the exchange relation.