



NATIONAL STATISTICS OFFICE OF GEORGIA

**IMPLEMENTATION OF THE NEWEST  
STANDARD OF THE SYSTEM OF NATIONAL ACCOUNTS  
(SNA 2008) AND GENERAL REVISION OF GDP TIME SERIES**

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### 1. NEED OF METHODOLOGICAL REVISION

On 15<sup>th</sup> November 2019, the National Statistics Office of Georgia (Geostat) implemented the System of National Accounts 2008 (SNA 2008), replacing the existing methodology – the System of National Accounts 1993 (SNA 1993). During the revision, fundamental methodological changes were implemented and sources were improved. Along with implemented changes, the Geostat conducted a general revision of national accounts' time series since 2010. The process was supported by experts of the International Monetary Fund and Statistics Denmark. The presented document describes all the SNA 2008 related and other methodological improvements along with description of a general revision of the time series.

The national accounts data are subject to regular revision due to the complex structure of its compilation methods. Revisions take place according to the predetermined calendar schedule, by different periodicities. Gross Domestic Product (GDP) represents one of the core indicators of national accounts, which is published on the 80th day after the calculating period based on a quarterly survey data, and is revised 11 months later after the calculating year, according to the annual survey results. In addition to the above-mentioned annual revision, the time series of the GDP is subject to the general revision periodically, to ensure comparability of the indicator over time. Reasons for the general revision may be methodological changes in the compilation of the accounts, improvement of data source, changes in classification, etc. According to the international practice, general revision should be conducted every five years, to reflect all the improvements in the indicator and get the highest precision level.

## **2. SNA 2008 IMPLEMENTATION RELATED CHANGES**

### **2.1. FINANCIAL INTERMEDIATION SERVICES INDIRECTLY MEASURED (FISIM)**

Geostat has implemented an updated method of FISIM calculation, in accordance with the SNA 2008. In Georgia, FISIM is calculated for residents, for local and foreign currencies, for commercial banks and microfinance corporations, for the following 5 institutional sectors: non-financial corporations, financial corporations, general government, households and non-profit institutions serving households (NPISH). Intermediate and final consumption of FISIM is calculated separately.

Intermediate consumption of FISIM is calculated for each industry, which is reflected in the calculation process of the value added. Mortgage loans of households are considered as intermediate consumption, while consumer loans are deemed as final consumption of FISIM.

FISIM is calculated according to the following formula:

$$f_L + f_D = (r_L - rr) \times Y_L + (rr - r_D) \times Y_D$$

Where:

$f_L$  and  $f_D$  represent the output of financial services on loans and deposits

$rr$  – the risk-free rate (reference rate)

$r_L$  – the interest rate on loans

$r_D$  – the interest rate on deposits

$Y_L$  – stocks of loans

$Y_D$  – stocks of deposits

Tbilisi Interbank Interest Rate (TIBR) is used as a reference rate for Georgia, for local currency, while the weighted average interest rate is used for foreign currency. The data source is the detailed statistical information on loans and deposits by currencies and institutional sectors since 2016, provided by the National Bank of Georgia (NBG). Missing data for the years 2010-2015 were retroplated using the splicing method. Average of the ratio of new and old estimates of FISIM for the years 2016-2018 was considered as a benchmark value.

## 2.2. IMPUTED RENT OF OWNER-OCCUPIED DWELLINGS

According to the updated method, imputed rent of owner-occupied dwellings is calculated based on the User Cost Method, recommended by the Euro Union resolution (N1722/2005), Organization for Economic Cooperation and Development (OECD) and the World Bank. Implementation of the method was stipulated by the fact that 90 percent of dwellings are used by owner occupiers and are distributed unevenly over the country. Based on a given criterion, the User Cost method should be applied for measuring services of owner occupied dwellings according to the EU recommendations. The User Cost method replaced the Self-assessment method, considering estimation of imputed rents by landlords, willing to pay for renting their own apartments.

