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# Quarterly National Accounts

Reference Metadata in Euro SDMX Metadata Structure

(ESMS)

## INSTAT

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## Reference Metadata

| 1. Contact | |
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| 1.1. Contact organisation | INSTAT, Institute of Statistics |
| 1.2. Contact organisation unit | Sector of National Accounts quarterly, Department of Real Sector Statistics |
| 1.3. Contact name | Elton Bushi |
| 1.4. Contact person function | Specialsit of National Accounts quarterly Sector |
| 1.5. Contact mail address | Rr. Vllazën Huta, Ndërtesa 35, Hyrja 1, Tiranë, Shqipëri, ZIP Code 1017 |
| 1.6. Contact email address | EBushi@instat.gov.al |
| 1.7. Contact phone number | +(355) 4 2222411 / +(355) 4 2233356 |
| 1.8. Contact fax number | +(355) 4 228300 |
| 2. Metadata update | |
| 2.1. Metadata last certified | 30.03.2023 |
| 2.2. Metadata last posted | 30.03.2023 |
| 2.3. Metadata last update | 30.03.2023 |
| 3. Statistical presentation | |
| 3.1. Data description | National accounts reflect macro-economic developments of the country and offer users basic information leading indicator and its economic development. They show the productive capacity of a country how much is the consumed, invested and exchanges with other countries of the world. National accounts data relate to all data produced and disseminated for an economy according to the definitions and guidelines of the European System of Accounts (ESA 2010). One of the main indicators of national accounts is the rate of change of Gross Domestic Product (GDP) adjusted to the effect of prices, which shows the economic development of a country, region and is also known as the rate of economic growth. |
| | Gross Domestic Product (GDP) represents the total monetary value of all goods and services produced over a specific period of resident producing units within the economic territory of the country. |
| | The main methods of calculating the GDP are: |

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| | − Production Approach;<br>− Expenditure Approach;<br>− Income Approach.<br><br>INSTAT estimates Quarterly GDP only by the method of production and expenditure, with current and constant prices. |
| 3.2. Classification system | ESA 2010 provides a methodology on common standards, definitions, internationally harmonized classifications and accounting rules used for compiling national accounts on a comparable basis. Chapter 12 sets out the main principles and characteristics of quarterly national accounts.<br><br>Chapter 23 of the ESA 2010 defines the way in which the data integrated in the files are coded and aggregated according to the levels required for the National Accounts search.<br>Classifications used in National Accounts are:<br><ul><li>Nomenclatures of economic activities Rev. 2 (NACE Rev. 2).</li><li>Nomenclature of products (CP);</li><li>Classification of Individual Consumption by use (COICOP);</li></ul> |
| 3.3. Sector coverage | National accounts describe the total economy of a country. All units that have their center of predominant economic interest in the economic territory of this country, are included. The publication of quarterly series has as its main objective to provide a coherent assessment of the performance of the economy. These series include quarterly GDP estimates at constant prices (volume changes to quarterly GDP), which include taxes and subsidies (net taxes) on products. Constant price calculations are expressed by the average prices of the previous year and chainlinking, in the reference year (2010 = 100). Estimates for the quarterly GDP are made on data not stripped of seasonal effects as well as on data stripped of seasonal effects. The method used to estimate the quarterly G.D.P is considered an indirect method.<br><br>It is considered as an indirect method because the available quarterly data are used to estimate the quarterly value added based on the reports occupied by these indicators. This method is based on the assumption that for the period we are analyzing, the ratio between value added and output is constant. In some specific branches such as Electricity, Public Administration, Education, Health and Financial Activities the direct method is used which makes estimates of production and consumption intermediate separately, the difference of which gives as a result the added value. |
| 3.4. Statistical concepts and definitons | **All statistical concepts and definitions to be used in the quarterly national accounts are described in Annex A to ESA Regulation 2010.**<br><br>**Gross Domestic Product (GDP):** Gross Domestic Product at market prices, is the final result of production activity of productive resident units during a year. It is calculated in two approaches:<br><br>**GDP according to production approach** is equal to sum of gross added values relevant to different kinds of activities, adding taxes and subtracting subsidies on products (not distributed to sectors or branches of a certain |

activity);

**GDP according to expenditure approach** is equal to final domestic usage of products and services (final consumption, gross fixed capital formation, changes in inventories), plus exports, minus imports.

