**Statistics Lithuania**

GRANT AGREEMENT: 878646 — 2019-LT-NA-BOP

# LITHUANIAN

# REGIONAL ACCOUNTS INVENTORY

**FEBRUARY 2021, VILNIUS**

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**Chapter 1 Summary: overview of organisation, methodology and sources**

The Regional accounts (RA) inventory of Lithuania provides the description of sources and methods used for the compilation of RA for the statistical year 2016. The Inventory follows broadly the standard structure proposed by Eurostat, and also includes description of sources and methods for the regionalization of Gross fixed capital formation (GFCF), Compensation of employees (COE) and Household Accounts by two recently distinguished regions. This inventory has seven main parts. Short overview of organization, methodology and sources presented in Chapter 1, Chapter 2 contains information about release and publication timetable, revision policy, access to the public. Chapter 3 describes methodology for the calculation of Regional Gross Value Added (RGVA). Chapters 4 and 5 describe sources and methods for the compilation of GFCF and COE by two regions, Chapter 6 describes Household Accounts by two regions and Chapter 7 gives quality assessment and plans for further improvements.

**1.1 Organisation of the statistical process for compiling Regional Accounts**

Regional accounts are compiled in the National Accounts Division (NAD) of Statistics Lithuania (SL). The NAD of Statistics Lithuania counts 21 employees, one of them is head and two are advisers. The responsibility between staffs is distributed according to the general topics of the system of National accounts. Every employee is in charge of preparation the specific economic area or group of macroeconomic indicators. Five chief specialists are responsible for estimates of regional accounts components and one of them for the estimation of RGVA. However, they all are engaged in compilation of NA aggregates for other domains as well.

**1.2 Overview of the methodology of Regional Accounts compilation**

**1.2.1 Regional territory**

The territorial administrative units of the Republic of Lithuania are counties and municipalities. Counties are formed from the territories of the municipalities characterized by common social, economic and ethno-cultural interests.

The territory of the Republic of Lithuania currently comprises 10 counties and 60 municipalities. The majority of municipalities are divided into smaller territorial units – wards.

According to Resolution No 5 "On the formation of the Capital Region and the Central and Western Lithuania Region" of 6 January 2016 of the Government of the Republic of Lithuania, two new regions were formed. The Capital Region is comprised of Vilnius county municipalities, and the

Central and Western Lithuania Region is comprised of the remaining counties – Alytus, Kaunas, Klaipėda, Marijampolė, Panevėžys, Šiauliai, Tauragė, Telšiai and Utena. Establishment of these two statistical regions have been legitimized at European level by adoption of Commission Regulation (EU) 2016/2066 of 21 November 2016 amending the annexes to Regulation (EC) No 1059/2003 of the European Parliament and of the Council on the establishment of a common classification of territorial units for statistics (NUTS).

According to the principles of the Nomenclature of Territorial Units for Statistics (NUTS) used in the European Union, Lithuania may be divided into 3 NUTS levels, since 1 January 2018:

<div style="text-align:center">

NUTS 1 level – whole country

NUTS 2 level– regions (2)

NUTS 3 level – counties (10)

</div>

Traditional administrative division of Lithuanian territory is the division into 60 municipalities and ten counties. NUTS 2 level is distinguished for the statistical purposes but not for administrative ones.

For the purposes of regional accounts, the RGVA is estimated and published by the following NUTS codes:

**LITHUANIA**

| CODE | NUTS 1 | NUTS 2 | NUTS 3 |
|------|--------|--------|--------|
| LT | | | |
| LT0 | Republic of Lithuania | | |
| LT01 | | Capital Region | |
| LT011 | | | Vilnius county |
| LT02 | | Central and Western Lithuania Region | |
| LT021 | | | Alytus county |
| LT022 | | | Kaunas county |
| LT023 | | | Klaipėda county |
| LT024 | | | Marijampolė county |
| LT025 | | | Panevėžys county |
| LT026 | | | Šiauliai county |
| LT027 | | | Tauragė county |
| LT028 | | | Telšiai county |

| LT029 | | Utena county |
|---|---|---|
| LTZ | Extra-Regio NUTS 1 | |
| LTZZ | | Extra-Regio NUTS 2 |
| LTZZZ | | Extra-Regio NUTS 3 |

The other regional accounts indicators – COE, GFCF and household regional accounts, as well as RGVA growth rates – are estimated and published at NUTS 2 level.

**The territory of the Republic of Lithuania at NUTS 2 and NUTS 3 levels**
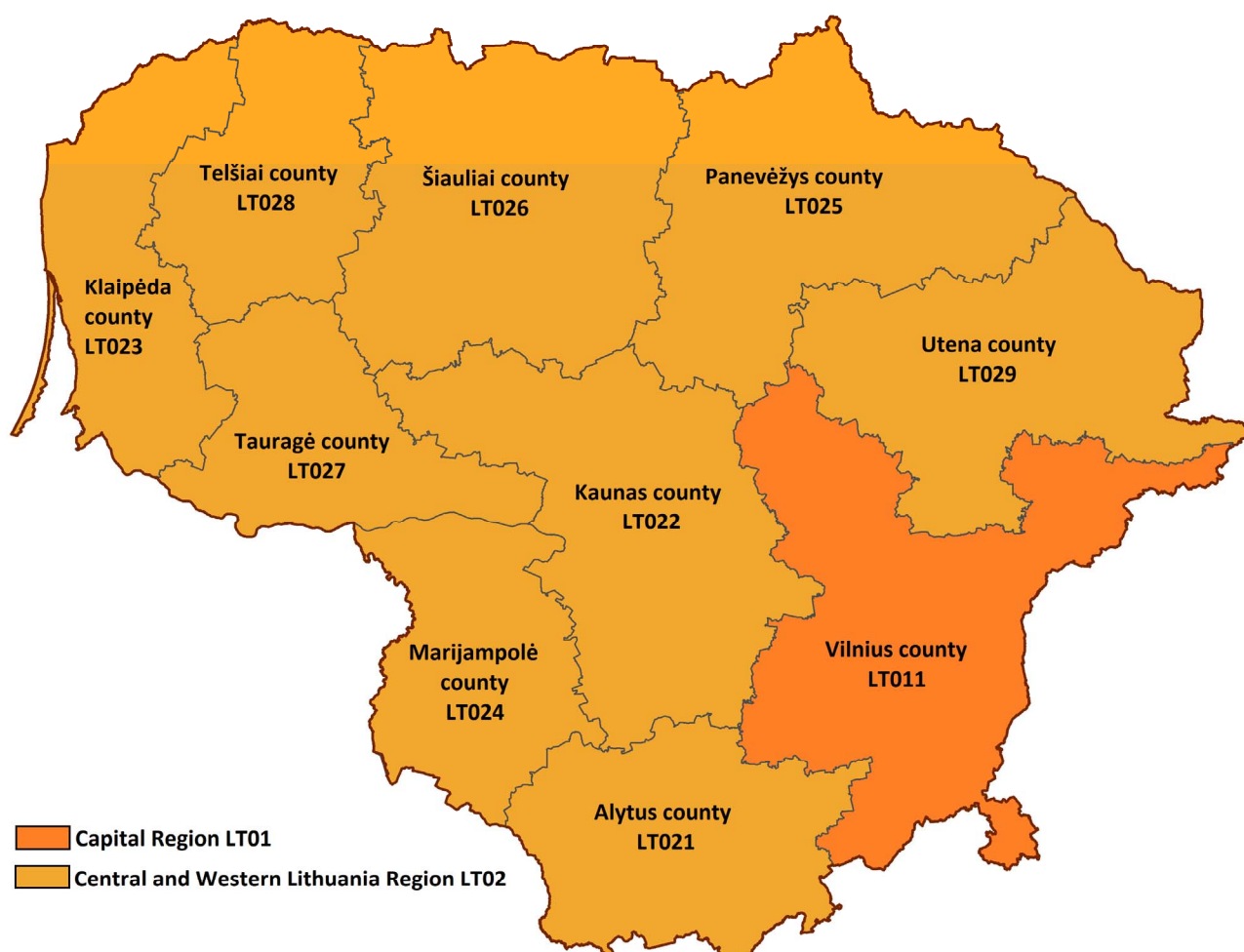


### 1.2.2 Statistical unit and residence

Statistical unit used in Lithuanian Regional Accounts is usually local unit; however, in some circumstances – enterprise.

If enterprise engages in production activities at more than one location, it is allocated in Regional Accounts according to location of activities. Where enterprises are partitioned by location, the partitioned parts are local units.

**1.2.3 Classifications of industries and sectors**

RA variables are decomposed by kind of economic activity and by institutional sector according to their specific classifications.

The main classification used in the compilation of GVA, COE and GFCF by region is statistical classification of economic activities (NACE Rev.2).

The requirements of Commission Regulation (EU) No 715/2010 of 10 August 2010 for the implementation of statistical classification of economic activities (NACE Rev.2) in regional accounts were executed. Starting with 2011, Regional Accounts are compiled using NACE Rev.2. For RGVA calculation, the level of A*21 kind of economic activity (NACE rev.2) is used. In some cases, breakdown by two or three digital level of economic activity (NACE rev.2) is used.

Statistics Lithuania is the institution responsible for the sector classification. Sectorisation of economic entities in Statistics Lithuania is carried out in accordance with the ESA 2010 rules; they are established by the Order of the Director General of Statistics Lithuania on 25 February 2015 (http://osp.stat.gov.lt/documents/10180/474348/2015_46.pdf).

Regional accounts by institutional sectors within the Lithuanian economy as well national accounts need to be consistent, i.e. the same classification of institutional sectors is used for both RA and NA. The institutional units are grouped together into five mutually exclusive domestic **institutional sectors**:

- S.11 Non-financial corporations

- S.12 Financial corporations

- S.13 General government

- S.14 Households

- S.15 Non-profit institutions serving households

### 1.2.4 Business register

The Statistical Register of Economic Entities (SREE) is the main tool to carry out statistical surveys and serves as a sampling frame for business surveys in Statistics Lithuania. It includes information about all types of units from the administrative Register of Legal Entities determining their active/inactive status.

The SREE is the base for defining statistical units, sample frames for surveys, business demography statistics and for serving user needs. For statistical purposes, the Register, apart from the administrative part of information from administrative registers of units, includes a statistical part of information as well. The statistical part contains contact information, number of employees, turnover, and status of activity (active or not), form of ownership, activity (NACE, Rev.2, by four-digit level), institutional sector, a source of historical data, statistical units.

### 1.2.5 Methods used at the regional level

RGVA at basic prices is equal to the total of RGVA by industries. When taxes on products are added to and subsidies of products are deducted from RGVA at basic prices, RGVA at market prices, or RGDP, is obtained.

