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**Methodological basis of the flash GDP estimates:  
experience of the Republic of Belarus**

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# **The Methodological Basis of the Flash GDP Estimate: Experience of the Republic of Belarus**

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*Today the global crisis has become a reason to review a number of major principles for shaping economical and political system both at the country and global level. Demand for flash estimates of economic and financial situation in a country for prompt policy decision-making has sharply increased.*

*It is evident that under the current conditions the release of rapid data would lead to quick and significant changes in the economic situation of a country. In most cases it is specified by the fact that the significant change in the indicator value would be followed by the change in the economic situation, but the direction of the change is not known precisely.*

*The response is determined by the situation on the market, economic state of a country, anticipatory expectations and, certainly, by the specific value of the published indicator. Depending on the interpretation of this or that indicator, it can vary accordingly. Therefore, the problem of provision of all user groups with timely, comprehensive, and reliable information allowing for the assessment of the current situation and its complex analysis<sup>1</sup>, is the most relevant.*

## ***The system of GDP valuations in the Republic of Belarus***

The central place in the system of main macroeconomic high frequency indicators in the Republic of Belarus used for the complex analysis of the current economic situation belongs to Gross Domestic Product (GDP). At present, the flash GDP estimate allows to assess the scale and the development of economic and financial crisis in Belarus.

Calculation of GDP is carried out by the National Statistical Committee of the Republic of Belarus (Belstat) in accordance with the international methodology on system of national accounts (SNC 93). SNC is in a sense accounting for country in a whole, using the specific for accounting principle of double entry that provides coordination of all indicators in the system. Therefore, considering the scale of calculation of GDP and the great volume needed information in international statistical practice calculation of GDP is carried out on the quarterly and annual basis. At the same time making more precise of GDP is fulfilled by stages after getting of more wide informational base.

In the Republic of Belarus in connection with necessity of monthly tracking of carrying out of major forecast parameters of socio-economic development of the country<sup>2</sup> the decision to make the monthly calculation of GDP by expert way was taken. Measurement of monthly GDP in the country is made using the production approach.

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<sup>1</sup> **Complex analysis** is an interpretation and estimation of the main economic indicators and factor of the country development. Complex analysis provides for the investigation of the current situation from the political, economical, and financial and credit perspective.

<sup>2</sup> **Forecast of socio-economic development of the Republic of Belarus** is developed in order to set direction of socio-economic development of the country on perspective. Forecast is compiled on each year. Difference between forecast and actual values generally provides reason for prompt policy decision-making.

Thus, the first valuation of GDP in the Republic of Belarus is presented by calculation of monthly GDP. The second and the third valuations of this indicator are presented by calculation of quarterly and annual GDP accordingly. Measurement of quarterly and annual GDP is fulfilled with using of three methods such as the production approach, the income approach and expenditure approach.

The provision dates of all GDP valuations are specified by the Special Data Dissemination Standard of the International Monetary Fund (IMF SDDS) as well as Regulations of development and provision of data on GDP adopted by Belstat.

The first valuation of GDP is carried out by Belstat on the 12<sup>th</sup>-15<sup>th</sup> calendar day of each month following the reporting month. It should be noted that when Belstat makes the preliminary calculation of growth rate of GDP it disposes by restricted sources of information presented by operative data only.

The results of calculation of quarterly GDP (second valuation) are provided by Belstat on the 90<sup>th</sup> calendar day of each quarter following the reporting quarter. Given date is stipulated by obtaining of additional quarterly sources of information that include the republican and the local budget performance reports of the Ministry of Finance of the Republic of Belarus (data about income, expenditure, taxes and subsidies provided to Belstat on the 55<sup>th</sup> day), the balance of payments of the National Bank of the Republic of Belarus (data about exports and imports of goods and services provided on the 80<sup>th</sup> day), data of the state statistical report provided to Belstat on the 55<sup>th</sup>-65<sup>th</sup> day. Besides given date is also stipulated by the fact that Belstat makes complex calculation of GDP (by the production approach, the income approach and expenditure approach) on the basis of hard coordination of indicators, providing balance equality of production, income and expenditure by branches and economy in whole.