**Output:** production is an activity carried out under the control, responsibility and management of an institutional unit that uses inputs of labour, capital and goods and services to produce outputs of goods and services. The total of products created during the accounting period is considered as output. There are three types of output such as: market output; output produced for own final use; non-market output.

**Intermediate consumption:** Intermediate consumption consists of goods and services consumed as inputs by a process of production, excluding fixed assets whose consumption is recorded as consumption of fixed capital. The goods and services are either transformed or used up by the production services.

**Gross Value Added:** Gross Value Added represents the contribution of different activities in GDP and is calculated as the difference between the output and intermediate consumption.

**Nominal GDP:** measures the current market value of a country's gross domestic product.

**Real GDP:** measures the volume level of a gross domestic product after changes in prices have been taken into account. It is obtained by expressing values in terms of a base period or previous period prices.

**Taxes on products and imports:** Taxes on products are paid taxes per unit of some goods and services like the Value Added Tax, excise and customs' tax on imports.

**Subsidies on products and imports:** Subsidies on products are non-reverse payment made by public administration units to the companies in the form of a certain amount of money per unit of goods or services. Subsidies on imports consist in subsidies of goods or services payable when the product surpasses the border of economic territory or if the services were made to resident institutional units.

**Final consumption:** Final consumption is one of the basic components of GDP by expenditure method. It consists in goods and services used by separate families or communities and are calculated as the sum of final consumption of household, final consumption of general government and final consumption of non - profit institutions serving the households.

**Final consumption of households:** Final consumption of households' contains all goods and services directly used to fulfil the individual needs of resident families.

**Final consumption of General government and Non Profit Institutions Serving Households (NIPSH):** Is the value of non - commercial services ensured by General government and non - profit institutions to the profit of communities or groups of families. It is calculated as the difference between

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| | the general government production and NPISH s and their market production value. |
| | **Net Export:** Net export is the difference between export of goods and services (fob) and import of goods and services (fob). |
| | **Gross fixed capital formation:** Consists in expenses made to buy new capital or other specific expenses accomplished by resident producers in goods or services to maintain, increase or enlarge their productive activity or create new process conditions in the future. |
| | **Basic prices:** is the price receivable by the producer from the purchaser for a unit of a good or services produced as output, minus any tax payable and plus any subsidy receivable on product. It excludes any transport charges invoiced separately by the producer. |
| | **Market prices**: is the price after adding taxes and deducting subsidies on products. |
| | **Current prices:** Prices of reference period. They represent the price paid for goods and services during the time of production or consumption. |
| | **Constant prices**: Estimation in constant prices represents the estimation in real terms, deflated with prices of a base year or of the previous year. They are a way to measure real change in output. |
| 3.5. Statistical unit | According to the 2010 ESA guidelines, national accounts use two types of units and two respective ways of dividing the economy: (a) institutional units; (b) unit of type of local activity (local KAU). The first type is used to describe income, expenses and financial flows, as well as balance sheets. The second type of units is used for the description of production processes, for input-output analysis and for regional analysis. An institutional unit is an economic entity characterized by a decision-making autonomy in the exercise of its primary function. A resident unit is considered to be an institutional unit in the economic territory, where it has its main economic interest center, if it has a decision-making autonomy and / or maintains a complete set of accounts, or is able to compile a complete set of accounts. |
| | In Albanian national accounts, the production account is based on the enterprise unit; regional accounts in LKAU. In sector accounts, the institutional unit is the enterprise unit. |
| 3.6. Statistical population | The population of national accounts of a country consists of all resident statistical units (enterprise unit, LKAU, see section 3.5). An entity is considered a resident unit of a country when it has a center of predominant economic interest in the economic territory of that country, ie when it engages for an extended period (one year or more) in economic activities in that territory. |
| | National accounts are comprehensive. This means that all resident statistical units are included. |
| 3.7. Reference area | The reference area for Quarterly National Accounts is the total economy of a country. The total economy of a country can be divided into regions. The |

