

# REGIONAL GDP OF THE REPULIC OF SERBIA – PRELIMINARY RESULTS

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## Introductory notes

Statistical Office of the Republic of Serbia have finished for the first time calculations of regional gross domestic product in accordance with European statistical standards and new statistical classification of territorial units of Serbia. These estimations are the result of considerable upgrading of statistical surveys that the SORS has implemented in the last two years and of a pro-active strategy of adopting the European statistical methodology in the area of national and regional accounts. In addition, we should bear in mind the rich and fruitful, long experience that the SORS acquired in estimating regional and sub-regional statistical indicators, as well as the long-lasting cooperation with the Statistics Sweden. The representatives from the regional accounts departments of Sweden gave their positive assessment of the SORS efforts in this area and they rendered considerable professional aid and support to operations. The regionalization of GDP for 2009 was based on the principle of distribution of value added (of economic subjects) by workplace, i.e. local units where value added is actually created, and not by head office seat of economic subjects. This principle anticipated for regional accounts has special significance if we take into account the fact that the large economic systems creating the framework of the Serbian economy (included here are public enterprises and government bodies and institutions) have in general wide geographic dispersion of their organizational units (plants, business units, etc.), and each of them presents a considerable center of economic activity on the territory of the municipality and region where it is situated (PTT Communications "Srbija", NIS, the Ministry of interior, large trade chains, insurance companies and banks, etc.)

## The main principles and regional geography

The calculations of regional GDP, as a part of the system of national accounts of the Republic of Serbia, were established pursuant to the EU principles and methodology, i.e. the European system of national accounts (ESA 95) and the Nomenclature of territorial units for statistics of the Republic of Serbia (NSTJ), which has been completely harmonized with the European Nomenclature of territorial units for statistics (NUTS). The calculations of regional GDP, in accordance with the European legislation, were carried out at the NSTJ level 2 (region) and it anticipates the following territorial units for statistics:

- Belgrade region
- Vojvodina region
- Region of Šumadija and Western Serbia
- Region of Southern and Eastern Serbia
- Region of Kosovo and Metohija. For this region, no reliable statistical data are at disposal and it was not covered by the calculations.

Regional gross domestic product is the regional equivalent to a country's GDP which represents the most important macroeconomic aggregate of an national economy and measure of its productivity and efficiency in production of goods and services needed for various types of consumption. Sum of GDP for each region is identical to the GDP of the Republic of Serbia in market prices. Gross value added created by all resident economic subjects of Republic of Serbia is starting point for the calculation of the GDP and its regionalization i.e. estimation of the contribution of each regional entity to the total GDP. The relation between GDP and the gross value added can be shown using following equations: *GDP* = the sum of gross value added of the institutional sectors or of the industries, plus taxes on products and imports and less subsidies on products (subsidies directly linked to the volume or value of production).

*GVA* = the total value of output of goods and services produced less the intermediate consumption (goods and services used up in the production process in order to produce the output).

The above presented fundamental equations represent the main principle of so called production approach in calculation of GDP which was applied in our calculation of GVA for each municipality and derivation of the regional GDP. and is the main approach for calculation of GDP for Republic of Serbia. Also, it must be added that the above formula for the calculation of the GVA is applied to the producing units belonging to the market sectors of economy and it is important to note that the treatment differs for economic subjects classified to the non-market sectors such as government sector and sector of non-profit institutions serving households. Output for these units, because their services do not have "tangible" i.e. market measure and because it is assumed that they cannot produce any kind of operating surplus, is derived by summing their operational.

In the system of National accounts, output and gross value added are valuated using *basic prices* i.e. prices that reflect amount that producers actually receive for unit of goods and services produced and sold on the market. This valuation procedure means that value of the output and and GVA includes subsidies directly linked with production and which are recieved from the government but excludes the taxes which are eventually paid by purchasers such as VAT and excise duties. In the final procedure of calculation of GDP in market prices i.e. prices in which products and services actually enter the consumption, subsidies on products are deducted and taxes on products are added to the aggregated figures of GVA. In this way, value of the GDP is expressed from the perspective of the purchasers or consumers of products and services. GDP in essence is the value of all products and services available for the various uses or types of final consumption other than consumtion of inputs for the production i.e intermediate consumption.

## Data sources

Apart from financial reports by all legal persons that are obliged to provide balance sheets, for the subject calculations the following data sources were used:

• For the non-financial sector of incorporated enterprises – a new-initiated module within regular annual statistical survey of structural business statistics that is envisaged from 2010 to compile data on turnover, number of employment, gross salaries and wages and other data by local units of enterprises on the level of municipality. As supplementary sources used were the data by the Serbian Health Insurance Office (HIO) on the number of employees in local units of enterprises and the statistical survey RAD-1 that collects localized data on employment and wages and salaries.