Pursuant to the Regulations of development and provision of data on GDP the final annual valuation of GDP by three methods is carried out by Belstat in the December of each year following the reporting year. This valuation is based on the complete set of data which it is possible to collect.

Thus, the calculation of GDP on a monthly basis allows as quickly as possible using only restricted data sources to provide a measure of economic development until getting more reliable valuations of quarterly and annual GDP.

### ***Operative data for monthly GDP estimate***

The monthly calculation of GDP is carried out by the National Statistical Committee of the Republic of Belarus by the production approach. GDP from the production side is obtained by adding together value added of 25 branches of the economy of Belarus at the basis prices plus net taxes on products and imports. Gross value added is calculated at the level of branches of the economy as the value of output of goods and services less the value of intermediate consumption. Taxes on products are taxes payable proportionally to the quantity or value of goods and services produced, sold and imported by a producing resident unit. Taxes on products include: value added tax(VAT), contributions to the budget funds, excise tax, etc. Taxes on imports are customs payments and duties on imported goods and services. Subsidies are current unrequited payments from the State budget to enterprises provided those enterprises are really producing particular goods and services. The monthly GDP is calculated at current prices and constant prices.

It should be noted that in connection with the lack of monthly information by most branches of economy allowing to determine the volume of output of goods and services at current prices, the monthly valuation of this indicator for most branches has deference from the

similar quarterly and annual calculations and is produced by the expert way with using of indirect calculations based on the data of the last accounting period.

For monthly valuation of GDP the data of the state statistical report by five main branches of the economy of Belarus (industry, agriculture, construction, transport, trade and public catering, that take nearly 70 % in GDP structure) presented by nearly 15 thousands of enterprises are used. These enterprises provide the state statistical reports to Belstat on the 2<sup>nd</sup>-9<sup>th</sup> calendar day of each month following the reporting month.

On the basis of gotten data the output of industry, agriculture and construction for current period at current prices and the physical volume indexes of such branches as industry, agriculture, construction, transport, trade and public catering are calculated.

The output of current period at current prices of such branches as health care, education, science, culture, general administration and defense as well as the taxes and subsidies on products and the taxes on imports are calculated on the basis of monthly data of consolidated budget performance report of the Ministry of Finance of the Republic of Belarus (with a month late) and expert adjustments of Belstat. The data of the Ministry of Finance are provided to Belstat on the 10<sup>th</sup> calendar day of each month following the reporting month.

The output of current period at current prices by branch “Banking” is calculated on the basis of monthly information provided to Belstat by the National Bank of the Republic of Belarus.

### ***Calculation of monthly GDP at current and constant prices***

The methodology of monthly valuation of GDP is used by the National Statistical Committee of the Republic of Belarus for monthly valuation of GDP at current prices and for definition of physical volume index of GDP at constant prices of previous year.

The valuation of monthly GDP during the year is fulfilled cumulatively taking into account the particularities of forming of informational base by branches of economy.

The quarterly calculations of GDP for previous year based on the reporting data and distributed by months cumulatively are used as a base for monthly calculations of GDP.

It was noted, that the production approach of GDP valuation is used for the calculation of the value added by all branches of economy as the difference between output and intermediate consumption. In order to estimate the value added of the branches at constant prices, the double deflation method is used. Output by branches at constant prices is converted by extrapolation of data at current prices for the base year with corresponding physical volume indexes or by deflation of data at current prices for the accounting period with corresponding price indexes. The index of the number of persons employed in branches of the economy is used in evaluating non-market services at constant prices by the extrapolation method. Intermediate consumption by branches are converted to constant prices by means of extrapolation of data at current prices for the base year with corresponding physical volume indexes of output adjusted on coefficient of specific consumption of materials by branches.

Thus, at present, the output by branch “Industry” at current prices is calculated on the basis of monthly data of state statistical report about the volume of goods and services produced by industrial organizations which are adjusted on the volume of industrial goods and services produced by nonindustrial organizations and small industrial enterprises, and on the volume of underground economy that had place at last accounting period (quarter, half-year, 9 months, year).