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| | NUTS classification ensures a single, uniform division of the economic territory of the EU Member States. Regional accounts in Albania are also compiled according to this classification, at NUTS level 2/3. |
| 3.8. Time coverage | Quarterly national accounts data are usually compiled on a quarterly basis.<br><br>ESA 2010 broadcast program requires data, starting from 1995 Q1 (quarterly), but currently some series of quarterly national accounts, start later. If previous data exist, they may have been compiled according to previous versions of ESA and may presen Quarterly G.D.P. data date from 2008 Q1 (quarterly) onwards.t conceptual clashes with those compiled under ESA2010. |
| 3.9. Base period | The concept of "base period" does not apply to national accounts. Instead, for some variables of national accounts last year's price concepts and chain-linked volumes apply, as set out in [Commission Decision 98/715 / EC](). Calculating the variables at the prices of the previous year enables the estimation of the volume indices between the current time period and a year ago. Once the reference period is defined, the volume indices can be chained and then applied to the variables at the current reference year prices. This generates volume estimates for each period analyzed.<br><br>Quarterly National Accounts, in order to have a better access to the Annual National Accounts and adhering to ESA 2010, evaluate the volume indicators of quarterly time series by estimating them with the previous year average prices and chain-linking ), in the reference year, (2010 = 100), enabling different periods to be consistently comparable and providing estimates for long periods. Chaining of quarterly figures is performed using the Annual Overlap technique, e.g. the values of the indicators with last year's prices are reduced to the level of the average price of the selected reference year, using annual deflators. |
| 4. **Unit of measure** | ESA 2010 shows all flows and stocks in monetary terms: in euro or other national currency. Market prices are, thus, the ESA's reference for valuation.<br><br>In addition to measurement in current (market) prices, some national accounts variables are also expressed in previous year's prices and chain-linked volumes. Furthermore, it is possible to derive growth rates and indices, and various other measures '(e.g. percentages, per capita data, data expressed in purchasing power standards)' can be applied as well.<br><br>REAL GROWTH RATE, compared (%) with the same quarter of the previous year (chain-linked), reference year 2010 (2010 = 100) for quarterly P.B.B according to the Production Approach and the Expenditure Approach.<br><br>Exceptions are some variables such as population or employment, which are usually expressed in number of persons, working hours or positions. |
| 5. **Reference period** | The reference period for the quarterly GDP is quarterly from 1 January to 31 December 2022. This report refers to the year 2022. |
| 6. **Institutional mandate** | |
| 6.1. Legal acts and other agreements | ➢ The legal basis at the national level for the production of quarterly G.D.P consists of:<br>   • [National Statistical Law No. 17/2018]() |

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| | <ul><li>[Official Statistics Programme 2022-2026](#)</li></ul><br>➢ The relevant legal basis at European level consists of:<ul><li>[REGULATION (EU) No 549/2013](#) of the European Parliament and of the Council, dated 21 May 2013, "On the European System of National and Regional Accounts in the European Union".</li><li>[European system of accounts (ESA)](#) Data transmission program.</li></ul> |
| 6.2. Data sharing | Quarterly P.B.B data are transmitted quarterly to EUROSTAT through the eDAMIS platform, and through the e-GDDS platform they are sent to the IMF. |

## 7. Confidentiality

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| 7.1. Confidentiality - policy | Data are considered strictly confidential and are used only for statistical and research purposes based on national Statistical Law No.17/2018 "On Official Statistics", date 10.03.2018 and on Law No.9887, date 10.03.2008 "Personal Data Protection". Article 31 on Statistics Law reads as follows: Data collected for the production of official statistics shall be treated by INSTAT as confidential and shall be used only in aggregated tables that will not identify the source information unit. Direct identification means when a statistical unit is directly identified from its name or address or any officially allocated and commonly known identification number. When data processing is made in a manner that allows the identification of the data subject, the data should immediately be encrypted in order for the subjects to be no longer identifiable. |
| 7.2. Confidentiality - data treatment | Albanian Institute of Statistics protects and does not disseminate data it has obtained or it has access to, which enable the direct or indirect identification of the statistical units. Albania Institute of Statistics takes all appropriate preventive measures so as to render impossible the identification of individual statistical units by technical or other means that might reasonably be used by a third party. Statistical data that could potentially enable the identification of the statistical unit are disseminated by Albania Institute of Statistics if and only if:<br><br>a) these data have been treated, as it is specifically set out in the Regulation, in such a way that their dissemination does not prejudice statistical confidentiality or<br><br>b) the statistical unit has given its consent, without any reservations, for the disclosure of data.<br><br>The confidential data that are transmitted to Albania Institute of Statistics are used exclusively for statistical purposes and the only persons who have the right to have access to these data are the personnel engaged in this task. Issues referring to the observance of statistical confidentiality are examined by the staff working in Albania Institute of Statistics. The responsibilities of this staff are to recommend on:  which detailed level the statistical data can be disseminated, so as the identification, either directly or indirectly, of the surveyed statistical unit is not possible; the anonymization criteria for the microdata provided to users; the access granting to researchers on confidential |

