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ABSTRACTS

***IV INTERNATIONAL
SCIENTIFIC CONFERENCE
Statistics of the XXI Century:
New Challenges, New Opportunities***

KYIV 2017

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Statistics of the XXI Century: New Challenges, New Opportunities.
Proceedings of the international scientific conference. Kyiv.: Taras
Shevchenko national university of Kyiv, 2017 – 72 p.

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MAIN ASPECTS OF THE FINANCIAL MARKETS SUSTAINABILITY ANALYSIS

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The development of modern Economics seeks an understanding of the causes of economic growth and identifying all factors that influence it. According to the *Global Competitiveness Report*, in 2016-2017 the *Global Competitiveness Index* of the Republic of Moldova decreased and Moldova has descended from 85 rank to 100 rank. One of the main reasons for descending was the decline in the level of the national financial market development to 129 rank and the state of the financial sectors that was defined as “under stress”, which determines the need for constant analysis of stability, soundness and efficiency of the national financial market.

Due to the complexity of financial markets and the risks related to them, the number of factors that may affect financial stability is very high. The selection of indicators and development of tools that enable timely recognition of the growth of vulnerabilities and potential risks is therefore one of the most important task for macro prudential policy.

One of the most recognized set of *Financial Soundness Indicators* was developed by the IMF. *Datasets and indicators for the financial stability* were developed by the ECB. *Financial systemic stress index* was elaborated by the Bank of Greece. NEF has developed *Financial System Resilience Index*. In 2015, the IFC provided sets of indicators to support the monetary and financial stability analysis: data sources and statistical methodologies. However, many of the above methodologies have the disadvantage of autonomous analysis of indicators that characterize individual financial sectors and their participants. While practice shows that, in times of crisis, some financial sectors or market participants can take on partial performance of the functions of others, reducing the negative consequences for the financial market, or vice versa, a slight

worsening in the performance of some market participants can initiate serious problems for others, increasing thus, the negative impact of the crisis. The present study is about the prospects for the development of integrated indicators and methodologies, allowing assessing the entire complex of financial market characteristics in their mutual influence.

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UKRAINIAN FOREIGN TRADE FORECASTING

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A foreign trade takes an important place in the economic system of each country. Successful foreign trade provides an increase of the inflow of foreign currency and respectively the increase of foreign exchange reserves. The negative balance in a foreign trade conversely leads to the decreasing of foreign exchange reserves and can affect negatively on the economic growth of the country. The qualitative forecasting of the foreign trade plays an important role in the planning and the development strategy of economic processes in the country. Therefore its prediction for the future can improve the foreign investment strategy of the country and its planning of external borrowing. Therefore our main purpose is to compare several forecasting methods of Ukrainian foreign trade and find the approach to its forecasting based on considered methods for 2016. The point and the interval forecasts with p-level 0,05 for these indices are computed based on its initial quarterly data in 2005-2015 taken from the official site of the State Statistics Service of Ukraine.

The simplest method for Ukrainian foreign trade prediction is based on the linear trend. Moreover this method provides the smallest length of the prediction confidence intervals. We can use this approach just for the import of services because linear trend models for other indices describe less than 50% of their variation. And even in this case

our forecasts are far away from real values of import of services in 2016. This is because the corresponding linear trend describes just 51% of this index variation. Linear trends for trend components of the considered indices of Ukrainian foreign trade have tendency to increase. And this is the second negative side of such forecasting because economical processes have cycling nature in general.

The parabolic trend describes better the development of time series. It is essentially better for considered Ukrainian foreign trade indices. But confidence intervals of forecast are rather large and the second negative side of the previous method remains. The tendency of decreasing is observed in parabolic trends of export from Ukraine in total, export of goods and export of services, import to Ukraine in total, import of goods and import of services in 2016.

Smoothing improves the initial data for consequent analysis. The Holt-Winters exponential smoothing is explored in this paper. We can conclude that this method is better than the previous one for short time prediction taking into account the length of confidence intervals. These intervals are smaller for the first and the second quarter for the Holt-Winters exponential smoothing and for the third and the fourth quarter of 2016 for the parabolic trend.

The ARIMA models method gives us the most precise equation of processes development. We can then state that received by this method forecasts should be the best. But the problem is that the confidence intervals received by this method are rather large and large than the respective intervals for Holt-Winters exponential smoothing method starting from the second quarter. The behavior of the length of confidence intervals of this method is similar to the Holt-Winters exponential smoothing comparing with the parabolic trend. These intervals are smaller for the first and the second quarter for the ARIMA models method and for the third and the fourth quarter of 2016 for the parabolic trend.

To summarize we can propose the next approach of Ukrainian foreign trade forecasting. The best forecast is one based on the linear trend if the corresponding to this trend determination coefficient is rather large (for example, greater than 0,7). Otherwise one can use parabolic trend method when the corresponding determination coefficient is essentially larger that for linear trend and is also large

enough. Forecasts constructed on the Holt-Winters exponential smoothing or ARIMA models method are useful for short time prediction. One should compare forecasting intervals of the parabolic trend, the Holt-Winters exponential smoothing and ARIMA models methods for long time prediction. The main attention in such comparing should be focused on the confidence intervals obtained by the ARIMA models method.

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MODELING ECONOMIC GROWTH IN IRELAND AND IN SPAIN USING TECM APPROACH

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While analyzing economic processes a decision is to be made which test is the most appropriate to ensure the need of a threshold model application. It is particularly important when economic growth is analyzed. The aim of the paper is (1) to compare the results of Enders and Siklos test and Tsay test and (2) to estimate threshold error correction models (TECM) in application to economic growth in Ireland and in Spain. We focus on the historical growth process which was induced by different economic forces. In Ireland a three party consensus was the primary cause that was followed by building economic and social institutions, foreign direct investments, income coming from the European Union as well as developing innovations. On the contrary in Spain the comparatively centralized enforcement mechanisms induced economic growth. Having different mechanism

of growth we focus on what we call “a heterogeneous result”. “The heterogeneous result” occurs when different causes produce the same effect. It corresponds with Zielinski’s sufficient vector of causes. Economic growth can be forced by different causes basing on different initial conditions including both resources and institutions. We agree with the hypothesis formulated by North in 1989 that institutional differences produce economic consequences. Our research is based on modeling growth using threshold models (particularly TECM model) and testing for thresholds and asymmetry using two alternative testing approaches: Enders and Siklos test and Tsay test. The first one is originally based on difference of adjustment to the long run and the second one corresponds to variance and covariance matrix. It is originally projected for multivariate approach. We modified the procedure of Enders and Siklos using other the ECM and Δ ECM threshold variables and producing the models that were fitted to the factors and institutions that determined the growth in the observed period of time. The choice of Ireland comes from the fact that it became a very fast developing economy and managed to overcome from a periphery to the core. It seems that Spain did not manage to do the same but it also generated a spectacular growth particularly in the mid of 80s. It is worth noting that the initial level of GDP was higher in Spain on comparison to Ireland which is partly confirmed by the initial results. The yearly data since 1980 till 2015, using GNP in case of Ireland and GDP in case of Spain are a subject of analysis. Then we compared the determinants, test results and comment on differences between the two compared economies.

Keywords: economic growth, Ireland, Spain, Threshold Error Correction Model (TECM)

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ESTIMATION OF EFFICIENCY ENSURING ECOLOGICAL SAFETY MECHANISMS

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The problem of ecological safety takes priority problems of economic development. Therefore there is a need to develop mechanisms to ensure ecological safety and assess their effectiveness, taking into account the basic principles of sustainable development strategies.

Now, the construction of this mechanism involves structural and functional elements of the system (society, economy, nature) and relationships among them:

- socio-economic (human, society and production);
- social and ecological (human, society and the natural environment);
- ecological and economical (economy and environment).

The effectiveness of ecological safety functioning means balancing the interests of these groups. Thus, to achieve high economic efficiency from the standpoint of economic entities does not mean increasing the efficiency of regional economy as a whole because it causes high consumption of natural resources and increased pollution.

