



METHODOLOGICAL EXPLANATION

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GROSS DOMESTIC PRODUCT, QUARTERLY DATA

This methodological explanation relates to the data releases:

Gross domestic product, Slovenia, quarterly (First Release)



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1 PURPOSE

The purpose is the assessment of gross domestic product (GDP) and economic growth on a quarterly basis. The data are published at current prices, at constant prices of the previous year and at constant prices of the reference year 2010. We are publishing also the growth rates of GDP and the main components of GDP - compared to the same quarter of the previous year. The contribution of each GDP component to GDP growth is published.

2 LEGAL FRAMEWORK

- [Annual Programme of Statistical Surveys \(LPSR\)](#) (only in Slovene)
- [National Statistics Act](#) (OJ RS, No. 45/95 and 9/01)
- Regulation EU No 549/2013 of 21 May 2013 on the European system of national and regional accounts in the European Union (CELEX 32013R0549)

3 UNIT DESCRIBED BY THE PUBLISHED DATA

The units described by available quarterly data are the components of GDP. In the case of GDP estimation by the output approach, the unit described is the gross value added by activities of the Standard Classification of Activities (SKD). In the case of GDP estimation by the expenditure approach, the unit described is the components of GDP, e.g. final consumption expenditure of households, gross fixed capital formation.

4 SELECTION OF OBSERVATION UNIT

Observation units are all institutional units (economic entities) performing economic activity on the territory of the Republic of Slovenia in economic activities following the concept of production by the European System of National and Regional Accounts (ESA2010).

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The calculation covers all activities following the concept of the production boundary by the System of National Accounts 2008 (SNA 2008) and the European System of National and Regional Accounts 2010 (ESA 2010).

5 SOURCES AND METHODS OF DATA COLLECTION

Data are collected quarterly.

The main sources of data are results of monthly and quarterly surveys conducted by the Statistical Office of the Republic of Slovenia (SURS). Statistical surveys that are the source of the data for calculating the quarterly GDP are:

- Quarterly performance of enterprises POSL-P/ČL
- Turnover and value of stocks in industry IND-PN/M
- Monthly survey on construction GRAD/M
- Survey on building permits GRAD-GD/M
- Monthly report on wholesale TRG-D/M
- Monthly report on retail trade, sale and maintenance of motor vehicles TRG/M
- Monthly report on turnover in service Activities STOR/M
- Statistics on export and import of goods (monthly)
- Trade in goods between EU Member States INTRASTAT
- Trade in goods between non-Member States EXTRASTAT
- External trade unit value indices
- Consumer price index ICŽP, HICŽP, CPI
- Producer price index ICIPP-SKUPAJ/M, CENE-DOMA/M, CENE-IZVOZ/M
- Import price indices IMPR
- Monthly statistical survey on tourist arrivals and overnight stays TU/M
- Quarterly survey on tourism travels of domestic population TU-ČAP
- Monthly report on earnings paid out by legal persons ZAP-M
- Labour costs index
- Statistical register of employment SRDAP
- Agricultural input prices INPUT/M
- Monthly report on electricity and heat production E1-EE/M
- Quarterly statistical survey on railway transport TR-ŽEL/ČL
- Survey on road goods transport TR-CES-B/T
- Monthly survey passengers in road public scheduled transport TR-CES-P/M
- Registered road vehicles in Slovenia CES-V/M

In addition to SURS, other Slovene institutions provide the data for the calculation of quarterly GDP:

- Insurance Supervision Agency (balance sheets and income statements of insurance companies, reinsurance companies and pension companies).
- Central Bank of Slovenia: the net profit or losses and balance sheets of commercial banks, balance of payments.
- Public Payments Administration of the Republic of Slovenia (B-2 report shows current revenues of central and local government and of social security funds).

- Financial Administration of the Republic of Slovenia: data on excises.
- Ministry of Finance: budgetary statistics (central budget, local budgets, Health Social Security Fund and Pension Social Security Fund).

Administrative data sources for the quarterly GDP compilation are VAT (value added tax) reports obtained by the Financial Administration of the Republic of Slovenia (FURS).