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| | data for scientific purposes. |

| **8. Release policy** | |
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| 8.1. Release calendar | Notifications about the dissemination of statistics are published in the release calendar, which is available on the website. The announcements and delays are pre-announced in this calendar. In the case of delays, the date of the next publication and the explanation of the reasons for the delays are specified. |
| 8.2. Release calendar access | The calendar of publications is available on the INSTAT website. |
| 8.3. User access | In accordance with article 34 of Law No. 17/2018 "On Official Statistics", official statistics are disseminated so that all users have an immediate and equal right and all possible forms of media are used. INSTAT and statistical agencies, having in the program the responsibilities of dissemination, seek to meet every requirement of any organization or individual for unpublished data or specific analysis. The following dissemination channels are used to release the results: <br>• Website – online release; <br>• Written requests; <br>• Special publications; <br>• Data request, section available for external users. |
| **9. Frequency of dissemination** | Frequency of data dissemination is done on quarterly bases. |

| **10. Accessibility and clarity** | |
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| 10.1. News release | Press release contains information about key indicators such as: G.D.P by production approach and main components of G.D.P by expenditure approach. The format of the press release is determined by the publication sector, which also sets the date of publication. The quarterly press release for the G.D.P is published online on the INSTAT website. |
| 10.2. Publications | Users can find the results on the INSTAT website at: <br>• Quarterly National Accounts |
| 10.3. On-line database | All the information is available in both Albanian and English language through the Pc-Axis system. Also on this site there is a simple methodological explanation. Access the database at the link below: Database |
| 10.4. Micro – data access | Not applicable. The data on which the quarterly G.D.P. is based are very source data; administrative and various surveys and as such, the most detailed level of data available for the quarterly G.D.P is at the macro level. |
| 10.5. Other | Users can submit specific requests for data through the INSTAT website in a |

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| | dedicated section for Contact. |
| 10.6. Documentation on methodology | The overall methodological framework for the compilation of national accounts in the EU is ESA 2010. The concepts and methodology of compiling quarterly national accounts are based on the methodology of Eurostat (Handbook on quarterly national accounts, Handbook on prices and volumes measures in national accounts, European Statistical System (ESS guidelines on seasonal adjustment) and has the same concepts as national annual accounts .<br><br>A short explanation related to the definitions of the main concepts and methodological explanations are provided to users in the end of press releases and publications. Additional support information is given to internal users when needed or required. On the INSTAT website there is a section related to the Methodology on Quarterly G.D.P. |
| 10.7. Quality documentation | The Quarterly National Accounts Sector documents all of the work process and procedures on the quarterly G.D.P for internal purposes. |
| **11. Quality managment** | |
| 11.1. Quality assurance | INSTAT is committed to ensure the highest quality with respect to the compilation of statistical information. In accordance with the Statistics Law, INSTAT use statistical methods and processes in compliance with internationally recognized scientific principles and standards conduct ongoing analyses of the statistics with a view to quality improvements and ensure that statistics are as up to-date. In performing its tasks it follows the general principles of quality management from the European Statistics Code of Practice. INSTAT declares that it takes into account the following principles: impartiality, quality of processes and products, user orientation, employee orientation, effectiveness of statistical processes, reducing the workload for respondents. |
| 11.2. Quality assessments | Quality controls and validation of data are actions carried out throughout the process and then analyzed by staff with the aim to improve the quality of statistics. Existing data from administrative or statistical sources are analyzed for methodology compliance, periodicity, timelines. New sources of information that can be used in compiling quarterly national accounts are also analyzed and the compliance of these data with the requirements of quarterly national accounts is analyzed.<br><br>The quarterly data used to estimate the quarterly G.D.P. are mainly administrative data as well as data obtained from quarterly surveys conducted by INSTAT. These series are always subject to future revisions, which is related to improving and adding information over time.<br><br>The review, evaluation and transformation of QNA data is performed according to the concepts and definitions of the National Accounts, ESA2010 for each of the variables. To check and analyze the data quality, follow these steps:<br>− Mathematical control of data; |

