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CHAPTER 13

REGIONAL ACCOUNTS

INTRODUCTION

- 13.01 This Chapter describes regional accounts in general and clarifies the purposes and major conceptual principles and compilation issues typical for regional accounts.
- 13.02 *Definition:* regional accounts are a regional specification of the corresponding accounts of the national economy. Regional accounts provide a regional breakdown for major aggregates such as gross value added by industry and household income.
- 13.03 National accounts concepts shall be used for regional accounts unless indicated otherwise in this Chapter.

National totals hide differences in regional economic conditions and performances. Population and economic activities are generally unevenly distributed among regions. Urban regions are generally specialised in services, while agriculture, mining activities and manufacturing tend to be located in non-urban regions. Major issues such as globalisation, innovation, ageing, taxation, poverty, unemployment and the environment often have a regional economic dimension. Regional accounts are, therefore, an important complement to national accounts.

13.04 Regional accounts comprise the same set of accounts as national accounts, in that they make regional economic structures, developments and differences visible. Conceptual and measurement problems result in a set of accounts for regions which are more limited in scope and detail than national accounts.

The tables on regional production activities by industry show:

- (a) the size and the dynamic of production and employment by region;
- (b) the contribution of regions to national aggregates;
- (c) the specialisation of each region;
- (d) the role of the various regions for each industry.

Regional household income accounts show primary and disposable household income by region, as well as the sources and distribution of income amongst regions.

13.05 In several Member States, regions at various levels have a substantial autonomy of decision-making. Regional accounts corresponding to such regions are, therefore, important for national and regional policy.

- 13.06 Regional accounts also serve important specific administrative purposes, e.g.:
- (a) to allocate the revenues of a specific national tax to regional governments;
 - (b) to allocate funds as part of European cohesion policy.
- 13.07 Regional accounts can be used flexibly at various levels of aggregation. This does not only correspond to geographic regions. Geographic regions can also be grouped by economic structure, location and economic relationships with other (neighbouring) regions. This is in particular useful for analysing national and European economic structures and development.
- 13.08 Regional accounts shall be compiled on the basis of regional data collected directly, and national data with regional breakdowns based on assumptions. The more complete the data collected directly, the less the role of assumptions. The lack of sufficiently complete, timely and reliable regional information requires assumptions in compiling regional accounts. This implies that some differences between regions are not necessarily reflected in regional accounts.

REGIONAL TERRITORY

- 13.09 A regional economy of a country is part of the total economy of that country. The total economy is defined in terms of institutional units and sectors. It consists of all the institutional units which have a centre of predominant economic interest in the economic territory of a country (see paragraph 2.04). The economic territory does not coincide exactly with the geographic territory (see paragraph 2.05). The economic territory of a country is divided into regional territories and the extra-regio territory.
- 13.10 The regional territory consists of that part of the economic territory of a country that is directly assigned to a region, including any free zones, bonded warehouses and factories.
- 13.11 The extra-regio territory is made up of parts of the economic territory of a country which cannot be assigned to a single region. It consists of:
- (a) the national air-space, territorial waters and the continental shelf lying in international waters over which the country enjoys exclusive rights;

- (b) territorial exclaves (i.e. geographic territories situated in the rest of the world and used, under international treaties or agreements between states, by general government agencies of the country — embassies, consulates, military bases, scientific bases etc.);
- (c) deposits of oil, natural gas etc. in international waters, outside the continental shelf of the country, worked by resident units.

13.12 The nomenclature of territorial units for statistics (NUTS) provides a single, uniform breakdown of the economic territory of the European Union. For national purposes, regional accounts may also be compiled at a more detailed regional level.

UNITS AND REGIONAL ACCOUNTS

13.13 Two types of units are distinguished for the national economy. First, records for the institutional unit reflect flows affecting income, capital and financial transactions, other flows and balance sheets. Second, records for the local kind of activity unit (local KAU) show flows occurring in the process of production and in the use of goods and services.

Institutional units

- 13.14 For regional accounts, depending on the regional level, two types of institutional units can be distinguished:
- (a) Uniregional units, where the centre of predominant economic interest is in one region. Examples of uniregional units are households, corporations the local KAUs of which are all located in the same region, most local and regional governments, part of social security and NPISHs.
 - (b) Multiregional units, where the centre of predominant economic interest is in more than one region. Corporations and NPISHs are examples of units which span regions. Other examples are institutional units whose activities span the whole country, such as central government and a small number of corporations exercising monopolies or near-monopolies.
- 13.15 All transactions of uniregional institutional units are allocated to the region in which such units have their centre of predominant economic interest. For households, the centre of predominant economic interest lies in the region where they are resident, not the region where they work. Other uniregional units have their centre of predominant economic interest in the region where they are located.

