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QUESTIONS OF METHODOLOGY

KEY ISSUES OF REFLECTION OF FOREST RESOURCES IN THE SYSTEM OF COMPLEX NATURAL-RESOURCE AND ECONOMIC ACCOUNTING

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The authors of this article discusses the key issues and approaches to reflection of forest resources in the System of Environmental and Economic Accounting (SEEA), within the framework of the development of a common system of national accounting (SNA) for natural resources and environmental protection. To be more specific, key principles of the international standard - SEEA-2012: Central Framework No- are characterized from the point of view of information and methodological requirements for enabling statistical calculations. Critical analysis is performed; possibilities for using international provisions in the conditions of the Russian Federation are also reviewed, including the formation of the balance of natural resources on the example of forest timber, solving the issue of valuation of relevant resources, integration of the received indicators obtained in the general system of the SNA aggregates, etc.

The article begins with the analysis of the current statistical information on availability, use, restoration and protection of forest resources in our country. The performance of existing indicators is measured in terms of their alignment with the SNA-SEEA requirements and methodology. In addition, an assessment of completeness and quality of statistical data, systematically collected by the statistical and forestry authorities is provided. The complexity and multidimensionality of forest resources and forestry statistics, which must be taken into account when carrying out macro-statistical constructions in accordance with the SNA-SEEA requirements, are mentioned. Major shortcomings in the field of accounting and statistical surveys were also identified.

The centerpiece of the article, as already mentioned, is the issue of the valuation of forest wood, i.e. standing timber, as well as reflection of these valuables in the balance of assets of natural resources. For this purpose, the publication describes the types of this balance and analyzes in detail their specific differences in relation to the timber resources in all main balance aggregates. Particular attention is placed upon identification of harvested (cultivated), naturally grown (non-cultivated) forest resources and forest stands growing under promote natural afforestation (the implementation of specific and targeted forestry activities). In this regard the following statistical characteristics of one of the key parameters that operate within SEEA for all biological assets in general and assets of forest timber in particular are considered in detail: a) depletion; b) degradation of resources.

The article is elaborated upon specific methods of forest timber valuation on the basis of determining the relevant natural resource rents, using primarily the method of the net present value (NPV), along with other techniques and assessment methods (more specifically those, on the basis of the residual value method, appropriation method, access price method). An improved calculation formula based on the NPV method is proposed. The major advantages and disadvantages of each of the proposed methods of calculation are identified.

In this article are formulated the basic questions that need to be answered before the data collection is organized, calculations are carried out, and preliminary observations on them are presented. In the final chapter of the publication are given the concrete proposals for arranging further work that is essential for the quality

assessment of forest resources as an important part of the national wealth and an object of the environmental resource management.

Keywords: SNA-SEEA, SEEA basic structure, biological assets, forest timber (standing timber), asset (account) balance, valuation of forest timber, natural resource rent, discount rates, method of the net present value (NPV), appropriation method, forest management and primary accounting for forest resources.
JEL: C82, E01, F64, Q50.

GREENHOUSE GAS EMISSIONS, RESOURCE USE AND ENVIRONMENTAL EFFICIENCY OF ECONOMIES FROM A LIFE-CYCLE PERSPECTIVE

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This paper illustrates the results of two environmentally extended input-output applications based on environmental-economic accounts concerning the attribution of environmental flows to final demand. First, total (direct and indirect) GHG emissions of the Italian vertically integrated industries from 1995 to 2008 are presented, including emissions avoided thanks to final and intermediate imports. In this case, the classical IO domestic technology assumption is conveniently integrated with supplementary data in consideration of the inexistence or non-representativeness of some primary industries in Italy.

Then, estimates of the Italian material flows in terms of Raw Material Equivalents (RME) for the period 2000-2010 are presented building on the ongoing Eurostat RME project. RME indicators provide a valuable methodological improvement with respect to the current EW-MFA aggregate indicators, as they overcome the asymmetry between the heterogeneous parts by which the indicators currently in use are produced (flows from nature and traded flows).

In order to derive such estimates, the environmental-economic accounting framework is fully exploited: the link between direct and indirect demand for raw materials on the one hand, and the final use of products on the other hand, is established through Leontief's inter-industry interdependence model.

The paper also proposes an in-depth analysis of the possible use of demand-based measures in the derivation of productivity indicators, focussing on resource productivity. In a policy setting where indirect flows are not neglected, raising carbon or resource productivity by transferring abroad of potential environmental burden is recognised as not being environmentally effective, i.e. as not leading to a reduction of pressures on a global scale. Moreover, we argue that the indicators used to measure productivity should use figures from National Accounts and from Environmental Satellite Accounts coherently.

Keywords: environmental accounts, trade and environment, resource productivity, raw material equivalents, vertically integrated products.
JEL: E01, F18, F64, Q56.