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| | − Logical control of data;<br>− Comparison of individual data in time series;<br>− Comparison of different data sources. |

| **12. Relevance** | |
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| 12.1. User needs | The main users of the Quarterly National Accounts are mainly a number of qualified users as follows:<br>• International Monetary Fund<br>• Eurostat<br>• World Bank<br>• Bank of Albania<br>• Ministry of Finance and Economy<br><br>Other users of Quarterly National Accounts are:<br>• Universities,<br>• Scientific Researchers<br>• Economic Scholars, Analysts<br>• National and international NGOs |
| 12.2. User satisfaction | Page Views (Hits) Clicks regarding the National Accounts (G.D.P) for the year 2022 are around 38.988 clicks.<br><br>During 2022 INSTAT conducted User Satisfaction Survey concerning INSTAT publications. The survey results show that the overall quality of National Accounts (G.D.P) statistics is rated 3.67 (73.4%) on a scale of 1 (very poor) to 5 (very good).<br><br>INSTAT organizes every year User Satisfaction Survey. |
| 12.3. Completeness | In most countries national accounts cover the domains national accounts main aggregates, government accounts, sector accounts regional accounts and supply and use tables. However, the content of the data on these domains as well as the (details of the) various breakdowns (by region, sector, industry, product, etc.) may deviate per country, depending on national needs and available sources. The ESA 2010 transmission programme, consisting of 22 tables across all national accounts domains (see section10.3) defines the minimum national accounts data set that must be available in all Member States of the EU.<br><br>For more detailed descriptions of the Albanian National Accounts please refer to the links below in section 19. |

| **13. Accuracy and reliability** | |
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| 13.1. Overall accuracy | After completing the data collection process from various sources inside and outside INSTAT, the data is checked for possible errors and logical connections between variables, if the data have problems, the sector tries to stay in touch with reporting units by requesting that the completion of data to be treated with the highest priority. |

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| | In case the data do not arrive on time, are incomplete, there is a change in the compilation methodology or there is a lack of clarity, contact the responsible person directly.<br><br>The data after being received by the responsible Institutions or Sectors are stored in the database. By linking the database information, ready-to-process files are created, which are subject to completeness and quality control. In case at this stage it is understood from the general analysis that there is a lack of data or incomplete data, the relevant institutions are reconnected again. |
| 13.2. Sampling error | Not applicable. |
| 13.3. Non - sampling error | Data review occurs only in case the relevant institutions or relevant departments within INSTAT review the data sent to the quarterly National Accounts sector for the purpose of updating or any possible human error. If the relevant institutions / departments review the data sent to INSTAT, then in the nearest publication these changes will be reflected and a brief explanatory information will be given to the users. This clarification will be in line with the general review policy as well as the error handling policy presented by INSTAT. |

## 14. Timeliness and punctuality

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| 14.1. Timeliness | Results of G.D.P are published on INSTAT website 89 days after the end of the reference period (Q + 89 days). The reference period of these results is December 31st, 2022.<br><br><table><tr><td>Reference period</td><td>12/31/2022</td></tr><tr><td>Date of publication</td><td>3/30/2023</td></tr><tr><td>Timeliness</td><td>89</td></tr></table> |
| 14.2. Punctuality | The data of G.D.P are disseminated according to the publication calendar. The publication of G.D.P has been punctuality in time to 100% of publications carried out over the years.<br><br><table><tr><td>Reference period</td><td>12/31/2022</td></tr><tr><td>Date of announcement</td><td>3/30/2023</td></tr><tr><td>Date of publication</td><td>3/30/2023</td></tr><tr><td>Time lag</td><td>0</td></tr></table> |

## 15. Coherence and comparability

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| 15.1. Comparability - geographical | The geographical comparability of national accounts in EU member states is ensured by the application of common definitions of the European System of Accounts (ESA 2010). Geographical comparison is also possible worldwide, as most non-European countries follow the guidelines of SNA 2008 and SNA 2008 is compliant with ESA 2010. |
| 15.2. Comparability - over time | Quarterly G.D.P data date from 2008 Q1 referring to the statistical database |