The housing services of owner-occupiers comprise of the following components according to the User Cost method: intermediate consumption, other taxes on production, consumption of fixed capital and net operating surplus. Detailed breakdown and calculation steps are provided in Table 1.

TABLE | №1

№	DESCRIPTION OF THE COMPONENT
	<b>INTERMEDIATE CONSUMPTION</b>
01	Expenditure on maintenance and repair of owner-occupied dwellings
02	Gross insurance premiums paid on owner-occupied dwellings
03	Premium supplements
04	Insurance claims paid to owners (minus)
05	Net insurance premiums paid by owners. (02) + (03) - (04)
06	FISIM
07	Total intermediate consumption. (01) + (02) + (03) - (04) + (06)
	<b>OTHER TAXES ON PRODUCTION</b>
08	Taxes paid by owners on the value of owner-occupied dwellings and their associated land

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	<b>CONSUMPTION OF FIXED CAPITAL</b>
09	Consumption of fixed capital on owner-occupied dwellings at current prices (excluding land)
	<b>NET OPERATING SURPLUS</b>
10	Current market value of the stock of owner-occupied dwellings at the beginning of the year (including land)
11	Current market value of the stock of owner-occupied dwellings at the end of the year (including land)
12	Current market value of the stock of owner-occupied dwellings at mid-year (including land) $((10) + (11))/2$
13	Real rate of return on owner-occupied dwellings (including land) in percent per annum
14	Real net operating surplus. $(13) * (12) / 100$
	<b>TOTAL EXPENDITURE ON OWNER-OCCUPIED DWELLING SERVICES</b>
15	Total Expenditures on owner-occupied dwelling services $(07) + (08) + (09) + (14)$

Services of owner occupied dwellings were calculated for the capital city of the country and 10 regions, for rural and urban areas.

The following data sources are used in the calculation process: data on routine maintenance of dwellings from the household budget survey, information on insurance premiums and claims provided by the state insurance supervision company, information on mortgage loans provided by the National Bank of Georgia, consolidated budget data on property taxes (other taxes on production), housing stock data from housing census results (conducted along with the population census in 2014), area of finished dwellings, average prices of newly constructed dwellings in 2018, real estate price indices.

### 2.3. CAPITALIZATION OF RESEARCH AND DEVELOPMENT

According to the SNA 2008, research and development (R&D) related expenditures are considered as capital expenditures, other than those cases when R&D producer enterprise uses R&D as an intermediate consumption produced by another company. Information on R&D is obtained annually since 2018 by special modules added to the survey questionnaires of non-

financial, financial corporations and non-profit organizations. A new survey was implemented for the education sector. Information on government expenditures on R&D was obtained from the Government Finance Statistics (GFS) data.

### **2.4. IMPLEMENTATION OF THE PRINCIPLE OF OWNERSHIP CHANGE IN EXTERNAL TRADE.**

Overall values of external trade are based on the balance of payment manual version 6th (BOP BPM 6), according to which export and import figures are based on ownership change, instead of the border-crossing principle. Implementation of the principle affects the volume of goods sent abroad for processing, which is returned to the same owner in the original country in the later period. According to the SNA 2008, export and import accounts for goods when ownership is changed.

## **3. OTHER CHANGES**

### **3.1. CHANGES IN CLASSIFICATIONS**

Along with the implementation of the SNA 2008, a national statistical classification of economic activities revision 2 (NACE Rev.2) and a statistical classification of products by activity 2008 (CPA 2008) were introduced. During the process of new classification implementation, companies were assigned new activity codes according to NACE Rev.2, and the non-observed economy was transferred into the new classification according to the structure of accounted production. Gross domestic product was compiled according to the new classification NACE Rev.2 for the years 2010-2018.

### **3.2. IMPROVEMENT OF NON-MARKET OUTPUT CALCULATION METHODS**

Non-market producers are general government sector and non-profit institutions serving households. Non-market output is calculated by the sum of costs. For public corporations, functional classification of expenditures was linked to the activity classification NACE Rev.2, enabling calculation of non-market output by industries. A model was constructed to calculate

the consumption of fixed capital by types of assets, which improved the quality of the non-market output calculation method. According to the revised method, the non-market output is created in 15 industries by governmental organizations and NPISHs.

