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The use of statistical units in the national accounts

Statistical units of production in the Russian national accounts

Prepared by the Federal Service of State Statistics of the Russian Federation¹

Summary

The importance of the statistical units issue in Russia is related to improving of the quality of statistical data, as well as to the specificities of the Russian system of national accounts, where the production account has a leading position.

The statistical units cannot be universal for all accounts in the system of national accounts. When selecting statistical units in Russia it is particularly important to assess their impact on the national and regional indicators of production, as well as on the correction of transfer prices of flows inside companies with vertically integrated production structure.

Bringing the production account in the national accounts system to a single statistical unit is currently underway in the Russian Federation at both national and regional levels based on the local unit.

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I. Introduction

1. Discussions on statistical units of production became more intense again in the international scientific community with the transition of economic statistics to the standards of the System of National Accounts 2008 (SNA 2008). This discussion however does not stop for several decades, because the effect of the statistical units on statistical indicators can hardly be overestimated.

2. The interest to this subject is associated with rapid complication of structure of the economy, and hence the tasks on regulating its development increase the requirements for quality of data on which the calculation of statistical indicators is carried out. This fully applies to the data of the production account, outgoing indicator of which is the gross value added (and accordingly the gross domestic product (GDP). Performance indicators of productivity factors widely used to assess the effectiveness of economy development are calculated on the basis of gross value added indicator.

3. Special attention to the statistical units of production in the Russian national accounts is caused among other things by the special role of the production account.

4. Firstly the production method is the primary method of GDP evaluation. Considering the complexity of structure of industries and the diversity of the organizational-legal forms of enterprises of the Russian economy, it can be said that accuracy and reliability of gross value added evaluations in terms of industries depends on the system of statistical units of production.

5. Secondly regional aspect of the economy is extremely important for the Russian Federation. The peculiarity of the SNA Russian regional indicators is that they, like in many other federal countries, are not used for inter-regional comparisons and analysis only, but also for making of decisions on economic development of the regions. Therefore these indicators should reflect rather accurately the economic structure of each region of the Russian Federation, approaching in this respect to the level of accuracy of the national level indicators.

6. It is also necessary to take into account the growing importance of performance indicators such as labor productivity index which should be calculated in terms of industries, not only at national but also at regional level (on the constituents of the Russian Federation). This circumstance requires inter alia the reconciliation of data on production volumes with data on factors of production within the framework of the statistical units of production, as well as the formation of indicators on the basis of the most homogeneous statistical units, which allows to obtain comparable regional evaluations on the required level of details.

II. Issues of reflection of economy sectoral structure

7. Statistical units unfortunately cannot be universal for all SNA accounts. The basic contradiction arises between the reflection of the economic transactions related to the distribution and redistribution of income and assets on the one hand, and the production of goods and the determination of primary income on the other hand.

8. In the first case the information on the entities having features of an institutional unit is required, it means information on the entities which have and exercise ownership rights for assets and production results. Typically these are *institutional units*. Data on these units allow to reflect properly the formation and accumulation of

assets as entities with the necessary rights only may enter the economic relations related to property.

9. In the second case there is need for data on the units which are characterized by maximum homogeneous structure of production and a high level of localization. Ideally such a unit should have one (not ancillary) type of economic activity and be located in one geographic location. Such a unit in the System of National Accounts is called *establishment (local kind of activity unit)*.

10. Of course, reasonable description of the structure of the economy and the processes occurring in it requires all the SNA accounts and, therefore, both types of statistical units. Measurement of the production of goods and services is the core of the SNA, because it determines the statistical evaluation of all subsequent movements of created products and incomes.

11. The data derived from existing tax and accounting reporting are mainly tied specifically to the institutional units. It is necessary to carry out expensive statistical survey to obtain data on homogeneous production units. This greatly complicates the task of forming of the SNA industry sectors and consequently the assessment of sectoral structure of the economy.

Table 1

The share of the principal activity in the output of large and medium-sized enterprises in the sector of non-financial corporations of the Russian Federation, 2014

<i>RNCEA Section</i>	<i>Share of the principal activity, %</i>
C. Extraction of minerals	90,8
D. Manufacturing productions	90,8
E. Producing and distribution of electric energy, gas and water	96,1
F. Construction	94,9
G. Wholesale and retail distribution	79,3
H. Hotels and restaurants	93,8
I. Transport and communications	97,2

12. Despite the fact that the share of the principal economic activity of the enterprises is quite high for the economy as a whole when using the institutional units as a statistical unit of production, industry structure of the gross added value can be distorted at the national level. This occurs when the secondary activities even making up a significant share of output are not separated to the individual production units. However, this is associated with the internal vertical integration of production to the greatest extent and most often affects the ratio of extractive and processing industries. Usually in these cases the share of the extractive industries is underestimated which is particularly sensitive for countries whose economies are dependent on natural resources.

13. Transfer prices have a significant impact on industry structure. In the case where the product of secondary activities is included in the domestic turnover of the enterprise assessment of its value can be significantly underestimated. This in turn leads to an overestimation of the share of output of the principal activity. Along with this, structure of gross value added is changed which ultimately changes industry structure of GDP.

III. Measurement of regional indicators

14. The need for macroeconomic indicators for the regions of the Russian Federation is one of the key factors facilitating the transition to a more homogenous and localized statistical units of production.

