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STATISTICAL METHODS IN ANALYSIS AND FORECASTING

THE USE OF ANNUAL, QUARTERLY AND MONTHLY STATISTICS IN MACROECONOMIC FORECASTING

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This article summarizes model implementation experience in medium-term economic forecasting. The author reviews implementation issues of annual, quarterly and monthly time series with due regard to their content and representation of economic processes for medium-term macroeconomic forecasting. The article discusses the following questions: joint use of time series, exclusion of seasonal factor, allocation of cyclic components, development of factor models and simultaneous equations for groups of variables, using cross-industry models in forecasting. The author considers the relationship between cyclical factors and potential GDP growth. This time series study allowed identifying specific periods in the development of the Russian economy in recent decades; and development of factor models made it possible to define leading and specific factors of economic growth in periods under review. A significant change in the structure of potential GDP growth factors after 2012 led to examining growth factors that play crucial role in the new economic situation. Based on the study of cycles and related economic policy, the author draws some conclusions regarding the preparations for the forthcoming technological cycle. In conclusion, are noted some of the problems that arise in the development and use of a general equilibrium model for forecasting purposes.

Keywords: time series, monthly, quarterly, annual statistics, seasonal «cleaning», cycles, factor models, cross-sectoral models.
JEL: C22, C53, C67.

ONCE MORE ON THE GINI COEFFICIENT AS AN INDICATOR OF THE CONCENTRATION

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This article is a continuation of the discussion that started with the publication in «Voprosy statistiki» of the article «On the use of the Gini index in economic and statistical studies» by G.l. Gromyko, I.N. Matyukhina (issue №9 for 2015) and continued in the issue No. 2 for 2016, with the article by K.P. Gluschenko «On the issue of application of the Gini coefficient and other inequality indices». Both papers expressed opposing views on the application area for the widely recognized Gini coefficient.

In the present article the authors include response to critical feedback from the authors of the second article, along with criticism of their main key points. The difference in authors' approaches manifest in the following issues: application area for the Gini coefficient as a concentration index, directly associated with the Lorenz curve and intended to evaluate the uneven distribution of the studied index by groups; interpretation of «distribution» and «concentration» concepts in statistics; selection of a grouping variable when constructing

variational series of distribution; meaningful interpretations of concentration and differentiation (difference) indicators and etc.

Keywords: Lorenz curve, Gini coefficient, concentration index, distribution of population by per capita income, distribution and grouping in statistics, average and relative values, differentiation indicators.
JEL: C10, C1.

ENVIRONMENTAL STATISTICS

MUNICIPAL SOLID WASTE STATISTICS: TRENDS, PROBLEMS, OBJECTS

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This article is devoted to the important issue of information provision of environmental studies i.e. to the problems of accounting and management of municipal solid waste (MSW), in old terminology «household solid waste». The paper includes results of economic and statistical analysis of indicators in question; it lists negative trends of recent decades that were associated with both increased negative impacts on the environment from the growth of waste disposal sites and increase in losses of material resources. The authors scrupulously examined the underlying situation in Moscow, St. Petersburg and several other Russian cities.

In the recent years Russian government adopted various laws and regulations on this subject to improve the existing environmental situation; this paper contains assessment of their effectiveness in regard to perfecting (bettering) MSW statistics. The authors explain the connection between statistical observation and the Federal Waste Classification Catalogue (FWCC). By doing so, they not only identified and described advantages of this Catalogue, but established the impediments to advancing statistical observation that require immediate removal.

This article analyzes the development of MSW statistics in Russia, along with the system of indicators and statistical toolkit that is used in our country. There is also an assessment of the national and departmental statistics (more specifically, statistical observations in the system of the Ministry of Natural Resources and Environment of the Russian Federation).

With regard to newly established fiscal element - environmental fee, the authors examine its subject matter; describe the procedure for its collection and spending, characterize measures associated with its accounting activities.

In order to comprehensively cover the subject of the study, there is a review of organization system and methodology for collecting (acquiring) statistical data in OECD/Eurostat and the United States. In the case of OECD/Eurostat - is used the Joined Questionnaire that is sent out to the national statistical authorities. For the United States the authors selected two main organizational and technical approaches to collecting summary data. The paper presents the system for data aggregation, summary calculation, grouping, and etc.

