Universität Siegen

Fakultät III – Wirtschaftswissenschaften
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Exam “Aggregate Economic Accounting Systems“
Winter Semester 2019-20
(1st Exam Period)

Solution

Available time: 60 minutes

For your attention:

1. The exam is made up of 8 pages (including this cover page). Please check and see if the exam you are holding is **complete**.

2. For your answers, use the designated spaces. Should these not suffice, use the backside of the pages. Please do not use a **pencil**.

3. Additional materials you may use for the exam: a non-programmable calculator. (Smart phones and mobile **phones** are **not** allowed!)

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**	**5**	**Sum**	**Mark**
Points achievable	9	10.5	10.5	19	11	60	
Points achieved							

Problem 1: Contributions to Growth

We consider a closed economy: $GDP_t = C_t + I_t$

Period	t = 1	t = 2
Consumption (C_t)	400	440
GCF (I_t)	100	105
GDP	500	545

a) Please calculate the growth of GDP between period 1 and period 2 from the contributions to growth of C_t and I_t . [6.5 points]

Solution:

C_t : $\frac{440}{400} \cdot \frac{400}{500} = 1.10 \cdot 0.80 = 0.88$

(0.5) (0.05) (0.05) (0.5)

Multiply!!

I_t : $\frac{105}{100} \cdot \frac{100}{500} = 1.05 \cdot 0.20 = 0.21$

(0.5) (0.05) (0.5)

GDP_t : 0.88 + 0.21 = 1.09

(0.5) (0.5)

Add!!

b) Check your result from a) by comparing it with the growth rate of GDP directly calculated from GDP values of periods 1 and 2. [2.5 points]

Solution: 545 / 500 - 1 = 0.09 → Same result!

(0.5) (0.5) (0.5) (0.5) (0.5)

Divide!!

Problem 2: International Comparisons

The following table shows data for Japan and the USA. It is designed to compare the welfare of the two countries over time.

GDP per head in volume, at 2005 PPPs, USA = 100

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Japan	70.5	70.7	70.2	70.0	69.6	68.8	68.8	69.6	69.7	68.4	70.4
USA	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

a) Why does the table use volume data, not data at current prices? [3 points]

Solution: data at current prices include price changes;
(1) (1)
however, these do not indicate welfare changes (1)

or: only volume changes indicate welfare changes

b) In the headline of the table, we read "USA = 100".

b_1 What does that indicate? [2 points]

Solution: all data are relative to the data of the USA
(1) (1)
or: are expressed as percentages of the US data

b_2 Why do we use "USA = 100"? [5.5 points]

Solution: because we want to make directly visible
(0,5) (1)
differences in level compared to the USA and their changes
(1) (1) (1) (1)

Problem 3: Calculation of Output : the Case of Insurance Companies

The following are simplified data for an insurance company:

- Premiums received: 200
- Indemnities paid out on claims: 180
- Income from the investment of reserves: 30
- Purchases of consumables: 20
- Inventories at the start of the period 6; at the end of the period: 20

a) Calculate output, intermediate consumption and value added. [5.5 points]

Solution:

Output = 200 + 30 -180 = 50
(0.5) (0.5) (0.5) (0.5)

Intermediate consumption = 20 - [20 - 6] = 6
(0.5) (0.5) (0.5) (0.5)

Value added = 50 - 6 = 44
(0.5) (0.5) (0.5)

b) Now suppose that an exceptional claim raises the amount of indemnity payments for the same period to 300.

b_1 Recalculate the output using the same procedure as in a). [2 points]

Solution: 200 + 30 - 300 = - 70
(1) (1)

b_2 Please comment on the result in b_1 . [3 points]

Solution: result not meaningful (1)

reason: company has provided insurance services (or: fulfilled its role)
(1) (1)

Problem 4: Households' Final Consumption Expenditure

Households' final consumption expenditure is the sum of four elements:

(1) Purchases of goods and services

(2) Partial payments for goods and services provided by general government

(3) …

(4) …

a) Please name the elements (3) and (4). [2 points]

Solution: imputed expenditures; consumption made outside the home territory
(0.5) (0.5) (0.5) (0.5)

b) We take a closer look at item (2): partial payments for goods and services provided by general government.

b_1 Please give one example for this category. [2 points]

Solution: ticket for entry in museum (2)

Or: payment for medical services not reimbursed by government

b_2 Please carefully explain one reason why this category is a problem for the system of national accounts. [9 points]

Solution:

- Household expenditure is a misleading indicator for comparison over time:
(1) (1) (1)

  Household payments change due to changes in regulations
(1) (1)

  → change of consumption expenditure (1)
  though consumption (or: welfare) of households does not change
(1) (1) (1)

Or:

- Household expenditure is a misleading indicator for international comparison:
(1) (1) (1)

  Household payments differ between countries to different regulations
(1) (1)

  → differences of consumption expenditure (1)

though consumption (or: welfare) of households does not differ
(1) (1) (1)

b_3 Please carefully explain how the problem of b_2 is solved in practice. [6 points]

Solution:

- Use of indicator “Actual household consumption”
  (2)

- Next to household consumption expenditure, this includes “individual consumption expenditure of general government”
  (1) (1)

- It is therefore insensitive (1)

  to shifts between the two elements of household consumption
  (1)

Problem 5: Quadruple Entry

Household H is employed by corporation C, a producer/supermarket.

a) For each of the following transactions, please make the quadruple entries in the accounts below. Assume that all the household’s economic relations are with this one corporation and that all transactions run through bank accounts. [8 points]

(1) H receives a salary of 40 000 from the corporation.

(2) H consumes 30 000 in products from the corporation.

(3) H buys further shares in the corporation for 2 000.

(4) H pays off 8 000 of the debt contracted with the employer the previous year, amounting to 15 000.

Household H
Non-financial transactions

Uses	**Resources**
Consumption Interest	Salaries Dividend

Corporation C
Non-financial transactions

Uses	**Resources**
Salaries Dividend	Output Interest

Household H
Financial transactions

Change of assets	**Change of liabilities**
Bank account Shares	Loans

Corporation C
Financial transactions

Change of assets	**Change of liabilities**
Bank account Loans	Shares

b) What is the name of the balance of the non-financial account, what is the name of the balance of the financial account? [3 points]

Solution: Net lending/net borrowing from non-financial account
(0.5) (0.5) (1)
Net lending/net borrowing from financial account
(0.5) (0.5) (1)

Solution:

Household H
Non-financial transactions

Uses	**Resources**
Consumption (2a) 30 000 Interest	Salaries (1a) 40 000 Dividend

Corporation C
Non-financial transactions

Uses	**Resources**
Salaries (1a) 40 000 Dividend	Output (2a) 30 000 Interest

Household H
Financial transactions

Change of assets	**Change of liabilities**
Bank account (1b) 40 000 (2b) – 30 000 (3b) – 2 000 (4b) – 8 000 Shares (3a) 2 000	Loans (4a) – 8 000

Corporation C
Financial transactions

Change of assets	**Change of liabilities**
Bank account (1b) – 40 000 (2b) 30 000 (3b) 2 000 (4b) 8 000 Loans (4a) – 8 000	Shares (3a) 2 000