For compilation of regional statistics output method supplemented with the income method is used for the majority of industries. They differ and are used in combination with the various bottom-up and top-down methods. For the purpose of regionalizing GVA the mixed methods with more stress on pseudo bottom-up approach are used. The bottom-up method is used where available data sources and resources allow realize it in practice.

Regionalization methods for regional GFCF, COE and household accounts are described in Chapters 4, 5 and 6.

### 1.3 Main sources used for the compilation of regional accounts

The RA compilation relies on a variety of data sources. Statistical information sources are statistical surveys of businesses and households, including administrative data sources – the Ministry of Finance, the Bank of Lithuania, the State Social Insurance Fund, Centre of Registers, State Tax Inspectorate – and other sources.

The main data source of information for estimates of aggregates by production approach is Income Tax Declarations of individual enterprises and Natural Persons carrying out economic activity from

the State Tax Inspectorate. The main data source for estimates by income approach is Annual Survey on Earnings.

The administrative data from Income Tax Declarations of individual enterprises and Natural Persons carrying out economic activity from the State Tax Inspectorate are used for RGVA compilation in household sector. It covers all enterprises and persons that produce market goods and services belonging to the sections A to S of the NACE rev.2 by regions, except activity O. The administrative data contain variables broken down by counties: the number of enterprises and natural persons, number of employees, income. For GVA regionalization income is used.

Another particularly important source for regionalization is the Annual Survey on Earnings designed from the sample Quarterly Survey on Earnings (DA-01) and State Social Insurance Fund Board (Sodra) information. It covers complete enumeration of enterprises, institutions and organizations of all kinds of ownership.

Data are used for RGVA compilation in non-financial, general government, non-profit institutions serving households sectors. Data covers enterprises, institutions and organizations of economic activities defined in sections A to T according to the NACE rev.2 by regions, except activity G and K. The sampling frame of enterprises, institutions and organizations is based on the Statistical Register of Economic Entities. For regionalization GVA gross earnings is used. The annual indicators on earnings represent regional units (in the county – by economic activity): data on employees, gross remuneration (including and excluding payments to employees leaving the enterprise, cash compensations for unused annual vacation), average gross monthly earnings, gross hourly earnings, average number of hours paid and hours actually worked per week, per month and indices by counties and municipalities.

For calculating of RGVA for financial enterprises, the following data sources are used:

Annual survey on activity of banks and credit unions (B-01) – reporting units are all active banks and credit unions including central bank and branches of foreign banks. Banks and credit unions are authorised and registered by the central bank. The survey includes all units in activity 65 (NACE rev.2).

Annual survey on activity of insurance companies (F-02) – reporting units are non-life and life insurance companies and branches of insurance undertakings of other European Union Member States established in Lithuania enterprises are authorised and registered by Supervision Service of the Bank of Lithuania (previously, their supervision was performed by the Insurance Supervisory

Commission until it was merged with BOL in 2012). The survey covers all units in activity 66 (NACE rev.2).

Annual survey on activity of financial intermediation enterprises (F-03) – reporting units are all active financial intermediation enterprises excluding banks, credit unions, insurance enterprises and pension funds. Shortened questionnaire was prepared for financial brokerage and management enterprises as part of necessary variables are obtained from supervision authority. The survey includes all units in activity 67 (NACE rev.2).

Financial enterprises surveys (B-01, F-02, F-03) contain variables broken down by county: the number of local units, number of employees, wages and salaries. For GVA regionalization wages and salaries is used.

The trade services output calculation is based on annual statistical survey of trade and catering enterprises (PR07): information about turnover, number of shops, sales space, number of catering units, number of seats in catering units on the regional level. The survey is carried out by applying sampling methods. Observation unit is an enterprise. The survey covers enterprises of all sizes and types the trade services activities 45, 46, 47 (NACE rev.2) and regional units (by counties and municipalities). For GVA regionalization the annual turnover as main indicator is used. The annual turnover is grouped by territory where the enterprises are pursuing their activity.

More detailed sources used for the compilation for regional GFCF, COE and Household accounts are described in Chapters 4, 5 and 6.

### 1.4 Compilation table and meta-data Table

In the following summary table, the estimation methods used by activities and by sectors are presented, where the "survey-based", "administrative" mean direct estimation, and "quantity-price", "other" mean indirect estimation:

*Table 1.  Estimation methods for Gross Value Added by activity and by sector*

|  | S.11 | S.12 | S.13 | S.14 | S.15 |
|---|---|---|---|---|---|
| A Agriculture, forestry and fishing | Survey-based, administrative | | | Quantity x price, survey-based, administrative | |
| B Mining and quarrying | Survey-based, administrative | | | Administrative | |
| C Manufacturing | Survey-based, administrative | | | Administrative | |
| D Electricity, gas, | Survey-based, | | | Administrative | |

| | | | | | |
|---|---|---|---|---|---|
| steam and air conditioning supply | administrative | | | | |
| E Water supply; sewerage, waste management and remediation activities | Survey-based, administrative | | | Administrative | |
| F Construction | Survey-based, administrative | | | Administrative, other | |
| G Wholesale and retail trade; repair of motor vehicles, motorcycles | Survey-based, administrative | | | Administrative | |
| H Transportation and storage | Survey-based, administrative | | | Administrative | |
| I Accommodation and food service activities | Survey-based, administrative | | | Administrative | |
| J Information and communication | Survey-based, administrative | | Administrative | Administrative | |
| K Financial and insurance activities | | Administrative, survey-based | | Administrative | |
| L Real estate activities | Survey-based, administrative | | | Administrative, other (User cost; benchmark extrapolation) | |
| M Professional, scientific and technical activities | Survey-based, administrative | | Administrative | Administrative | |
| N Administrative and support service activities | Survey-based, administrative | | | Administrative | |
| O Public administration and defense; compulsory social security | | | Administrative | | |
| P Education | Survey-based, administrative | | Administrative | Administrative | |
| Q Human health and social work activities | Survey-based, administrative | | Administrative | Administrative | |
| R Arts, entertainment and recreation | Survey-based, administrative | | Administrative | Administrative | |
| S Other service activities | Survey-based, administrative | Survey-based | | Administrative | Survey-based |
| T Activities of households as employers | | | | Other | |
| **Total** | Survey-based, administrative | Administrative, survey-based | Administrative | Quantity/price, administrative, other, survey-based | Survey-based |

**Chapter 2 Release and publication timetable, revision policy, access for the public**

**2.1 Timetable for release and publication of provisional and final estimates**

**2.1.1 Publication calendar**

The provisional RGVA data are prepared in 12 months after the reference period T+12. The final data are released a year later at T+24. Household accounts, GFCF and COE data are released at T+24.

The publication covers RGVA, GFCF and COE estimates by 2 regions and 10 counties by A*10 kind of economic activity (NACE rev.2).

Advance release calendars are publicly available on the Official Statistics Portal (OSP):

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https://osp.stat.gov.lt/informacijos-skelbimo-kalendoriai.

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The press release can be found on the Official Statistics Portal:

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https://osp.stat.gov.lt/.

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**2.1.2 Current revisions**

Major revisions of the Regional accounts aggregates are harmonized and implemented at the same time as the main aggregates of National Accounts. Possible minor revisions in the time series are carried out and published in each compilation round.

**2.2 Policy on benchmark revisions**

The Regional accounts aggregates by industries for Lithuania are compiled in line with ESA 2010. Revisions of time series of the Regional accounts aggregates were induced by revisions in time series of the NA. In principle, the definitive version of Regional accounts aggregates equals to the revised estimates of NA data.

**2.3. Comparability over time**

Time series of Regional Accounts aggregates are comparable for 2000–2018.

**2.4. Transmission to international institutions other than Eurostat**

Regional accounts data are not transmitted to international institutions other than Eurostat.

## 2.5. Accessibility for the public

All public information is released on Statistics Lithuanian's web pages in Lithuanian and English languages. Data are available at NUTS-2 and NUTS-3 level. In addition to the data there is also a press release about the main economic results.

The publication covers RGDP by 2 regions and 10 counties; RGVA by 2 regions and 10 counties by A*10 kind of economic activity (NACE rev.2); COE and GFCF by 2 regions by A*10 kind of economic activity (NACE rev.2); regional households accounts by 2 regions.

All Regional accounts data can be found at:

https://osp.stat.gov.lt/en/statistiniu-rodikliu-analize (Economy and finance (macroeconomics) – National accounts (ESA 2010)).

## 2.6. Policy for metadata

Statistics Lithuania publishes and regularly updates NA metadata on OSP: https://osp.stat.gov.lt/en/nacionalines-saskaitos as well.

The updated methodological documents on the RGVA including additional Regional accounts indicators are under preparation. This inventory will be released on SL web page.

## Chapter 3 Methodology for the calculation of regional GVA

This Chapter provides an overview of the methodological provisions applied and gives details of sources and methods used for RGVA calculation by industry in practice. As required by Annex B of Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013 on the European system of national and regional accounts in the European Union, RGVA data are disseminated at the A*10 breakdown by industry. Data in Tables 2 and 3 below illustrate the latest results of RGVA estimates fully consistent with national GDP and GVA data.