The authors selected most successful foreign practices for organizing statistics and accounting. They carried out economic and statistical analysis of MSW management, reflecting Russian and foreign trends in this area.

The paper ends with critical feedback and relevant proposals.

Keywords: municipal solid waste (MSW), household solid waste (HSW), legislation in the field of MSW, Federal Waste Classification Catalogue (FWCC), environment comparisons.
JEL: K32, H20, Q30, Q53, R10.

STUDY OF SOCIAL AND ECONOMIC PROCESSES

CALCULATION OF PRICE DYNAMIC INDICES ON THE BASIS OF MONITORING REAL ESTATE MARKET*

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The article proposes an approach to analyzing the dynamics of real estate prices by separating the influence of spatial and temporal factors in a hedonic model. The author speaks in favour of this particular approach because structure and characteristics of properties sold on the real estate market are changing in each period. The task of ensuring time-series comparability (when data is correlated period-to-period) for the model in question is considered completed, if the location factor is taken into account by means of geo-referencing, and the impact of location on property value is estimated by cadastre valuation methods.

Implementation of this approach requires adequate information support based on system of monitoring real estate market in individual transactions. Analysis of price dynamics is just one of the applications of this system. The author supports analytical value such observation in managerial decision making for improving transparency of real estate market, perfecting valuation activities, advancing mechanism of property taxation and stabilizing the mortgage system.

Keywords: real estate price indexes, method of hedonic pricing, spatial modeling, multiple regression, real estate market monitoring.
JEL: C31, R30.

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ON APPROACHES TO DEVELOPMENT OF INTERAGENCY STATISTICAL RESOURCES FOR MONITORING THE PERFORMANCE OF SOCIAL PROGRAMS*

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This article describes an approach to development of interagency statistical resources with regard to support program for children and families with children - «Children of Russia» - based on the best foreign practices. In other countries these types of statistical resources are created by cooperative efforts of government agencies (that are responsible for implementation of support `programs for children and families with children) and research centers (universities).

Program of development of a specialized unit of interagency information resources dedicated to the problems of children and families with children is put together to investigate the wellbeing of target groups, to work out a program for supporting children and families with children, to monitor program's performance (stages and results). This resource is to be multifunctional; it may serve research and education interests of universities and raise public awareness and knowledge about this vital and socially significant sphere.

Official statistics forms the basis for data array; functionality is amplified by analytical services with regard to needs of all interested parties (agencies, researchers and general public).

The paper discusses an approach to creating an interagency resource with information on children and families with children in Russia. Despite the fact that several national ministries in line with their activity areas practice and keep statistical records on these topics, the data resources are not integrated for system analysis of problems of children and families with children. Therefore, in order to standardize the terminology and concepts in this field of statistical observation the authors propose developing a unified subject classification and integrating data in the resources' multifunctional information framework. Such resource may provide means for integrated assessment of the general subject area and specific target groups. According to the authors, this resource may serve as a foundation for elaborating documents for strategic planning of effective family, maternity and childhood support policies at a new level of quality.

The article proposes an approach to the development of statistical information resource based on Rosstat data with advanced interface and a set of analytical services, which include access to the methodology of statistical monitoring and access to thematic publications on the problems of children and families with children in regions of the country.

Keywords: social statistics, Russian national children's strategy for 2012-2017, data integration, statistical resource, statistical observation, harmonization of concepts of the subject area..

JEL: J13, C81, C82, C83.

* Case study: support programmes for children and familes with children.

FROM THE EDITORIAL MAIL

ON THE USE OF MATHEMATICAL AND STATISTICAL TOOLS TO ASSESS THE PROMOTIONAL ACTIVITIES OF THE UNIVERSITY

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The article analyzes the characteristics of promotional activities of the university in modern conditions. As an example the author chose promotional campaign of one of the leading Russian universities - HSE and traced change in the number of applicants in the last three years. In 2015 this indicator demonstrated a positive growth. Statistical analysis of the advertising cost structure shows elements of the promotional activities of the university. Introduction of new marketing models for targeting potential students makes it possible to increase efficiency of the advertising strategy.

The paper presents economic and statistical model which allows optimizing the advertising costs of the university based on performance statistics for advertising campaigns of the past years.

Keywords: mathematical and statistical tools, promotional activities of the university, performance statistics, cost structure, optimization of advertising activities.

JEL: C61, I22, M31.