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6 DEFINITIONS

Gross domestic product by the output approach equals value added at basic prices by activities, increased by taxes on products, and reduced by subsidies on products. Gross domestic product thus equals the sum of value added at basic prices of all domestic (resident) production units and net taxes on products (taxes less subsidies on products).

Value added at basic prices equals output at basic prices, reduced by intermediate consumption at purchasers prices. Value added at basic prices also equals the sum of compensation of employees, other taxes on production, less other subsidies on production, and the sum of gross operating surplus and gross mixed income.

Output equals the value of finished products (goods and services) from the beginning to the end of the year; it is valued at basic prices. Output at basic prices includes subsidies on products and excludes taxes on products. Output includes market output, output for own final use and other non-market output (output of individual non-market services produced by general government and NPISH and output of collective services produced by general government).

Intermediate consumption is valued at purchasers prices as the value of products used by a producer to produce other products. Intermediate consumption includes products with service life up to one year and services of current repair and maintenance that do not increase the value or extend the service life of fixed assets.

Taxes on products are all taxes and import duties, value added tax, excises on petrol, cigarettes, alcohol, taxes on gambling and slot machines, taxes on specific services and real estate transactions.

Subsidies on products are unrequited payments to market producers, made by government institutions to support production regarding the level of market prices. They are recorded for agriculture, manufacturing of food and passenger transport.

Gross domestic product by the expenditure approach equals domestic expenditure and external trade balance. Domestic expenditure includes final

consumption expenditure and gross capital formation.

Final consumption expenditure is composed of final consumption expenditure of households, non-profit institutions serving households (NPISHs), and individual and collective general government expenditure.

Final consumption expenditure of households is compiled by the national concept as the sum of final consumption expenditure of households by the domestic concept and purchases of resident households in the rest of the world minus purchases of non-resident households in Slovenia.

Individual government expenditure comprises payments for non-market government services (education, health, social care, culture, sport, etc.) and market goods and services (pharmaceutical and therapeutic products, concessions to private sector, health resort services, etc.). Collective government expenditure consists of expenditure on administrative, defence, economic, R&D and other non-market government services. Government and NPISH final consumption expenditures are calculated as the difference between the output value by the cost method and sales. FISIM is in final consumption allocated in household, general government and NPISH consumption and in exports and imports.

Gross capital formation is composed of gross fixed capital formation, increase in inventories and acquisitions less disposals of valuables.

Gross fixed capital formation consists of acquisitions (purchases) of new and used fixed assets, minus disposals (sales) of used fixed assets, plus costs of transactions of used fixed assets. Fixed assets include also intellectual property products. Acquisitions include also production for own use.

Changes in inventories is calculated for work-in-progress and finished goods at producers, inventories of trade goods in stores, and inventories of raw material, spare parts, etc.

Exports and imports cover the treatment of goods for processing as the exports or imports of the processing service without the value of goods. The export value of goods is calculated by FOB and the import value of goods is reduced reduced from CIF to FOB according to data provided by the Bank of Slovenia. Exports and imports of services are taken from the balance of payments according to data and methodology of the Bank of Slovenia.

Gross domestic product by the income approach equals the sum of compensation of employees, net taxes on production and imports (taxes on production and imports less subsidies on production) and gross operating surplus and mixed income.

Compensation of employees is the sum of gross wages and salaries, and employers social contributions. Employers social contributions include actual (compulsory and voluntary) and imputed social contributions. Imputed social contributions comprise payments by employer to employees during the absence from work due to sickness, accidents, etc. Personal allowances comprise expenses for food, transport to and from work and reimbursement for annual vacation. All gross payments of employers for contract, temporary or part-time employment are from 2002 on included in intermediate consumption. Gross

wages and salaries include tips in restaurants and personal services as well as estimation of private use of business cars.

Taxes on production and imports comprise taxes on products and other taxes on production. Other taxes on production are taxes which are paid by enterprises for the use of certain fixed assets, and taxes on labour force as production input.

Subsidies on products are irrevocable payments to market producers, made by government institutions. Subsidies are divided into subsidies on products and into other subsidies on production.