*Table 2. RGVA by two regions and 10 counties by A*10 activity, 2016, EUR million*

| Code | A | B_E | F | G_I | J | K | L | M_N | O_Q | R_U | Total |
|------|------|--------|--------|---------|--------|-------|--------|--------|--------|-------|---------|
| LT0 | 1209.0 | 7743.7 | 2346.2 | 11023.9 | 1259.2 | 760.7 | 2371.0 | 2394.1 | 5083.5 | 805.8 | 34997.0 |
| LT01 | 121.1 | 2259.4 | 869.9 | 4492.9 | 834.3 | 577.6 | 957.1 | 1506.6 | 2259.1 | 367.6 | 14245.6 |
| LT011 | 121.1 | 2259.4 | 869.9 | 4492.9 | 834.3 | 577.6 | 957.1 | 1506.6 | 2259.1 | 367.6 | 14245.6 |
| LT02 | 1087.9 | 5484.2 | 1476.4 | 6531.0 | 424.9 | 183.2 | 1413.9 | 887.5 | 2824.3 | 438.2 | 20751.4 |
| LT021 | 59.6 | 280.3 | 89.7 | 269.2 | 26.0 | 7.6 | 89.5 | 27.4 | 207.0 | 41.4 | 1097.8 |

| Code | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LT022 | 220.2 | 1863.6 | 518.0 | 2381.4 | 199.9 | 63.3 | 433.7 | 359.0 | 882.6 | 174.6 | 7096.3 |
| LT023 | 90.6 | 965.6 | 254.0 | 1557.0 | 58.8 | 30.9 | 241.6 | 260.8 | 468.8 | 76.9 | 4005.0 |
| LT024 | 117.0 | 279.7 | 56.8 | 295.2 | 15.2 | 7.6 | 88.2 | 26.8 | 164.7 | 16.5 | 1067.8 |
| LT025 | 170.4 | 590.2 | 166.4 | 544.5 | 35.2 | 15.7 | 149.6 | 48.1 | 299.6 | 38.5 | 2058.0 |
| LT026 | 228.8 | 601.1 | 159.5 | 813.5 | 45.2 | 38.7 | 176.3 | 78.2 | 344.3 | 41.2 | 2526.8 |
| LT027 | 74.8 | 138.6 | 41.0 | 191.0 | 8.4 | 5.2 | 61.1 | 15.7 | 121.2 | 12.4 | 669.3 |
| LT028 | 68.0 | 414.3 | 126.2 | 270.1 | 16.3 | 7.3 | 86.0 | 43.5 | 155.4 | 19.2 | 1206.3 |
| LT029 | 58.5 | 351.0 | 64.7 | 209.1 | 20.0 | 6.9 | 87.9 | 27.9 | 180.6 | 17.5 | 1024.1 |

It should be noted that some of the totals do not correspond to the sums of lines and columns due to rounding.

*Table 3. RGVA by two regions and 10 counties by A\*10 activity, 2016, against the national average, %*

| Code | A | B_E | F | G_I | J | K | L | M_N | O_Q | R_U | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **LT0** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** |
| **LT01** | **10.0** | **29.2** | **37.1** | **40.8** | **66.3** | **75.9** | **40.4** | **62.9** | **44.4** | **45.6** | **40.7** |
| LT011 | 10.0 | 29.2 | 37.1 | 40.8 | 66.3 | 75.9 | 40.4 | 62.9 | 44.4 | 45.6 | 40.7 |
| **LT02** | **90.0** | **70.8** | **59.2** | **33.7** | **24.1** | **59.6** | **37.1** | **55.6** | **54.4** | **59.3** | **59.3** |
| LT021 | 4.9 | 3.6 | 3.8 | 2.4 | 2.1 | 1.0 | 3.8 | 1.1 | 4.1 | 5.1 | 3.1 |
| LT022 | 18.2 | 24.1 | 22.1 | 21.6 | 15.9 | 8.3 | 18.3 | 15.0 | 17.4 | 21.7 | 20.3 |
| LT023 | 7.5 | 12.5 | 10.8 | 14.1 | 4.7 | 4.1 | 10.2 | 10.9 | 9.2 | 9.5 | 11.4 |
| LT024 | 9.7 | 3.6 | 2.4 | 2.7 | 1.2 | 1.0 | 3.7 | 1.1 | 3.2 | 2.1 | 3.1 |
| LT025 | 14.1 | 7.6 | 7.1 | 4.9 | 2.8 | 2.1 | 6.3 | 2.0 | 5.9 | 4.8 | 5.9 |
| LT026 | 18.9 | 7.8 | 6.8 | 7.4 | 3.6 | 5.1 | 7.4 | 3.3 | 6.8 | 5.1 | 7.2 |
| LT027 | 6.2 | 1.8 | 1.7 | 1.7 | 0.7 | 0.7 | 2.6 | 0.7 | 2.4 | 1.5 | 1.9 |
| LT028 | 5.6 | 5.3 | 5.4 | 2.5 | 1.3 | 1.0 | 3.6 | 1.8 | 3.1 | 2.4 | 3.4 |
| LT029 | 4.8 | 4.5 | 2.8 | 1.9 | 1.6 | 0.9 | 3.7 | 1.2 | 3.6 | 2.2 | 2.9 |

It should be noted that some of the totals do not correspond to the sums of lines and columns due to rounding.

In order to get reliable data of RGVA at A\*10 level, estimates are made at A\*21 level, in some cases introducing more detailed breakdowns by kind of activity and institutional sector. RGVA data at A\*10 level are obtained by aggregation of data at A\*21 level and sectors. Description of sources and methods used for estimates of RGVA at the most detailed level are provided below.

## 3.1. Principles applicable to all industries

The creation of methodology for RGVA estimation in Lithuania follows the institutional sectors division of national economy. It means that we are going to regionalize value added separately by

the sectors. Compilation for RGVA generally applies the output and income approach. The output approach mainly is used for household sector. In activities with sufficient regional information, pseudo bottom-up approach is used. In some industries, GVA of multiregional enterprises is first divided into labour and capital – input related parts before being allocated to local units via a pseudo bottom-up approach.

For the activities involving a top-down method statistics on employment data, population data, housing stock data by counties are used to derive indicators.

In industries where SBS data (the base of output is income) is used regionalization of RGVA is done by using bottom-up method (in the household sector) and calculation are done for output and GVA directly. That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts. In other sectors calculation are done for compensation of employees and GVA directly, where RGVA is derived from regional compensation of employees using the ratio of compensation and GVA in the national accounts. Bottom-up method is used because the income components (which are to be regionalized) and the indicators (distribution keys) are of similar substance: compensation of employees (an income component from national accounts) is regionalized by wages and salaries (distribution key made from data of the statistical survey on earnings).

When using bottom–up method, differences between national and regional results are allocated to the regions in proportion to regional values, i.e. the same percentage adjustment is applied to all regions.

### 3.1.1 Available sources and information

Available data sources, which are used for compilation of RGVA:

1. Annual Survey on Earnings: sample Quarterly Survey on Earnings (DA-01) and information from the State Social Insurance Fund Board.

2. Income Tax Declarations of individual enterprises and Natural Persons carrying out economic activity from the State Tax Inspectorate.

3. Statistical survey on agricultural crop area, harvest and yield (survey questionnaire ŽŪ-29 for agricultural companies and enterprises).

4. Quarterly statistical questionnaire on the number of livestock and animal production in agricultural companies and enterprises ŽŪ-24.

5. Agricultural Information and Rural Business Centre.

6. Labour Force Survey.

7. Annual survey on activity of banks and credit unions (B-01).

8. Annual survey on activity of insurance companies (F-02).

9. Annual survey on activity of financial intermediation enterprises (F-03).

10. Annual statistical survey of trade and catering enterprises (PR07).

11. Information from State Enterprise Center of Registers.

12. Information from the Real Estate agencies.

### 3.1.2 Use of benchmarks and extrapolations

The role of benchmarks and extrapolations in the current RGVA compilation is not particularly important. A lot of statistical sources inside the Department are available and accessible on regular basis.

### 3.1.3 Treatment of multi-regional enterprises, sources and variables used

Multiregional units where the centre of predominant economic interest is in more than one region cover institutional units whose activities span the whole country, such as central government and a small number of corporations exercising monopolies or near monopolies.

In Lithuanian regional accounts, we have multi-regional enterprises in such industries, like electricity, gas and water supply; transport and storage; information and communication; financial and insurance activities; trade services. The majority of these activities are active in more than one region and for these multi-regional enterprises a special calculating method is done. The regional information comes from special annual survey which was conducted at irregular intervals and provides information on the multi-regional enterprises, for example the multi-regional corporation "Lithuanian Railways". For regionalization of GVA such variables like wages and salaries, train routes, number of aircraft arrivals and departures, average annual number of employees, consumption of fixed capital, operating surplus are used.

### 3.1.4 Treatment of ancillary activities

Ancillary activities carried out on the same site as the corresponding enterprise are allocated to the same region and industry as the enterprise or unit they serve and share the location with. Units carrying out ancillary activities are only recorded as a separate local unit if they are located in a different region, separate from all other units of the corresponding enterprise. In this case they are allocated to the same activity as the principal activity of the enterprise they serve. Usually, that is also a place of location of headquarters of the enterprises.

### 3.1.5 Treatment of the Extra-regio

Extra-regio gross value added is not estimated because of its minor importance in Lithuania. Lithuania does not have any large presence of economic territory abroad or in international waters (for instance military or scientific bases, deposits of oil, natural gas, etc.).

### 3.1.6 Approach to exhaustiveness

Direct estimation of the exhaustiveness for regional GVA is not used. The regional values must be adjusted to the national level. Total differences between National and Regional Accounts include exhaustiveness and are allocated to the regions in proportion to regional values.

### 3.1.7 Calculation of FISIM by user industries

Nowadays, financial intermediation services indirectly measured (FISIM) are to be treated in regional accounts in the same way as in national accounts.

In the Lithuanian Regional accounts calculation, there are no data available to measure FISIM output directly on regional level. Any changes in the national value were automatically passed on the regions in proportion of regional structure of gross value added.

### 3.1.8 Adjustments for commuting

The sources used to describe the production process are based on location of production. Therefore, there is no need for adjustments for commuting or statistics based on household's place of residence. All used distribution keys are based on the place of production.

### 3.1.9 Transition from GVA to GDP

Gross domestic product (GDP) at market prices is derived by adding taxes on products (D21) and deducting subsidies on products (D31) to GVA at basic prices. Net taxes on products are distributed to regions in proportion to GVA.

### 3.1.10 Method used for the compilation of regional GDP per capita

For estimation of Regional GDP per capita demography statistics such as annual average population are used. Compilation method of the annual average population is the same for annual national and regional GDP per capita estimates. Annual average population is derivative indicator of resident population and is estimated as the average of the resident population on 1 January of two consecutive years. Regional GDP per capita is calculated as a ratio of RGDP to average annual population by counties.

*Table 4. GDP and population by two regions and by 10 counties, 2016*

| Code | GDP, EUR million | Proportion of GDP, against the country's GDP, % | GDP per-capita, EUR thousand | Per-capita GDP, against the national average, % | Average annual population, thousand persons |
|------|------|------|------|------|------|
| **LT0** | **38889.9** | **100.0** | **13.6** | **100.0** | **2868.2** |
| **LT01** | **15830.2** | **40.7** | **19.7** | **145.0** | **805.3** |
| LT011 | 15830.2 | 40.7 | 19.7 | 145.0 | 805.3 |
| **LT02** | **23059.7** | **59.3** | **11.2** | **82.4** | **2063.0** |
| LT021 | 1219.9 | 3.1 | 8.5 | 62.8 | 143.4 |
| LT022 | 7885.7 | 20.3 | 13.7 | 101.4 | 573.6 |
| LT023 | 4450.4 | 11.4 | 13.8 | 101.8 | 322.6 |
| LT024 | 1186.6 | 3.1 | 8.1 | 59.4 | 147.2 |
| LT025 | 2286.9 | 5.9 | 10.0 | 74.0 | 228.0 |
| LT026 | 2807.9 | 7.2 | 10.3 | 75.7 | 273.4 |
| LT027 | 743.8 | 1.9 | 7.4 | 54.9 | 99.9 |
| LT028 | 1340.5 | 3.4 | 9.6 | 70.9 | 139.5 |
| LT029 | 1138.0 | 2.9 | 8.4 | 62.0 | 135.3 |

It should be noted that some of the totals do not correspond to the sums of lines and columns due to rounding.

