

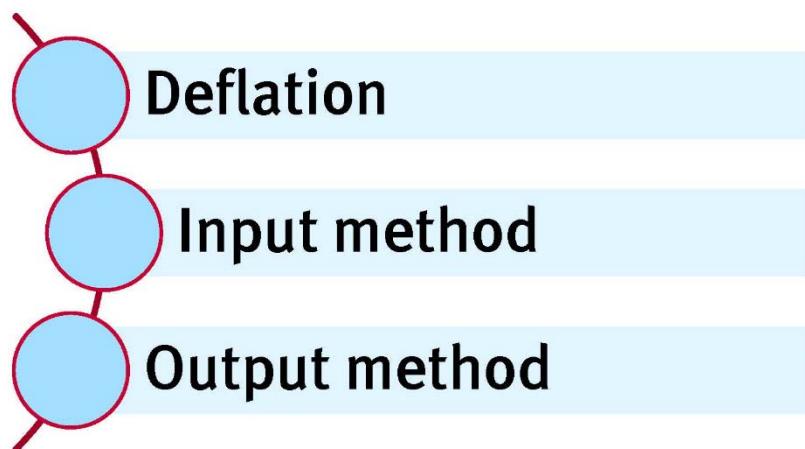
VOLUME MEASUREMENT OF NON-MARKET EDUCATION IN GERMAN NATIONAL ACCOUNTS



Outline

- a) General methodology**
- b) Output method for education**
- c) Approach in Germany for non-market output in education**
- d) Results**

General methodology



General methodology

- Where it is possible to define **unit costs of quantity of non-market services**, it is also possible to **apply the general principles for calculating volume and price indices**
- It is generally possible to define units of quantity for non-market services which are **consumed on an individual basis such as education**
- The method consisting of calculating volume by applying **unit costs of the previous year to the quantities of the current year** is called the **output method**
- Output method without application of explicit quality adjustments has to be used (ESA 2010 par. 10.30), **input method to be avoided**

Output method for education

- *Education output is the amount of teaching received by the students for each type of education (Handbook on price and volume measures in National Accounts)*
- Teaching received by students can be measured by number of hours they spent at being taught („student-hours“ or „pupil-hours“)
- Education is delivered as a non-market output, the current price value of output is determined by reference to the inputs
- Measurement of volume output should not be calculated by simply deflating inputs.

Approach in Germany for non-market output of education

- General government
- Non-profit institutions serving households
- We do not talk about education produced by non-financial corporations.

Approach in Germany for non-market output of education

Four areas of education

- a) Primary education
- b) Secondary education
- c) Tertiary education
- d) Further education

Approach in Germany for non-market output of education

Wirtschaftszweig	Klassenbezeichnung	ISCED 1997-Stufe
85.1	Kindergärten und Vorschule	0
85.2	Grundschulen	1
85.3	Weiterführende Schulen(Sek 1+2)	2-3
85.41	Postsekundärer, nicht tertiärer Unterricht	4
85.42	Tertiärer Unterricht	5-6

a) Primary education (Kindergarten)

- General government and non-profit institutions serving households
- Source
 - Statistik der Kinder- und Jugendhilfe (annually available)
- Quantities
 - children-hours
- No further weight necessary because each supervised hour is dealt with equally.

b) Secondary education

- In the German federalism, education is a task which belongs to the federal states, the „Bundesländer“
- We can therefore observe varying costs, depending on the Bundesland, for the same school type.
- We use average values for the same school type.
- 90% of German pupils attend public schools, private schools play a minor role.

b) Secondary education

- **general schools and vocational schools, both subdivided in different school types**
- **Source**
 - Schülerschnellmeldung, Fachserie 11.1, Reihe 1.1, Reihe 2
 - Stundentafeln der Kultusministerkonferenz
- **Quantities**
 - number of students, student-hours
- **Weights**
 - salaries (personnel expenses), current expenses

b) Secondary education

- **general schools (divided in different school types, each type with appropriate weight)**