Thus, an effective mechanism to ensure ecological safety is based on the principle of rationalization of economic activity on the environment. This provides for creation an economic model that would minimize the total cost of economic actors and society to industrial and environmental activities.

The mechanism implementation is possible under the following conditions:

- setting the boundaries of natural resources consumption and environmental pollution;

➤ obtaining natural resources valuation, taking into account environmental costs of renewable reproduction and substitution of non-renewable resources;

➤ economic system provides efficiency of each unit of natural resources;

➤ awareness of social responsibility for the implementation of environmental policy.

The advantage of this approach is practical flexibility using at industrial complexes, industries, regions and country. Evaluating the mechanism effectiveness involves the system of quantitative and qualitative indicators in these areas.

These figures relate to the important ecological and economic processes as welfare and quality of life (indicators of income, health, life expectancy, education, etc.); reduction in absolute and relative terms of natural resources in production; increased use of substitutes for non-renewable resource, that objectively evaluate the effectiveness of the mechanism.



MONITORING OF SUSTAINABLE DEVELOPMENT GOALS IN UKRAINE: HEALTH TOPICS

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In 2015 193 **member state** of the UN formally accepted a new program in sustainable development, entitled «Transforming our world: the 2030 Agenda for Sustainable Development».

UN member states agreed on 17 sustainable development goals till 2030 and 169 targets for monitoring the achievement of which were agreed the relevant indicators. Almost all of the sustainable development goals (SDGs) directly related to health or indirectly contribute to the improvement of health. One of the goals (SDG 3) invoke «ensure healthy lifestyle and promote the well-being for all at

all ages». Its 13 targets focus on combating non-communicable diseases and ensuring universal coverage of health services.

After a wide consultation process by the World Health Organization (WHO) has developed a list of basic health indicators proposed to monitor achievements of sustainable development.

One of the objectives for achieving SDG 3 is to reduce to 2030 by one third of premature mortality from non-communicable diseases by prevention and treatment, and support the mental health and well-being. The level of achievement of objectives is defined by the following indicators: mortality from cardiovascular disease, cancer, diabetes, chronic respiratory diseases; deaths from suicide.

Cardiovascular diseases (CVDs) are first among non-communicable diseases in Ukraine, causing a third of the causes of disability and nearly two-thirds of deaths. Every year from CVDs dies more than 426 thousand Ukrainian (67,3%), i.e on average every day – more than one thousand. This indicator is one of the highest in Europe, so the reduction of premature mortality from non-communicable diseases in Ukraine is very important.

The epidemic of non-communicable diseases causes considerable social costs, major economic loss, slows progress towards the strategic goals of human development.

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STATISTICAL ESTIMATION OF THE QUALITY OF INFORMATION OF STATE MANAGEMENT

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Development of managerial decisions as on the micro so on the macro levels demands from the manager to solve several tasks. These tasks are not only making the plan, determining the interim level of indices, supervising the phased realization of the plan.

The main problems which should be solved are: (1) the formation of the system of indices, the control of their achievement should be carried on during the whole planned period, (2) determining the criterion as to the size of deviation of the factual levels of indices from the planned, the excess of which demands the correction of the plan.

Their solution requires using the appropriate statistical approaches and methods. In particular, the formed system of indices, which is the informational basis of management, must meet the criteria of the quality of the statistical information.

At present the unsolved problem is lack of the generally accepted scientific approach to the estimation of the quality of information. We think that the most objectively is to use as such estimation the correspondence of the information to the criterion of relevance.

That means that informational basis is formed for solving the certain concrete task. In connection with this the manager must determine just such indices which are necessary at the stage of development of the plan and at the stage of controlling its fulfillment.

Taking into account only the information in the reports which are given by the entrepreneurs and state structures, and which is summarized by the State Statistics Service of Ukraine and ministries, not always may be reasonable.

The set, necessary for management, indices must be optimal, it means that it must contain only those indices, which will be enough for solving the tasks which were put. This demand can be very easily observed if for the formation of such set to use the basic statistical methods of generalization of information, in particular – the methods of cluster and correlation analysis. Cluster analysis allows to join in clusters the indices, the level of which is determined by the influence of one (or several interconnected) factor. The calculation of pair indices of correlation for the factors of each cluster allows to choose among them one, which is the most substantial. Such approach gives the possibility to reduce the number of indices necessary for management by 30% - 40%, in comparison with those, which are offered by the existing statistical reports. And at the same time without losses of relevance.

Formed in such way informational basis of management will be more qualitative in comparison with the one which is used now by the bodies of state management. The proposed approach to its formation will raise the efficiency of state management, that will allow to solve the tasks of improving the well-being of people with less expenses.

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INDEX ANALYSIS OF MORTALITY

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Demography has large number of indicators for research of different processes. Though some of them are used frequently and other seldom. The latter include the index method.

Demographic processes are affected by three factors: extensive, intensive and structural. All of these factors are related, they have impact on each other, which reflects on final result.

So, change in the number of deceased is affected by the following factors:

- change of total population (the larger the population, the larger number deceased);
- change in the structure of population by age (the older population is, the larger is the number of deceased);
- change of the intensity of the extinction in each age group.

From year to year the impact of each factor varies, which is reflected on the overall change of number of the deceased. That is, if we have the distribution of population by age and the distribution of deaths by age, we can define a separate influence of change of the number of population, change of the age structure and change of the intensity of extinction on the result, which, in this case, is the number of deceased.

It should be noted that the impact of these factors may be unidirectional or multidirectional, which leads to mutual compensation. In addition, the factor may change the direction of the impact over time.

In the scope of the work it was researched the effect of these three factors on annual change of the number of deceased women and men from 1897 till 2013. As information base for calculations it were used long-term demographic time series, reconstruction of which was

made by O. Rudnitsky (Ptoukha Institute for Demography and Social Studies of the National Academy of Sciences of Ukraine).

The average number of women in 2013 was 24 368.8 thousand, and in 1897 - 14 480.1 thousand. At the same time in 2013 died 337.7 thousands of women, and in 1897 – 415.3 thousand. During this period, the increase in the number of women and the change of age structure (aging) resulted in increase of the number of deceased, and the change in age of the intensity of mortality – reduced the number of deceased women.

As for men, their average annual number in 2013 and 1897 were respectively 20 940.5 thousand and 14 649.8 thousand, and the number of deceased – 324.7 thousand and 445.1 thousand. But the impact factors for men are the opposite: change of their number and age structure resulted in decrease of the number of deceased, and change of age mortality – on increase of the number of dead men. This seemingly paradoxical result are explained by high men mortality during social cataclysms, especially wars.

This data is a generalization for a long historical period, but in different years the influence of factors were different.

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MODERN TRENDS IN STATISTICAL FORMATION UKRAINE

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In the modern world statistical education is one of the top priorities of the future education, which declared by the world's leading institutions, including the UN. Active development of statistical methods to ensure the analysis feasibility of policy validity is carried out by all developed countries. The development of statistics as a science in different countries takes into account peculiarities of national economies. However, to ensure consistency of statistical data

statistics is harmonized with international standards. In the field of education such standards is the International Standard Classification of Education adopted by the General Conference of the UN Commission on Education, Science and Culture.

In 2014 Ukraine started the reform of higher education. At one stage of reform major (speciality) of "Applied Statistics" was assigned to the field of knowledge "Social and Behavioral Sciences", specialty Economics.

The classification change of specialties (majors) led to the scope limitation of "Applied Statistics" exclusively with economic processes. According to international practice Applied Statistics is a universal science because its methods are used in all aspects of life: social, political, economic, business studies, demographic, environmental processes, public administration and in applied science researches, particularly in medicine, biology, geology, anthropology, criminology.