### **3.3. IMPROVEMENT OF METHODS FOR CHANGES IN INVENTORIES**

An international approach - elimination of holding gains was introduced in measuring changes in inventories. Holding gain is excluded after converting the beginning period and the end of period stocks of inventories in the average prices of the previous year.

### **3.4. CHANGES IN THE INSURANCE OUTPUT CALCULATION METHOD**

In measuring the output of insurance services, a method for estimating expected profit was introduced. Using the method is essential when significant losses take place and insurance claims surpass insurance premiums.

### **3.5. IMPROVEMENT OF PRICE INDEX SOURCES FOR DEFLATING PURPOSES**

Updated price index sources were used for deflating purposes. Particularly, export/import price indices and a construction cost index were added to the database of indices intended for deflating. Price indices for industries are calculated as weighted averages of respective product indices, separately for output and intermediate consumption, where weights are based on a structure of the supply and use tables.

### **3.6. CHANGING THE REFERENCE PERIOD TO THE YEAR 2015**

The reference period for the constant price GDP was changed from 2010 to 2015.

### **3.7. USING THE ACCRUAL METHOD FOR ESTIMATING TAXES ON PRODUCTS**

Estimation of taxes on products is conducted using the accrual principle, replacing the method of cash basis.



### **3.8. IMPROVEMENT OF DATA SOURCES**

#### **3.8.1. IMPLEMENTATION OF SPECIAL SURVEYS TO EVALUATE THE NON-OBSERVED ECONOMY**

Special surveys, intended to evaluate the non-observed economy, were implemented in the following industries: agriculture, construction, hotels and restaurants. The commodity flow method was used to measure the non-observed output for 2018 as a benchmark year. The non-observed output coefficients were calculated for the benchmark year. The coefficients were interpolated between the new and the old special survey results.

#### **3.8.2. ILLEGAL ACTIVITIES ARE INCLUDED IN GDP**

Illegal activities should be estimated and taken into account in the GDP compilation process, according to the SNA 2008 methodology. Trade by narcotics and prostitution services were evaluated for Georgia based on special surveys conducted by non-governmental organizations and administrative data sources.

#### **3.8.3. INTERMEDIATE CONSUMPTION STRUCTURE UPDATE**

To improve a quality of the supply and use tables, a survey of intermediate consumption structure was conducted by institutional sectors according to CPA 2008 classification. Survey results were reflected in supply and use tables of 2018.

### 4. EFFECT OF CHANGES ON GDP

The effect of changes on the GDP is represented in tables 2 and 3.

TABLE | №2

#### EFFECT OF CHANGES ON NOMINAL GDP, MIL GEL

	2010	2011	2012	2013	2014	2015	2016	2017	2018
GDP SNA 2008	21 821.6	25 478.7	27 227.3	28 593.0	31 124.1	33 935.0	35 836.0	40 761.7	44 599.3
GDP SNA 1993	20 743.4	24 344.0	26 167.3	26 847.4	29 150.5	31 755.6	34 028.5	37 846.6	41 077.5
GDP revision SNA 2008, %	5.2	4.7	4.1	6.5	6.8	6.9	5.3	7.7	8.6

TABLE | №3

#### EFFECT OF CHANGES ON REAL GDP GROWTH RATE, %

	2011	2012	2013	2014	2015	2016	2017	2018
SNA 2008	7.4	6.4	3.6	4.4	3.0	2.9	4.8	4.8
SNA 1993	7.2	6.4	3.4	4.6	2.9	2.8	4.8	4.7
Difference (SNA 2008 – SNA 1993)*.	0.1	0.1	0.2	-0.2	0.1	0.1	0.0	0.1

\*Slight differences between the indicator and the difference of real GDP growth rates, calculated by different methodologies are caused due to rounding.