The output by “Industry” at constant prices is calculated by extrapolation of output for corresponding period of previous year at current prices with corresponding physical volume index of industrial produce of current period to the corresponding period of previous year.

The output by branch “Agriculture” at current prices is calculated on the basis of monthly data of state statistical report about the volume of goods and services produced by agricultural

organizations and on the basis of expert calculation of agricultural produce of personal subsidiary plots and farms adjusted on the volume of services of organizations serving the agriculture that had place at last accounting period (quarter, half-year, 9 months, year).

The output by "Agriculture" at constant prices is calculated by extrapolation of output for corresponding period of previous year at current prices with corresponding physical volume index of agricultural produce of current period to the corresponding period of previous year.

The calculation of output by branch "Forestry" at current prices is made by extrapolation of output for current period at constant prices with deflator that had place in branch at last accounting period (quarter, half-year, 9 months, year) adjusted on change of producer price index by logging industry of current period from similar index of last accounting period.

The calculation of output by "Forestry" at constant prices is produced by extrapolation of output for corresponding period of previous year at current prices with index of the number of persons employed in this branch.

The output by branch "Construction" at current prices is calculated on the basis of monthly data of state statistical report about the volume of building and assembly works, ordinary repairs and major improvements of buildings which are adjusted on the volume of design and prospecting works and the volume of building works produced by natural persons that had place in last accounting period (quarter, half-year, 9 months, year).

The output by "Construction" at constant prices is calculated by extrapolation of output for corresponding period of previous year at current prices with corresponding physical volume index of building and assembly works of current period to the corresponding period of previous year.

The calculation of output by branch "Transport" at current prices is made by extrapolation of output for current period at constant prices with deflator that had place in branch at last accounting period (quarter, half-year, 9 months, year) adjusted on change of freight tariff index (tariff index of passenger transportation services) of current period from similar index of last accounting period.

The calculation of output by "Transport" at constant prices is produced by extrapolation of output for corresponding period of previous year at current prices with physical volume index which is defined as weighted arithmetic average of physical volume indexes of goods turnover and passengers turnover of railway, motor road, air, water and pipeline transport using the shares of each kind of transport in branch for corresponding period of previous year as weights.

The calculation of output by branch "Communications" at current prices is made by extrapolation of output for current period at constant prices with deflator that had place in branch at last accounting period (quarter, half-year, 9 months, year) adjusted on change of tariff index of communication services of current period from similar index of last accounting period.

The output by "Communications" at constant prices is calculated by extrapolation of output for corresponding period of previous year at current prices with corresponding physical volume index established in branch at last accounting period (quarter, half-year, 9 months, year).

The calculation of output by "Trade and catering" at current prices is produced by extrapolation of output for current period at constant prices with price index which is defined as weighted arithmetic average of consumer price index for goods, price index for produce of catering and industrial producer price index using the shares of each kind of trade in branch for last accounting period as weights.

The calculation of output by "Trade and catering" at constant prices is produced by extrapolation of output for corresponding period of previous year at current prices with physical volume index which is defined as weighted arithmetic average of physical volume index of retail turnover, including catering, for current period, physical volume indexes of wholesale and

external trade for last accounting period using the shares of each kind of trade in branch for corresponding period of previous year as weights.

The output by branch "Material supply" at current prices is calculated by extrapolation of output for current period at constant prices with deflator that had place in branch at last accounting period (quarter, half-year, 9 months, year) adjusted on change of industrial producer price index of current period from similar index of last accounting period.

The output by branch "Material supply" at constant prices is calculated by extrapolation of output for corresponding period of previous year at current prices with physical volume index that had place in branch at last accounting period (quarter, half-year, 9 months, year) adjusted on change of physical volume index of industrial produce of current period from similar index of last accounting period.

The calculation of output by branches "Procurement", "Information and computer services", "Other good-producing branches", "Insurance", "Real estate" at current prices is made by extrapolation of output for current period at constant prices with deflator that had place in branches at last accounting period (quarter, half-year, 9 months, year) adjusted on change of consumer price index of current period from similar index of last accounting period.