15. In Russia for the macroeconomic evaluation at the regional level the indicator of the gross regional product (GRP) is used which is the sum of gross value added at basic prices created in the territory of the region. The exception is the collective services of public sector units, as well as financial intermediation service.

16. GRP calculation is carried out via production method and, therefore, the production account and income determination account are made for each constituent (region) of the Russian Federation. This approach is connected with the need for maximum detailed representation of the structure of the regional economy, as the constituents of the Russian Federation are included in the economic management system. Using the top-down method of the distribution of gross value added can be used to a limited extent.

17. The most difficult problem of evaluation of the gross value added at regional level occurs in case of multi-location enterprises with vertically integrated production structure. The current accounting procedures do not allow to evaluate the output and production costs for each of the production units included in the integrated corporation, whereby the evaluation of the value added on these units is quite conditional. As a result, in the regions where the head offices of integrated corporations are located, value added is somewhat overestimated, whereas in the regions where territorial subdivisions of these companies are located, the value added is contrariwise underestimated.

18. Rules of national accounts suggest an imputation of market prices everywhere when an exchange between production units at different stages of the production process is based on transfer prices. In many cases, this significantly alters the distribution of produced value added between economic sectors and regions.

IV. Development of a system of statistical units of production

19. In the classification of Eurostat² and United Nations (UN)³ a key role in the production analysis is given to enterprises (groups of enterprises). According to the definition used in the European Union, the enterprise is "the smallest combination of *legal units* that is an organizational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources."⁴ It should be noted that both *legal entities* (in the understanding of the System of National Accounts) and *physical persons* who are engaged in an economic activity in their own right are considered as *legal entities*.⁵

20. This definition of the enterprise is quite universal, because it also covers unincorporated household enterprises, which may be quasi-corporations or enterprises inseparable from the owner of the enterprise. In the first case, they are included in the

² Council Regulation (EEC) No 696/93 of 15 March 1993 on the statistical units for the observation and analysis of the production system in the Community. - Official Journal L 076, 30/03/1993.

³ Statistical Units. United Nations, New York October 2007.

⁴ Council Regulation (EEC) No. 696/93, Section III.

⁵ Council Regulation (EEC) No. 696/93, Section II.

sector of non-financial or financial corporations as individual institutional units (although they do not constitute a legal entity). In the second case they are recorded as part of the sector to which the owner of the unincorporated enterprise is related.

21. The concept of an enterprise (at least for the sector of non-financial corporations) is almost identical to the concept of a legal entity in the Russian Federation. Therefore, the production unit can be either a legal entity as a whole or a part of it. The enterprise is used as a production unit in the calculation of national gross value added. Industry which is a group of production units, in this case consists of enterprises.

22. In calculation of the regional gross added value Rosstat takes into account all production units within the territory of the region to come as close to industry structure of the region as possible: enterprises completely located on the territory of the region, and geographically isolated subdivisions of multi-location enterprises located in the territories of several regions.

23. The system of national accounts requires to bind the volume of goods produced with the volume of costs of factors of production - labor and capital. This means that each cost created in the process of production must relate to the specific location and type of activity where and by which the factors of production were spent. Therefore, according to SNA methodology keeping records in term of industries requires the use of production units considering a territorial and industrial aspect. In 2008 SNA *industry* "is a *group of establishments* engaged in the same or similar activities."⁶

24. The total number of registered legal entities to be taken into account in the calculation of indicators of national accounts in the Russian Federation is approximately 4.7 million. Also approximately 3.5 million of individuals are involved in the production as individual entrepreneurs. Thus, the number of *legal units* (according to Eurostat terminology) exceeds 8 million.

25. Despite of great total number of reporting units the total number of units in the composition of which establishments can be allocated is relatively not-large - a few tens of thousands of large and medium-sized enterprises. However, the separation of establishments is very difficult when assessing the cost of production and excluding of influence of transfer prices since in many cases companies do not keep a full cost accounting especially for activities in terms of their local units. In many large companies with developed management accounting quite detailed information about the current costs can be accumulated, but even in this case, more work is needed on accounting and breakdown of all cost components on separate production units of the enterprise.

26. The existing Rosstat system of data preparation for the compilation of production accounts and SNA income determination is based to the greatest extent on statistical survey data, in particular, the structural survey of large and medium-sized enterprises in the sector of non-financial corporations. The composition of this survey data allows making the transition to the use of the local unit in the preparation of mentioned accounts. It should be noted that at this stage the data necessary for accounting are not available to the full extent, and the missing ones must be obtained by calculation.

27. In general, out of 360 thousand large and medium-sized enterprises in the sector of non-financial corporations, 9% only consist of more than one local unit. There

⁶ System of National Accounts 2008. New York, 2012. P. 97.

are 2.5% of the enterprises only which have local units located in other regions of the country. The total number of local units, including these enterprises of non-financial corporations sector is 575 thousand. Small businesses and individual entrepreneurs on the first stage are considered as local units.

28. This approach can be regarded as an intermediate on the way to the formation of industries out of establishments (local kind of activity units). At the same time the use of local unit would eliminate the differences in the composition of industries of the national and regional level as well as significantly improve their homogeneity although some local units have several economic activities.

29. In 2016-2017, the issue of transition to the local unit is being solved in Rosstat by means of "production, labor and capital" data harmonization software which was specially designed for the preparation of the data for SNA. Currently preparation of automation of calculation of SNA indicators of multi-location enterprises on local units is underway.