13.16 Some of the transactions of multiregional units cannot be allocated to regions. This is the case for most distributive and financial transactions. Consequently, balancing items of multiregional units such as saving and net lending are not recorded at the regional level for multiregional units.

Local kind-of-activity units and regional production activities by industry

13.17 Enterprises can engage in production activities at more than one location, and for regional accounts it is necessary to allocate the activities to location. Where enterprises are partitioned by location, the partitioned parts are called local units.

13.18 Institutional units can be classified on the basis of economic activities to describe the economy's production activities by industry. This results in heterogeneous industries, as many enterprises have substantial secondary activities that are different from their principal activity. It also results in some industries having the principal product of the industry as a small proportion of total output. In order to obtain groups of producers whose activities are more homogeneous in terms of output, cost structure and technology of production, enterprises are partitioned into smaller and more homogeneous units. These are called kind-of-activity units.

- 13.19 The local kind-of-activity unit (local KAU) is the part of a kind-of -activity unit (KAU) which corresponds to a local unit. When a KAU is engaged in production activities in several regions, the information on the KAU is split in order to obtain regional accounts. For this splitting, information is required on compensation of employees, or employment if this is not available, and gross fixed capital formation. For enterprises situated in a single location and in which the principal activity accounts for most of the value added, the local KAU is the same as the enterprise.
- 13.20 An industry for a region consists of a group of local KAUs engaged in the same, or similar, kind-of-activity.
- 13.21 When defining a local KAU there are three distinct cases.
- (a) A production activity with significant labour input at a fixed location. Significant labour input, in this context, at a minimum is the yearly equivalent of one person regularly working half a day.

- (b) A production activity without significant labour input at a fixed location is generally not to be considered as a separate local KAU and the production should be attributed to the local unit that is responsible for managing this production. However, there are exceptions to this rule, examples being windmills, the extraction of oil and gas, internet hubs and fully automatic petrol stations. Such production activities may be located in one region and fully managed in a different region. The output of such activities is not recorded in the region where they are managed, as production takes place in the other region. Gross fixed capital formation should be recorded in the same region as the associated output and value added.
- (c) For a production activity without a fixed location the concept of residence (see paragraph 2.04) at the national level is applied. For example, major construction projects undertaken by contractors from other regions are registered as a separate local KAU. Examples of major construction projects are building bridges, dams and power stations, that take a year or more to complete and are managed through a local site office. For construction projects of less than a year, the residence of the parent construction company is used to allocate the production by region.

- 13.22 Production transactions between local KAUs, which belong to the same institutional unit and are located in different regions, are recorded. However, no delivery of ancillary output between local KAUs is recorded, unless it is observable (see paragraph 1.31). This implies that only deliveries of principal or secondary output between local KAUs are recorded, as far as this is practised in national accounts.
- 13.23 If an establishment undertaking only ancillary activities is statistically observable, in that separate accounts for the production it undertakes are readily available, or if it is in a geographically different location from the establishments it serves, it is recorded as a separate unit and allocated to the industrial classification corresponding to its principal activity, in both national and regional accounts. In the absence of suitable basic data being available, the output of the ancillary activity is estimated by summing costs.

METHODS OF REGIONALISATION

- 13.24 Regional accounts are based on the transactions of units that are resident in a regional territory. In general, regional accounts are compiled by using the following:
- (a) bottom-up methods;
 - (b) top-down methods; or
 - (c) a mixture of bottom-up and top-down methods.

13.25 The bottom-up or ascending method of estimating a regional aggregate consists of collecting data directly for resident units, and compiling regional estimates by aggregation.

A pseudo-bottom-up approach is acceptable when data for local KAUs is not available. Data for local KAUs can be estimated from enterprise, KAU or local unit data using distribution models. The estimates are aggregated to obtain regional totals as in the bottom-up approach.

In the second stage of the compilation process, bottom-up estimates are reconciled with the totals from the national accounts.

13.26 When information is only available at the level of units which contain several local KAUs engaged in different activities and regions, indicators such as compensation of employees, and employment by region, are used to compile regional breakdowns by industry.

13.27 The top-down method is distributing a national total across the regions, without attempting to distinguish resident units by region. The national figure is distributed using an indicator that is distributed across regions in the same way as the variable to be estimated.

The notion of a resident unit by region is needed in order to achieve regional coverage of the indicator used to produce the regional allocation of the variable required.

