Universität ⬆ Siegen

Fakultät III – Wirtschaftswissenschaften
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Exam "Aggregate Economic Accounting Systems"
Winter Semester 2017-18
(2nd Exam Period)

Solution

Available time: 60 minutes

For your attention:

1.   The exam is made up of 7 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 <u>not</u> 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	Sum	Mark
Points achievable	14	15.5	11.5	19	60	
Points achieved						

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Problem 1: Accumulation Accounts

The accumulation accounts are a set of four accounts.

a) In general terms, what do all the accounts show on their left-hand side, what do they all show on their right-hand side?   [4 points]

Left-hand side:

Right-hand side:

Solution:

Left: changes in assets
     (0.5)   (1)

Right: changes in liabilities and in net worth
      (0.5)   (1)   (1)

b) Please give the names of the four accounts.   [4 points]

   Solution:

   capital acc., financial acc., other changes in volume of assets acc., revaluation acc.
     (0.5)   (0.5)   (0.5)   (0.5)   (0.5)   (0.5)   (1)

c) For <u>two</u> of the accounts, please briefly describe what they show in particular.
                                                                              [6 points]

   Solution:

   (i) Capital account: acquisitions and disposals of non-financial assets
                         (1)   (1)   (1)

           (or: left: transactions in non-financial assets
                right: changes in net worth due to saving and capital transfers)

   (ii) Financial account: acquisitions and disposals of financial assets
                            (1)   (1)   (1)

           (or: left: transactions in financial assets
                right: transactions in liabilities; net lending/net borrowing)

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(iii) Other changes in volume of assets account:

Changes of assets and liabilities

that are neither due to transactions nor to holding gains or losses
        (1)   (1)   (1)

        (or: exceptional events causing changes in volume of assets or liabilities)

(iv) Revaluation account: holding gains and losses
        (1)   (1)   (1)

Problem 2: Calculation of Output: the Case of a Car Producer

The following are the simplified data for a firm producing cars:

- Sales of cars: 1 500
- Purchases:
  - Raw materials: 500
  - Temporary employment services: 300
  - Machine tools: 200

- Inventories of finished products
  - At the start of the period: 240
  - At the end of the period: 340

- Inventories of raw materials:
  - At the start of the period: 73
  - At the end of the period: 43

a) Calculate the output, the intermediate consumption and the value added at current prices, assuming no change in prices during the period.   [8.5 points]

  Output =

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Intermediate consumption =

Value added =

Answer:

Output: sales + changes in inventories of finished products = output

1 500	+	(340	- 240)	=	1 600
(0.5)		(0.5)	(1)		(1)

Intermediate consumption:

purchase of raw materials + temp. employ. – changes in invent. for raw materials

500	+	300	- (43	- 73)	= 830
(0.5)		(0.5)	(1) (0.5)	(1)	

Value added: output - intermediate consumption

1 600	-	830	= 770
(0.5)		(0.5)	(1)

b) In contrast to a), let's suppose that there were increases in prices of raw materials during the period.

b_1 Please explain <u>why</u> we would have to modify the calculations in a). [3 points]

Answer:

- change in inventories of raw materials would include holding gains
(1)   (1)

- those gains would have to be excluded
(1)

b_2 Please indicate <u>how</u> the values of the following variables would change compared to a) (increase, decrease, unchanged). [4 points]

- output:

- intermediate consumption:

- value added:

Answer:

- output: unchanged   (1)

- intermediate consumption: increased (2)

- value added: decreased (1)

Problem 3: Gross Value Added

a) For the data given in the following production account, please calculate gross
   value added at basic prices and at producers' prices.   [6.5 points]

	Uses	**Resources**
Transactions and balancing items		
Output at basic prices		3 604
Intermediate consumption	1 883	
Taxes on products		141
Subsidies on products (-)		- 8
Gross value added		

Gross value added at basic prices =

Gross value added at producers' prices =

Answer:
Gross value added at basic prices   =   3 604   -   1 883   =   1 721
                                         (1)   (1)   (0.5)

Gross value added at producers' prices =   1 721 + (141 – 8) = 1 854
                                      (1)   (1)   (1)   (1)

b) Why should we use value added instead of output as an indicator of production?
                                                                        [3 points]
   Answer: value added is independent of the organization of production
                           (1)   (1)   (1)

            or: value added avoids double counting

c) In which sense can we interpret value added as cost of production? [2 points]

   Answer: value added = cost of labor (or: salaries) +   cost of capital (or: profits)
                           (1)   (1)

Problem 4: Exports and Imports

a) How is the degree of openness of a country measured?   [3 points]

   Solution: exports plus imports as percentage of GDP
                        (1)   (1)   (1)

b) Exports and imports are defined using the concepts of "economic territory" and of "resident". Please briefly explain <u>one</u> of those concepts.   [3 points]

   Solution:

   Economic territory: area of the state
                            (1)   (2)

   Resident: unit whose "center of economic interest" is situated in the state
                           (1)   (1)   (1)

c) Which types of exports and imports are included in GDP?   [2 points]

   Solution: goods and services
                        (1)   (1)

d) There are several sources of data for exports and imports. Please name two of them.   [2 points]

   Solution: custom authorities, tax authorities, banks, surveys of major traders
                           (1)   (1)   (1)   (1)

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e) The following tables shows data for exports and imports (base year 2005). Please calculate the terms of trade for 2006. [9 points]

Billions of euro

	At current prices		In volume	
	2005	**2006**	**2005**	**2006**
Imports	460	500	460	480
Exports	450	480	450	470

Solution:

$$P_{2006}^{EX} = \frac{\overset{(1)}{480}}{470} = 1.0213 \quad , \quad P_{2006}^{IM} = \frac{\overset{(1)}{500}}{480} = 1.0417$$

$$\qquad\quad {\scriptstyle(1)} \qquad {\scriptstyle(1)} \qquad\qquad\qquad {\scriptstyle(1)} \qquad {\scriptstyle(1)}$$

$$tot = \frac{P_{2006}^{EX}}{P_{2006}^{IM}} = \frac{\overset{(1)}{1.0213}}{1.0417} = 0.9804$$

$$\qquad\qquad\quad {\scriptstyle(1)} \qquad\qquad {\scriptstyle(1)}$$