

QUESTIONS OF METHODOLOGY

**METHODOLOGICAL APPROACHES TO ORGANIZING STATISTICAL OBSERVATION
OF COGNITIVE TECHNOLOGIES**

Oleg Rybak

Author affiliation: Statistics Institute of Rosstat (Moscow, Russia). E-mail: niostat@hotmail.ru.

This article is one of the first few that review challenges of organizing statistical monitoring of the development of cognitive technologies, which together with nanotechnology, biotechnology and information and communication technologies pre-determine the fundamentals of the future technological structure. Best domestic and international practices related to the making of cognitive technologies are summarized; their content and development directions clarified. The author gives basic scientific definition of cognitive technologies, formulates options for its modification, depending on potential development trends and structural transformation of technology.

On the basis of structurally modified concept of the noosphere is constructed the graphical representation (elementary diagram) of organization basic elements of cognitive technologies. When systematizing cognitive processes statistical attention is drawn to the ratio of the mental and material in understanding of cognitive technologies, transformation of philosophical practices and beliefs in the context of the new branches of dualism (emergent materialism as a sub-branch of «property dualism») and monism («anomalous monism») caused by the discovery of actual cognitive mechanisms. The article notes that relative balance has been achieved between the development level of scientific potential, supply of research results and ideas and public demand. This is a unique moment state in which it is possible to carry out statistical monitoring of all components and development stages of cognitive technologies. The formation features of the component base of cognitive technologies and organizational principles of interaction between the main structural elements are revealed.

As to the interdisciplinarity, the author presents differentiated approach to substantiate the objectivity of statistical observation; he also shows schematically the formation process of cognitive science as an independent discipline, and provides directions for transformation of information fields by way of changing the quality of interaction between different scientific disciplines with research technologies, public supply and commercialization. The composition and development directions for the technological basis of scientific research is demonstrated, market niches and promising areas of commercialization of the research and development results are clarified. This article substantiates the expediency of organizing statistical monitoring of cognitive technologies (in accordance with common methodological principles of the OECD) used with reference to large technologies - biotechnology, nanotechnology, information and communication technologies.

Keywords: cognitive technology, economic structure, convergence of technologies, noosphere, mental and material, component base of cognitive technologies, interdisciplinary, technological basis of cognitive technologies, commercialization of technologies, statistical monitoring, subject and content of statistics of cognitive technologies, scientific definition of cognitive technologies.

JEL: O33.

ON INFORMATION AND METHODOLOGICAL SUPPORT OF INTELLECTUAL ASSETS ANALYSIS AND USE OF SCIENTIFIC POTENTIAL OF RUSSIA

Natalia Pashintseva

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

Irina Zinov'yeva

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

This article substantiates the questions of information and methodological support of intellectual assets analysis and utilization of scientific potential of Russia. The authors comment on changes in methodological approaches to assessing the value of intellectual property products in official statistical accounting and calculating macro economic indicators that characterize the quality of life of the population, in connection with the transition to the new international standard for national accounting - the 2008 SNA.

This publication discusses the questions of measuring and using scientific potential amid information and methodological possibilities of assessing the technological achievements of a country, embodied in new products, processes, services related to high-tech and knowledgeintensive industries, since it indicates the economic and technological efficiency of science. Therefore, comparing the levels of technological development of different countries makes it possible to evaluate the efficiency of the scientific potential of Russia and its place in the global scientific community. The authors commented on the results of a study of statistical tools to measure the technological capabilities and technological development, on the basis of which the competitiveness rankings of countries are made.

Keywords: 2008 SNA, intellectual assets, intellectual property products, scientific capacity, research and development, competitiveness rankings of countries.

JEL: O30, O33, O34.

STATISTICAL STUDY OF THE REAL SECTOR OF ECONOMY

INTEGRATION PROCESSES IN THE RUSSIAN METALS SECTOR: CURRENT STATE AND DEVELOPMENT PROSPECTS

Mariia Karelina

Author affiliation: Nosov Magnitogorsk State Technical University (Magnitogorsk, Russia). E-mail: mar-jyshka@mail.ru.

Vladimir Mkhitarian

Author affiliation: National Research University «Higher School of Economics», Plekhanov Russian University of Economics (Moscow, Russia). E-mail: vmkhitarian@hse.ru.

Irina Savchenko

Author affiliation: Nosov Magnitogorsk State Technical University (Magnitogorsk, Russia). E-mail: biznes_magtu@bk.ru.

