Universität Siegen

Fakultät III – Wirtschaftswissenschaften
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Exam "International Financial Markets"
Summer Semester 2016
(2nd Exam Period)

Solution

Available time: 45 minutes

For your attention:

1. Please do **not** directly write your answers into this problem set. Use the set of solution pages.
2. Please do **not** use a **pencil**.
3. Additional materials you may use for the exam: a non-programmable calculator.
4. ATTENTION: The names for variables have the same meaning as in the lecture. Insofar as you also use the same symbols for the variables as we did in the lecture you will not have to define these any further.

Qa

Question	**1**	**2**	**3**	**4**	**Sum**	**Mark**
Points achievable	10	5	11	19	45	
Points achieved						

Problem 1: Financial Integration in Europe

The introduction of the euro as a common currency for several countries has contributed to financial integration..

a) The introduction of the euro has made it more attractive to invest in / borrow from other EU countries (that also have the euro). Please give one reason for this effect. [4 points]

Solution:

elimination of currency risk (4)

or: better comparison of financial assets across borders (4)

or: lower transaction costs (4)

b) The introduction of the euro has also lead to lower credit rates (ask rates) as well as to higher investment rates (bid rates). Please briefly explain this impact of the euro. [6 points]

Solution: (ATTENTION: maximum 6 points)

- euro has intensified competition in the financial sector (3)

- this has …

  (i) … reduced monopolistic / oligopolistic rents (3)

  (ii) … forced the financial sector to produce cheaper services (3)
  (or: lead to a better performance of the financial sector
  or: lead to exploit economies of scale)

Problem 2: Exchange Rate

We are in the euro area. The exchange rate between the US-Dollar and the euro has increased from 1.0 [$/€] to 1.30 [$/€].

a) Does the above quotation show the direct rate of the euro or its indirect rate? [1 point]

Solution: direct (1)

b) Has the dollar appreciated or depreciated against the euro? By which percentage rate? Please show your calculation of that percentage rate. [4 points]

Solution: depreciated (1)

$$\frac{\overset{(0.5)}{\frac{1}{1.30}} - \overset{(0.5)}{\frac{1}{1.00}}}{\underset{(1)}{\frac{1}{1.00}}} = -0.231 \text{ (or : by } 23.1\,\% \text{)} \quad \overset{(1)}{}$$

Problem 3: Price Relations Between International Financial Markets

We are given the following statistics about the Chinese Renmimbi (¥) and the US dollar (all percentage rates are annual rates):

	¥	**$**
Inflation	dP/P = 8 %	$(dP/P)_{\$}$ = ? %
One-year interest rate	i = 5 %	$i_{\$}$ = 3 %
Spot exchange rate [¥/$]	e = ?	
Expected exchange rate in one year [¥/$]	e^e = 7	

Below are given the precise versions of the international parity conditions. Based on these conditions, please replace the question marks (?) with appropriate answers. Please show your calculations and give three digits for the results.

$$e^e = e \frac{1 + \frac{dP}{P}}{1 + (\frac{dP}{P})_{\$}}$$

$$e^F = e \frac{1 + i}{1 + i^f}$$

$$e^e = e \frac{1 + i}{1 + i^f}$$

$$e^F = e^e$$ [11 points]

Solution:

From $e^e = e \frac{1 + i}{1 + i_{\$}}$, we find :

$$e^e \quad \frac{1 + i_\$}{1 + i} \quad = \quad e$$

Therefore:

$$e \quad = \quad \overset{(1)}{7} \quad \frac{\overset{(1)}{1 + 0.03}}{\underset{(1)}{1 + 0.05}} \quad = \quad \overset{(2)}{6.866}$$

From $e^e \quad = \quad e \quad \frac{1 + \frac{dP}{P}}{1 + (\frac{dP}{P})_\$}$, we find:

Therefore:

$$1 + (\frac{dP}{P})_\$ \quad = \quad \frac{e}{e^e}(1 + \frac{dP}{P})$$

$$(\frac{dP}{P})_\$ \quad = \quad \left(\quad \frac{\overset{(1)}{6.866}}{\underset{(1)}{7}} \left(\overset{(1)}{1} + \overset{(1)}{0.08} \right) \right) \quad - \quad \overset{(1)}{1} \quad = \quad \overset{(2)}{0.059}$$

Problem 4: International Money Market

a) The money market is said to be a "short-run" market and a "wholesale" market. What do these features mean? [3.5 points]

Solution:

- short-run: claims (or: assets) (0.5)
  have an initial maturity (0.5)
  of one year or less (1)

- wholesale: transactions (0.5)
  are large (1)
  (or: interbank market)

b) Note-Issuance Facilities (NIFs) are an important instrument of the money market. Please describe <u>two</u> important features of NIFs. [10 points]

Solution: (ATTENTION: maximum 10 points)

- the NIF is a credit line (2)
  provided by a syndicate of banks (1)
  for a specified period of time (1)

- the borrower can draw on the facility by issuing Euronotes (2)
  with maturities of one month to twelve months (1);
  the banks then help to sell the notes to investors (2)

- the issuer can draw on the line on a revolving basis (2)
  (or: at maturity of a short-term note he can either repay the money or roll over);
  NIFs thus give borrowers medium-term or even long-term continuous access to short-term funds (3)

– the <u>banks</u> do not give credit themselves; (2)
  thus, they keep out the risk from their balance sheet; (2)
  they thus also avoid having to add equity capital (1)

– instead of getting a bank loan, the <u>borrower</u> gets funds from final investors by selling them so-called notes; (2)
  these are issued with high face values (often $500,000 or more) (2)
  they are thus intended for institutional investors rather than private individuals (1)

– the notes issued under a NIF are unsecured short-term debt; (2)

they are usually issued by large corporations with excellent credit ratings (2); they thus offer final lenders the possibility to buy tradable assets from high-grade borrowers rather than giving their money to a bank (1)

c) We are given the following equations for the discount rate (d) and the yield (i) of a note issued under an NIF, both expressed as annualized rates:

$$d = \frac{D}{FV} \cdot \frac{360}{n} \quad ,$$

$$i = \frac{D}{P} \cdot \frac{360}{n} \quad ,$$

D = discount = FV - P ,
n = number of days to maturity of the note,
FV = face value,
P = price

c_1 Why is the yield always higher than the discount rate: i > d ? [2 points]

Solution:
Because the note is always sold at a discount such that P < FV
(1) (1)

c_2 A note with a face value of \$100,000 and 60 days to maturity is sold at a discount of \$1,500 from face value. Please calculate the yield (i). [3.5 points]

Solution:

$$i = \underset{(0.5)}{\frac{1{,}500}{100{,}000 - 1{,}500}} \underset{(0.5)}{\frac{360}{60}} = \underset{(1)}{0.0914} \; (\text{ or : } = 9.14\,\% \;) \quad ,$$

(0.5) (0.5) (0.5)