### 3.2 Specific methods and sources for compiling regional GVA

### 3.2.1 Agriculture, forestry and fishing (A)

Agriculture, hunting and forestry and fishing consist of the following three subgroups:

- 01 Crop and animal production, hunting and related service activities

- 02 Forestry and logging

- 03 Fishing and aquaculture

*Crop and animal production, hunting and related service activities* consists of the production of crop products and production of animal products, also covering the forms of organic agriculture, the growing of genetically modified crops and the raising of genetically modified animals, the growing of crops in open fields as well in greenhouses and other activities, such as hunting, trapping and related.

*Forestry and logging* activities includes the production of roundwood as well as the extraction and gathering of wild growing non-wood forest products. These activities can be carried out in natural or planted forests.

*Fishing and aquaculture* capture fishery and aquaculture, covering the use of fishery resources from marine, brackish or freshwater environments. Service activities incidental to marine or freshwater fishery or aquaculture are included in the related fishing or aquaculture activities.

### 01.1-01.5 Agricultural production

Agricultural and Environmental Statistics Division is responsible for estimation of agricultural "industry" output by regional level NUTS 3. Agricultural output represents the sum of production by all units (enterprises and farms) in the" industry". The production data have the same breakdown as for national economy. The output calculation is based on detailed statistical surveys: crop area (based on harvesting data), total harvest and average yields, number of livestock and poultry, production and productivity, purchase of crop and animal production, producer (farm-gate) prices for agricultural products, results of economical-financial activity in agricultural companies.

Agricultural companies and enterprises submit statistical reports. Information from farmers' and family farms, which represent the major part of agricultural production, is obtained from the sample surveys of these farms. 7000 farmers' and family farms or approximately 7 per cent of the total number of farms with livestock are included in the sample survey on the number of livestock and animal production. 7000 farmers' and family farms or approximately 5 per cent of all operating farms with land size of 1 ha and more are included in the sample survey on crop production. Multiplying the quantity data with the price of the product group gives us the output of that product group. Within the calculations of this kind, it is possible to calculate the regional output of agriculture products. The key for the regionalisation of GVA in non-financial sector (S11) and household sector (S.14) is the output of agricultural companies and farmers as a main indicator in production approach have been used. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (agriculture activities). The ratio of value added to output

constituted 33.7 per cent (S11) and 35.7 per cent (S14) in 2016. For estimate of RGVA, bottom-up method is used.

In *01.6 Support activities to agriculture and post-harvest crop activities* the key for the regionalisation of GVA in household sector (S.14) the output is used as a main indicator in production approach. For the distribution of GVA by region, income is applied as the basis of output from the individual enterprises and natural persons carrying out economic activity.

That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (agriculture related service activities). The ratio of value added to output constituted 38.4 per cent. For estimate of RGVA, bottom-up method was used.

See compilation table (overview) in Annex 1.

The main part of gross value added in *02 Forestry and logging activities* is produced in non-financial sector (S11). Reporting units are non-financial corporations, i.e. forestry enterprises producing goods or providing services for the market. The key for the regionalisation of GVA is wages and salaries as a main component in income approach. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (forestry, logging and related service activities). Statistical data source used – Annual Survey on Earnings from Labour Statistics Division. For estimate of RGVA, bottom-up method is used.

The key for the regionalisation of GVA in household sector (S.14) the output as a main indicator in production approach is used. For the distribution of GVA by region, income is applied as the basis of output from the individual enterprises and natural persons carrying out economic activity.

That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (forestry, logging and related service activities). The ratio of gross value added to output constituted 55.3 per cent in 2016. For estimate of RGVA, bottom-up method was used.

See compilation table (overview) in Annex 1.

The main part of gross value added in *03 Fishing and aquaculture* is produced in non-financial sector (S11). Reporting units are non-financial corporations, i.e. fishing and aquaculture enterprises producing goods or providing services for the market. The key for the regionalisation of GVA is wages and salaries as the main component in income approach. Regional GVA is derived from

regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (fishing and aquaculture). Statistical data source used – Annual Survey on Earnings from Labour Statistics Division. For estimate of RGVA, bottom-up method is used.

The key for the regionalisation of GVA in household sector (S.14) the output as a main indicator in production approach is used. For the distribution of GVA by region, income is applied as the basis of output from the individual enterprises and natural persons carrying out economic activity.

That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (fishing and aquaculture activities). The ratio of gross value added to output constituted 49.8 per cent in 2016. For estimate of RGVA, bottom-up method was used.

See compilation table (overview) in Annex 1.

### 3.2.2 Mining and quarrying (B)

The main part of gross value added in *B Mining and quarrying activities* is produced in non-financial sector (S11). Reporting units are non-financial corporations, i.e. mining and quarrying enterprises producing goods or providing services for the market. The key for the regionalisation of GVA is wages and salaries as a main component in income approach. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (mining and quarrying activities). Statistical data source used – Annual Survey on Earnings from Labour Statistics Division. For estimate of RGVA bottom-up method is used.

The key for the regionalisation of GVA in household sector (S.14) the output as a main indicator in production approach is used. For the distribution of GVA by region, income is applied as the basis of output from the individual enterprises

That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (mining and quarrying activities). The ratio of value added to output constituted 60.0 per cent in 2016. For estimate of RGVA bottom-up method was used.

See compilation table (overview) in Annex 1.

### 3.2.3 Manufacturing (C)

The main part of gross value added in *C Manufacturing industries* is produced in non-financial sector (S11). Reporting units are non-financial corporations, i.e. manufacturing enterprises

producing goods for the market. The key for the regionalisation of GVA is wages and salaries as a main component in income approach. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (manufacturing industries). Statistical data source used – Annual Survey on Earnings from Labour Statistics Division. For estimate of RGVA, bottom-up method is used.

The key for the regionalisation of GVA in household sector (S.14) cover following parts:

- The output is used as a main indicator in production approach. For the distribution of GVA by region, income is applied as the basis of output from the individual enterprises and natural persons carrying out economic activity. For estimate of RGVA, bottom-up method was used.

- For the exhaustiveness in household sector (S14) illegal part of GVA in *11 and 21 industries* is estimated (in this case, illegal production of drugs and alcoholic beverages). For the estimation of regional output, a derivative indicator of statistical demography is used (such as annual average population in 5 big cities, i.e. in Vilnius, Kaunas, Klaipėda, Panevėžys and Šiauliai). In this case, top-down method is used for estimate of regional GVA.

That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (manufacturing industries). The ratio of gross value added to output constituted 43.7 per cent in 2016.

See compilation table (overview) in Annex 1.

**3.2.4 Electricity, gas, steam and air conditioning supply and Water supply; sewerage, waste management and remediation activities (D and E)**

*D Electricity, gas, steam and air conditioning supply activities* consists of the Electric power generation, transmission and distribution; Manufacture of gas; distribution of gaseous fuels through mains; Steam and air conditioning supply.

Most of these activities are active in more than one region and for these multi-regional enterprises a special calculating method is done. Therefore, regionalizing gross value added of those activities, two indicators, such as wages and salaries and consumption of fixed capital were chosen in non-financial sector (S11). The regional information comes from special annual survey which was conducted at irregular intervals and provides information from the multi-regional enterprises in

Electricity, gas, steam and air conditioning supply activities. Having data on labour and consumption of capital by regions, we could estimate gross value added in those activities more precisely. Estimating gross value added by two indicators (wages and salaries and consumption of fixed capital) we used pseudo bottom-up method:

1. The share of wage and salary fund in each region was calculated:

$$qw_i = \frac{wf_i}{\sum_{i=1}^{n} wf_i}$$

$qw_i$ – share of wage and salary fund in the region $i$,

$wf_i$ – wage and salary fund in the region $i$,

$n$ – number of counties.

Denominator amounts to the wage and salary fund in the total economy.

Following the formula in the item 1 we calculated the share of consumption of fixed capital $qk_i$ in each region.

2. The shares of wage and salary fund and consumption of fixed capital are added up (summed) using rationed weights of wage and salary fund and consumption of fixed capital in the structure of value added:

$$d_i = a_i \, qw_i + b_i \, qk_i$$

$a_i$ and $b_i$– rationed weights of wage and salary fund and consumption of fixed capital in the structure of value added, $(a_i+b_i=1)$.

3. Value added is split by regions according to the shares in the item 3:

$$GVA_i = GVA \, d_i$$

$GVA_i$ – gross value added in the region $i$,

$GVA$ – gross value added of the particular activity in the total economy.

However, the key for the regionalisation of GVA in household sector (S.14) the output as a main indicator in production approach is used. For the distribution of GVA by regions income are applied

as the basis of output from the individual enterprises and natural persons carrying out economic activity.

That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (electricity, gas, steam and air conditioning supply activities). The ratio of value added to output constituted 62.0 per cent in 2016. For estimate of RGVA, bottom-up method was used.

See compilation table (overview) in Annex 1.

*E Water supply; sewerage, waste management and remediation activities* consists of the Water collection, treatment and supply; Sewerage; Waste collection, treatment and disposal activities; materials recovery; Remediation activities and other waste management services.

The main part of gross value added in those activities is produced in S11 and S13. Reporting units are enterprises providing services for the market or non-market. The key for the regionalisation of GVA is wages and salaries as a main component in income approach. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (water supply; sewerage, waste management and remediation activities). Statistical data source used – Annual Survey on Earnings from Labour Statistics Division. For estimate of RGVA, bottom-up method is used.

The key for the regionalisation of GVA in household sector (S.14) the output as a main indicator in production approach is used. For the distribution of GVA by region, income is applied as the basis of output from the individual enterprises.

That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (water supply; sewerage, waste management and remediation activities). The ratio of value added to output constituted 51.4 per cent in 2016. For estimate of RGVA, bottom-up method was used.

See compilation table (overview) in Annex 1.

### 3.2.5 Construction (F)

The main part of gross value added in *F Construction activities* is produced in non-financial sector (S11). Reporting units are non-financial corporations, i.e. construction enterprises engaging on

building for the market. The key for the regionalisation of GVA is wages and salaries as a main component in income approach. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (construction activities). Statistical data source used – Annual Survey on Earnings from Labour Statistics Division. For estimate of RGVA, bottom-up method is used.