Current integration processes form the basis for development of metallurgical companies. In this regard, the paper focused on an integrated statistical study of the current state and key guidelines for development of integration processes in the metals sector of the Russian Federation. With this object in view, the article analyzes key development trends for the global metallurgy and their influence on the sector-specific activity in the field of mergers and acquisitions; it also presents a statistical analysis of integration processes and key guidelines

for development of the Russian metallurgy industry; and reveals key trends in M&A deals with participation of Russian metallurgical holdings.

The authors focus on the analysis of the metals sector of the world and the Russian economy. The analysis performed highlighted the following key trends in development of the metallurgy industry: a refocusing of steel production and consumption by regions of the world, an active search for sources of raw materials, an increase in the output of high value-added products, etc.

The article presents generalized analysis results of integration processes in the global and the Russian metallurgy industry. It was shown that main objectives of integration deals in the steelmaking sector included an increase in raw materials supply, a steady growth of profitability, expansion of the geography of production, an access to new technologies. The results of the conducted research led the authors to the conclusion that the M&A market in the metals sector of the Russian economy is developing in line with global trends, and it is reasonable for Russian metallurgical holdings, striving to become noticeable world market players, to be more active in the field of integration.

Keywords: integration processes, metallurgy, mergers and acquisitions (M&A), development trends, holding.

JEL: C13, L61.

STATISTICAL ANALYSIS OF IMPORT SUBSTITUTION PROSPECTS AND COMPETITIVE ADVANTAGES OF THE REAL SECTOR OF ECONOMY IN THE SARATOV REGION

Vyacheslav Somov

Author affiliation: Rosstat Territorial Statistical Office for Saratov Region (Saratov, Russia). E-mail: srtv@oblstat.renet.ru.

Vladimir Markov

Author affiliation: Saratov Socio-Economic Institute of Plekhanov Russian University of Economics (Saratov, Russia). E-mail: markov.saratov@mail.ru.

The article reviews the economic background of import substitution in Russia, in relation to economic activities. The basis for the identification of the import substitution process and assessment of its intensity is the system of timing factors, linked by types of economic processes: production, import and consumption. The authors compare import substitution processes (by sector) for the Saratov region, Privolzhsky (Volga) Federal District and Russia as a whole.

On the basis of cyclical sensitivity is revealed the degree of dependence of regional economies on national and global crisis, and are recognized the activities that develop most successfully in conditions of instability. On the example of real economy sector of the Saratov Region are allocated branches, autonomous in their development, and those branches that depend on national trends (for example, agriculture, trade). The identification of dependencies was conducted using beta coefficients of the regression equations and determination coefficients.

Autonomy amid the instability contributes to the sustainability of regional development; however it has a downside - weak integration into the national economy. Therefore, based on a combination of industry analysis and indicators of concentration, on the example of the Saratov region, is made the conclusion that economic policy measures should be divided in order to support the real sector. These measures include fiscal policy tools and elements of cluster support.

Keywords: regional import substitution, correlation between production, consumption and imports, determinants of import substitution, impact of global shocks, dynamics of the real sector of economy.

JEL: O11, C51, O47.

SHORT-TERM POPULATION STATISTICS: POSSIBILITIES AND LIMITATIONS

Evgeny Andreev

Author affiliation: The New Economic School (Moscow, Russia). E-mail: evand2009@yandex.ru.

Vladimir Shkolnikov

Author affiliation: Max Planck Institute for Demographic Research (Rostock, Germany); The New Economic School (Moscow, Russia). E-mail: shkolnikov@demogr.mpg.de.

The article considers possibilities and limitations for the use of short-term population statistics provided by Rosstat in demographic analysis. Methodological conclusions are illustrated by data for the first half of 2015. Following the statement that current data is basically a set of data on the number of vital events registered by civil registrar offices during a calendar month, the authors believe that current information can not be analyzed without proper understanding of its nature and qualities, their comparison with final data on demographic processes in longer term retrospective. However, even when all these conditions are complied with, short-term data can be used merely for establishing preliminary hypotheses and tentative conclusions.

The authors elaborate on why reliable diagnostics of problems relating to population replacement and public health can not be based upon current data. Specifically, comparison of the number of vital events for the two spaced-apart by one calendar year periods can not be considered as a reliable tool for monitoring demographic dynamics.

Keywords: current (short-term) population statistics, mortality, fertility, numbers of vital events, numbers of registered vital events, influenza epidemic.

JEL: C80, J11.