

Universität Siegen

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Exam "International Financial Markets"
Summer Semester 2019
(2nd Exam Period)

Solution

Available time: 45 minutes

For your attention:

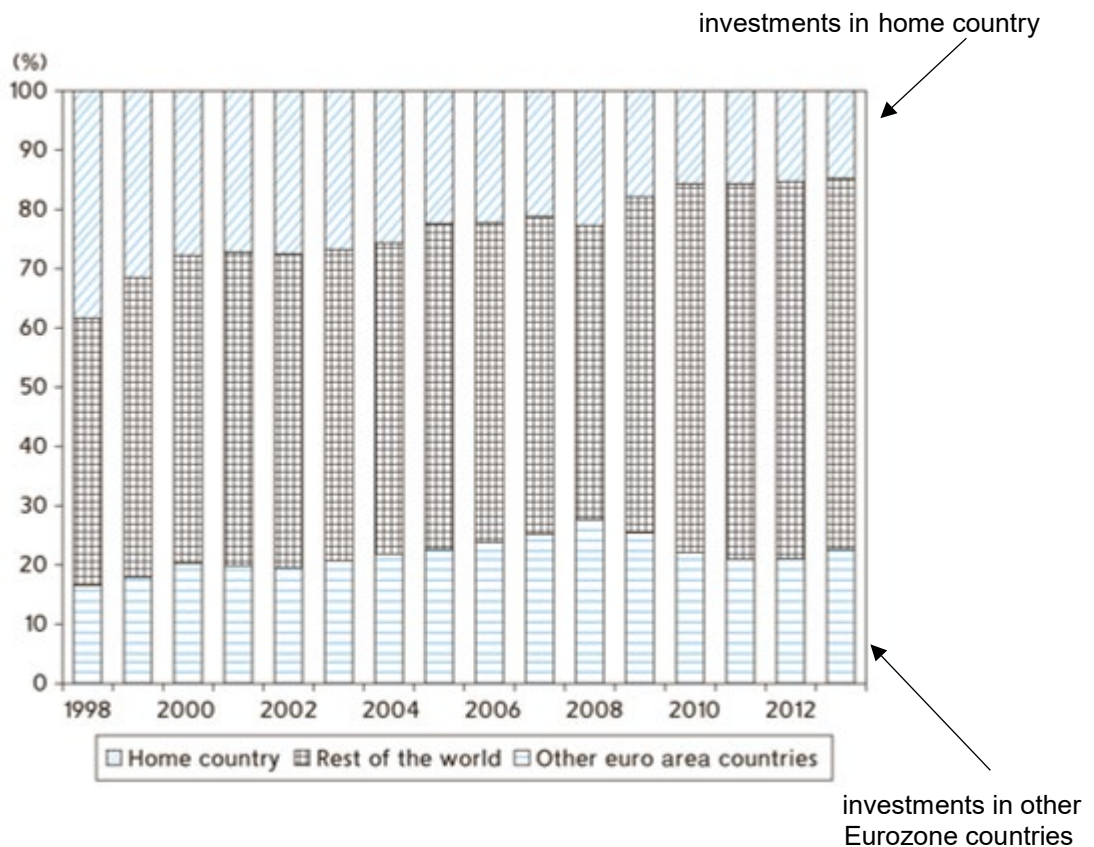
1. Please do **not** directly write your answers into this problem set. Use the set of solution pages.
 2. Please do **not** use a **pencil**.
 3. Additional materials you may use for the exam: a non-programmable calculator.
 4. **ATTENTION:** The names for variables have the same meaning as in the lecture. 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.
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Question	1	2	3	4	Sum	Mark
Points achievable	12	10	13	10	45	
Points achieved						

Problem 1:

The following graph shows holdings of investment funds from the Eurozone:

- the upper parts of the columns show the portfolio percentage invested in securities from the funds' home countries
- the centre parts (dark parts) indicate the portfolio shares invested in non-euro countries (rest of the world)
- the bottom parts show the percentages of investment in euro countries other than the funds' home countries



a) Traditionally, investment funds have a tendency to invest a lot in their home countries.

a₁ Please name one reason for this so-called home bias and briefly explain it. [4 points]

Solution:

- asymmetric information: (1)
 funds know more about securities from their home countries than from other countries (3)
- currency risk: (1)
 securities from other countries usually have an exchange rate risk while domestic securities do not (3)

a₂ By referring to the graph, please comment on the development of the home bias. [4 points]

Solution: has declined: (2)
percentage of domestic investment (or: upper part of columns) has fallen (2)

b) The lower part of the columns (bottom parts) show the percentages that Eurozone funds allocate to euro countries other than their home countries. Please describe one development of those investments and give an explanation for that development. [4 points]

Solution:

- in tendency, it has increased (2)
reason: introduction of euro has eliminated currency risk (2)

- however, it suffered from the financial crisis (2)
reason: crisis showed strong weaknesses of many euro countries (2)
or: particularly strong decrease of security values from euro countries

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 or by an example. [10 points]

Solution:

- 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)

- 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: Price Relations Between International Financial Markets

Consider a currency trader based in Sweden. The current spot exchange rate of the euro in terms of the Swedish kroner is $e = 5$ [Skr/€]. The risk-free rate in the euro area is $i_{\epsilon} = 3$ percent per year and the SKr risk-free rate is $i_{skr} = 6$ percent per year.

- a) Calculate the arbitrage-free forward exchange rate between the Swedish kroner and the euro (please give three digits): e_{fair}^F [Skr/€] [4 points]

Solution:

$$e_{fair}^F \left[\frac{\text{Skr}}{\text{€}} \right] = 5 \cdot \frac{1 + 0.06}{1 + 0.03} = 5.146$$

(1) (1) (1)

- b) Based on the current forward price of $e^F = 4$ [Skr / €], we want to examine how the trader can earn a risk-free arbitrage profit.

b₁ The following relation holds if the forward rate is at its arbitrage-free risk value:

$$1 + i_{Skr} = \frac{1}{e} (1 + i_{\epsilon}) \cdot e_{fair}^F$$

What do you call this relation? [1 point]

Solution: Covered interest rate parity
(0.5) (0.5)

b₂ Given the market forward rate of $e^F = 4$ [Skr / €], please indicate the four transactions needed to make a profit. Please also indicate the four markets where these transactions take place. [8 points]

Solution:

- take funds (or: credit) in euro money (or: financial) market
(1) (0.5) (0.5)

- exchange these funds into Skr on the spot market
(1) (1)

- invest the Skr funds in the Swedish money (or: financial) market
(1) (0.5) (0.5)

- exchange the Skr back into euros on the forward market
(1) (1)

Problem 4: Financial Accounts

We look at the data of the euro area shown in the table on the next page.

a) Was the euro area a net debtor or a net creditor at the end of the 1st quarter of 2019? Please name the corresponding indicator and give the amount. [4 points]

Solution: debtor in the amount of 97, indicator: "net financial worth"
(1) (1) (2)

b) By what amount did the euro area's position of a net debtor/net creditor change during the 1st quarter of 2019? Please show two ways to calculate this change by using the appropriate data from the table. [6 points]

Solution:

$$\begin{array}{r} -97 \\ (1) \end{array} - \begin{array}{r} (-309) \\ (0.5) \end{array} = \begin{array}{r} 212 \\ (0.5) \end{array} \quad (\text{or: } -97 + 309 = 212)$$

$$\begin{array}{r} 58 \\ (1) \end{array} + \begin{array}{r} 154 \\ (0.5) \end{array} = \begin{array}{r} 212 \\ (0.5) \end{array}$$