If the task Applied Statistics would be limited only to service the economic sphere, most of the ministries, departments, services, organizations, and academic institutions left without information support. Not to mention the work of official statistics agency - State Statistics Service. Considering that social processes become more complicated in years their monitoring requires serious improvement of existing and development of new statistical survey procedures especially in terms of harmonization of national and international databases.

In world practice, statistical methods are developed not only within the Applied, but also Mathematical Statistics. However, unlike the Applied, Mathematical Statistics does not have a significant part of the methods, which are essential to investigate, analyze and evaluate mass phenomena and processes in all areas of public life. A separate line of work - specific tools development of statistical analysis that can not be ensured exclusively via Mathematical training.

Rushing reform of education classification in Ukraine has caused problems from the beginning of its implementation. At the present stage of educational reform is advisable to study foreign experience of education reform, mainly in Eastern Europe, which had

similar problems and take into account achievements of national statistical school.

The critical analysis of educational classifications among the countries of the world allows us to offer amendments in the educational classification and its standards.

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EUROPEAN NEIGHBOURHOOD POLICY: PENSIONS IN NATIONAL ACCOUNTS OF EU AND UKRAINE

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The international statistical standards, the System of National Accounts (2008 SNA) and European System of National and Regional Accounts 2010 (ESA 2010) have recently been updated in order to keep up with new social and economic developments. One of focus of ESA 2010 is the enhanced reporting on pensions. The newly developed framework of a supplementary pension table on accrued-to-date pension entitlements is in particular important in the context of an ageing society where comprehensive information on pensions is indispensable. It should be noted, that Ukraine publications do not always follow the format of the data European Commission. Database EU has reliable and internationally comparable statistics on public and mandatory and voluntary pensions.

The Ukraine reporting system on age related expenditure is multifaceted. While national accountants focus on already earned pension entitlements, the statistics are analyze the impact of ageing on Ukraine societies from in a wider angle. The statistical research brings together estimates even for entitlements being accrued in the future, including expenditure on health care and long-term care, pointing at the long-term sustainability of public finances.

At the same time, it should be noted that the results of actuarial calculations on pension entitlements depend to a large extent on the underlying assumptions. Therefore, a harmonised and coordinated approach is essential for ensuring comparable results and the key assumptions will be regularly reviewed by statisticians and experts working on ageing populations in order to maintain consistency and cross-country comparability.

The author offers recommendations concerning the improvement of statistical support for management of Pension funds by expanding sources of primary information on social insurance for drawing up auxiliary accounts of social security. These recommendations have been developed in order to serve a growing need for pensions indicators.

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TOURISM SATELLITE ACCOUNT: METHODOLOGICAL FRAMEWORK

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Tourism today plays an important role in any society than the predetermined importance of research in this area. Of particular importance is the implementation of effective policies in the field of tourism, one of the instruments which the organizing satellite accounts. They allow detailed study of the role and importance of the tourism industry in the national economy, to determine the main levers of influence.

Satellite accounts - additional national accounts, containing scientific information (physical quantity) and complementary economic information of national accounts. They cover all economic

activities related with tourism, which is included in the national accounts, but not identified as tourism. This activity is determined and combined in a separate account, that account, which is a Satellite of National Accounts.

The Tourism Satellite Account (TSA) is a standard statistical framework and the main tool for the economic measurement of tourism.

The Tourism Satellite Account: Recommended Methodological Framework 2008 (also known as the TSA: RMF 2008) provides the updated common conceptual framework for constructing a TSA. It adopts the basic system of concepts, classifications, definitions, tables and aggregates of the System of National Accounts, the international standard for a systematic summary of national economic activity, from a functional perspective.

The TSA thus allows for the harmonization and reconciliation of tourism statistics from an economic (National Accounts) perspective. This enables the generation of tourism economic data (such as Tourism Direct GDP) that is comparable with other economic statistics. Exactly how the TSA does this relates to the SNA logic of contrasting data from the demand-side (the acquisition of goods and services by visitors while on a tourism trip) with data from the supply-side of the economy (the value of goods and services produced by industries in response to visitor expenditure).

The TSA can be seen as a set of 10 summary tables, each with their underlying data: (1) inbound, domestic tourism and outbound tourism expenditure; (2) internal tourism expenditure; (3) production accounts of tourism industries; (4) the Gross Value Added (GVA) and Gross Domestic Product (GDP) attributable to tourism; (5) employment; (6) investment; (7) government consumption; (8) non-monetary indicators.

TSA data provides a better understanding of the place of tourism in an economy and enables a range of economic analysis. For example, it becomes possible to apply economic modeling techniques (like Input-Output analysis) to TSA data in order to estimate the indirect and induced effects of tourism in an economy.

Note that System of Tourism Statistics should be embedded in the National Statistical System, providing of reliable, consistent and

appropriate statistical information on the socio-economic aspects related to tourism, integrated within the economic and social statistics related to other fields and at different territorial levels.

Based on TSA system can be built with central performance indicator - the volume of tourism activity (the set of goods and paid services related to the activities of the tourism industry). With such a system indicator of in-depth study of tourism as an economic phenomenon that in the light of additional sources of demand for goods and services by tourists.

In general, we note that the practice of satellite accounts can more accurately determine the amount of tourism income and expenses, but requires adaptation to the specific conditions of the country where they are introduced. Of course, any country has its own characteristics that need adjustment, but the satellite accounts are a general methodological basis for a detailed study of tourism and determination of its contribution to the economy.

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BUSINESS STATISTICS: POTENTIAL OF BUREAU OF CREDIT HISTORIES

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Bureau of credit histories (BCH) is an important infrastructure institution of modern credit markets. It performs the important function of reducing the risk of asymmetric information in credit relations. Bureaus are functioning in almost all countries where credit markets present. Consumer lending is impossible without an analysis of the borrower`s credit history. In Ukraine, credit history bureaus have been developing since 2005. In Ukrainian State Unified Register there are 7 bureaus from which 3 are identified by the National Bank of Ukraine as qualification ones. To date, any borrower physical

person has credit history which present at least in one of the qualification bureaus.

Modern BCHs contain Big Data on various characteristics of borrowers. The data is updated regularly, which makes them very relevant. Statistical analysis of the credit bureau data has a huge potential for application in the credit business. First, it allows using descriptive statistics to display various parameters of the credit market and its segments. In addition, on this basis, it is possible to construct a meaningful comparative analysis. Secondly, probability distributions constructed on the basis of statistics can be used in the development of credit business models. For example, the statistics of overdue loans allows calculating the effective interest rate, which include premium for risk of default. Thirdly, the statistical data of the bureau allows us to find the interdependencies between different indicators of lending. Fourth, time analysis allows to use trend models and to develop forecasting in the credit market. Fifthly, statistics allows constructing and using of various indices.

The use of statistical analysis based on credit bureau data can be structured as follows:

- 1) Statistical analysis of the credit market as a whole.
- 2) Statistical analysis of market segments and comparative analysis of segments.
- 3) Statistical analysis of the parameters of individual creditors and comparative analysis.

Statistical analysis of the market as a whole makes it possible to calculate the average values of various market parameters and their dynamics. For example, the important parameters are the average loan size, the average percentage of borrowers with negative credit history, the average number of loans which borrowers have and many others. The definition of a set of significant parameters and the formation of their statistical estimates allows the BCH to form a benchmarking model. The essence of BCH's benchmarking is used to measure performance of credit market using a specific indicators. The comparing statistical values from some segment of the market with whole market's statistical value is very effective benchmarking application.

Statistical analysis of concrete market segments, as a rule, includes its application to various segments of credit market. For example, a segment of mortgage loans, car loans, payday loans, etc. As a result, a characteristic of the credit risk in each segment can be obtained.

Statistical analysis of the parameters of individual creditors includes the formation of a certain set of indicators on which analysis is carried out, as a rule, in dynamics. For example, it may be the percentage representation of the geographic distribution of borrowers, the distribution of the amount of loans requested, and much more. The comparison these values with values from benchmark are very substantial for understanding effectiveness of creditor activity.

