

MACROECONOMIC STATISTICS

ISSUES OF MEASURING ECONOMIC GROWTH IN THE CIS COUNTRIES

Youri Ivanov

Author affiliation: Lomonosov Moscow State University, Statistical department (Moscow, Russia).
E-mail: yni1937@mail.ru.

Key concepts and definitions of macroeconomic indicators of economic growth stipulated by the international standards for macroeconomic statistics, and their implementation issues in the CIS countries are reviewed in this article. In this context the author indicates that GDP growth rate, being most essential for measuring economic growth, should be, for purposes of analysis, extended by a range of indicators featuring the following aspects of economic development: investments in fixed capital and their sources of funding, capital outlay and total factor productivity, external economic relations and several other. Implementation issues of the 2008 SNA provisions, covering the new approach to a number of economic transactions, influencing the economic growth, are addressed.

Keywords: economic growth rate, gross domestic product (GDP), GDP dynamics, investments in fixed capital, funding sources of investments, capital outlay, total factor productivity, 2008 SNA.

JEL: C82, D24, E01.

MATHEMATICAL AND STATISTICAL METHODS IN ANALYSIS

STATISTICAL TOOLS IN SOLVING THE PROBLEMS OF MANAGING THE DEVELOPMENT OF THE TERRITORIES

Vladimir Glinskiy

Author affiliation: Novosibirsk State University of Economics and Management (Novosibirsk, Russia).
E-mail: s444@ngs.ru.

Liudmila Serga

Author affiliation: Novosibirsk State University of Economics and Management (Novosibirsk, Russia).
E-mail: s444@ngs.ru.

Valentina Pulyaevskaya

Author affiliation: Rosstat Territorial Statistical Office for the Republic of Sakha (Yakutia) (Yakutsk, Russia). E-mail: s444@ngs.ru.

In this publication are outlined the problems of using statistical indicators for information support of effective strategic management decisions at the municipal level. The system of indicators to measure the level of social and economic development of municipalities with emphasis to positive and destructive factors - «stimulants» and «deterrents» - was formed. Gross municipal product (GMP) calculation methods are reviewed, an algorithm for rapid assessment of gross municipal product by the factor estimates, which is based on the significant relationship of the gross municipal product and gross regional product in two versions: regression on significant indicators and regression on main factors.

Classification of municipalities of the Republic of Sakha (Yakutia) for 2008-2012 was carried out in terms of social-and-economic development using the following algorithms: by the ideology of the multivariate median at regular intervals and cluster analysis by Ward's method that made it possible to verify the obtained partitions.

The authors studied social-and-economic situation of the municipalities of the Republic of Sakha (Yakutia), identified municipalities-leaders, providing a relatively higher quality of development of the regional economy, the «position» of each municipality in the economic space of the region was rated.

Possibility for studying the development and operation patterns of the municipalities, as a relatively independent production-and-territorial units, on the basis of the gross municipal product was proved. Results of typological analysis indicate that there are significant disproportions in social-and-economic development between the industrial and agricultural municipalities of the region under review. Conclusions and recommendations were made, specifically, the need to assess economic performance of municipalities on a regular and systematic basis.

Data from the state statistics for the Republic of Sakha (Yakutia) was used as an information base for this research.

Keywords: gross municipal product, municipality, development indicator, classification.

JEL: E16, E17, R13.

WAYS OF IDENTIFY ERRORS IN LARGE ARRAYS OF NUMERICAL INFORMATION

Georgy Khubaev

Author affiliation: Rostov State University of Economics (Rostov, Russia). E-mail: gkhubaev@mail.ru.

In this article are suggested methods for detecting errors in the numerical information. It is pointed out that in large arrays of numerical data it is impossible to visually highlight data sources with false information and to determine accuracy of which indicators is questionable and requires validation. The author shows that the «compression» of the original information by calculating the correlation matrices, average values of the correlation coefficients, coefficients of skewness and variation facilitates error detection in large arrays of numeric data. If there is a statistically significant regression equation quality check of the source and new array of numerical information can be carried out by comparing the predicted and actual values of the response in a regular array of numerical data with subsequent validation of observations with maximum values of residues.

Keywords: error detection, numerical information, «compression» of information, analysis of residuals, correlation matrix, coefficients of skewness and variation.

JEL: C1, C4.

REGIONAL STATISTICS

INNOVATION POTENTIAL OF REGIONS OF THE VOLGA (PRIVOLZHISKY) FEDERAL DISTRICT

Galina Polyakova

Author affiliation: Rosstat Territorial Statistical Office for the Nizhny Novgorod Region (Nizhny Novgorod, Russia). E-mail: Sekretar@mail.nzhnstat.nnov.ru.

Marianna Pachanova

Author affiliation: Rosstat Territorial Statistical Office for the Nizhny Novgorod Region (Nizhny Novgorod, Russia). E-mail: Pachanova@mail.nzhnstat.nnov.ru.

