Universität 🔼 Siegen

Fakultät III – Wirtschaftswissenschaften
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Exam "Aggregate Economic Accounting Systems"
Winter Semester 2015-16
(2nd 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 <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	16	18	12	14	60	
Points achieved						

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Problem 1: Value Added

a) Please illustrate the derivation of value added as the balancing item of the production account. (Please neglect the distinction between gross and net value added.)   [3 points]

Uses	Production account	Resources

Solution:

Uses	Production account	Resources
Intermediate consumption (1)	Output (1)
Value added (1)	

b) What is the general interpretation of value added?   [2.5 points]

Solution:

Value created by production
            (1)   (1.5)

Or: value that labor and capital add to intermediate consumption

Or: contribution of labor and capital to the production process

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c) Is value added completely paid as compensation to the owners of labor and capital? Please explain your answer.   [5 points]

Solution:

no, part of value added is appropriated by the government:
 (1)   (1)

taxes (less subsidies) on production and imports contained in value added
 (1)   (0.5)   (1)   (0.5)

d) What is the relation between gross value added and net value added? Please answer this question by completing the following equation: [1.5 points]

net value added   = gross value added

Solution:

net value added   =   gross value added   -   consumption of fixed capital
                              (0.5)   (1)

e) Compared to gross value added, what is the advantage of <u>net</u> value added?
                                                                    [4 points]
Solution:

It does not include consumption of fixed capital   (1)

→ good since that is not a value "added"   (3)
    (or: good since that is a cost of production)

Problem 2: Essential Macroeconomic Indicators

a) An indicator of aggregate economic production should fulfil several require-
   ments. Please name <u>two</u> of these.   [4 points]

   Solution:
   - avoid double counting (2)

   - measurable in practice (2)

   - independent of non-economic factors (2)

   - independent of the organisation of firms (2)

   ATTENTION: maximum of 4 points!!

b) Gross domestic product (GDP) versus gross national income (GNI)

   b_1 What is the arithmetic relation between GDP and GNI? Please complete the
        following equation.   [5 points]

      GNI = GDP

   Solution:

   GNI = GDP + income received by residents from abroad
           (0.5)   (1)   (1)
                - income created in the domestic country but paid to non-residents
              (0.5)   (1)   (1)

   b_2 A company creates a value added of 200 in Germany. Part of it (50) is paid
        as dividend in the amount of 50 to a Russian investor. Please indicate
        how these transactions increase, decrease or leave unaffected the GDPs
        and GNIs of Germany and Russia. Please also indicate the amounts of the
        corresponding changes.   [4 points]

      GDP Germany :

      GNI Germany :

      GDP Russia :

      GNI Russia :

Solution:

GDP Germany :   increased by 200
          (0.5)   (0.5)

GNI Germany :   increased by 150
          (0.5)   (0.5)

GDP Russia :   unaffected (1)

GNI Russia :   increased by 50
          (0.5)   (0.5)

b3 What is the conceptual difference between GDP and GNI, i. e. what is the
    difference in approach?   [5 points]

Solution:

- GDP is based on the place of production (or: place of creation of income)
              (1)   (1)

- GNI is based on the residence of the receiver of income
              (1)   (1)   (1)

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Problem 3: Calculation of Volume at Various Price Levels

Let us take two products, A and B, with the following series of quantities and prices in each of the two periods:

	Period 1		Period 2	
	Quantity	Price	Quantity	Price
A	20	5	40	3
B	150	0.2	145	0.25

Please calculate, for each period, the amount at current prices, the volume at constant period 1 prices, the volume at constant period 2 prices and the growth rates for period 2. Fill out the following table: [12 points]

	Period 1	Period 2
Amount at current prices		
Growth rate	-	
Volume at period 1 prices		
Growth rate	-	
Volume at period 2 prices		
Growth rate	-	

Answer:

	Period 1		Period 2	
Amount at current prices	130	(1.5)	156.3	(1.5)
Growth rate	-		20.2	(1)
Volume at period 1 prices	130	(1.5)	229	(1.5)
Growth rate	-		76.2	(1)
Volume at period 2 prices	97.5	(1.5)	156.3	(1.5)
Growth rate	-		60.3	(1)

Problem 4: Disposable Income versus Adjusted Disposable Income

a) We first look at the aggregate redistribution of income in kind account of an
   economy:

Uses	Redistribution of Income in Kind Account	Resources
	Disposable income 1604	
Social transfers in kind, payable 215	Social transfers in kind, receivable 215	
Adjusted disposable income 1604		

a1 What are "social transfers in kind"?   [4 points]
   Answer:

   Goods and services …

   - … that are provided by general government or NPISHs
               (0.5)   (0.5)   (0.5)

   - … and are delivered to individual households.
               (0.5)   (1)   (1)

a2 "Social transfers in kind" payable (left-hand side) and receivable (right-hand side)
   are equal in the above account because it is the account of the <u>total</u> economy.
    Is adjusted disposable income higher or lower than disposable income for the
   following <u>sectors</u>?   [3 points]

Private households:

General government:

NPISHs:
   Answer:

Private households: higher (1)

General government: lower (1)

NPISHs: lower   (1)

b) We now look at the use of adjusted disposable income account:

Uses   Use of Adjusted Disposable Income Account   Resources

Uses	Resources
Actual final consumption	Adjusted Disposable income
Adjustment for the change in pension entitlements	Adjustment for the change in pension entitlements
Saving	

b$_1$ For private households, what is the difference between "actual final consumption" and "final consumption expenditures". Please answer this question by completing the following equation: [3 points]

   actual final consumption = final consumption expenditures …

Answer:

   actual final consumption = final consumption expenditures

                                    + social transfers in kind, receivable
                                          (0.5)   (1)

                                    - social transfers in kind, payable
                                          (0.5)   (1)

or: plus goods and services
     provided by general government or NPISHs and delivered to individual households
         (0.5)   (0.5)   (0.5)   (0.5)   (0.5)   (0.5)

b$_2$ For the sector of private households, please give <u>one</u> advantage of actual final consumption as compared to final consumption expenditures.   [4 points]
   Answer:
   - better indicator of the standard of living (2)

   because it includes the value of social transfers in kind (2)
   (or: because it includes the value of <u>all</u> consumption goods and services
         acquired by households, whether by purchase or by transfer)

   - better indicator for international comparisons (2)

   because the degree of procurement of household consumption goods and
   services by government and NPISHs differs between countries (2)

   ATTENTION: maximum of 4 points!!