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| | providing a time comparability of 15 years (CC2 = Jlast-Jfirst + 1 = 15). The data are constantly checked to ensure their comparability over time. |
| 15.3. Coherence - cross domain | Quarterly G.D.P. calculations are consistent with the Annual National Accounts and are based on the same concepts and principles. |
| 15.4. Coherence - internal | In output evaluation the internal consistency of the data is checked before the output is finalized. The relationships between the variables and the coherence in their series are also checked. Also, more detailed controls are performed at the macro level. |
| **16. Cost and burden** | The staff involved in the preparation of quarterly G.D.P Statistics at the 3-month National Accounts sector is: 3 employees at INSTAT headquarters. With the estimates of the new ESA 2010 requirement tables, the staff workload has been increased. |
| **17. Data revision** | |
| 17.1. Data revision - policy | Revision policy is done in accordance with general revision policy and errors treatment policy introduced by INSTAT in the links below:<br>• Revision Policy<br>• Errors Treatment Policy |
| 17.2. Data revision - practise | One of the most important moments of the quarterly series is revisions policies. These revisions are related with quarterly and annual data changes. Revisions to the previously published series may be made each quarter. The frequency and cause of these revisions are as follows:<br><br>**Quarterly revisions:**<br>As additional data become available for the last quarter, they have their impact on the previous quarters because: data reported for the last quarters are supported by additional source data or improvements/corrections to data for previous nearest quarters were performed. It is necessary to mention that most of the data used for quarterly estimations are administrative data.<br>Including the last quarter data in the series and subsequent application of the seasonal adjustment will result in some changes to the previous quarters.<br><br>**Annual revisions:**<br>Quarterly data are benchmarked to the annual one, and revisions to annual data will influence the quarterly series. Revisions to annual data are subject to arrival of new annual data sources or improvements of the existing ones. One year has three steps of estimation; flesh, semi final and final. Changes that happen during these steps have their direct effect on the quarterly series. The flash estimations of the current year are available 11 months after the end of the reported year, semi final are available with a time discordance of 17 months and the final version - within 29 months. Revisions to quarterly series are linked to the production cycle of annual estimates. |

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| | **Methodological revisions:**<br>Revisions of quarterly series due to changes in methodology are to the extent possible coinciding with the annual cycle of revisions outlined above.<br>In addition, each of the above causes of revisions, and/or the incorporation of new series in the actual quarterly series, has the potential to alter seasonal factors and therefore may lead to a revision in the seasonally adjusted series. |
| **18. Statistical processing** | |
| 18.1. Source data | **Data obtained within the Institution.** The data are obtained in the timeframes planned in each statistical activity of INSAT according to the respective phases. This data is used as input to the system of compiling quarterly national accounts by making direct links<br><br>**Administrative data obtained from other Institutions.** Memoranda of Understanding have been signed with the institutions that produce this data for obtaining the data in defined formats and deadlines. |
| 18.2. Frequency of data collection | Frequency of data collection is realized on a quarterly frequency. |
| 18.3. Data collection | **The data obtained within the Institution are mainly:**<br><ul><li>Data from the short-term statistics sector (STS, Retail Trade)</li><li>Data from the Price Sector: Price Indices (PPI, CCI, EPI, IPI, CPI) ;</li><li>Data from the directorate of Agriculture (Production and Prices for Agriculture, Forestry and Fisheries);</li><li>Data on Administration, Education and Public Health;</li><li>Foreign trade data;</li><li>Labor Force Survey (LFS);</li><li>Household Budget Survey (HBS);</li><li>Obtaining data on annual GDP estimates by the method of production and expenditure.</li></ul><br>The department responsible for compiling the data puts them in a file according to an agreed format and timeline. This data is used as input to the system of compiling quarterly national accounts by making direct links.<br><br>**The administrative data obtained from other Institutions are mainly:**<br><ul><li>Balance of Payments (Bank of Albania);</li><li>Energy data (KESH, OSSHE, OST);</li><li>National Agency of Natural Resources (Production and investment for hydrocarbon exploration activity);</li><li>Data on Financial activity (BoA and estimated by SANA);</li><li>Data from the VAT, PT and Social Security file.</li><li>Data from the AMF file.</li></ul><br>The data is stored in the database, and then codified, analyzed and ready for the evaluation of the components of the quarterly national accounts**.** |