Operating surplus is the residual category of value added in financial and non-financial corporations and in housing activities of households. In non-market activities, gross operating surplus equals the consumption of fixed capital.

Mixed income is the residual category in the calculation of value added of unincorporated enterprises of households.

Employment by the national concept equals employment by the domestic concept plus residents working in the rest of the world minus non-residents working in Slovenia.

Employment by the domestic concept covers all permanently employed persons and self-employed persons together with unpaid family workers in agriculture and self-employed persons in other household activities. Employment in national accounts also covers student work and other forms of part-time employment, employment in transport by sea on our ships, diplomatic and consular representatives abroad, enterprises without employment, etc.

Employment, employees and self-employed by activities are shown by the domestic concept.

7 EXPLANATIONS

7.1 CLASSIFICATIONS

Data calculation and dissemination for various components of gross domestic product are based on the [European System of National and Regional Accounts \(ESA2010\)](#).

7.2 DATA PROCESSING

DATA EDITING

DATA EDITING

The process of estimating the gross domestic product includes different procedures that can be defined as the editing of the original data sources, e.g.

adjustment to suitable time frequency (e. g. monthly to quarterly), adjustment according to the national accounts concepts and adjustment to the concepts that indirectly measure the movements of estimated GDP components. The quarterly data are reconciled to the annual data once a year (after the publication for the second quarter and when the annual data on GDP are available).

The reconciliation of quarterly data with the annual data is done once a year using the Denton method (the method of least squares, which is one of the regression methods that minimizes the sum of squared residuals). The method ensures the consistency of the quarterly values with the annual value and at the same time preserves the original movements of the estimates.

Components of GDP at the quarterly level are estimated directly or indirectly, depending on availability of data sources. The example of the direct approach is estimation of value added in banking and insurance activities on the basis of the quarterly balance sheets and business income statements. In this case the value added is calculated as the difference between production and intermediate consumption. Most GDP components are estimated indirectly, based on assumptions, e.g. value added in the service activities is estimated on the basis of the data on revenues, assuming that the dynamic of revenues is consistent with the dynamic of production and intermediate consumption.

Estimation of gross domestic product by the output approach

Value added is estimated for more than 75 branches of activity, which are then aggregated. For estimating value added by activities, several methods are used, namely single extrapolation of value added, interpolation/trend extrapolation of annual data and double indicator method.

- Agriculture, hunting, forestry and fishing: The index of the physical volume of agricultural production is used for the estimation of the quarterly movements of value added. Current price estimates are obtained by reflatting constant price estimates.
- Mining and quarrying: Value added is estimated with value/volume of industrial production.
- Manufacturing: Value added is estimated with value/volume of industrial production.
- Electricity, gas, steam and air conditioning supply: Estimates of value added are prepared on the basis of VAT data, monthly data on energy statistics and relevant price indices.
- Water supply, sewerage and waste management: Value added is estimated on the basis of VAT data, deflated with the proper price index.
- Construction: Value added is estimated on the basis of the data on the value of construction works done from the monthly survey in construction. For deflation the construction price index is used.
- Wholesale and retail trade, repair of motor vehicles: The main source of data for the estimation of quarterly value added is the monthly survey on services. The consumer price index is used to deflate sales.
- Transport, storage and communications: Several indicators are used for extrapolation of value added: the number of tonne kilometres, the number of passenger kilometres, the number of passengers transported and turnover data.

- Hotels and restaurants: Two indicators are used for the estimation of value added in this activity: the number of overnight stays and value/volume of turnover.
- Information and communication: Value added is estimated on the basis of VAT data and turnover in service activities, deflated with the suitable price indices.
- Financial intermediation: Value added is estimated on the basis of several data sources, balance sheets of banks and insurance companies, employment and price indices. FISIM (financial intermediation services indirectly measured) is separately estimated and then added to the total value added of financial intermediation.
- Other market services: Value added of housing by quarters is estimated by trend interpolation/extrapolation of annual data. Value added in casinos is estimated on the basis of turnover in casinos, where the value of turnover is estimated on the basis of turnover tax. Value added of R&D is estimated on the basis of compensation of employees and employment in this activity. Value added for other activities is estimated either on the basis of turnover or employment.
- Non-market services (government and NPISH): Value added in non-market services is estimated as the sum of compensation of employees, other taxes on production and consumption of fixed capital. Main data sources are GFS, employment and wages statistics.