- 13.28 Bottom-up methods are rarely encountered in their pure form. Mixed methods are also acceptable. For example, regional estimates of a variable or an aggregate of variables may only be possible with the help of the bottom-up method at macro-regional level. For estimates at a more detailed regional level, a top-down method is then applied.
- 13.29 Direct measures of regional values are preferred to indirect measures. If complete and reliable micro-data is available at the level of local KAUs, regional values that correspond in concept with the national values are estimated by the bottom-up method. To obtain consistency with the national accounts totals, those regional accounts estimates are then made consistent with national accounts aggregates.
- 13.30 Indirect measurement on the basis of national aggregates and an indicator that is correlated with the variable to be measured is subject to measurement errors. For example, national figures on gross value added by industry can be allocated to regions using regional employment statistics, under the assumption that, for each industry, gross value added per employee is the same for all regions. Compiling at a detailed breakdown level of industry improves top-down calculations.

- 13.31 Aggregates of production are allocated to the region where the unit carrying out the relevant transactions is resident. The residence of the local KAU is an essential criterion for the allocation of such aggregates to a particular region. The residence principle is preferred to a territorial approach in which production activities are allocated on the basis of their location.
- 13.32 For specific industries, like construction, energy production and energy distribution, communication networks, transport and financial intermediation, and for some transactions in the household accounts such as property income, specific problems in the allocation to regions exist. For international comparability of regional accounts, the same compilation methods, or methods yielding similar results, are employed.
- 13.33 Gross fixed capital formation is allocated to regions by ownership. Fixed assets owned by a multiregional unit are allocated to the local KAUs where they are used. Fixed assets used under an operating lease are recorded in the region of the owner of the assets, and those used under a financial lease are recorded in the region of the user.

AGGREGATES FOR PRODUCTION ACTIVITIES

Gross value added and gross domestic product by region

- 13.34 Three approaches can be used for estimating regional gross domestic product: the production, income and expenditure approaches.
- 13.35 The production approach measures regional gross domestic product at market prices as the sum of gross value added at basic prices, plus taxes minus subsidies on products. Gross value added at basic prices is measured as the difference between output at basic prices and intermediate consumption at purchasers' prices.
- 13.36 The income approach measures regional gross domestic product at market prices by measuring and aggregating the various uses in the regional part of the total economy generation of income account: compensation of employees, gross operating surplus and taxes less subsidies on production. Information by industry on compensation of employees and employment is often available at regional level. This information is used in estimating gross value added by industry directly or via the production approach. The income approach for regional gross domestic product overlaps with the production approach.

- 13.37 Information on gross operating surplus is generally not available by industry and by region. Information on gross operating surplus of market producers can be derived from the business accounts of enterprises. A breakdown by institutional sector and by region is often not available. This is a barrier to using the income approach to the estimation of regional gross domestic product.
- 13.38 Taxes (less subsidies) on production consist of taxes (less subsidies) on products and other taxes (less subsidies) on production. The allocation of taxes (less subsidies) on products is discussed in paragraph 13.43. For the other taxes (less subsidies) on production, information may be available by industry, e.g. in business surveys or by inferring from the specific type of tax or subsidy of the industry involved. This can then be an indicator for allocation of gross value added by region.
- 13.39 For measuring regional gross domestic product, the expenditure approach is not used due to lack of information. Examples where there is a lack of data are direct information on inter-regional sales and purchases, and a breakdown of exports and imports between regions.

The allocation of FISIM to user industries

13.40 Financial intermediation services indirectly measured (FISIM) are treated in regional accounts in the same way as in national accounts. The allocation of intermediate consumption of FISIM by user industries to regions poses a problem, because estimates of stocks of loans and deposits are usually not available by region. Where this is the case, the allocation of FISIM to user industry is made with a second-best method: regional gross output or gross value added by industry are used as distribution indicators.

Employment

13.41 Regional production measures are consistent with employment estimates in a region when employment includes both the residents and the non-residents who work for regional producer units. Regional employment is defined consistently with the principles governing employment and residence for the national economy (see paragraph 11.17).

Compensation of employees

13.42 For producers, compensation of employees is allocated to the local KAUs where the people are employed. Where this data is not available, compensation of employees is allocated, as a second-best method, based on the hours worked. If neither compensation of employees nor hours worked are available, the number of employees by local KAU is used. Compensation of employees in the household accounts is allocated to regions according to residence.

Transition from regional GVA to regional GDP

- 13.43 In order to calculate GDP at market prices for regions, taxes and subsidies on products are allocated to the regions. By convention, these supra-regional taxes and subsidies are allocated on the basis of the relative size of gross value added of all industries in the region valued at basic prices. Alternative methods of allocation can be applied on a case-by-case basis for territories with specific fiscal systems, resulting in significantly different rates of taxes and subsidies on products within a country.
- 13.44 Per inhabitant figures can be calculated for the GDP of all regions. These figures are not calculated for extra-regio measures.
- 13.45 Regional gross domestic product per inhabitant can be significantly influenced by commuter flows between regions. Net commuter inflows into regions increase production beyond that possible by the resident active population. GDP per inhabitant appears relatively high in regions with net commuter inflows and relatively low in regions with net commuter outflows.