STATISTICAL METHODS IN ANALYSIS

ON ESTIMATING THRESHOLD VALUES IN SOLVING THE PROBLEM OF DATA CLASSIFICATION

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The paper contains a summary of results of original research of total aggregates, to be specific, solving the issues of statistical investigation of aggregate instability. The setting of the problem is to establish the groups' boundaries for classification of fuzzy and threshold aggregates using the method of mixture decomposition of probability distributions. The article presents the experience of breaking down real aggregate represented as a final mix of probability distributions on private aggregates. The issue of setting objective rules and criteria for finding threshold values, that will clearly identify the transitions from one qualitative condition of the phenomena to another, are solved. Threshold value determined by the boundaries of private aggregates will correspond to the occurrence size at the intersection of curves probability distributions, extracted from the mixture. The study used EM-algorithm to find maximum likelihood of parameters of probabilistic models, when a model depends on some hidden variables.

The proposed scheme of threshold aggregates identification has found practical application in the research of the population of Russian employees by level of accrued wages and can be used for establishing the optimal value of minimum monthly wages. It is recommended that such a value is to be set as a science-based minimum wage of employees in the Russian Federation. This will allow to bring out a part of the real wage from shadow sector and to give additional incentive for development of the economy.

The official data from the Federal State Statistics Service on average per capita income for a number of years was used.

Keywords: classification as a statistical method, threshold aggregates, a mixture of probability distributions.

JEL: C46, C65, J31.

METHODOLOGICAL APPROACHES TO STATISTICAL STUDY OF REGULATION OF BANKING SECTOR OF THE RUSSIAN ECONOMY

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The author offers methodological approaches to complex statistical analysis of the regulation mechanism of the Russia's banking sector amidst transition to Basel-3 standards. In line with the concept proposed by the author is carried out the analysis of the structure of liabilities and assets of banking system, included in the broadly defined money supply. Multiplicative index models were developed; quality dynamics assessment is

presented along with the influence factors have on the change of debt burden on the economy. The classification and comparative assessment of the behavior of leading Russian banks on the basis of indicators of their financial soundness were conducted using methods of multivariate analysis before the bank crisis of 2008 and the end of 2013.

International standards on statistics and bank supervision; legislative and information documents of the Bank of Russia and data from the Federal State Statistics Service were used as methodological basis for the research. The obtained results may be of some scientific interest and practical value for scientists and specialists involved in researching development issues of banking system of the Russian Federation in modern conditions.

Keywords: claims and liabilities of the banking system, coefficient of the debt burden on the economy, supply of money, adequacy of the capital, liquidity ratio, discriminant analysis.

JEL: G21, G28.

DIAGNOSTIC METHODOLOGY OF BANK'S FINANCIAL INSTABILITY

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This article is devoted to the issues of timely detection of negative trends in bank's operation on the basis of data from financial statements. The authors determined that revealing certain sequences of events in credit institutions activities (negative development scenarios) permits to reduce the risk of license withdrawal prediction error. A set of the most common negative scenarios was discovered and described by the authors.

Discovering such scenarios based on the financial statement data allows all interested parties to be proactive in preventing closing down of a credit institution at the initiative of the Bank of Russia or in protecting themselves from negative consequences of this event. The conclusions were confirmed by the mathematical modeling results using classification trees from CART methodology, which have never been applied before to predict license withdrawal.

Keywords: bank, revocation of a license, classification tree, CART.

JEL: C14, G21, G33.

RETROSPECTIVE ANALYSIS

MIGRATION OF POPULATION OF RUSSIA - DATA FROM THE 1970, 1979, 1989 SOVIET CENSUSES

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This article analyzes the internal migration of the population of Russia in the 70s and 80s of the last century. The study is based on data on regional population movements, as reflected in the official published materials

from the All-Union censuses of 1970, 1979, 1989. The basic flow and direction of migration are reviewed. Analysis of the migration was done with the help of cross-cutting indicators allowing to assess the dynamics of migration processes over a long period of time. Particular attention is paid to rural-urban internal migration, volumes, patterns and consequences of which so far have not been sufficiently studied.

It is revealed that in the 1980th there was a reduction of territorial mobility in both urban and rural population, compared with the 1970th. This was due to both demographic and social and economic factors. Indicators of relative performance that have not been used previously to assess the processes studied and their consequences were proposed and calculated. Were examined the inter-regional migration flows, marked various trends and the intensity of migration over the past two decades. The dynamics of the structure of migrants on the basis of length of residence in the place of permanent residence in the various regions is analyzed.

It is shown that the development and maintenance of the existing trends in the period, continues to have negative affect on the territorial redistribution of the population and regional social and economic development of the country. To ensure comparability of materials from the Soviet period censuses under review was used economic regionalization adopted at that time, along with that administrativeterritorial scale was brought up to uniform conditions.

Keywords: migration of the Russian population, population census and migration statistics, indicators of rural-urban internal migration rates , indicators of interregional migration flows, indicators of the structure of migrants on the basis of duration of living in places of permanent residence.

JEL: J11, J61.