Estimation of gross domestic product by the expenditure approach

- Household final consumption expenditure: Final consumption expenditure of households is estimated on the basis of various data sources, namely quarterly retail trade survey, VAT data, statistical surveys on transport, telecommunication, hotels and restaurants, data provided by the Ministry of Infrastructure, balance of payments, and other sources. Estimates are prepared for 40 groups of products. For deflation/inflation of the estimates, the consumer price index is used.
- Government final consumption expenditure: The government final consumption expenditure is estimated as the value of output, measured as the sum of costs (value added and intermediate consumption), less the value of incidental sales, plus purchases of market goods and services. The basic data source for government final consumption expenditure is GFS data from the Ministry of Finance. For government individual and collective services, output at constant prices is estimated as the sum of value added at constant prices (which is mainly determined by the dynamics in employment and consumption of fixed capital in constant prices) and intermediate consumption, deflated by the price indices for the main types of inputs. Expenditures on the goods and services that were produced by market producers and that are intended for households as social transfers in kind are deflated by individual types of goods and services by the relevant price indices.
- Final consumption expenditure of NPISH: The final consumption expenditure of NPISH is estimated as the value of output, measured as the sum of costs, less the value of sales of goods and services. Expenditure at constant prices is estimated by the deflation with implicit output deflator.

- Gross fixed capital formation is estimated on the basis of various data sources (construction statistics, external trade statistics, data provided by the Ministry of Infrastructure). Estimates are prepared for 16 main components of assets. For conversion of current/constant price estimates to constant/current price values, deflation by different price indices (producer price indices, construction price indices, import price indices) is used. Components of R&D and computer software produced on own account are extrapolated by using employment as a quantity indicator.
- Changes in inventories are estimated on the basis of the model that includes data on changes in inventory in industry (IND-PN/M) and the sentiment indicator. At a latter publication, the model estimate is revised with the data from the survey: quarterly performance of enterprises by activity (POSL-P/ČL). The survey provides the data on the opening and closing level of inventories by types of inventories (raw materials, work-in-progress, finished goods and goods for resale). The value of inventories at the beginning and at the end of the quarter is recalculated to the average prices of the quarter, and the changes in inventories are obtained as the difference between closing and opening levels at the average prices of the quarter. Calculations are done separately for all four types of inventories and for 19 activities. The relevant price indices (PPI, construction price indices, CPI) are used as deflators for the calculation of the average prices of the period. Changes in inventories at constant prices are estimated for the same types and for the same activities as the current price estimates, and the same types of indices are used for deflation.
- Exports and imports of goods are estimated on the basis of external trade statistics data. Imports of goods, as shown in external trade statistics, are adjusted from c.i.f. to f.o.b. values at the aggregate level by the coefficient estimated by the Bank of Slovenia on the sample of customs declarations. Balance of payments is also the source for adjustment for transactions that are not statistically covered. The balance of payments is also the data source for the estimation of the exports and imports of services. For the deflation of exports and imports of goods, mainly genuine price indices for exports and imports are used. For deflation of export and imports of services, harmonised EU consumer price indices are used.

Estimation of gross domestic product by the income approach

- Compensation of employees is estimated mainly on the basis of employment and wages statistics.
- Taxes on production and imports are estimated on the basis of tax statistics provided by the Financial Administration and the GFS data provided by the Ministry of Finance.
- Subsidies on production are estimated with GFS data.
- Gross operating surplus/mixed income is estimated as a residual item.

BALANCING AND Reconciliation

GDP estimate by output and expenditure approach is done separately. The last step of GDP estimation is ensuring the internal consistency of GDP components/aggregates by balancing. Aggregate consistency is checked by comparing the dynamics of aggregates that are statistically closely related. Balancing is a systematic iterative process in which, taking into account a large number of different indicators, the result is finally determined, i.e. GDP data,

which is the sum of subcomponents according to the output or expenditure approach. Balancing is not a mathematical method. The process focuses on analysing results over time (time series). Regular analyses of the quality of quarterly estimates have shown over a long period of time that data on GDP by the output approach are more reliable than GDP by the expenditure approach.