The results of statistical analysis of BCH find effective application in the models of credit risk management, marketing and business development of market participants.

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TECHNIQUES OF STATISTICAL ESTIMATION OF THE INVESTMENT ATTRACTIVENESS OF REGIONS

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Nowadays there is no universal techniques of statistical estimation of the investment attractiveness of the regions, which would allow to evaluate a large number of factors that affect the investment environment and take into account the regional differences.

Generalization of methodical approaches to assessing the investment attractiveness of the regions allowed to systematize and group as follows: based on the generalized statistical indicators, expert, rating and based on the apparatus of fuzzy logic (FUZZY-technology).

Comparative characteristics of existing techniques of

evaluation the investment attractiveness of countries and regions showed that their main differences are related to different selection criteria factors, input parameters, algorithms, their grouping and the number of groups used statistical indicators. The most acceptable is the approach to drafting international rating of investment attractiveness of countries, developed by United Nations Conference on Trade and Development (UNCTAD).

UNCTAD is a global center of excellence, deals with issues related to investment and business development in the United Nations. The conference is based on 35-year experience and international expertise in matters of research and analytical work, policy development and multinational agreements, and provides technical assistance to developing countries.

Methodical approaches and methodology of compiling international rating of investment attractiveness of countries, developed by UNCTAD, based on the use of index analysis.

This estimation involves forming ranks of the countries for following indexes: Inward FDI Performance Index; Inward FDI Potential Index; Outward FDI Performance Index; FDI Contribution Index.

The author adapted the international technique of calculating the regional indexes capacity and efficiency of investment, designed by UNCTAD, to the specific formation of the regional investment market in Ukraine.

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STATISTICAL ANALYSIS OF TRENDS AND FACTORS IN CANCER INCIDENCE OF WOMEN IN UKRAINE

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The paper analyzes the dynamics of cancer of the reproductive organs found in Ukrainian women and their survival in the context of radiation effects of the Chernobyl nuclear power plant. Over the past 25 years not only increased relapse rate but also reduced six times the interval between the first and second diagnosis of cancer of the reproductive organs. So, if during the 1981-2008 biennium. Between the first and second detection of cancer lasted more than 11 years, after 2008 and until now it has decreased to an average of 2 years. With the endowment, found that the chance to live the next 3 years after 8.5 years after diagnosis of the first cancer to 2008 was .959, and after 2008, only 0.562. Also, there is a more aggressive course of the disease of breast cancer among women who received radiation during the Chernobyl accident at the age of 30 years. With probability $p = 0.000798$ shown that factors of survival of patients before and after 30 years are fundamentally different, which is the subject of a separate study. One can not argue that the age of patients at the time of the Chernobyl accident affects their survival, as described in the scientific literature. Developmental sign stands criterion formation of two clusters of women for survival, and statistical significance only confirms the hypothesis that the causal factors of differentiation survival of the two groups of women are fundamentally different nature.

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ACTIVE AGEING IN UKRAINE: IN THE VIEW OF STATISTICAL EVALUATION AND COMPARISON ANALYSIS

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Acceleration of demographic ageing actualizes the most comprehensive application of the older people's potential in economic and social development. To reach this goal creating conditions for active ageing, namely the capacity to maintain health, social participation and human protection in ageing process is a must. Assessment of the extent to which older people can participate in social and economic activities, social life and live independently, Active Ageing Index is used.

The index covers a wide range of areas of life and includes 22 indicators grouped into four blocks (they correspond to 4 sub-indexes): "Employment", "Participation in Society", "Independent, Healthy and Secured Life", "Capacity and Enabling Environment for Active Ageing".

We developed Active Ageing Index for Ukraine based on original methodology adapted to peculiarities of the national information and statistical base. Ukraine has not monitored all statistical indicators provided by the original methodology. As for the other components we proposed comparable indicators and substitutes which are similar to the components used in the Active Ageing Index calculations and generally reflect the valued components of active ageing.

Calculated sub-indexes and Active Ageing Index we compared with similar indicators a number of n EU countries. Estimation shows

that such components of the Active Ageing Index as "Independent, Healthy and Secured Life" and "Participation in Society" in Ukraine demonstrate the most significant gap. Values for components "Employment" and "Capacity and Enabling Environment for Active Ageing" demonstrate both Ukrainian achievements and potential areas for improvement.

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MODEL OF DATA GATHERING FROM SMALL AND MEDIUM ENTERPRISES SUBJECTS

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One of the important issues in the field of business statistics data manipulation on the micro-level is acquisition of this data from the subjects of entrepreneurship.

The part of information is gathered by the checking (fiscal) bodies which are challenged to compose statistical reports on the level of the state. But statistical data of the macro economical level do not allow to estimate and compose the forecast and recommendations for a certain subject of entrepreneurship.

This data is not published separately in the open sources and it might be received only on permission of the corresponding entrepreneurship subject manager.

To estimate this issue it is necessary to understand, that for any entrepreneur any data performances are temporary expenses, as far as he needs time for making a decision about performing this data and he also needs time for data performance as such and for recognition the risks of possible negative results – that the information performed would be available to the third part and it might negatively impact the entrepreneur's activity. At that, the profit of the statistic researching of the entrepreneurship subject is not obvious at once.

It is proposed to define the following data groups to be requested from entrepreneurship subjects:

1. The data is received and it is handed to the checking bodies to be controlled.
2. The data is received and it might be checked by the proper bodies.
3. The data is received but it is not checked.
4. The data is not received.

To increase the value of the research from the point of view of the entrepreneur it is very important to perform not just research results but also those materials which might be used by the representatives of the researched entrepreneurship subject.

Groups created after the data acquisition: 1. Visualization of the entrepreneur's activity. 2. Activity forecast. 3. The system of the internal indicators and their estimation. 4. The system of the internal indicators improving.

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COMPETITIVE PROFILE OF UKRAINE IN THE INTERNATIONAL ENERGY RANKINGS

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Energy is a major resource for the growth of the economy and for ensuring social welfare of the population. Achieving national economic competitiveness is increasingly dependent on supply of energy resources and on the place on the world energy market. In the coming decades, experts predict growth in demand for energy. According to the new policies scenario, by 2035, the energy demand will increase by about 35%, and 60% of growth will fall on China, India and the Middle East. In significantly lesser extent energy consumption is expected to increase in developed countries. In the

whole world, coal consumption will grow the least (13%), and mostly by renewable energy (87%). Fossil energy sources will continue to dominate in the energy balance.

Globalisation processes that generate an association of countries, the emergence of diverse international organisations, economic integration and, as a consequence - the convergence of national interests of states, leading to the declaration of common strategic objectives. In the energy sector, the main goals are the safe and sustainable satisfaction of demand while reducing the environmental impact and cost of resources itself as well as processing and transportation costs.

Sustainable energy policy is only possible through balancing three dimensions: a high level of environmental sustainability, energy security and affordability of energy - energy trilemma. This index characterises the energy profile of the country, indicating the key disadvantages and risks of energy policy.

Ukraine is at 63 place in this rating. Competitive advantage, according to the ranking, is energy security - 28th place, Ukraine's weak position is an environmental component - 108 place (in 2015 - 111). Energy effectiveness of Ukraine is constrained by a significant proportion of imported fuel, including natural gas and oil. In terms of environmental factors - the high intensity of CO₂ emissions, which is driven by outdated cleaning technology in the industry sector, particularly in heavy industry. Energy infrastructure, which requires significant investments for its modernization is also a limiting factor. A diversification of energy sources is a positive trend, which is associated with the rejection of Russian gas through Ukrainian increase production of oil and gas and nuclear energy development.

