Høgskolen i Østfold

EXAMINATION

Course code:	**Course:**
SFB 12614	**International Finance (10 ECTS)**
Date:	**Duration:**
May 3, 2017	09:00 – 13:00 (4 hours)
Permitted sources:	**Lecturer:**
English – mother tongue dictionary Mother tongue – English dictionary Calculator	Roswitha M. King

The examination:

The examination papers consist of 4 pages inclusive this page. Please check that the examination papers are complete before you start answering the questions.

The exam consists of 4 (four) exercises. You must solve all four exercises. The exercises have equal weight.

Date of announcement of the examination results: May 29, 2017

The examination results are available on the Studentweb no later than two workdays after the announcement of the examination results. www.hiof.no/studentweb

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Show all your calculations. Interpret the meaning of your results. Explain all symbols that are not already explained in the given text. If formulas are involved, first work with the general formula, then later fill in numbers. Clearly indicate what your final answer is. Give opening and concluding statement.

Good luck!

1. Central Concepts

Please explain the following concepts:

a) Direct and Indirect Quote
b) Spot exchange rate, and Forward exchange rate
c) Derivative
d) Purchasing Power Parity
e) International Fisher Effect (Fisher Open)

2. Profit Diagram: Buyer of a Put Option

You and your twin brother agree on almost everything, except financial hedging strategies, especially when it comes to financial derivatives.
After long discussions you decide, against the advice of your brother, to buy a *put option* that is defined on a treasury bond future. So, the *underlying* for your put option is a *treasury bond future*. Your brother advised you to purchase a treasury bond future instead of a put option defined on a treasury bond future. Your brother thinks you are silly and he cannot understand why you are willing to pay an expensive premium for your put option, when, as he says, a treasury bond future would give you the same kind of protection against uncertainty.
Your put option is traded on the Chicago Board of Trade and quoted in points,
with 1 point = USD 1000.

Assumptions on your Put Option

- On 'purchase date' you **buy** one of the above described put options defined on a Treasury bond future.
- You **pay** a premium of USD 4000.
- The exercise price, E, (also called 'strike price') that is specified in your option contract is 230 points.
- We now consider three scenarios for the market (spot) price, $S_{T,}$ of the underlying at the expiration date T of the option :

(i) $S_T = 230$ points,
(ii) $S_T = 220$ points,
(iii) $S_T = 240$ points.

Your task is as follows:

a) Draw an accurate profit diagram with "Profit" on the vertical axis and "Market Spot Price S_T" on the horizontal axis, using the assumptions of the three scenarios, (i), (ii), (iii), for the spot price at expiration date. Explain in detail the reasoning behind the points that you draw in the diagram, i.e. the "how" and "why" of the calculation of profit. Show all your calculations.

b) Explain the shape of the graph.

c) Your brother is still giving you a hard time about your put option. Explain the perceived advantages of an *option* relative to a *future*.

3. Forward Premium (Discount)

Here we consider the exchange rate Swiss Franc (SF) against US Dollar (USD) , **SF/USD** to determine key concepts in connection with forward exchange rates: *Forward Premium and/or Forward Discount*.

a) Write down the formula for the forward premium (discount) in terms of percent-per-annum premium or discount under the assumption that USA is the home country and that indirect quote is used.

b) Calculate the percent-per-annum premium (discount) given the following data: Time horizon 180 days; at the time of signing of contract the spot rate is SF 1.50/USD and the 180 day forward rate is SF1.55/USD. Clearly state whether we are dealing here with a premium or discount. Show all your calculations.

c) Interpret your result. Does the market expect SF to increase or decrease in value relative to USD? How do you see that?

4) The *Impossible Trinity* (also known as the *trilemma of international finance)*

Explain the concept of the "Impossible Trinity" with the help of a carefully labeled and annotated triangle graph. Your explanation should include examples of countries that have made each of the three respective choices and trade-offs. Does the 'real world' show any trends regarding the choices that countries make?

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