The article presents assessment of the development of the innovation potential of regions of the Volga (Privolzhsky) Federal District (PFD) - by a number of indicators in view of the territories, as well as its change in time (2010 and 2012.). The provided information is based on official statistical data from Rosstat and its territorial offices. To carry out the analysis, as a basis was taken the analytical report entitled «Rating of innovative development of constituent entities of the Russian Federation», prepared by experts from the HSE. Relying on the chosen methodology and using the available statistical data, set the scope of the considered indicators formed in three groups, characterizing economic conditions and human resources, research capacity and

innovative activities of constituent entities of the district (26 indicators in total).

In this article is characterized the employment in high-technology industries, as well as labour productivity (the share of high-tech and knowledge-intensive industries in total output in the region). Analysis of the scientific-and-technical potential of constituent entities of the PFD in more detail touch on a subject of intramural expenditures on research and development, as well as their share in the gross regional product, the share of personnel engaged in research and development, total employment in the economy of the region.

Innovation activity is reflected, above all, in innovative activities of organizations, as well as in the share of enterprises engaged in technological innovation, in their total number. Using the full set of indicators of each of the three groups, the corresponding index is calculated, determining the position of the region in the considered set of criteria. Composite indexes of innovative development of territories of the PFD are analyzed as the final result.

The calculations allowed to carry out a comparison of the results of innovative policy in the constituent entity under consideration and other regions of the Russian Federation at a whole new level, as well as to evaluate the contribution of territories to the development of innovative sphere of the PFD and solving the problem of transforming the district into one of the leaders of the Russian innovative technological development.

Keywords: regional analysis, innovative capacity, system of indicators, economic conditions, human resources, scientific potential, innovation activity, composite index of innovative development.

JEL: 018, 031, 032.

INTERREGIONAL COMPARISONS IN PRESCHOOL EDUCATION: SYSTEM OF RANKING ASSESSMENTS

Natalia Kovaleva

Author affiliation: National Research University - Higher School of Economics. E-mail: nkovaleva@hse.ru.

Vera Kouznetsova

Author affiliation: National Research University - Higher School of Economics.
E-mail: vkouznetsova@hse.ru.

Elena Nechaeva

Author affiliation: National Research University - Higher School of Economics. E-mail: enechaeva@hse.ru.

The authors argue that ranking assessment in education has become a very popular subject for discussion in the educational community and among personnel of education authorities. It is demonstrated that a reliable regional ranking is a kind of a benchmarking as it enables each region not only to see its achievements and failures, but to overcome the current difficulties taking into account the achievements of the neighbors. In this regard the word «reliable» is of particular importance. It is the authors' opinion that the calculations are based on a serious methodology, specially selected meaningfully interpreted indicators comparable by regions, reliable information database - data from the federal statistical observation (results of annual federal statistical observations on the activities of preschool educational organizations, on consumer prices, etc.).

The comparisons of regional preschool education systems are interesting in themselves, as it is in the early childhood that, regardless of the place of residence, a foundation for a child's socialization and outcomes of his further education are created. The article presents a comparative analysis of various aspects of the preschool education system functioning in the regions of Russia based on a complex of ranking assessments for 2010 and 2012. The objects of the research are 83 regional preschool education systems.

Keywords: interregional comparisons, ranking assessments, federal statistical observation, preschool education, preschool education organizations, pedagogical personal of preschool education organizations, accessibility of preschool education.

JEL: C81, C18, C4.

ON THE ECONOMIC ACTIVITY OF POPULATION OF THE MURMANSK REGION IN COMPARISON WITH THE REGIONS OF THE NORTHERN ECONOMIC DISTRICT (2009-2012)

Vera Sergeeva

Author affiliation: Rosstat Territorial Statistical Office for the Murmansk region (Murmansk, Russia).
E-mail: p51_trud@gks.ru.

Larisa Bykova

Author affiliation: Rosstat Territorial Statistical Office for the Murmansk region (Murmansk, Russia). E-mail: p51_trud@gks.ru.

The authors analyzed the materials of the Sample Survey on Employment and information on the number of officially registered unemployed by the regions of the North economic district. The major trends of dynamics of economic activity of the population and common and distinctive features of the labour market in regions are determined.

For the first time into analytical use are introduced estimates on employment in the informal economy, as well as on output of products of agriculture and forestry, hunting and fishing in households.

Keywords: official statistical information, economic activity of the population, informal economy, employment of population, unemployment.

JEL: J08, J21, J41.

SCIENCE AND EDUCATION

SCIENCE AND EDUCATION IN NATIONAL ECONOMY: STATISTICAL ANALYSIS

Pashintseva Natalia

Author affiliation: Institute for the Study of Science, Russian Academy of Sciences (RAS) (Moscow, Russia). E-mail: N.Pashinceva@issras.ru.

Zinov'yeva Irina

Author affiliation: Institute for the Study of Science, Russian Academy of Sciences (RAS) (Moscow, Russia). E-mail: I.Zinovyeva@issras.ru.