The key for the regionalisation of GVA in household sector (S.14) cover following parts:

- The output is used as a main indicator in production approach. For the distribution of GVA by region, income is applied as the basis of output from the individual enterprises and natural persons carrying out economic activity. For estimate of RGVA, bottom-up method was used.

- The other part in household sector is the own-account construction of individual dwellings for own final use (self – construction). In construction activity, the households engaged in the construction of their own dwellings for their own use, are producers of this production (mainly capital repair). This part of household sector is evaluated as the certain percentage part of residential construction. Own-account construction value added in sector S14 was allocated into regions by the top-down approach where residential construction by regions was used as a distribution key. The statistical data source used – Short Term Business Statistics Division provides data on residential construction output by regions.

RGVA is not calculated as balancing item of regional output and regional intermediate consumption. It is derived from regional output (production approach) using the ratio of output and GVA in the national accounts (construction activities). The ratio of gross value added to output constituted 65.8 per cent in 2016.

See compilation table (overview) in Annex 1.

### 3.2.6 Wholesale and retail trade; repair of motor vehicles and motorcycles (G)

Trade services are disaggregated into the following sub-activities:

- 45 Wholesale and retail trade and repair of motor vehicles and motorcycles

- 46 Wholesale trade, except of motor vehicles and motorcycles

- 47 Retail trade, except of motor vehicles and motorcycles

The production approach is applied to S.11 and S.14 institutional sectors of *45, 46, 47 trade services* and compilation are based on pseudo bottom-up methods using mostly regional information –

Annual Statistical Survey of Trade and Catering Enterprises from Enterprise Statistics Division. All trade services contain information about turnover, number of shops, sales space, number of catering units; number of seats in catering units on the regional level.

GVA calculations start out with turnover of local units. Regional output equates to the turnover of local units in the region. In a next step, the regional gross margin (i.e. turnover minus goods purchased for resale) of each sub-activity is compiled by multiplying regional output with national ratio of gross margin to turnover. Finally, regional GVA is estimated by proportionally adjusting regional gross margins to national GVA figures.

For the exhaustiveness in household sector (S14) illegal part is estimated of GVA in *47 Retail trade, except of motor vehicles and motorcycles* (in this case, illegal smuggling of drugs and alcoholic beverages, smuggling of tobacco). The regional output is estimated using a derivative indicator of statistical demography such as annual average population number by ten counties. Non-observed gross value added in sector S14 was allocated into regions by the top-down approach. RGVA is derived from regional output (production approach) using the ratio of output and GVA in the national accounts. The ratio of gross value added to output constituted 84.7 per cent in 2016.

See compilation table (overview) in Annex 1.

**3.2.7 Transportation and storage (H)**

Transport and storage are disaggregated into the following sub-activities:

- 49 Land transport and transport via pipelines

- 50 Water transport

- 51 Air transport

- 52 Warehousing and support activities for transportation

- 53 Postal and courier activities

Distributing value added by regions in the *49.1-49.2 Passenger rail transport, interurban and Freight rail transport activity* pseudo bottom-up method was used. Three indicators were chosen for the regionalization value added of that activity in non-financial sector (S11): wages and salaries, train routes and average annual number of employees. The regional information comes from special annual survey which was conducted at irregular intervals and provides information from the multi-regional corporation "Lithuanian Railways". Corporation presented average annual number of

employees, wages and salaries and average train route per day by each local unit. Having detailed data by regions, we could estimate gross value added in this activity more precisely. The number of passing trains and average annual number of employees were used for the distribution of gross operating surplus by regions. We could not take into account the number of freight trains in each region. Therefore, it does not reflect real situation in particular railway stations.

1. Operating surplus of the activity was distributed by regions using inverse proportion of the number of passing trains:

$$L_i = \frac{L}{nt_i}$$

$L_i$ – operating surplus of the region i,

$L$ – totals operating surplus in the activity,

$nt_i$ – number of passing trains in the region i.

2. Potential total $\overline{GVA}$ are distributed among the regions according to the wage and salary fund in each region:

$$\overline{GVA_i} = (GVA - L)\ qw_i.$$

3. Gross value added of the region $i$ are equal to the potential $\overline{GVA_i}$ of the region $i$ plus corresponding operating surplus:

$$GVA_i = \overline{GVA_i} + L_i.$$

For the allocation of value added by regions in the *51 Air transport activity* the same methods as in the passenger rail transport, interurban activity were applied. Regionalizing value added of air transport activity in non-financial sector (S11) pseudo bottom-up method is used, estimating three indicators: wages and salaries, number of aircraft arrivals and departures, average annual number of employees. The regional information comes from special annual survey which was conducted at irregular intervals. Having detailed data by regions, we could estimate gross value added in this activity more precisely. The number of aircraft arrivals and departures and average annual number of employees were used for the distribution of gross operating surplus by regions.

Gross value added of *53 Postal and courier activities* was allocated to regions applying wages and salaries as the main component of income approach in the non-financial sector (S.11). The regional information comes from special annual survey which was conducted at irregular intervals and provides information from the multi-regional corporation. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (postal and courier activities). For estimate of RGVA bottom-up method is used.

For the distribution of value added among regions in the *49 Land transport and transport via pipelines activity, except 49.1-49.2 Passenger rail transport, interurban and Freight rail transport activity; 50 Water transport activity; 52 Warehousing and support activities for transportation* wages and salaries as the main component of income approach in the non-financial sector (S.11) are applied. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts. Statistical data source applied – Annual Survey on Earnings from Labour Statistics Division. For estimate of RGVA, bottom-up method is used.

However, the key for the regionalisation of GVA in household sector (S.14) the output as a main indicator in production approach is used. For the distribution of GVA by region, income is applied as the basis of output from the individual enterprises and natural persons carrying out economic activity.

That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (transport and storage activities). The ratio of gross value added to output constituted 50.1 per cent in 2016. For estimate of RGVA, bottom-up method was used.

See compilation table (overview) in Annex 1.

### 3.2.8 Accommodation and food service activities (I)

The main part of gross value added in *I Accommodation and food service activities* is produced in non-financial sector (S11). Reporting units are non-financial corporations, i.e. accommodation and food service enterprises providing services for the market. The key for the regionalisation of GVA is wages and salaries as a main component in income approach. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (accommodation and food service activities). Statistical data source used – Annual Survey on Earnings from Labour Statistics Division. For estimate of RGVA, bottom-up method is used.

However, the key for the regionalisation of GVA in household sector (S.14) the output is used as a main indicator in production approach. For the distribution of GVA by regions income are applied as the basis of output from the individual enterprises and natural persons carrying out economic activity.

That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (accommodation and food service activities). The ratio of gross value added to output constituted 61.0 per cent in 2016. For estimate of RGVA, bottom-up method was used.

See compilation table (overview) in Annex 1.

### 3.2.9 Information and communication (J)

The main part of gross value added in *J Information and communication activities* is produced in institutional sectors S11 and S13. Reporting units are corporations, i.e. information and communication enterprises producing goods or providing services for the market and non-market. The key for the regionalisation of GVA is wages and salaries as a main component in income approach. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (information and communication activities). Statistical data source used – Annual Survey on Earnings from Labour Statistics Division. For estimate of RGVA, bottom-up method is used.

Gross value added of *61 Telecommunications activities* was allocated to regions applying wages and salaries as the main component of income approach in the non-financial sector (S.11). The regional information comes from special annual survey which was conducted at irregular intervals and provides information from the multi-regional corporation. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (telecommunications activities). For estimate of RGVA, bottom-up method is used.

The key for the regionalisation of GVA in household sector (S.14) the output as a main indicator in production approach is used. For the distribution of GVA by regions income are applied as the basis of output from the individual enterprises and natural persons carrying out economic activity.

That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (information and communication activities). The ratio of gross value

added to output constituted 66.4 per cent in 2016. For estimate of RGVA, bottom-up method was used.

See compilation table (overview) in Annex 1.

### 3.2.10 Financial and insurance activities (K)

The activity is comprised of three sub-activities:

- 64 Financial service activities, except insurance and pension funding

- 65 Insurance, reinsurance and pension funding, except compulsory social security

- 66 Activities auxiliary to financial services and insurance activities

The regional GVA in *K Financial and insurance activities* is allocated in financial sector (S12). Local unit are central and commercial banks, non-life and life insurance companies and other financial intermediaries which are independent legal entities and market producers, and whose principal activity is the production of financial services. The income approach is applied to S12 institutional sector of 64, 65, 66 financial activities and compilation is based on pseudo bottom-up methods using the regional information about wages and salaries as a main component. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (financial and insurance activities). Regional data sources are administrative data from the Bank of Lithuania and statistical data on annual survey on the activity of insurance companies and other financial intermediaries from Enterprise Statistics Division.

The regional allocation of GVA in household sector S14 of 64 banks and 66 other financial intermediaries we used the output as a main indicator in production approach. For the distribution of GVA by region, income is applied as the basis of output from the individual enterprises and natural persons carrying out economic activity.

That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (64 and 66 activities). The ratio of gross value added to output constituted 55.8 per cent in 2016. For estimate of RGVA, bottom-up method was used.

See compilation table (overview) in Annex 1.

### 3.2.11 Real estate activities (L)

The considerable part of regional GVA in *L Real estate activities* is produced in non-financial sector (S11). Reporting units are real estate agencies providing services for the market. The key for the regionalisation of GVA is wages and salaries as a main component in income approach. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (real estate activities). Statistical data source used – Annual Survey on Earnings of Labour Statistics Division. For estimate of RGVA bottom-up method is used.

The key for the regionalisation of GVA in household sector S.14 (excluding services of owner-occupied dwellings) the output as a main indicator in production approach is used. For the distribution of GVA by region, income is applied as the basis of output from the individual enterprises and natural persons carrying out economic activity.

That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (real estate activities). The ratio of gross value added to output constituted 76.8 per cent in 2016. For estimate of RGVA, bottom-up method was used.