The calculation of output by these branches at constant prices is produced by extrapolation of output for corresponding period of previous year at current prices with index of the number of persons employed in corresponding branches.

The calculation of output by branch "Commercial market activities" at current prices is made by extrapolation of output for current period at constant prices with deflator that had place in branch at last accounting period (quarter, half-year, 9 months, year) adjusted on change of industrial producer price index of current period from similar index of last accounting period.

The output by "Commercial market activities" at constant prices is calculated by extrapolation of output for corresponding period of previous year at current prices with corresponding physical volume index established in branch at last accounting period.

The calculation of output by branch "Geology" at current prices is made by extrapolation of output for current period at constant prices with deflator that had place in branch at last accounting period (quarter, half-year, 9 months, year) adjusted on change of price index for building and assembly works of current period from similar index of last accounting period.

The calculation of output by "Geology" at constant prices is produced by extrapolation of output for corresponding period of previous year at current prices with index of the number of persons employed in this branch.

The calculation of output by branches "Housing" and "Public utilities" at current prices is made by extrapolation of output for current period at constant prices with deflator that had place in branches at last accounting period (quarter, half-year, 9 months, year) adjusted on change of price index of housing of current period for "Housing" and on change of price index of utilities and personal services rendered to households of current period for "Public utilities" from similar indexes of last accounting period.

The output by "Housing" and "Public utilities" at constant prices is calculated by extrapolation of output for corresponding period of previous year at current prices with corresponding physical volume index established in these branches at last accounting period.

The output of such branches as "Health care", "Education", "Science", "Culture", "General administration and defense" as well as the taxes and subsidies on products of current period at current prices are calculated on the basis of monthly data of consolidated budget performance report of the Ministry of Finance of the Republic of Belarus (with a month late). The data of the Ministry of Finance by these branches, taxes and subsidies for previous month are adjusted with consumer price index of current month to previous month and with coefficient allowing the proportion of market and non-market services in these branches from last accounting period and are added to the output by branches and to the volume of taxes and subsidies for previous period.

The calculation of output by these branches at constant prices is produced by extrapolation of output for corresponding period of previous year at current prices with index of the number of persons employed in corresponding branches adjusted on change of physical volume index of last accounting period (quarter, half-year, 9 months, year) by branches from index of the number of persons employed in corresponding branches.

The net taxes on products at constant prices is calculated by extrapolation of this indicator for corresponding period of previous year at current prices with physical volume index that had place at last accounting period (quarter, half-year, 9 months, year) adjusted on change of physical volume index of industrial produce of current period from similar index of last accounting period.

The output by branch "Banking" and the output of financial intermediation services indirectly measured of current period at current prices are calculated on the basis of monthly information provided by the National Bank of the Republic of Belarus and expert adjustment of Belstat based on the data of last accounting period (quarter, half-year, 9 months, year).

The output by "Banking" and the output of financial intermediation services indirectly measured at constant prices are calculated by extrapolation of output for corresponding period of previous year at current prices with corresponding physical volume index of bank services and financial intermediation services indirectly measured accordingly provided by the National Bank.

For calculation of the intermediate consumption of current period at current prices by branches the data about the output of current period at current prices by branches and share of intermediate consumption in output by each branches for the previous accounting period (quarter, half-year, 9 months, year) are used.

Intermediate consumption by branches are converted to constant prices by means of extrapolation of intermediate consumption for corresponding period of previous year at current prices with corresponding physical volume indexes of output by branches adjusted on coefficient of specific consumption of materials by branches for the previous accounting period (quarter, half-year, 9 months, year). Coefficient of specific consumption of materials is the ratio of share of intermediate consumption in output for current period at constant prices of corresponding period of previous year to share of intermediate consumption in output for corresponding period of previous year at prices of this period.

Thus, at present, the methodology of flash GDP estimate in the Republic of Belarus has been reconciled. But the National Statistical Committee of the Republic of Belarus fulfils continuous work for improvement of this methodology using the experience of different countries.