• For the financial sector (Banks and the Central bank of Serbia, insurance companies, companies for financial leasing, pension and investment funds and other financial institutions) – annual survey KGI-02 that starting from 2008 compile data for banks and insurance companies on the level of local units and data bases of financial statements of legal persons classified in this institutional sector.

• For the government sector, i.e. government bodies and institutions – KGI-03 survey that annually complies the major indicators for budgetary beneficiaries as well as ad hoc survey covering 11 major government institutions with the largest territorial dispersion of local units. This survey have compiled the most precise and the most complete data so far on municipal distribution of local units, employees and wages and salaries. The following institutions were covered by this special survey: Ministry of interior, Ministry of defense, State tax administration, Customs administration, National employment service, State pension and disablement insurance fund, State health insurance fund, Statistical office, Hydro-meteorological service, Geodetic institute and PTT Communications "Srbija". In addition, as a supplementary source used were the above-mentioned data by HIO and the data from the survey RAD-1.

• For the sector of households – statistical estimations based on statistical surveys data and data provided by the Serbian Tax administration. Apart from unincorporated enterprises (sole proprietorships and partnerships), this sector includes other self-employed persons, such as are outworkers and individual agricultural producers. In addition, the GDP of household sector covers net receipts from renting, i.e. household income resulting from the private renting of dwellings. According to the principles of national accounts, this income includes also so-called imputed rentals for owner occupied dwellings, i.e. imputed value of income that could be received by owners of private dwellings by renting them to other persons. This estimate is based on the data on dwelling stock on the territory of certain region and on average unit price of real estates.

• For the sector of non-profit institutions serving households (NGOs, associations of citizens, political and other socio-political associations and organizations) – database of financial statements of other legal persons and the HIO data on the number of employed in the local units thereof.

To the maximum extent that available data sources allow, for each of the stated institutional sectors applied were specific methods for the calculations of production value (market and non-market output) and value added in accordance with the EU legislation applicable to national and regional accounts.

# Methodological notes

As we mentioned earlier, for the regional GDP calculations applied is production approach for value added estimation, which is calculated as the difference between the production value, i.e. output, and all tangible and intangible inputs used in the production process (intermediate consumption). For Gross value added estimations on micro level, we apply "top-down" method in a way that GVA of each economic entity is distributed to its local units, on the respective municipality territory, according to the share of each local unit in the GVA of the whole entity it belongs to. Then after applied is "bottom up" method, i.e. value added of all local units on the territory of certain municipality is aggregated to the level of district, and eventually to the level of region. This method provides for significantly more precise results in comparison to a more simple technique of GDP regionalization, which anticipates that already calculated higher regional aggregates are broken to lower, sub-regional levels by the way of certain distribution "keys" and that is the practice implemented in some countries, including certain EU member states. It is worth stressing here that for the regional GDP estimations, the SORS designed a special application for data entry, checkup and distribution of value added by local units, and derivation of regional and sub-regional aggregates as well. All these facts indicate a significant upgrading of the infrastructure of the system of national accounts.

# The results – Regional GDP, shares and level indices

REGION	GDP (mil. RSD)	Share (%)	GDP per capita (thous. RSD)	Level index RS = 100
Republic of Serbia	2 815 000	100.0	385	100.0
Belgrade region	1 124 565	39.9	690	179.4
Vojvodina region	720 301	25.6	366	95.2
Region of Šumadija and Western Serbia	563 734	20.0	275	71.4
Region of Southern and Eastern Serbia	406 400	14.4	243	63.3
Region of Kosovo and Metohija				

#### Regional GDP, 2009. preliminary results

Pursuant to the estimation principle of workplace, the regions had the following shares in the Serbian GDP: Belgrade region holds the leading position (40%); Vojvodina region (26%) follows and then come the region of Šumadija and Western Serbia (20%) and the region of Southern and Eastern Serbia (14%).

Belgrade region, with GDP per capita amounting to RSD 690 000, has almost 80% higher per capita amount when compared to the RS average. The level index for the Vojvodina region is 95.2% (RSD 366 000), for the region of Šumadija and Western Serbia 71.4% (RSD 275 000) and for the region of Southern and Eastern Serbia 63.3% (RSD 243 000).



Regional GDP per capita, level indices (RS = 100)



### Regional GDP per capita, 2009 (in thous. RSD)



In 2011 the SORS will take efforts to further upgrade statistical surveys and to improve cooperation with large economic systems that have significant share in creating GDP of the Republic of Serbia, as well as in the regions where their local units are situated. These improvements and the expected upgrading of administrative data sources will consequently facilitate even more precise and reliable estimations of regional GDP and other regional economic indicators that make up the system of regional accounts. For the time being, the presented data show up the best quality and most reliable estimate of the economic strength and importance of certain regions of the RS. Finally, we shall stress the fact the subject data are preliminary and that before the end of 2010 we may expect the estimations' revision, which according to the first noted details will not have significant influence on the levels of regional GDP and the shares of certain regions in the GDP of the Republic of Serbia.