Allgemein- bildende Schulen	Vollzässig- schulange- stellten	Grund- schulen	Schularten- abhängige Orientierungs- stufe	Haupt- schulen	Schularten mit mehreren Bildungs- gängen	Realschulen	Gymnasien				Integrierte Gesamtschulen				Föder- schulen				Sonstige Schularten			
							zusam- men	Sekun- darschul- bereich I	Sekun- darschul- bereich II	zusam- men	Primar- schul- bereich	Sekun- darschul- bereich I	Sekun- darschul- bereich II	Abend- hauptschulen	Abend- realschulen	Abend- gymnasien	Kollegs					
Summe																						

b) Secondary education

- vocational schools (divided in different school types, each type with appropriate weight)

Berufliche Schulen		Sonstige Schularten								
	(Teilzeit-) Berufsschulen	Berufsvorbereitungsjahr	Berufsgrundbildungsjahr	Berufsaufbau-schulen	Berufsfachschulen	Fach- oberschulen	Fach- gymnasien	Berufs-/ Techn. Ober- schulen	Fach- schulen	Fach-/ Berufs- akademien
Summe										

c) Tertiary education

- 3 types of higher education:
 - art academies
 - universities of applied sciences and technical colleges for administration
 - universities
- General idea: different costs for different subjects by type of higher education (implicit quality adjustment)
 - Stratification (9 groups of subjects)

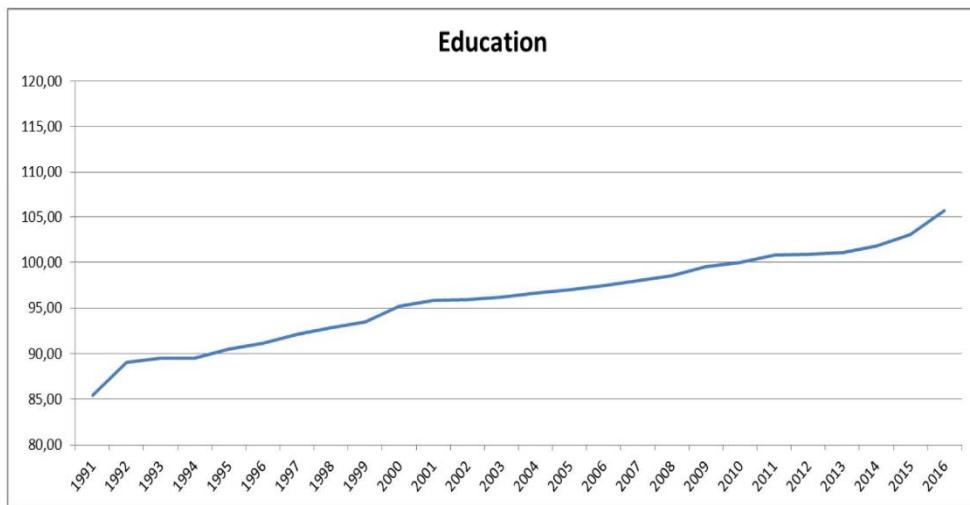
c) Tertiary education

- 9 groups of subjects:
 - 1 Sprach- und Kulturwissenschaften
 - 2 Sport
 - 3 Rechts-, Wirtschafts- und Sozialwissenschaften
 - 4 Mathematik, Naturwissenschaften
 - 5 Humanmedizin/Gesundheitswissenschaften
 - 6 Veterinärmedizin
 - 7 Agrar-, Forst- und Ernährungswissenschaften
 - 8 Ingenieurwissenschaften
 - 9 Kunst, Kunsthissenschaft

c) Tertiary education

- At the end of the calculations in tertiary education, there is an overall cost-based weighting.
- Source
 - number of students Fachserie 11, Reihe 4.1
- Weights
 - salaries, current expenses (Fachserie 11, Reihe 4.3.2)
- Adjustments
 - Research and Development

Results – production in volume terms of NACE 85 (2010 = 100)



Literature (in German language)

- » **Revision der Volkswirtschaftlichen Gesamtrechnungen 2005 für den Zeitraum 1991 bis 2004, in: Wirtschaft und Statistik 5/2005**
- » **Preis- und Volumenmessung für Krankenhäuser, Erziehung und Unterricht sowie öffentliche Sicherheit und Ordnung, project report by Stefan Pierdzioch, 2008**
- » **Methodenbeschreibung der Preis- und Volumenmessung (published in December 2017)**