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**ON THE PROBLEM OF ADAPTATION INTERNATIONAL
EXPERIENCE POPULATION AND HOUSING CENSUSES
BY ALTERNATIVE METHODS
AT UKRAINIAN CONDITIONS**

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The article shows that the population censuses by new alternative methods, is the result of searching for "information returns" census and reduce their carrying costs. Weak interest of Ukrainian researchers has led to a backlog of development of the national scientific and practical ideas at the sphere of population statistics. While the study of modern society requires upgrading existing census methods and ways to collect information about the population. The article defines concepts such as "alternative" and "traditional" methods, based on the census of the two selected criteria. To it referred change the data source and disclaimed from some criteria census (simultaneity, universality). In turn, this has allowed to classify the variety of specific features of the modern census methodology in different countries and to assess the rate of spread of alternative census methods around the world. The paper also delineated the concept of "census method" and "ways of collecting census information", which are interrelated but not equivalent. This approach allowed a clearer approach to the classification of census methods. While at the same time highlight important trends in the development of methods of collecting census data, offer advice on the adaptation of international experience in the Ukrainian conditions.

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REFORMING OF THE INTERNATIONAL INVESTMENT REGIME

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The international investment regime existing today has been a reason behind the growing discontent from the countries engaged in investment activities. This causes the reform of investment regime at international and regional level, in order to bring it in conformity with the contemporary strategic goals of all the stakeholders.

Objectives that need to be dealt with now are as follows:

1. Simplify the investment procedures. While at national level many countries have created systems to attract and simplify investment procedures, the effort is by far concerned with investment attraction (investment preferences) rather than simplification of investment procedures (to simplify the investment process). Most part of International Investment Agreements (IIAs) does not have effective provisions on these matters.

2. Set up guarantees of responsible investing. Although foreign investment has positive effects for the host country performance in a number of areas, it may have negative effects in areas like environment, health care, labor protection, human rights or other social benefits. IIAs do not tend to specify investors' obligations in exchange for the protection that they enjoy. Potential areas of the reform deal with the inclusion of provisions in IIAs to prevent from downgrading the standards in environmental or social spheres, to oblige investors to keep to the requirements of domestic laws or to increase the social responsibility of corporations.

3. Increase the internal cohesion of IIA system, to have it strengthened and organized.

UNCTAD, in turn, has already proposed the global package of actions on simplification of procedures for investing, including policy options to assure the effectiveness of administrative procedures and better predictability of political situations. The package of actions

consists of 10 areas of actions and more than 40 decisions. It includes measures that can be implemented by countries unilaterally, and decisions that can guide international cooperation.

The effective effort in reforming international investment regime has to be an integral part of the broader investment policy system (including regulation, liberalization, protection and stimulation), aiming at maximizing investment benefits and minimizing any kind of by-side effects or externalities.

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PARAMETERS OF FISCAL SUPPORT OF MACRO-ECONOMIC STABILIZATION

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The implementation of the tax regulation mechanism depends on a significant number of interests and factors and is determined primarily by using appropriate macro-financial indicators that are necessary to ensure an adequate comprehensive assessment of the conditions of making managerial decisions, carrying out the preliminary analysis of their consequences and the selection of optimal scenarios to achieve the strategic goals. The choice of macro-

financial indicators secures government regulation effectiveness and managing the potential risks of macro-economic stabilization.

The need for performance indicators occurs at the time of current status assessment and economics trend identification. Since management is a continuous cyclic process actually the indicators are used twice in a single cycle: in the process of assessing the situation to create an action plan and in the assessment of the effects of these measures implementation.

The combination of indicators with control process is achieved by presenting it as a classical model of forecasting management cycle - planning - performance organization -control and analysis. As for the macro-level stabilization the gross domestic product (GDP), the individual components of the macroeconomic indicator itself (aggregate demand, state procurements, gross investments, net exports) or regional indicators of the gross regional product (GRP), depending on the purpose of analysis are chosen as a resulting index.

However, at the macro level the division of financial indicators by analysis directions into the indicators of efficiency, security and stability is quite rare. That is why various scholars have different views on certain indicator referring to a particular classification group.

The necessary conditions of obligation performance at the macro-level include keeping the formation base of public finances revenue, relative stability and cost efficiency. The implementation of these tasks is provided by the indicators of fiscal sustainability and the second - monetary. Herewith, tax field indicators are also included into the group of macro-financial stability as a part of the revenue structure. In terms of macro-financial stability as strategic analysis the macroeconomic category of tax burden is considered, as well as its effectiveness and impact on macro-indicator changes.

In general, tax burden shows income share that residents pay to the budget in the form of taxes and non-tax payments. There are several methods for calculating this indicator, depending on the specific objective and available resources. The tax rate is an indicator of the efficiency of tax burden formation. The indicator reflects the ratio of the sum of all received taxes to the gross domestic product.

In terms of the analysis of macro-financial stability the ratio of tax revenues to the GDP gives sufficient grounds to form conclusions

about long-term trends of budget revenues and identify potential risks through trend analysis models. The relationship between the taxation level and macro-parameters of economic stabilization depends on evaluating the effectiveness of government revenues and expenditures, which asserts about the impact in the short term – the tax coefficient, but in the long – the tax burden.

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THE ESTIMATION OF DEMOGRAPHIC LOSSES IN UKRAINE DUE TO CANCER INCIDENCE

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Each historical epoch is characterized by a set of factors which regulates the number and structure of the population. Life expectancy of current mankind depends to a great extent on endogenous factors, diseases of non-infectious nature, namely cancer ones are among them. In Ukraine the main cause of women's mortality from cancer diseases is cancer of reproductive system organs. Besides direct losses of women, including fertility cohort, indirect losses occur – non-born children. In view of this, it is important to study the trend of cancer incidence of reproductive organs of women in Ukraine

In current structure of cancer diseases of women in Ukraine, breast cancer takes the first place (19.5%) which causes 20% mortality of all malignant growths. Reproductive organ cancer is among six mostly widely-spread nosological forms of women's cancer. However, the intensity of these diseases among Ukrainian women is almost the same as that in the post-soviet European countries and lower than in some industrialized European countries.

According to the data of the National cancer-registry of Ukraine, during the last 10 years the highest intensity of breast cancer and that of corpus uteri and cervix was observed among women of older than reproductive age (60-69 years old). At the same time in

2004-2014 age structure of malignant growths among reproductive female-population got worse slightly. For instance, in the structure of breast cancer incidence, the proportion of young and average-age groups (25-39 years old) increased by 4 p.p.; they have shown high birth activity in recent years. Women of an early age (15-19) and those of an early reproductive age (25-29) contributed to ovary cancer incidence, its indicator increasing by 3.7 p.p. Totally, in 2004-2014 the annual number of new incidents of reproductive organ cancer increased by 3.5%, and within the compared territory of Ukraine this indicator increased by 4% in 2003-2013, i.e., 0.39% annually. So, how big indirect demographic losses can be – the number of unborn children because of new cases of malignant growths among women of a reproductive age. To find the answer on this question, a multiple index model of hypothetical number of unborn children was built, taking into consideration cancer incidence of women at a reproductive age, their age-specific fertility rates and age structure. In 2004-2014 total hypothetical losses of child birth due to unrealized reproductive functions by cancer-sick women increased by 89.2. If to exclude women diagnosed with breast cancer whose reproductive ability can be restored after long-term sever therapy, the scope of hypothetical losses would be increased by 80.6%. However, such high growth rates are mostly associated with general tendency of age fertility increase, typical for all Ukrainian women (+62.9%); it is during the last 11 years that reproductive activity of women at the age of 30-40 has increased by two times. The change in the age structure of a women's reproductive cohort caused the increase of potential child-birth and also hypothetical losses (+2%). Primary cancer incidence of women at a reproductive age led to the increase of hypothetical losses by 11.8% in general, and with permanent loss of reproductive functions because of cancer of a reproductive system the number of unborn children increased by 8.7%. However, a mentioned index model enables to make rough estimation of hypothetical losses of child birth based on the statistics of the annual number of identified new cases of disease. Unfortunately, the lack of the information about age structure of all registered cancer-sick women of a reproductive age does not allow estimating a true number of unborn children. While estimating the losses of child birth, it is advisable to consider age survival probability

of the women with malignant growths of reproductive organs. Hence, the next step is to identify the survival parameters of cancer-sick women of a reproductive age.