Chain-linked measures of price and volume changes

Price and volume changes are measured through an annual chain index. Quarterly volume measures are annually chain linked by using the annual overlap method.

WEIGHTING

Weighting was not performed.

SEASONAL ADJUSTMENT

Each series is seasonally adjusted directly at the publishing level. This relates also to aggregates, such as total value added or gross domestic product. Seasonally and working days adjusted data are therefore not additive consistent. The exception is external trade balance which is obtained as a difference between exports of goods and services, and imports of goods and services.

Sum of quarterly seasonally adjusted data in a year is not equal to the sum of non-seasonally adjusted data (time consistency is not imposed to the seasonally adjusted data).

For seasonal adjustment of time series, we use the TRAMO/SEATS method. A time series model is set up, which is revised in detail and corrected about once a year. Using the model the time series is decomposed into:

- The trend-cycle component (which consists of the trend and cyclical movements over a period longer than one year),
- The seasonal component (which consists of the seasonal effects and the calendar effects; the calendar effects are composed of the working day effect, the leap-year effect, the holiday effect and the Easter effect),
- The irregular component (which consists of random fluctuations and some outliers).

Seasonally adjusted data are original data from which the seasonal and calendar effects are eliminated. For more, see the general methodological explanations [Seasonal adjustment of time series](#).

Time series are seasonally adjusted in two parts: with one model for the period from the beginning of the time series to the end of 2010, and with the second model for the period from the beginning of 2010 to the end of the time series. Results of seasonal adjustment are updated only for the second model; average of both models is taken into account for 2010.

7.3 INDICES

Indices are not published.

7.4 PRECISION

The precision is not calculated.

7.5 OTHER EXPLANATIONS

8 PUBLISHING

SiStat Database: [GDP and national accounts](#). Data are published in absolute values, at current prices, at constant previous year prices, at constant prices of the reference year 2010, volume growth rate of the same quarter of the previous year, volume growth rate of the previous quarter, and contribution to GDP growth compared to the same quarter of the previous year. The data are original data and seasonally adjusted.

First release (GDP and National Accounts, GDP and Economic growth): "Gross domestic product, Slovenia, quarterly".

EUROSTAT (Statistical Office of the European Union)

9 REVISION OF THE DATA

9.1 PUBLISHING OF PRELIMINARY AND FINAL DATA

Each quarter, there is only one publication of data. Data for quarters of a current year are revised until the fourth quarter data are published:

- Together with the second quarter data, revised data for the first quarter are published,
- Together with the third quarter data, revised data for the first and the second quarters are published,
- Together with the fourth quarter data, revised data for the first, the second and the third quarter are published.

After the publication of the fourth quarter data, quarterly accounts are revised only due to reconciliation with annual accounts data. Reconciliation is performed between the publishing of the first quarter and the publishing of the second quarter data. Due to procedures used, quarterly data are usually revised for one year more than annual data have been revised.

The exception to the general rule is seasonally adjusted data; they are revised for the period 2010 onwards at each publication.

The policy of national accounts revisions is determined by the ESA 2010, so these data do not have a provisional or final status.

9.2 FACTORS INFLUENCING COMPARABILITY OVER TIME

There are no breaks in time series, so all points in time are comparable.

10 OTHER METHODOLOGICAL MATERIALS

Methodological materials on SURS's website are available at <https://www.stat.si/statweb/en/Methods/QuestionnairesMethodologicalExplanationsQualityReports>.

Questionnaire:

SURS does not collect data for this survey by using a questionnaire.

Methodological materials on SURS's website are available at <https://www.stat.si/statweb/en/Methods/QuestionnairesMethodologicalExplanationsQualityReports>.

[Handbook on quarterly national accounts](#)

[Quarterly National Accounts Manual Concepts, Data Sources, and Compilation](#)