Quarterly Gross Domestic Product – „flash" estimates
Methodological notes

The "flash" estimates of Gross Domestic Product provide a timely and consistent picture of economy evolution and have the following characteristics:

- are produced according to ESA 2010 methodology;
- are compiled and published at 45 days after the end of the reference quarter;
- are based on an incomplete set of information as compared to the provisional quarterly national accounts being revised on a quarterly basis.

The differences between the "flash" estimates and the provisional estimates of Gross Domestic Product are defined depending on the following aspects:

- Timeliness: "flash" estimates are available earlier than the provisional ones (40-45 days as compared to 70-75 days);
- Accuracy: a compromise is made between timeliness and accuracy. "Flash" estimates are generally less accurate than the provisional ones, but the minus of accuracy is envisaged to be at the lowest level;
- Coverage: the number of variables covered by the "flash" estimates is limited.
- Available information: the « flash » estimates are based on a limited set of data. Quite often, some information resulting from statistical surveys or from administrative sources are not available.
- Estimation method: depending on the available data sources, the direct method (using the existing data and estimates for the missing ones) or the indirect method (using regression techniques) could be used.

The "flash" estimates of quarterly Gross Domestic Product in Romanian national accounts are obtained by applying the direct method, taking into account the existence of infra-annual data sources, particularly of statistical surveys providing information allowing for estimating the quarterly Gross Domestic Product (QGDP) at market prices based on **production method,** according to the formula:

QGDP = GVA + TP – SP
where:
GVA = gross value added at basic price;
TP = taxes on product;
SP = subsidies on product.

Beside the gross estimates of quarterly Gross Domestic Product, seasonally adjusted estimates are also compiled, using the regressive method, a method recommended by the European regulations. The seasonal adjustment envisages the removal of seasonal effects from the data series, in view to point out the real economic evolution in consecutive periods.
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 JDEMETRA software package is used (TRAMO/SEATS and X-13ARIMA-SEATS methods). 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

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.*

calendar effect (Orthodox Easter, leap year and other national holidays) as well as to the identification and correction of outliers (additive outlier, transitory change, level shift) 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 JDemetra, depending on the nature of series subject to adjustments.

The seasonally adjusted series for the last five years and the available quarters of the reference year are re-estimated every quarter as a consequence of the revision of unadjusted annual and quarterly series when more comprehensive and accurate statistical and administrative data sources become available, of including in the series of new observation, of the chages of the models used and regression parameters.