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ESTIMATION OF THE FACTORS OF GROWTH IN THE SERVICE SECTOR

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The modern economy of Ukraine is characterized by increasing of the rates of production and sales of services. The influence of the service sector on the economy of the state is growing. The activity of the service sector is characterized by the specifics of service as an economic category, as well as the orientation of service enterprises in various economic activities. In a market economy, one of the patterns manifests itself - outstripping the development of the sphere of services in comparison with other types of economic activity, including the material sector of the economy.

Growth and development of the service sector is impossible without paid consumer demand. The incomes of households in Ukraine are critically low and provide the population with only the most necessary. More than half of the population lives below the poverty line and considers purchasing a certain product or paying for services with luxury.

In order to assess the dependence of household expenditures on the payment of services on the amount of income in 2015, the chain elasticity coefficient was calculated. The following conclusions were made:

- with the increase in household incomes, the share of expenses for payment of services increases;

- chain elasticity coefficients for all groups of households were greater than 0, but less than 1. This indicates that payment for services for the population of Ukraine is a priority item of the budget;

- the average coefficient of elasticity was 1.32%. Thus, with the increase in household incomes, the costs of paying for services increase. By the aggregate of household's payment for services is a luxury: since the elasticity ratio has exceeded 1 and indicates that for most households, the consumption of the full range of services is inaccessible due to insufficient income.

The development of the service sector is impossible without a general economic recovery. It should be accompanied by an increase in real household money income, an increase in investments in the economy and services, an increase in the level of public confidence in the state, and the establishment of just social guarantees.

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STATISTICAL EDUCATION AND STATISTICAL LITERACY

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The statistical vision of education opportunities trained professionals modernization, development and economic growth, and generated statistical tools, statistical methodology used in the study of economic processes at the micro - and macro levels and constantly improved. Most of the work of economists is to collect and analyze data about how markets operate. This work is carried out with great care and requires expert skills in the field of statistics. Once you encounter something variable and start asking how to measure this variability in the future, you will involve statistics and statistical parameters - such as the average price trend direction or dispersion.

Any statistics or any measure randomness can be recorded derivative financial derivative, and that can be traded. European integration, unprecedented growth and volume data sets necessary knowledge, changing the system of knowledge transfer, intense competition in the labor market, etc., require constant training of specialists..

Statistical literacy is a person's ability to understand the statistics, use it a basis for evaluating the characteristics of society, everyday life and make their decisions using her patterns. Statistical literacy is necessary for citizens to understand the material presented in such media as television, newspapers, books, the Internet and so on. The ability of human controlled amounts of information is a prerequisite to be statistically literate person. To be considered statistically literate person sometimes critical ability to understand personality using statistical tools to evaluate the relevance of the material and establish statistically reasonable approach to all aspects of life in general. It is considered literacy in the broader sense as understanding the human environment and its acceptance suspended reasonable action. World experience shows that literacy can increase odds employment and access to higher education. There are economic benefits for individuals, companies with which they worked, and Treasury, as well as the economy and the country as a whole, such as an increase in GDP. The experience of other countries, especially the EU and the US proved the relevance of spreading knowledge of statistics.

Call today to encourage dissemination of statistical knowledge among the general population, that it is expanding the boundaries of "official" statistics lifelong learning is considered as the main tool of professional and social adaptation of the individual in contemporary society. Lifelong Learning encompasses all purposeful learning, formal or informal, to increase knowledge, improve skills and competence. In this context, statistical literacy raises an important part of continuing education, including extracurricular after high school. Qualitatively higher education is the result of a statistical developing skills for self-education and lifelong learning.

In the traditional university education, the goal is to train future professionals with the principles of continuous education. You can make a sequence of climbing opportunities for result: competency →

education (awareness) of the person → competency based approach to training individuals (the result of statistical education) → actions by the person on the basis of statistical literacy → independence of the individual → lifelong learning → social and economic growth of the state.

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INDIRECT ESTIMATION OF DISABILITY ON THE BASE OF POLISH NATIONAL CENSUS 2011

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The main objective of the project is a multi-dimensional analysis and forecasting of the development of legal and biological disability in Poland on a regional basis using statistical data from the National Census of Population and Housing 2011 (in short NCP 2011) and indirect estimation for small domains and areas. The project will perform two additional goals of a source-finding and methodological nature. NCP 2011 was carried out for the first time in Poland with the use of administrative data sources and survey methodology and small domain statistics (small area estimation). Thus, it will be a first evaluation of these sources and a wide range of indirect estimation techniques in the study of people with disabilities.

Key words: indirect estimation, disability, small area statistics, National Census, administrative registers, calibration.

Project is financed by The National Science Centre (Narodowe Centrum Nauki) on the granted decision number DEC-2013/11/B/HS4/01472.

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BENCHMARKING OF SMALL AREA ESTIMATION OF DISABILITIES IN POLAND

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National Census in 2011 (NSP 2011) conducted in Poland for the first time using administrative registers and indirect estimation techniques. In the Polish 2011 census disability was one of the 10 major topics studied using a large sample. As the first stage of our works was generalization of the sample survey results. The sample survey results were generalized by the using of the calibration method. The second stage is the small area estimation. Our task is an evaluation of goodness of the both stages. The benchmark evaluation of the calibration estimation results is to determine the quality of the estimates made. Using an unconventional hierarchical clustering method, indirect estimation of the quality of calibration estimation for small areas (urban districts “counties”) was made.

Key words: indirect estimation, disability, small area statistics, benchmarking, internal benchmarking, administrative registers, calibration.

Project is financed by The National Science Centre (Narodowe Centrum Nauki) on the granted decision number DEC-2013/11/B/HS4/01472.

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VALUATION VALUE AND STRUCTURE OF GDP TAKING INTO ACCOUNT METHODOLOGY CHANGES IN SNA 2008

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The purpose of reviewing the SNA is to update the national accounting methodology to correspond to the current economy development level, methodological research progress, and user needs. Due to the changes in calculation of production, consumption and accumulation parameters, implementing an updating methodology will result in certain changes to the macroeconomic aggregates in the SNA, particularly the Gross Domestic Product (GDP).

The summarized effect of the methodological changes of the updated SNA-2008 international standard on the GDP components in Ukrainian statistical practice causes an increase or decrease of the nominal value of output, intermediary output, gross value added, and GDP disposition categories.

The change in the FISIM calculation method results in increased non-market output; increased intermediate consumption in separate types of economic activity combined with decreased total intermediate consumption due to exclusion of consumer loans FISIM; decreased gross added value of market producers; increased final consumption expenditures of the institutional sectors "Households", "General government" and "Non-profit institutions serving households"; increased GDP. The internal reference rate should be determined using the prevailing inter-bank borrowing and lending rates. Sometimes, such decisions result in a negative FISIM value.

The change in the insurance services valuation method results in an increased insurance output and a respective decrease in its intermediate consumption; it does not affect the GDP. According to SNA-2008, transactions between insurer and reinsurer should be reflected separately for insurance premiums payable to the insurer and those payable to the reinsurer. Therefore, insurance premiums are first reflected as payable to the insurer, and then a smaller portion thereof

is reflected as payable to the reinsurer (recording on gross basis). Services provided by the reinsurer are allocated to intermediate consumption of the direct insurer.

Including research and development products in gross aggregate results in a decreased intermediate consumption of these services by market producers, therefore decreasing the value added of the latter; as well as a decreased final consumption expenditures of the general government sector and an increased gross fixed capital formation; and an increased GDP.

Including weapons expenses in gross fixed capital formation decreases output and intermediate consumption, as well as final consumption expenses of the general government sector, while increasing gross aggregate respectively and therefore, having no effect on the GDP.

