Quarterly Gross Domestic Product
Methodological notes

The quarterly Gross Domestic Product at market prices (QGDP), the main macroeconomic aggregate of national accountancy, represents the final result of production activities carried out by resident productive units, during a defined period, namely a quarter. The quarterly Gross Domestic Product at market prices is estimated based on two methods:

a) production method:

QGDP = GVA+TP-PS,

where:

GVA = gross value added at basic price;

TP = taxes on product;

PS = product subsidies

b) expenditure method:

QGDP = FC+GCF+E-I,

where:

FC = actual final consumption;

GCF = gross capital formation;

E = exports of goods and services;

I = imports of goods and services.

The main data sources used for the estimation of quarterly Gross Domestic Product:

- **statistical sources**: infra-annual surveys on industrial production, construction, services, trade; the agricultural production account; infra-annual surveys on earnings and employees number;
- **financial-bookkeeping sources**: balance sheets of financial institutions;
- **administrative sources**: execution of state budget and of local budgets, as well as of state social insurance budget; balance of payments.

Estimation of production in current prices:

- for non-financial companies (enterprises), population households and non-profit institutions it was estimated by activity branches, extrapolating the production level of the same quarter of the previous year, using the volume, price and value indices available from statistical data sources;
- for financial companies and public administrations it was directly determined based on administrative data sources (balance sheets and budgets execution).

Estimation of intermediate consumption:

- for non-financial companies (enterprises), population households and non-profit institutions it was estimated by activity branches applying the weight of intermediate consumption in output for the same quarter of the previous year, for which more complete and reliable data sources were available, based on the assumption that the technological coefficient are unchanged;
- for financial companies and public administrations it was directly determined based on administrative data sources (balance sheets and budgets).

Estimation of Gross Value Added:

The Gross Value Added was calculated as the difference between production and intermediate consumption.

Calculation of taxes and subsidies on product: based on the data from the consolidated budget.

The quarterly Gross Domestic Product is estimated at current prices, at the prices of the previous year corresponding period and at average prices of the year 2000. The estimates at average prices of the year 2000 are compiled by chaining the volume indices.

Beside the raw estimates of quarterly Gross Domestic Product, seasonally adjusted estimates are also compiled through the regressive method, this being the method recommended by the European regulations.

Seasonal adjustment envisages the removal of seasonal effects from the data series in view to point out the real economic evolution during consecutive periods[1].

For the adjustment of main aggregate series, based on which the GDP is estimated through the production and the expenditure methods, the DEMETRA package is used (TRAMO/SEATS method). This leads to the estimation of seasonal effect (events occurring at the same moment, with the same scale and direction each year, such as: seasons, holidays, etc., the working days number different from one month to another and the calendar effect (Orthodox Easter, leap year and other national holidays) as well as to the identification and correction of outliers (occasional, transitional or permanent changes in level) and the interpolation of missing values.

The quarterly national accounts of Romania present, in general, strong seasonality, being also adjusted for working days number and the calendar even if the effect of the last ones is not significant.

The seasonally adjusted series was obtained by removing the seasonal effect from the unadjusted series, by means of correction coefficients, established depending on the regression model used (additive or multiplicative). The additive or the multiplicative model used for regression is automatically identified by Demetra, depending on the nature of series subject to adjustments.

The seasonally adjusted GDP is obtained through the direct method, therefore entailing statistical discrepancies between the GDP and the sum of its components seasonally adjusted in an independent manner.

The seasonally adjusted series are quarterly re-estimated due to the change in adopted models, in the number of regression factors used, in the unadjusted series and in the number of available observations.

Beginning with Q I 2012, the policy related to Quarterly Gross Domestic Product estimation and dissemination was changed, by introducing a third estimate called “provisional data (2)” that is to be published, according to the Press release calendar posted on INS web-site, within 95 days after the end of the reference quarter. The main objectives of this revision relate to:

- the integration of statistical, financial-banking and administrative information which became available or were rectified after the publication of first provisional estimates, within 65 days after the end of the reference quarter;
- ensuring the consistency between the aggregates on which quarterly GDP is based and the aggregates from quarterly accounts of institutional sectors, particularly those of “Public administration” sector, the dissemination deadline being 90 days after the end of the reference quarter.

1 *GDP – seasonally adjusted series, is used in view to compare the reference quarter with the previous quarter, while the GDP – unadjusted series is preponderantly used for the comparison with the corresponding period of previous year.*

The additional information used for the estimation of Gross Domestic Product – provisional data (2) refers to:

- rectified statistical data for the last month of the quarter, regarding: industrial production indices, industrial production price indices, construction works indices, construction cost indices, indices of turnover volume for retail, excepting motor-vehicles and motorcycles, indices of turnover volume for wholesale and retail, maintenance and repairs of motor-vehicles and motorcycles, value indices of turnover for wholesale, indices of turnover volume for market services rendered to population, value indices of turnover for market services mainly rendered to enterprises;
- additional statistical data on passengers and freight transport;
- administrative data on budgetary execution;
- rectified data the Balance of external payments.