Universität ⬆ Siegen

Fakultät III – Wirtschaftswissenschaften
Univ.-Prof. Dr. Jan Franke-Viebach

Exam "International Financial Markets"
Summer Semester 2020
(2nd Exam Period)
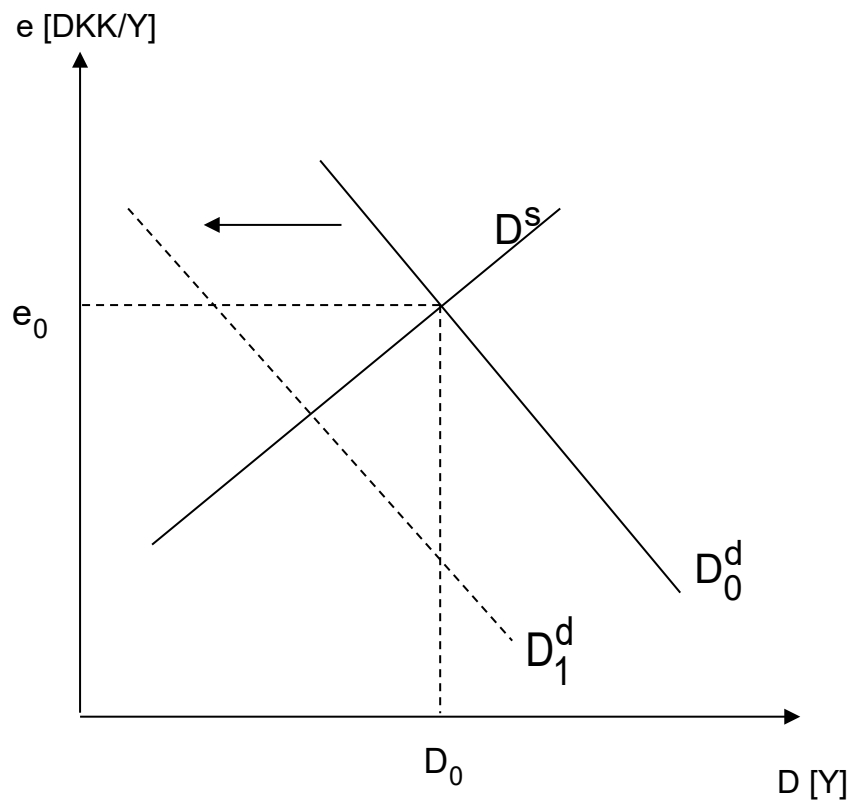
Solution

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.

Question	1	2	3	4	Sum	Mark
Points achievable	10	10	10.5	14.5	45	
Points achieved						

Problem 1: Forex Market

The following diagram depicts the market for exchange of Danish Kroner (DKK) against Chinese Yuan (Y).

a) Which Danish transactions with China cause a demand for Yuan? [4 points]

Solution:

- Import   (1)
   of goods   (1)

- Export   (1)
   of capital   (1)

b) In the graph, the curve of demand for Yuan shifts from the initial position D_0^d

to the position D_1^d.

b_1 Is this a decrease or an increase of the demand for Yuan?   [1 point]

Solution:
Decrease   (1)

b_2 At the exchange rate e_0, which constellation of supply and demand of Yuan
does now prevail?   [1 point]

Solution:
Excess supply   (1)

b_3 Assume a system of flexible exchange rates. Will the above constellation
of supply and demand lead to a depreciation of the Yuan or to an
appreciation?   [1 points]

Solution:

depreciation   (1)

b_4 Now suppose that the Danish central bank wants to keep the exchange rate
at its initial level e_0. How must the central bank intervene in order
to keep the rate constant at e_0?   [1 point]

Solution:

Buy Yuan   (1)

b_5 How can the Danish central bank avoid a change of the monetary base
resulting from its intervention?   [2 points]

Solution:
reduction   (1)
of credits to the domestic economy   (1)

Problem 2: Basics of Financial Systems

What is meant by "network externalities" of financial systems? You may answer
this question in a general / abstract way <u>or</u> by an example.   [10 points]

Solution:

- Abstract way of explanation:

    a financial system can fulfill its tasks the better, the more participants it has
                                         (1)   (1)   (2)

    externality: the decision of an economic unit to join the system (2)
                          does not only benefit that unit itself; (1)
                          it also increases the system's benefits for the existing members (2)
                          without them having to pay for this increase of benefit (1)

- Explanation by example:

    bank receives funds from a depositor but does not readily have available a
    borrower; (2)
    to make the funds available for a credit by passing them to another bank (or:
    broker) will be the easier the more banks (brokers) are in the system (2)

    externality: the decision of an economic unit to join the system (2)
                          does not only benefit that unit itself; (1)
                          it also increases the system's benefits for the existing members (2)
                          without them having to pay for this increase of benefit (1)

    ATTENTION: maximum 10 points !

Problem 3: Arbitrage

Here are some quotes of the US dollar in terms of the Romanian lei, [RON/USD]:

Bank A: 5.00 - 5.20

Bank B: 4.90 - 5.00

Bank C: 5.10 - 5.15

a) Please carefully interpret the rate 5.20 of bank A.   [3 points]

> **Solution:** A charges 5.20 RON for one US dollar (or: per US dollar)
>   (1)   (0.5) (0.5)   (0.5) (0.5)

b) Given the above rates of banks A, B, and C, a trader wants to make an arbitrage
   profit. For that purpose, he has 1000 Romanian lei available. Please explain his
   arbitrage transactions and calculate his profit in terms of RON.   [7.5 points]

> **Solution:**

- with 1000 RON, buy dollars at B to obtain 1000 [RON] / 5.00 [RON/USD] = 200 [USD]
                 (0.5)   (0.5)   (0.5)   (0.5)   (0.5)   (0.5)

- sell the 200 dollars to C to obtain 200 [USD] x 5.10 [RON/USD] = 1020 [RON]
   (0.5)   (0.5)   (0.5)   (0.5)   (0.5)   (0.5)

  -   profit: 1020   – 1000   =   20 [RON]
              (0.5)   (0.5)   (0.5)

Problem 4: Interest Rate Parity

a) How is the following relation called?   [2 points]

$$\frac{e^e - e}{e} = i - i^f .$$

Solution:

Uncovered interest rate parity
   (1)   (0.5)   (0.5)

b) Please carefully interpret its economic content.   [3.5 points]

Solution:

Expected relative change of spot (or: exchange) rate equals the interest rate differential
   (0.5)   (0.5)   (0.5)   (0.5)   (0.5)   (0.5)   (0.5)

or: the currency with the lower interest rate is expected to appreciate

c) Consider the USA as the foreign country. The spot rate of the US dollar in
    terms of the euro is 0.9 [€/$]. The one-year interest rates are 3 % for the dollar
    and 8 % for the euro, respectively.

   c_1 Assuming that market participants are risk-neutral, what is the implied
       market prediction of the spot rate one year ahead?   [5 points]

Solution:

$$\frac{e^e - e}{e} = i - i^f = 0.08 - 0.03 = 0.05$$

$$\rightarrow e^e = 0.05\, e + e = 1.05\, e = 0.945 \qquad (5)$$

   c_2 Now, assume that market participants are risk-averse. Their risk premium
       (RIS) is 4 %. Please show how to modify the equation from a).   [4 points]

Solution:
$$\frac{e^e - e}{e} = i - (i^f - RIS)$$

$$(3)   (1)$$