SNA-2008 and the sixth edition of the Balance of Payments Compilation recommend reflecting export and import exclusively on the basis of change of ownership; therefore, flows of goods between the owner country and the processing country should not be included in exports and imports of goods. A change in reflecting international trade in goods for processing results in a decreased intermediate consumption and output, as well as export and import, while having virtually no effect on the GDP.

SNA-2008 states that production in national accounts should include economic activity that is not directly observed, that is, not captured in regular statistical enquiries. Including illegal economic activities in production results in increased output, intermediate consumption and gross value added, as well as increased final consumption expenses of households, which results in increased GDP.

The change in calculating services of owner-occupied dwellings results in increased output, gross value added and final consumption expenses of households, and respectively, an increased GDP. Implementation of the methodological changes envisaged by the updated international standard SNA-2008 in the national accounts of Ukraine will be simultaneous with a retrospective review of production and income generation accounts data for the previous years, due to the implementation of new economic activity classification system of Ukraine.

THE USE OF XBRL (XML) TECHNOLOGY IN COLLECTING THE STATISTICAL DATA FROM BELGIAN COMPANIES MINISTRY OF ECONOMY OF BELGIUM

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As a result of the Copernicus reform the NSI(National Statistical Institute of Belgium) was converted into the Directorate General Statistics and Economic Information (DGSEI) and became one of the Directorates General of the Federal Public Service Economy, SMEs, Self-employed and Energy. With the new Statistics Act of 2006, the DGSEI became the key player in the statistical scene of Belgium.

This Act has established a modern framework for the collection, the production and the dissemination of high quality economic and statistical information.

Using the experience of Belgium National Bank (BNB) on collecting the companies' annual report ministry of economy of Belgium has adopted the decision in 2008 to atomize and offer on-line software for Belgium companies for filling company structural enquires in XBRL format.

What is XBRL?

XBRL (Extensible Business Reporting Language) is a freely available and global standard for exchanging business information. XBRL allows the expression of semantic meaning commonly required in business reporting. The language is XML-based and uses the XML syntax and related XML technologies such as XML Schema, XLink, XPath, and Namespaces. One use of XBRL is to define and exchange financial information, such as a financial statement. The XBRL Specification is developed and published by XBRL International, Inc. (XII).

Advantages of this approach:

Business statistical department can develop taxonomy independently from IT department;

XML format could be easily transformed to different Data management systems available at

XML format of data is widely representative for data exchange between different organizations;

Use of data in both XBRL format allows the Statistical department to use profiles for their forms with information filled in by enterprises early at the site of the National Bank of Belgium. This way enterprises do not have to fill in information, which was already filled for BNB.

The structural business statistics survey is closely connected to the annual accounts of enterprises. Since 2007 annual accounts must be compiled according to XBRL standards.

Re-using the National Bank's taxonomy will avoid double input.

After a few years of successful implementation of the XBRL approach for data collection on-line of structural enquiries, other, statistical forms were implemented using this technology.

Extensible Markup Language (XML) is a markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable. The W3C's XML 1.0 Specification and several other related specifications—all of them free open standards—define XML.

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COMPANY PROFITS EVALUATION USING MULTI-FACTOR ANALYSIS METHOD

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The aim of the study is modeling of the company profits dependency from determined factors, a full statistical analysis of the resulting model and receiving point and interval estimation,

determining the development prospects of the company, development of measures to improve its functioning.

The task was to study the processes that affects company profit and to implement the algorithm of multi-factor model construction as well as its research.

The "Trans-Auto" company was take as an example of research, the main purpose of the company is to provide transport services to enterprises, institutions, organizations and individuals. The subject is internal and international transportation of goods by road. The source of information is the official statistical statements for the period from the II quarter 2016 to I quarter 2017. The dependency of the company profits from the following factors is researched:

- the interest on balance received on the terms of temporarily free funds investment in an extra deposit account of company;

- increase the book value of company goods and services;

- the labor costs which is the reward that the owner or authorized body shall pay the employee for work done by the resident enterprise during the reporting period independent from whether there is evidence resident workers or residents. Remuneration is calculated based on the assessed amounts and includes actual and contingent social contributions;

- the tax charges that are an integral part of the expenditure of any business;

- the cost of goods and services;

- the insurance fees;

- the amortization, which has an inherent value in transport transit.

Dynamic factors analyzed, vector predictive values of these objects defined for the next period.

Multicollinearity factors tested by three statistical criteria, different types of multicollinearity relationships identified such as connections in general combination of factors, relationships between each factor and all other, paired factor relationships.

The unknown model parameters estimated by the method of Least Squares. The following statistical analysis was done: relative error of model was calculated, model standard error was calculated, model was tested for compliance with statistical data, statistical

conclusions were made, determination and correlation coefficients were estimated, significance of parameter estimates and selective correlation coefficient was tested, elasticity coefficient was estimated, special cases of stochastic component behavior was investigated (autocorrelation does not exist by Durbin-Watson criteria, company profit model remains were homoscedasticity by Goldfeld-Cvandt parametric test).

Summary. Point and interval forecasts profits of the company "Trans-Auto" received according to the calculated model. As a result predictive value of profits in the next period will be 14 189 thousand UAH.

The interval estimate of individual values was calculated, which is outside the base period. Projected change in income of between 9 672 thousand UAH to 18 706 thousand UAH is forecasted.

The boundaries of reliable intervals for mathematically expectation values of indicator was calculated. It was concluded that the average profit of the company "Trans-Auto" is estimated in the range of 13 285 thousand UAH to 15 093 thousand. UAH.

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STATISTICAL OPPORTUNITIES OF THE TARGET2- SECURITIES FOR “PAN-EUROPEAN DOMESTIC” SECURITIES SETTLEMENT MARKETPLACE

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Nowadays, lack of the Central Securities Depositories (CSDs) and reliable legal framework for safety net of clearing and settlements is suggests of underdeveloped and too risky financial market in our country. Waiting for attractions of foreign investments into the national economy expects are stock market traders of Ukraine, such as banks, institutional investors, issuers, funds, liquidity managers, regulators and the Ukrainian association of banks. It will be possible

through the mechanism of centralized national depository, clearing and settlement infrastructure of the national stock market in accordance with international best practices.

It should be noted that not all market participants have a common position on this issue. This is due to bias by the state and its impact on commercial interests and potential competitive advantages of the business infrastructure and their shareholders. Therefore, system underdeveloped, market failure and fragmented of the stock market infrastructure is a result from competitive struggle and the ambitions of market participants.

In terms of the advantages and disadvantages of existing models, the potential clearing and settlement are long the debate and discussion in the market. Moreover, the implementation of the universal common approaches each year more difficult. It is caused by introducing of new models clearing and/or settlement each of the knowledge-based exchange and depository. However, most of them do not exactly conform to the current legislation in the field of money transfer and operation of payment systems, including national interbank payment system, due to fragmented and competing legal regulation of this sphere.

Current technologies of the money transfer and entities of central money clearing daily served transactions amount to hundreds of million hryvnias. Firstly, this outflow bank funds, and secondly, are outside the regulation of the Central Bank, which complicates the implementation of the National Bank of Ukraine monetary functions.

One of the world's existing domestic variants of payment system models is to ensure competition in clearing and money payments, which insists on a certain part of the market

For pre-trade and the Single European Payment Area (SEPA) initiative for payments was established a pan-European domestic settlement marketplace for the settlement of securities through accounts at the central bank TARGET2-Securities (T2S), which based on the successful experience of Trans-European Automated Real-time Gross settlement Express Transfer (TARGET2). First, the function of clearing and settlement in each country and each exchange in the European Union market were scattered between national and international depositories, banks and other elements of infrastructure.

But now, in order to create a single market for financial services in the European Union and reduce the cost of cross-border transactions, functions of monetary settlements are slowly returning to the European Central Bank (ECB).