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| 18.4. Data validation | **Sequence of compilation**<br>In the indirect method the chronological order may change, but the most used is as follows:<br><br>i) Constructing the quarterly indicators at current and constant prices from different sources for the appropriate recent periods;<br>ii) Development of time series for quarterly data at current and constant prices in order to ensure data comparability and consistency over time;<br>iii) Benchmarking the non-seasonally adjusted series to the relevant annual series;<br>iv) Eliminating the seasonality from the aggregated quarterly time series.<br><br>It is worth mentioning that the sum of seasonally adjusted quarters is not necessarily equal to the annual GDP for any particular year. Under normal circumstances, there will be enough variation in seasonality and/or trading day effects to explain a gap between the two. |
| 18.5. Data compilation | **Volume measures**<br>Quarterly National Accounts, to ensure better consistency with the Annual estimates, as well as complying with ESA 2010, the volume measure of quarterly time series are expressed in average prices of the previous year and chain-linked reference year (2010=100).<br><br>General procedure of volume measures calculation consists of two steps: First figures at current prices are converted to previous year's average prices using appropriate price indices. Figures at previous year's prices are then chain-linked, with the reference year (2010=100), in order to obtain comparable time series of volume measures over time. This approach was introduced for the first time in quarterly accounts during the publication of the first quarter 2014. In the past, different approach was applied, where current price data were converted to constant prices of the fixed base year (the base year was 2005).<br><br>Chain-linking of quarterly figures is performed using the Annual Overlap technique, i.e. figures at previous year's prices are scaled down to the average price level of the chosen reference year using annual deflators. This technique is used in the majority of member states of the European Union. Chain linking means constructing long run volume measures by cumulating movements in short term indices with different base periods. The chain-linking of quarterly GDP data with fixed reference period (2010=100) allow different periods to be compared in a consistent manner and provide measures of long-run changes. However, the users should be aware of the phenomena of (non-additivity problem) of chained data.<br><br>For example if quarterly time series of GDP at current and constant prices with average prices of the previous year are additive, where total GDP is the sum of the components, for chain linking series, with fixed reference period (2010=100) the total GDP will be non-additive.<br><br>**Following international methodology, the real growth rate is estimated using quarterly chain-linked series, with the reference year 2010 (2010 = 100).** |

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| | **Benchmarking**<br>The aim of benchmarking is to ensure the consistency between Quarterly and Annual National Accounts. It should be applied to both current and constant prices, where quarterly values are expressed at the same base year as the annual data. It has to be underlined that the benchmarking alters the original figures, and consequently the volume growth of the aggregates, influencing in this way the chain-linked adjusted results.<br><br>Benchmarking of quarterly GVA figures, was carried out by using the XLPBM Excel programme. The XLPBM Excel programme has been developed by the IMF and provides a set of mathematical and statistical techniques which are used for temporal disaggregation of data series. During the process of adjustment, the discrepancy between estimated quarterly data and final annual data is minimized. The result is the achievement of consistency of quarterly and annual data, that is, the sum of quarterly data is equal to annual data in every year. |
| 18.6. Adjustment | **Seasonal adjustment**<br>One of the major characteristics and issues of quarterly national accounts is seasonality. There are two methods for eliminating the seasonal effect from quarterly series.<br><br>**Indirect method:**<br>The level at which series are seasonally adjusted is important, since it has the potential to affect the quality of that seasonally adjusted series. The individual component series of the main economic variables can be seasonally adjusted and then summed to derive totals. This is called an indirect seasonal adjustment. The indirect approach has the advantage of retaining additive, but this applies only to the current price series. Although the indirect approach conceptually also provides additively for volume series.<br><br>**Direct method:**<br>Alternatively, the main economic variables can be seasonally adjusted at the total level, independently from the seasonal adjustment of their components. The adjustment of the total of an aggregate series is called a direct seasonal adjustment.<br><br>The direct approach often gives better results if the component series show similar seasonal patterns. At the most detailed level, the irregular factor may be large compared with the seasonal factor and therefore makes it difficult to perform proper seasonal adjustment.<br><br>In a small country such as Albania, irregular events can have strong impact on particular data. However, if the component series show the same seasonal pattern, aggregation often reduces the impact of the irregular factors in the component series. This is particularly relevant for Albania, where many economic series are affected by same seasonal fluctuations in the primary industries. INSTAT applied direct method for seasonal adjustment of quarterly time series.<br><br>The program used for seasonal adjustment of time series is JDemetra +, method TRAMO / SEATS, this program was developed by EUROSTAT. |

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| **19. Comment** | |

**Annex**

[Implementation of ESA 2010 and NACE Rev.2_Albania](#)
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