The biggest part for regional GVA compilation in household sector (S14) has services of owner-occupied dwellings. The share of rental sector is small. Privately rented dwellings constituted 3.6 per cent in total dwellings stock. The information on actually rented out stock of dwellings is based on cooperation with real estate agencies. The method "price x area" is applied for the output of actual rental calculation in national accounts. GVA for actual rents was allocated into regions by top-down approach. For private part of actual rent we use private housing stock (square metre) in 5 biggest cities, since in NA the assumption is made that private rented out area makes up 12 per cent of total private dwellings stock in Vilnius and 9 per cent of total private dwellings stock in each of four biggest cities. The statistical data source used – Short Term Business Statistics Division provides data on dwellings stock. The imputed rent in Lithuania is calculated using the User Cost method. The following components constitute the value added of the imputed rent, estimated by user cost approach:

- Consumption of fixed capital (P51C)

- Other (net) taxes on production (D29)

- Net operating surplus (B2N)

CFC constitutes the biggest share of GVA in this case. GVA for imputed rent was allocated into regions by the top-down approach. Estimates were based on square metre of housing stock in regions corresponding to NUTS 3. This indicator was used as a distribution key. The administrative data source used – Short Term Business Statistics Division provides data on dwellings stock from State Enterprise Center of Registers.

See compilation table (overview) in Annex 1.

### 3.2.12 Professional, scientific and technical activities; Administrative and support service activities (M and N)

*NACE M* includes institutions engaging on legal, accounting, consultancy, research, advertising, creating, animal health caring and other services for the market and non-market.

The main part of regional GVA estimation comes for the market producers in non-financial sector S11. The key for the regionalisation of GVA in this sector is wages and salaries as a main component in income approach. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (professional, scientific and technical activities). Statistical data source used – Annual Survey on Earnings of Labour Statistics Division. For estimate of RGVA, bottom-up method is used.

The key for the regionalisation of GVA in household sector (S.14) the output as a main indicator in production approach is used. For the distribution of GVA by region, income is applied as the basis of output from the individual enterprises and natural persons carrying out economic activity.

That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (professional, scientific and technical activities). The ratio of gross value added to output constituted 75.4 per cent in 2016. For estimate of RGVA bottom-up method was used.

*N Administrative and support service activities* cover employment agency, travel agency, security, reservation, cleaning, plant and other agencies providing services for the market in the non-financial S11 and household S14 sectors. The considerable part of regional GVA is produced in S11. For the regionalisation of GVA in these sectors, the same indicators and methods are used as in professional, scientific and technical activities.

See compilation table (overview) in Annex 1.

### 3.2.13 Public administration and defence; compulsory social security (O)

*O section* consists of institutional units which are non-market producers, i.e. Central government, Local government, extra budgetary fund and Social security fund. Moreover, the activity includes exclusively other non-market producers.

On the national level, the data are obtained from the Central and Local budgets which are provided by the Ministry of Finance. Other information comes from the State Social Security Fund and Extra budgetary fund. Value added of **non-market** equals the sum of compensation for employees, consumption of fixed capital and other taxes on production less other subsidies. Regional breakdowns are not provided.

The key for the regionalisation of GVA in general government sector (S13) is wages and salaries as a main component in income approach. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (public administration and defence; compulsory social security activity). Statistical data source used – Annual Survey on Earnings of Labour Statistics Division. For estimate of RGVA, bottom-up method is used.

See compilation table (overview) in Annex 1.

### 3.2.14 Education (P)

*NACE P* includes services of private and public preschool, general schools, vocational, college type and higher establishments, universities, driving schools and other education services. Education services are provided by non-market and market institutions.

On the national level value added of **non-market** education equals the sum of compensation for employees, consumption of fixed capital and other taxes on production less other subsidies. Regional breakdowns are not provided.

The key for the regionalisation of GVA in general government sector (S13) is wages and salaries as a main component in income approach. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (education activity). Statistical/administrative data source applied – Annual Survey on Earnings of Labour Statistics Division. For estimate of RGVA, bottom-up method is used.

The share of **market value added** makes up about 8.1 per cent in total value added. The bigger part of market value added is produced in non-financial sector (S11).

The key for the regionalisation of GVA in S11 is wages and salaries as a main component in income approach. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (education activity). Statistical data source used – Annual Survey on Earnings of Labour Statistics Division. For estimate of RGVA, bottom-up method is used.

The key for the regionalisation of GVA in household sector S.14 the output is used as a main indicator in production approach. For the distribution of GVA by region, income is applied as the basis of output from the individual enterprises and natural persons carrying out economic activity.

That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (education activity). The ratio of gross value added to output constituted 72.6 per cent in 2016. For estimate of RGVA, bottom-up method was used.

See compilation table (overview) in Annex 1.

### 3.2.15 Human health and social work activities (Q)

*Q Human health and social work activities* cover health institutions, such as hospitals, out-patient care institutions (policlinics, primary health care centres, ambulatories and etc.) and social care institutions, such as child and elderly care institutions. Health and social work services are provided by non-market and market institutions.

Value added of **non-market** equals the sum of compensation for employees, consumption of fixed capital and other taxes on production less other subsidies. Regional breakdowns are not provided. The key for the regionalisation of non-market value added in general government sector (S13) is wages and salaries as a main component in income approach. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (human health services and social work activities). Statistical data source used – Annual Survey on Earnings of Labour Statistics Division. For estimate of RGVA, bottom-up method is used.

The minimal part value added of non-market is produced in non-profit institutions serving households sector (S15). Non-profit institutions have been allocated to activity – *87-88 Residential care activities and Social work activities without accommodation*. For the allocation of value added by region in S15, the same methods as in sector S13 were applied.

The share of **market value added** makes up about 21.8 per cent in total value added. The bigger part of market value added is produced in non-financial sector (S11).

The key for the regionalisation of GVA in S11 is wages and salaries as a main component in income approach. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (human health services and social work activities). Statistical data source used – Annual Survey on Earnings of Labour Statistics Division. For estimate of RGVA, bottom-up method is used.

The key for the regionalisation of GVA in household sector S.14 the output is used as a main indicator in production approach. For the distribution of GVA by region, income is applied as the basis of output from the individual enterprises and natural persons carrying out economic activity.

That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (human health services and social work activities). The ratio of gross value added to output constituted 58.5 per cent in 2016. For estimate of RGVA, bottom-up method was used.

See compilation table (overview) in Annex 1.

### 3.2.16 Arts, entertainment and recreation and Other service activities (R and S)

*R Arts, entertainment and recreation activities* includes a wide range of activities to meet varied cultural, entertainment and recreational interests of the general public, including live performances, operation of museum sites, libraries, archives, gambling, sports and recreation activities. This section is split into two major parts: market and non-market institutions.

The key for the regionalisation of **non-market value added** in general government sector (S13) is wages and salaries as a main component in income approach. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (arts, entertainment and recreation activities). Statistical data source used – Annual Survey on Earnings of Labour Statistics Division. For estimate of RGVA, bottom-up method is used.

The **market part** consists of S11 and S14 sectors.

The key for the regionalisation of GVA in non-financial sector S11 is wages and salaries as a main component in income approach. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (arts, entertainment and recreation activities). Statistical data source used – Annual Survey on Earnings of Labour Statistics Division. For estimate of RGVA, bottom-up method is used.

The key for the regionalisation of GVA in household sector S.14 the output is used as a main indicator in production approach. For the distribution of GVA by regions income are applied as the basis of output from the individual enterprises and natural persons carrying out economic activity.

That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (arts, entertainment and recreation activities). The ratio of gross value added to output constituted 59.9 per cent in 2016. For estimate of RGVA, bottom-up was used method.

*S Other service activities* includes the activities of membership organisations, the repair of computers and personal and household goods and a variety of personal service activities not covered elsewhere in the classification. This section consists of market and non-market producers.

Non-profit institutions (S15) have been allocated to activity – *94 Activities of membership organisations*. They are producers of **non-market** output. Value added of non-profit institutions equals the sum of compensation for employees, consumption of fixed capital and other taxes on production less other subsidies. Regional breakdowns are not provided. The key for the regionalisation of GVA is wages and salaries as a main component in income approach. Regional GVA is derived from regional wages and salaries using the ratio of wages and salaries and GVA in the national accounts (activities of membership organisations.). Statistical data source used – Annual Survey on Earnings of Labour Statistics Division. For estimate of RGVA, bottom-up method is used.

The **market part** of other service activities is composed from institutions sectors S11 and S14. For the allocation of value added by region in sector S11, the same methods as for sector S15 are applied.

Other service activities are special by the weight of household sector (S14) in value added. This section was one of those where the income of natural persons is determinant in S14. The key for the regionalisation of GVA in this sector cover the following parts:

- The output is used as a main indicator in production approach. For the distribution of GVA by region, income is applied as the basis of output from the individual enterprises and natural persons carrying out economic activity. For estimate of RGVA, bottom-up method was used.

- For the exhaustiveness in household sector (S14), illegal part of GVA in *96 Other personal service activities* (in this case, prostitution's services) is estimated. For the estimation of regional output, a derivative indicator of statistical demography (such as annual average

population number in 5 big cities, i.e. in Vilnius, Kaunas, Klaipėda, Panevėžys and Šiauliai) is used. In this case, top-down method is used for estimate of RGVA.

That means that RGVA is not calculated as balancing item of regional output and regional intermediate consumption. RGVA is derived from regional output using the ratio of output and GVA in the national accounts (other service activities). The ratio of gross value added to output constituted 72.8 per cent in 2016.

See compilation table (overview) in Annex 1.

### 3.2.17 Activities of households as employers; undifferentiated goods- and services- producing activities of households for own use (T)

Activities of households as employers cover domestic personnel such as maids, cooks, waiters, valets, butlers, laundresses, gardeners, gatekeepers, stable-lads, chauffeurs, caretakers, governesses, babysitters, tutors, secretaries etc. Undifferentiated goods- and services- producing activities cover hunting and gathering, farming, the production of shelter and clothing and other goods produced by the household for its own subsistence and cooking, teaching, caring for household members and other services produced by the household for its own subsistence.

This activity is small by size and is one of activities calculated indirectly in national accounts. The indirect estimation involves information from two sources. The number of employees in this activity comes from Labour Force Survey and the average earnings of employees – from Survey on Earnings of Labour Statistics Division. The regional allocation of GVA in sector S14 is made using the regional information about number of employees in this activity and regional average earnings of employees. Bottom-up method is used for estimation GVA by regions.

See compilation table (overview) in Annex 1.

### 3.2.18 Activities of extraterritorial organisations and bodies (U)

*U Extraterritorial organizations and bodies* are not resident units, and therefore the activity carried out by these units does not form part of the economic activity.

### 3.3 Methods and sources for compiling regional GVA at current prices for the most recent year (preliminary data)

The same data sources and methods described in section 3.2 are applied for the compilation of preliminary data (for the most recent year).

**3.4 Regional GVA at constant prices and regional growth rates**

Estimation of growth rates of gross value added by regions (NUTS level 2) is based on the following information:

- value added at current prices by region by 10 industries (NACE rev.2);

- implicit deflators of value added by 10 industries.