Volume growth rates of regional GVA

13.46 In measuring price and volume changes, the principles applied for the national economy shall apply also to regions. However, there are problems with regional data which make applying these principles to regions difficult. Examples of the difficulties are the following:

- (a) information on regional price changes is often not available;
- (b) if regional value added in current prices is directly estimated and not by deducting intermediate consumption from output, then double deflation of regional value added is not possible;
- (c) in the absence of regional supply and use tables, price and volume changes cannot be measured and assessed in such a framework.

13.47 A commonly used approach is therefore to deflate regional value added by industry on the basis of national price changes by industry. This is carried out at the most detailed level at which gross value added at current prices is available. Differences between national and regional price changes due to differences in economic structure by industry are taken into account. However, this solution is still vulnerable to major differences between national and regional price changes. Examples of such differences are:

- (a) differences in cost structure and composition of outputs within one industry between producers in different regions. There can be large variations in price changes amongst regions for a single industry;
- (b) regional differences in the price changes of major inputs, e.g. changes in the price of labour, land and renting office space. The existence of national wage agreements with no regional differentiation implies that regional differences in changes in wage rates are small.

13.48 Regional value added is deflated by using:

- (a) regional deflators when available and of sufficient quality, using price changes of outputs rather than inputs. In some cases regional deflators can be obtained indirectly by combining information on value changes and volume changes. When regional prices are used (possibly in combination with national deflators by industry), the regional growth rates are calculated to be consistent with national growth rates;
- (b) double deflation when possible. This is in particular appropriate where the price change of intermediate consumption deviates from that of output and where intermediate consumption is substantial.

REGIONAL HOUSEHOLD INCOME ACCOUNTS

13.49 Distribution and redistribution of income result in balancing items, namely primary income and disposable income. In regional accounts these income measures are limited to households.

13.50 Regional accounts of households are a regional specification of the corresponding accounts at the national level. For measurement reasons the accounts are limited to:

- (a) allocation of primary income account;
- (b) secondary distribution of income account.

These accounts record primary income and disposable income of households which are resident in a region (see Table 13.1).

Table 13.1 — Regional household income accounts

	Region			Correction for regional flows without any national counterpart	National total
	a	b	Extra-regio		
Allocation of primary income					
Resources					
B.2/B.3 Net operating surplus/mixed income					
D.1 Compensation of employees					
D.4 Property income receivable				Minus intraregional property income related to B2/B3	
Uses				Minus intraregional property income related to B2/B3	
D.4 Property income payable					

		Region			Correction for regional flows without any national counterpart	National total
		a	b	Extra-regio		
	B.5 Primary income (balancing item)					
Secondary distribution of income account for households						
Resources	B.5 Primary income					
	D.62 Social benefits other than social benefits in kind					
	D.7 Other current transfers receivable					
Uses	D.5 Current taxes on income, wealth, etc.					
	D.61 Social contributions					
	D.7 Other current transfers payable					

		Region			Correction for regional flows without any national counterpart	National total
		a	b	Extra-regio		
	B.6 Disposable income (balancing item)					
	Supplementary information					
	Population (number of inhabitants)					
	Primary income per capita					
	Disposable income per capita					

- 13.51 The regional household accounts are based on the households that are resident in a regional territory. The number of persons that are members of the resident households adds up to the total resident population of the region.
- 13.52 The rules for determining the residence of households at the national level shall also apply to the regional accounts of households. By way of exception, when the host region is in the same country as the region of residence, students and long-term patients are treated as resident of the host region if they stay there more than one year.
- 13.53 The household accounts can be extended by the use of income accounts. This requires the allocation by region of national accounts statistics on final consumption expenditure by households and the adjustment for the change in net equity of households in pension fund reserves. Regional saving by households is the balancing item.

- 13.54 Allocation by region of final consumption expenditure by households requires reliable regional information from for example an extended household budget survey. However, such a regional breakdown is often absent and in the national accounts final consumption expenditure by households is often estimated using other information. In these circumstances, constructing a regional breakdown is more difficult.
- 13.55 Governments can play an important role in providing education, health care and social services to households, through social transfers in kind. The role of such social transfers in kind differs substantially between different countries and can show major fluctuations over time. Allocating such social transfers in kind to regions implies that regional actual final consumption by households and adjusted disposable income by households can be obtained. Considering the important role of social transfers in kind in some Member States, comparing actual final consumption and actual disposable income by households across Member States can give a different picture from a comparison based on final consumption expenditure and disposable income by households.
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