Liabilities	Euro area	Households	Non-financial corporations	MFIs ¹⁾	Investment funds (except MMFs)	OFIs	ICPFs ²⁾	General government	Rest of the world
2019 Q1									
Opening balance sheet, liabilities									
Total liabilities	133,893	7,540	36,165	35,802	11,459	19,916	10,044	12,968	25,527
Monetary gold and special drawing rights (SDRs)	57			57				0	80
Currency and deposits	28,221		51	27,626				544	2,788
Short-term debt securities	1,260	0	80	539	9	145	2	486	523
Long-term debt securities	16,933	0	1,270	3,546	7	3,533	63	8,514	4,503
Loans	25,792	6,666	10,762	0	127	5,403	531	2,302	5,092
Shares and other equity	44,547	30	18,150	3,218	10,993	10,303	733	120	11,418
Listed shares	7,085		5,426	470	5	988	198	0	2,901
Unlisted shares and other equity	25,340	30	13,724	1,614	0	9,315	537	120	8,004
Investment fund shares (including MMF shares)	12,122			1,133	10,988				514
Insurance and pension schemes	8,953	38	391	63	0	17	8,434	10	27
Other accounts payable and financial derivatives	8,130	805	4,463	753	323	514	280	962	1,097
of which: Trade credits and advances	3,748	196	3,216	53	0	71	42	168	292
Net financial worth	-309	16,348	-10,861	630	-254	1,216	-33	-7,354	711
Financial account, transactions in liabilities									
Total transactions in liabilities	1,596	27	125	852	167	83	176	166	331
Monetary gold and SDRs	1			1				0	0
Currency and deposits	706		1	695				10	44
Short-term debt securities	94	0	16	48	5	2	0	22	-24
Long-term debt securities	214	0	15	99	0	20	1	119	92
Loans	99	36	13	0	5	37	20	-12	120
Shares and other equity	234	0	102	7	82	41	1	0	66
Listed shares	10		-1	0	0	11	0	0	12
Unlisted shares and other equity	149	0	103	15	0	30	1	0	66
Investment fund shares (including MMF shares)	75			-7	82				-12
Insurance and pension schemes	115	0	2	-3	0	0	116	0	0
Other accounts payable and financial derivatives	133	-8	-24	44	75	-18	38	26	33
of which: Trade credits and advances	-35	-5	-23	0	0	1	0	-8	3
Changes in net financial worth due to transactions	58	110	-19	21	-25	21	3	-53	-58
Other changes account, liabilities									
Total other changes in liabilities	2,815	0	1,250	208	710	358	246	144	796
of which: Revaluations ³⁾
Monetary gold and SDRs	.	.	.	.	.	.	.	.	.
Currency and deposits	.	.	.	.	.	.	.	.	.
Short-term debt securities	.	.	.	.	.	.	.	.	.
Long-term debt securities	.	.	.	.	.	.	.	.	.
Loans	.	.	.	.	.	.	.	.	.
Shares and other equity	2,293	0	1,212	97	.	.	42	.	.
Listed shares	.	.	.	.	.	.	.	.	.
Unlisted shares and other equity	.	.	.	.	.	.	.	.	.
Investment fund shares (including MMF shares)	724	.	.	13	.	.	.	.	.
Insurance and pension schemes	.	.	.	.	.	.	.	.	.
Other accounts payable and financial derivatives	.	.	.	.	.	.	.	.	.
Other changes in net financial worth	154	515	-401	65	15	-39	47	-69	-142
Closing balance sheet, liabilities									
Total liabilities	136,406	7,567	37,541	36,652	12,335	20,357	10,466	13,278	26,654
Monetary gold and SDRs	58			58				0	81
Currency and deposits	29,011		52	28,450				554	2,875
Short-term debt securities	1,356	0	85	593	14	143	2	509	511
Long-term debt securities	17,418	0	1,311	3,645	7	3,626	65	8,762	4,743
Loans	25,926	6,702	10,783	0	133	5,461	557	2,290	5,280
Shares and other equity	46,985	30	20,430	3,296	11,772	10,567	776	123	12,010
Listed shares	7,809		6,001	502	5	1,084	217	0	3,279
Unlisted shares and other equity	26,267	30	14,428	1,643	0	9,483	559	123	8,215
Investment fund shares (including MMF shares)	12,919			1,152	11,767				515
Insurance and pension schemes	9,300	38	392	61	0	18	8,782	10	27
Other accounts payable and financial derivatives	8,343	796	4,476	803	409	542	284	1,030	1,127
of which: Trade credits and advances	3,736	190	3,213	53	0	72	43	163	297
Net financial worth	-97	16,873	-11,262	737	-264	1,180	18	-7,476	511

Source: ECB.

1) Separate data are available for Eurosystem (S121) and MFIs excluding Eurosystem (S12T).

2) Separate data are available for insurance corporations (S128) and pension funds (S129).

3) The complete set of data on revaluations is not yet available.