Primarily, implicit deflators of value added by 10 industries are estimated. Value added at current prices by 10 industries is divided by value added at previous year prices by 10 industries.

Secondly, value added at previous year prices by regions and by 10 industries are estimated dividing value added at current prices by calculated implicit deflators. Gross value added at previous year prices by region is calculated as a sum of value added at previous year prices by industry and by region.

Growth rate of gross value added by regions (NUTS level 2) is estimated dividing gross value added at previous year prices by gross value added at current prices in previous year by regions (NUTS level 2).

## Chapter 4 Gross Fixed Capital Formation (GFCF)

**4.1 Methods and sources for the compilation of regional GFCF at NUTS 2 level**

The compilation of GFCF by regions is based on recommendations of the Manual on Regional Accounts Methods 2013 (hereinafter referred to as the Manual). In Lithuanian regional accounts, the majority of GFCF are regionalized with bottom-up method and based on the industry by sectors approach.

The compilation of regional GFCF by industry is based on investment survey, structural business statistics survey, administrative data with a regional dimension of at least NUTS 2 level, the national accounts GFCF table by industry (A*10, NACE Rev. 2) and by institutional sector.

The compilation steps are based on the Manual recommendations and presented below. Table 5 (from national accounts) is the starting point and provides the information about the investments by industry and sector.

*Table 5.  Gross fixed capital formation by sector, 2016, EUR million*

| Code | A | B_E | F | G_I | J | K | L | M_N | O_Q | R_U | Total |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

| S.1 | 703.9 | 1467.2 | 273.9 | 1559.8 | 399.0 | 62.0 | 1544.7 | 483.3 | 1151.1 | 77.7 | 7722.6 |
|------|-------|--------|-------|--------|-------|------|--------|-------|--------|------|--------|
| S.11 | 274.5 | 1395.2 | 270.1 | 1479.2 | 376.9 | - | 390.8 | 472.7 | 43.6 | 37.2 | **4740.2** |
| S.12 | - | - | - | - | - | 62.0 | - | - | - | - | **62.0** |
| S.13 | - | 35.3 | - | - | 17.4 | - | - | 4.0 | 1097.9 | 28.3 | **1182.9** |
| S.14 | 429.4 | 36.7 | 3.8 | 80.6 | 4.7 | - | 1153.9 | 6.6 | 9.5 | 8.5 | **1733.8** |
| S.15 | - | - | - | - | - | - | - | - | - | 3.7 | **3.7** |

It should be noted that some of the totals do not correspond to the sums of lines and columns due to rounding.

At the next, intermediate step, the tables of GFCF for each industry (A*10) by sector and region at NUTS 2 level are compiled.

Regional GFCF data for all industries (A*10), except A industry, are calculated using the investment structure by regions. In order to determine the structure, the data about the investments on county level, obtained from the investment survey (questionnaire KS-2) and SBS survey (enterprise activity questionnaire F-01), are aggregated. Furthermore, O industry investments are adjusted by adding data from the Ministry of National Defence about regional allocation of government expenditure on weapon systems and data from Lithuanian Road Administration about the investments.

Regional GFCF data for A industry are calculated using the GVA structure by counties compared to country.

The data in Table 6 present a summary of the results obtained for each industry at the intermediate step and represent regional GFCF by industry at NUTS 2 level.

*Table 6. GFCF by industries and regions, 2016, EUR million*

| Code | A | B_E | F | G_I | J | K | L | M_N | O_Q | R_U | Total |
|------|-----|------|-----|------|-----|------|------|------|------|------|--------|
| **LT0** | **703.9** | **1467.2** | **273.9** | **1559.8** | **399.0** | **62.0** | **1544.7** | **483.3** | **1151.1** | **77.7** | **7722.6** |
| LT01 | 70.5 | 405.5 | 169.1 | 550.6 | 291.7 | 42.6 | 840.7 | 346.6 | 391.3 | 52.0 | **3160.6** |
| LT02 | 633.3 | 1061.8 | 104.8 | 1009.2 | 107.3 | 19.4 | 704.0 | 136.6 | 759.8 | 25.7 | **4562.0** |

It should be noted that some of the totals do not correspond to the sums of lines and columns due to rounding.

The sum in the column indicates the total investments of the appropriate industry. This sum matches with the corresponding value in the national table column (Table 5).

## Chapter 5 Compensation of Employees (COE)

Compensation of employees by two regions shows the total payment in cash and in kind by employers to employees in the region according to the place of work. It is the only category of

primary income for which regional data are calculated for all institutional sectors. At the same time, it is also the largest category of primary income and covers more than 40% of the GDP by income approach.

Data are available at the NUTS 2 level by A*10 kind of economic activity. They are presented bellow in Table 7.

*Table 7. Compensation of employees by activities and regions, 2016, EUR million*

| Code | A | B_E | F | G_I | J | K | L | M_N | O_Q | R_U | Total |
|------|------|--------|--------|--------|-------|-------|-------|--------|--------|-------|---------|
| **LT0** | **457.4** | **3396.7** | **1379.3** | **4937.3** | **708.8** | **349.6** | **188.8** | **1302.8** | **3890.2** | **401.2** | **17012.3** |
| LT01 | 51.0 | 947.2 | 495.9 | 2071.7 | 531.9 | 264.6 | 103.2 | 766.6 | 1616.4 | 188.1 | **7036.7** |
| LT02 | 406.3 | 2449.5 | 883.4 | 2865.6 | 176.9 | 85.1 | 85.6 | 536.2 | 2273.8 | 213.1 | **9975.5** |

It should be noted that some of the totals do not correspond to the sums of lines and columns due to rounding.

## 5.1 Methods and sources for the compilation of regional Compensation of employees at NUTS 2 level

Top-down approach is applied for estimation of regional compensation of employees.

The main source of information for regionalization of compensation of employees is the Labour Cost Survey (DS-01). The survey data are used to distribute B-N, P-S activities by region.

For activity A estimation, more detailed breakdown is applied. The distribution key for activity A01 is based on estimated regional agricultural production for agricultural companies and enterprises, and farmers' and family farms. The data sources are statistical surveys on agricultural crop area, harvest and yield, and on the number of livestock and animal production.

Compensation of employees for activity A02-A03 and O is distributed by region using the ratios determined by the data from Statistical Survey on Earnings (DA-01).

Compensation of employees for T activity is estimated based on the data from Labour Force Survey (GU-01) and data from Statistical Survey on Earnings (DA-01).

## Chapter 6 Household Accounts

Regional household accounts are compiled for the resident households on the regional territory. Regional household accounts comprise the allocation of primary income account and the distribution of secondary income account. The purpose of those accounts is to measure the primary income and disposable income of the resident households in the region at the NUTS 2 level.

A major part of resources households receives consists of compensation of employees, property income, transfers from other sectors.

A household has a centre of economic interest when it maintains a dwelling, or succession of dwellings, within the country which members of the household treat, and use, as their main residence. All individuals who belong to the same household must be resident in the same region. The centre of economic interest of household is the region where they live, not the region where they work.

In general, Household accounts are mainly compiled by using top-down methods, less frequently – the bottom-up ones.

## 6.1 Allocation of primary income account

Allocation of primary income account is used to determine the primary income of households resident in the regional territory. The allocation of primary income account shows how households participate in the production process or shows the source of their primary income. The major share of primary income of Household originates from compensation of employees (employees receive as payment for work). The balance of primary income is equal to total primary resources less total primary uses**.

Allocation of primary income of household consists of:

- Operating surplus/mixed income B2N/B3N,

- Compensation of employees D1,

- Property income (receivable) D4,

- Property income (payable) D.4,

- Balance of primary income as the balancing item of account B5.

*Table 8. Allocation of primary income account of the household sector by region, 2016, EUR million*

| ESA Transaction | LT0 | LT01 | LT02 |
|---|---|---|---|
| Net operating surplus/mixed income | 2908.7 | 701.3 | 2207.3 |
| Compensation of employees | 16975.3 | 6236.6 | 10738.8 |
| Property income, receivable | 5548.7 | 1961.4 | 3587.2 |
| Property income, payable | 236.2 | 59.8 | 176.4 |
| Net balance of primary income | 25196.5 | 8839.5 | 16357.0 |

It should be noted that some of the totals do not correspond to the sums of lines and columns due to rounding.

**Operating surplus/mixed income B.2N/B.3N**

Operating surplus of the household sector is the activity imputed to home owner-occupiers consisting of providing housing services to themselves as occupiers of the accommodation concerned.

For net operating surplus regionalization in household account top-down method with the distribution key is used. It is calculated based on imputed rents value added by regionals. GVA for imputed rent was allocated into regions by using the data from Short Term Business Statistics Division on dwellings stock.

In the case of unincorporated enterprises in the household sector, the balancing item of the generation of income account implicitly contains an element corresponding to remuneration for work carried out by the owner or members of the family. This income from self-employment has characteristics of wages and salaries, and characteristics of profit due to work carried out as an entrepreneur. This income, neither strictly wages nor profits alone, is referred to as 'mixed income' (ESA 8.19).

For mixed income regionalization in household account top-down method with the distribution key is used. It is allocated on basis of self-employed persons distribution by regions.

**Compensation of employees D.1**

Compensation of employees is defined as the total remuneration, in cash or in kind, payable by an employer to an employee in return for work done by the latter during an accounting period. Compensation of employees is made up of the following components: wages and salaries, employers' social contributions (D.11 + D.12).

For regional household account compensation of employees are calculated (observed) from the side of place of residence.

**Wages and salaries D.11**

Wages and salaries are made up of wages and salaries in cash and wages and salaries in kind.

Wages and salaries in cash include social contributions, income taxes, and other payments payable by the employee, including those withheld by the employer and paid directly to social insurance schemes, tax authorities, etc. on behalf of the employee.

**Employers social security contributions D.12**

Employer's social contributions are social contributions payable by employers to social security schemes or other employment-related social insurance schemes to secure social benefits for their employees.

For Compensation of employees regionalization in household account top-down method with the distribution key is used. Distribution key estimation is based on two main data sources – data from the Labour Cost Survey (LCS) and data from the Labour Force Survey (LFS).

**Property income D.4, receivable**

Property income is income which accrues when owners of financial assets and natural resources put them at the disposal of other institutional units (D.41 + D.42 + D.43 + D.44 + D.45).

Property incomes are classified in the following way in the system of accounts:

- Interest,

- Distributed income of corporations,

- Reinvested earnings on direct foreign investment,

- Property income attributed to insurance policy holders,

- Rents.

**Interest D.41**

Interest is a form of property income that is receivable by the owners of certain kinds of financial assets, namely deposits, securities other than shares, loans, other accounts receivable.