The authors demonstrate analytical value of indicators reflecting development level of science and education in Russia. More specifically, are analyzed the indicators of the number of graduates of higher educational establishments by major groups of specialties, data on which is considered from the point of view of the current needs of the modern economy in general and economic agencies - to fill existing vacancies. The attention is drawn to the fact that most significantly has increased the need for employees (workers) in the manufacturing, transport and communications sectors, as well as specialists in biological, agricultural, natural and engineering sciences, healthcare.

The article presents the results of a survey that was a part of the Programme for International Assessment of Adult Competencies (PIAAC), in which Russia participated for the first time. The survey covered 25 territories and regions, and 94 settlements. The proficiency assessment of adult population was carried out by three criteria - literacy, numeracy and problem solving in technology-rich environments.

The author uncovers weaknesses in the steering of science and education system in the Russian Federation that hinder progress in reaching the worldwide level of technology and ensuring a stable and long-term economic growth in Russia.

Keywords: gross domestic product (GDP), expenditures on research and development (R & D), investment climate, human development index (HDI), innovation economy, intellectual resources, competitive capacity of a country, scientific and technological capacity, patents, system of vocational education, level and quality of life, fundamental research, knowledge economy.

JEL: D83, I25, O32.

STATISTICS EDUCATION: CURRENT STATUS AND DEVELOPMENT DIRECTIONS

Olga Bashina

Author affiliation: Moscow State University of Economics, Statistics and Informatics (Moscow, Russia).
E-mail: OEBashina@mesi.ru.

Vitaly Minashkin

Author affiliation: Moscow State University of Economics, Statistics and Informatics (Moscow, Russia).
E-mail: VMinashkin@mesi.ru.

Pavel Smelov

Author affiliation: Moscow State University of Economics, Statistics and Informatics (Moscow, Russia).
E-mail: PSmelov@mesi.ru.

The article discusses current situation in statistics education in Russia and worldwide, its causes and importance of mathematical training for statistical education. Challenges in online education are discussed along with readiness of students and teachers to learn contemporary statistics. Main features of modern online courses on statistics and the results of their mastering by students, as well as issues of interaction between specialists in applied statistics and statisticians-”researchers” are described. The authors of this article point out that the role of statistics in the modern world, as a tool to identify hidden patterns and dependencies, is generally underestimated. The main topics and results of the International Conference on Teaching Statistics together with current issues of statistics education are discussed. The distribution of the conference papers from different countries and regions of the world is analyzed. The directions for discussions by the following main topics are described: Innovative collaboration in statistics education, Statistics education at school level, Education and development of staff who teach statistics, Statistics education at the post-secondary level, Statistics education in the disciplines and the workplace, Innovation and reform in teaching probability within statistics, Statistical literacy in the wider society, Research in statistics education, Technology in statistics education, Sustaining strengths and building capacity in statistics education. Special emphasis is laid on the importance of mastering the necessary mathematical methods for teaching statistics and using them as the main tool for providing the possibility of meaningful understanding and effective use of statistical methods for the solution of contemporary problems of processing and analyzing large heterogeneous datasets. The set of major disadvantages of statistics education in Russian Federation is formulated.

Keywords: statistics, statistics education, «statistical thinking», «statistical literacy».

JEL: A20.

THEMATIC STRUCTURE OF RUSSIAN AUTHORED PUBLICATIONS REGISTERED IN WEB OF SCIENCE

Sergei Silvestrov

Author affiliation: Financial University under the Government of the Russian Federation (Moscow, Russia). E-mail: fm.fa@yandex.ru.

Yuri Bogachev

Author affiliation: Financial University under the Government of the Russian Federation (Moscow, Russia). E-mail: bogachev43@mail.ru.

Lyudmila Vasileva

Author affiliation: Financial University under the Government of the Russian Federation (Moscow, Russia). E-mail: vasilieval@yandex.ru.

Alexander Libkind

Author affiliation: All-Russian Scientific and Technical Information Institute (VINITI), Russian Academy of Sciences.(Moscow, Russia). E-mail: anliberty@mail.ru.

Dmitry Rubvalter

Author affiliation: Financial University under the Government of the Russian Federation (Moscow, Russia). E-mail: drubvalter@hotmail.ru.

The paper presents a comparative theme structure analysis for Russian, US, French, German and Japanese national scientific publications registered in Web of Science (WOS) within a period from 2006 to 2010. Paper discusses a distribution of publications by seven WOS databases. It defines a contribution of each national publications array into presented in the certain database global publications array. Paper also identifies national intrinsic habits in use of different ways for scientific communications (papers, conference papers, monographs) in natural and social sciences. Beyond paper presents a number of calculated parameters characterizing national publication activity in WOS papers for period 2006-2012. A level of use for publications with Russian authors in dependence from journal impact-factor is discussed.

Paper contains analysis of dependence Russian authors' citation index from journal impact-factor separately for physics, chemistry, earth science, biology and medicine. That analysis show a higher level of use for papers published by join teams of Russian and foreign authors.

Keywords: national publications array, publication activity thematic structure, bibliometric characteristics, Web of Science

JEL: G0, K2.