Regionalization of the interest is estimated by the top-down method with the distribution key which is calculated based on the data from the Association of Lithuanian Banks on Balances of Deposits by Regions.

**Dividends D.421**

Dividends are a form of property income received by owners of shares to which they become entitled as a result of placing funds at the disposal of corporations.

Regionalization of the dividends is estimated by the bottom-up method. Distribution is done based on the data from the State Tax Inspectorate under the Ministry of Finance of the Republic of Lithuania on Dividends received by Lithuanian residents by regions.

**Other investment income D.44**

Other investment income consists of investment income attributable to insurance policy holders, investment income payable on pension entitlements, investment income attributable to collective investment fund shareholders. For regionalization of other investment income indirect data sources are used.

Other investment income (D.441, D442 and D443) is compiled by using top-down methods. Regionalization of the Investment income attributable to insurance policy holders (D.441) and Investment income attributable to collective investment fund shareholders (D.443) is done with the distribution key which is calculated based on the data on Wages and salaries (D.11), Employers' imputed social contributions (D.122) and self-employed persons distribution by regions.

Regionalization of the Investment income payable on pension entitlements (D.442) is done by using data on Compensation of employees (D.1) based on data from Labour Cost Survey (LCS) and data from the Labour Force Survey (LFS).

**Rent D45**

Rent is the income receivable by the owner of a natural resource for putting the natural resource at the disposal of another institutional unit (ESA 4.72).

Top-down method is used for estimation of Rent by regions. Estimation is based on annual information on common area of land rent and on prices for land rent by regions.

**Property income D.4, payable**

Property income-payable contains interest on loans (D.41) and rent (D.45), and is compiled by using top-down methods.

Interest on loans (D.41) is a form of property income that is payable by the household. This category is distributed by region with the distribution key which is calculated based on the estimates of the interest paid on dwelling loans. Estimation is done on basis of data from the Bank of Lithuania.

Household payments for usage natural resources (as land) are treated as rent and are recorded in allocation of primary income account as rent (D.45)

For rent regionalization indirect data sources are used. It is estimated using annual information on common area of land rent and on prices for land rent.

**Net balance of primary income B.5**

Net balance of primary income is the balancing item of the allocation of primary income account. It is calculated as a sum of net operating surplus/mixed income, compensation of employees, property income-receivable, less property income payable.

**6.2 Secondary distribution of income account**

The secondary distribution of income account records current income, property, etc. taxes and transfers. It reflects money transferred (to/from), households unrelated to a productive activity. The balancing item of the secondary distribution of income account is gross/net disposable income.

Secondary distribution of income account of household consists of:

- Social benefits other than social benefits in kind D.62,

- Other current transfers, receivable D.7,

- Current taxes on income, wealth, etc., payable D.5,

- Social contributions D.61

- Other current transfers, payable D.7

- Net disposable income B.6.

*Table 9. Secondary distribution of income account of the household sector by region, 2016, EUR million*

| ESA Transaction | LT0 | LT01 | LT02 |
|---|---|---|---|
| Social benefits other than social benefits in kind | 4466.1 | 1146.2 | 3319.8 |
| Other current transfers, receivable | 1296.2 | 368.7 | 927.5 |
| Current taxes on income, wealth, etc., payable | 1557.0 | 681.9 | 875.1 |
| Net social contributions | 5367.1 | 1868.6 | 3498.5 |
| Other current transfers, payable | 151.8 | 47.6 | 104.2 |
| Net disposable income | 23882.8 | 7756.5 | 16126.4 |

It should be noted that some of the totals do not correspond to the sums of lines and columns due to rounding.

**Social benefits other than social benefits in kind D.62**

Social benefits are transfers to households in cash intended to relieve them from the financial burden of risks or needs. They could be made through collectively organized schemes or outside such schemes by government units and Non-profit institutions serving households.

Social transfers other than social transfers in kind are classified in the following way in the system of accounts:

- Social security benefits in cash D.621

- Other social insurance benefits D.622

- Social assistance benefits in cash D.623

For Social benefits other than social benefits in kind (D.621, D.622 and D.623) regionalization in household account top-down methods with the distribution keys are used.

Regionalization of Social security benefits in cash (D.621) is done with the distribution key which is calculated based on administrative data from the State Social Insurance Fund Board under the Ministry of Social Security on Average State social insurance pension and Average annual number of recipients of State social insurance pensions by regions.

Regionalization of Other social insurance benefits (D.622) is done with the distribution key which is calculated based on the data from National accounts division on Average annual number of Employees by regions.

Regionalization of Social assistance benefits in cash (D.623) is done with the distribution key which is calculated based on the data on Share of persons living at risk of poverty and social exclusion and data on Average annual population by regions.

**Other current transfers D.7, receivable**

Other current transfers are unrequited payments, with nothing received in exchange. In the households sector, this comprises non-life insurance claims and miscellaneous current transfers**.**

**Non-life insurance claims D.72**

Non-life insurance claims represent the claims due under contracts in respect of non-life insurance; that is the amounts which insurance companies are obliged to pay in settlement of injuries on damage suffered by persons or goods.

For non-life insurance claims regionalization indirect data sources are used. It is calculated by the top-down method based on the data from the Household Budget Survey and data on Average annual population.

**Miscellaneous current transfers D.75, receivable**

Miscellaneous current transfers consist of a variety of transfers to the households sector: from NPISH and central government, gains on lotteries and gambling, etc.

Regionalization of the of miscellaneous current transfers is estimated by the top-down method with the distribution key which is calculated based on the data on Average annual population by regions.

**Current taxes on income, wealth, etc. D.5, payable.**

Current taxes on income and wealth are compulsory, unrequited payments, in cash or in kind, made by the households sector to the government sector.

Current taxes on income, wealth, etc. are sub-divided into:

- taxes on income,

- other current taxes.

**Taxes on income D.51**

Taxes on income include income taxes, as well as taxes on profits and capital gains. Taking into account the households sector, the main components are personal income taxes.

Taxes on households' income by region are calculated using the bottom-up method. The basis for the calculations of the taxes on income is the data from the State Tax Inspectorate under the Ministry of Finance of the Republic of Lithuania on Income tax by Lithuanian residents by residence and by regions.

**Other current taxes D.59**

Other current taxes include various taxes; the major part of household current taxes consists of land tax for natural persons. For example, in 2016, it represents more than 90% of all other current taxes paid by households.

Other current taxes by region are calculated using the top-down method. The key for the regionalization of other current taxes for household is the data from the State Tax Inspectorate

under the Ministry of Finance of the Republic of Lithuania on land tax paid by Lithuanian residents by regions.

**Social contributions D.61**

Social contributions comprise actual and imputed social contributions. They are classified in the following way in the system of accounts:

- Employers' actual social contributions D.611

- Employers' imputed social contributions D.612

- Households' actual social contributions D.613

- Households' social contribution D.614

For Social contributions (D.611, D.612, D613 and D.614) regionalization in household account top-down methods with the distribution keys are used.

For employers' actual and imputed social contributions and households social contribution regionalization indirect data sources are used. Regionalization is done with the distribution key which is calculated based on the data from Labour Cost Survey (LCS) and data on Labour Force Survey (LFS).

Regionalization of Households' actual social contributions (D.613) is done with the distribution key which is calculated based on the data on Average annual population by regions.

**Other current transfers D.7, payable**

**Net non-life insurance premiums D.71**

Non-life insurance premiums are premiums payable under policies taken by institutional units. They relate to policies taken out by households on their own initiative, for their own benefit, independently of their employers or government social insurance schemes.

For non-life insurance premiums regionalization in household account top-down method with the distribution key is used. It is allocated on basis of the data from Household Budget Survey and Average annual population.

**Miscellaneous current transfers D.75, payable**

Miscellaneous current transfers consist of a variety of current transfers including payments of court fines, certain government fees and transfers to and from the rest of the world.

For regionalization of Miscellaneous current transfers top-down method with the distribution key is used. Distribution key is calculated based on the data on Average annual population by regions.

**Net disposable income B.6**

Net disposable income is the balancing item of secondary distribution of income account. It is calculated by adding social benefits and other current transfers receivable to primary income and by deducting taxes on income, social contributions and other current transfers.

## Chapter 7 Quality assessment and improvement

### 7.1 Self-assessment of the methodology for compilation of regional accounts

For each industry and indicator, sources are examined to see whether it is possible to compile regional accounts according to the bottom-up or pseudo-bottom-up method. As a result, the GFCF and majority of GVA are estimated by the bottom-up or pseudo-bottom-up method which ensures reliable regional allocation of these indicators. 95.6% of RGVA calculations are based on bottom-up and pseudo bottom-up methods, 4.4% on top-down method. That means that around 4% of data used for GVA regionalization need further improvement or more suitable data source.

COE and Household accounts are predominantly determined using the top-down method. For example, the calculation (regionalization) of Household accounts is based on distribution keys, such as number of employed persons or COE, this can lead to possible biases or deviations.

Data from surveys which are available every 4 or more years (Labour Cost Survey, Labour Force Survey, Household Budget Survey) are benchmarked and used for RA estimates for the interim years. As a result, estimation of the interim year's data can be a subject to the revisions.

The latest benchmark revision of National Accounts and, in consequence, of Regional Accounts was accomplished in two stages. The first one was carried out in 2019 for NA time series for 2010–2016, and the last one – in 2020 for 2000–2009 time series including RA.  RA, in particular, adopted all the innovations introduced at national level.

In 2018, independently from NA, regional accounts were revised due to implementation of NUTS-2 level. As a result, important new indicators and newly elaborated methods have been introduced: Household accounts, GFCF, COE and growth rate of GVA for two regions. As from December 2020 all-time series of RA indicators are comparable for the period 2000–2018 for the NUTS 1 level, NUTS 2 level and the NUTS 3 level.

**7.2 Plans for further improvement**

Statistics Lithuania is currently carrying out a major project 'The State Data Governance Information System' aimed at increasing accessibility of administrative data from other institutions. The implemented project will certainly improve availability of more detailed information from various data bases and hopefully increase the number of data sources to be used for compilation of RA.

In general, all possible improvements or changes to sources and methods are planned to be introduced with the next benchmark revision of NA in 2024.

**Annex 1 – Regional GVA, compilation table (overview)**

Regional GVA compilation table is available as a separate MS Excel file (LT_Annex1_Annex2_overview_2016.xlsx).

**Annex 2 – Metadata of sources and variables used for the regionalisation of GVA by industry**

Metadata table of sources and variables used for the regionalisation of GVA by industry is available as a separate MS Excel file (LT_Annex1_Annex2_overview_2016.xlsx).