T2S was launched in 2008 and became operational on June 2015, and expected to will be finish on July 2017. T2S outsourcing of the technical settlement platform from the Central Securities Depositories to the Eurosystem. This platform offer centralized delivery-versus-payment (DvP) settlement in central bank funds across all participating European securities markets. Nowadays, 24 CSDs from 21 countries have joined T2S: these 24 CSDs cover most of the Eurozone (excluding Cyprus, Ireland, and Greek equities), 5 of these CSDs are from non-Eurozone countries (Denmark, Hungary, Lithuania, Romania and Switzerland).

T2S offers a full range of benefits, not only providing advantages in terms of price, but also in terms of risk reduction, collateral savings, back office streamlining, increased competition and new business opportunities:

- Reduce risk in the post-trade environment in Europe;
- Increase the velocity of collateral movement around Europe;
- Be a catalyst for post-trade harmonization across Europe;
- Contribute to making Europe a better place to invest.

In view of the European integration of Ukraine, it is makes economic sense to go in this way and the innovative of a single universal national clearing and settlement system. It should be suitable for servicing a number of regulated markets (not only fund but related - term, commodity, etc.), and for subsequent integration into international financial markets.

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INFLUENCE OF SOCIAL FACTORS ON STATISTICAL REGULARITIES OF DISEASE BY PSORIASIS IN ZAPOROZH REGION

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In Ukraine, statistics on the incidence of psoriasis differ significantly from the average in Europe and the world. So, in 2011 the prevalence of psoriasis in absolute numbers was 102,100 patients, of whom there were 6,698 children, and the incidence was 223.9 per 100,000 in the general population, including 83.7 per 100,000 among children. This may be due to both the imperfection of the medical and statistical systems and the hypodiagnosis of psoriasis due to the low level of patients' appeals. The incidence of psoriasis is an actual medical and social problem, and in recent decades there has been a rapid increase in its indicators, an increase in the number of patients who are severe and resistant to various methods of treatment. The goal: to establish how social factors influence the statistical regularities of the incidence of psoriasis in the Zaporozhye region. To assess the risk factors for public health in urban areas, methods of analytical epidemiology of noncommunicable diseases ("epidemiology of risk factors") are used, which aim not only to quantify the risk of disease development, but also to identify factors that affect its level under the specific conditions in which it occurs Life and activity of the population. Results and discussion. To analyze the dependence of public health on habitat factors, two complementary approaches are used: environmental-epidemiological studies and risk assessment. Ecological and epidemiological studies are based on a retrospective linkage of those violations of population health that can already be identified, with the action of specific harmful factors or their complex. The prerequisites for carrying out ecological and epidemiological studies are usually: the presence in the environment of a factor or factors, the harmful effect of which on the human body

is expected from the data of experiments on animals or on other populations;



SOCIAL INSURANCE AS AN OBJECT OF STATISTICAL STUDY

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The main task of Ukraine as a social state is enabling social rights of people to achieve social justice and socio-economic stability. Accordingly, the social study is the basis for the formation of strategic program of state development. It should be noted that the effectiveness of reform depends not only on the implementation of tasks, but also on the availability of reliable information about the reform process. This indicates that the population should not only be knowledgeable about a consistency of reforms, but also actively participate in their implementation. Thus, the use of statistical methods in the study of social processes is the necessity to ensure a transparency and information needs of people as consumers of social services. It should be emphasized that the study of the mechanism of functioning of social insurance is one of the problems of social statistics.

Accordingly, the main statistical study in basic social security system is the social and demographic structure of the population especially of able-bodied population, level of income, quality of life, financial situation, health and social involvement. The main task of social security statistics is to determine the number of people in need of social benefits, as well as the determination of costs, taking into account the type of social risks, a rate of performance loss, a level of financial position. It should be noted that the financial situation of able-bodied population is determined by the level of wages, the ratio

of minimum wage to a living wage and the financial situation of pensioners – by the ratio of the minimum pension to a subsistence wage for able-bodied persons, by the level and dynamics of the size of pension, replacement rate.

Statistical methods of the study of social processes in the social insurance system determine the probability of the insured event with regard to the professional, social and demographic factors. It should be emphasized that statistical studies (actuarial calculations) enable not only to determine the amount of costs taking into account insurance risks, but also to form a set of preventive measures of insurance risks. **Consequently**, the latter contributes to a efficient social insurance system.

To assess the effectiveness of social programs is used an assessment methodology based on a combination of quantitative and qualitative approaches. The quantitative analysis involves the analysis of the poverty among the able-bodied population, employment, income, financial security. And the qualitative analysis involves the assessment of the effectiveness of social assistance programmes in the system of the social insurance: temporary disability benefit, child benefit, unemployment benefit, pension payments. Accordingly, the object of the statistical study in the social insurance system is primarily the able-bodied population that receives social security benefits and also pensioners.

Thus, the statistical study in the social insurance system enable to objectively evaluate the effectiveness of the functioning of the social protection of the able-bodied population and to develop recommendations for its improvement with regard to the needs of consumers of social services. In addition, by statistical indicators of social development is determined the level of social change parameters of the population which is extremely important for social justice and social stability.

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GLOBAL ENERGY MANAGEMENT (GEM) RISK MANAGEMENT IN UTILITY COMPANIES

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Engie Global Markets (GEM) is part of the French largest utility group of the world, Engie. GEM is window to the market for the Engie group managing the market risk linked to the native position of power plants and gas contracts. It is the trading platform where production and sales are matched using commodity derivatives to optimize the profit.

Risk management is a corner stone to achieve this objective. History has shown that large losses up to several billions occurred and even bankrupted big players due to wrong or insufficient risk management and control. We distinguish five different risk types that are detailed below.

First of all, a group like Engie is subject to market risk. When you know for example that a nuclear plant will produce 800MW in two years' time, Engie could lose a lot of money in case electricity prices drop significantly before then. Therefore GEM puts in place a market risk framework with metrics like Value at Risk and stress-testing in order to measure this risk and keep it within a certain risk appetite using financial and physical derivatives. These are instruments that allow locking the sale price in the future.

The second risk type is the credit risk. If you engage in an energy derivative contract you might feel protected against future price movements but what if the counterparty bankrupts before the contract is finalized. Again for this risk type, GEM uses a set of risk metrics and limits like internal ratings and Credit Value at Risk in order to actively manage the risk of bankruptcy. The ultimate goal is to mitigate this risk as much as possible using netting and margin call agreements and avoid having a credit risk concentration on a few risky counterparties.

The third risk type is Operational Risk and relates to all losses due to a failure of a person, process, IT system or external event (nuclear incident). The focus of the risk management of this risk type is on putting in place the risk controls and set key risk indicators that can give early warning signals. If an operational risk event occurs despite these measures, it is of utmost importance a return of experience is organized and action points are put in place to prevent it from happening again.

The fourth risk types relates to the physical risk of an asset. If a power plant or a distribution network is down for technical reasons, it will immediately impact the position management and market risk as less energy is produced than expected.

The last risk type relates to regulatory risk. The energy derivatives market is becoming increasingly subject to additional regulations. New regulatory frameworks are being put in place to ensure for example that the energy commodity dealers like EGM have sufficient capital allocated to absorb potential big losses deriving from their activity and not causing a cascading effect throughout the Energy Markets in case of a default (like the financial crisis in 2008). Other legislations like Emir, Mifid and Remit only contribute to the further complexity of risk management in a utility company.

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TOWARDS COHERENT SYSTEM OF CROSS-BORDER RESEARCH

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Integration and disintegration processes that occur between changes generate socio-economic local, regional and global levels. The statistics of cross-border regions play an increasingly important role at all levels of cooperation between the countries.

Public statistics do not satisfy the growing demand for information on the cross-border area. There are many information gaps due to the lack of consideration the movement of people and transport, causing a lack of information, and to increase social and economic phenomena that are not observed.

Therefore, a significant factor research on the study of these areas is to create an integrated information infrastructure. The main priority for the Ukrainian official statistics is to create a systematic, reliable and cross-border comparative statistical database available to the public, various structures in border regions and cross-border, regional and local authorities, government and business structures.

On the growing importance of cross-border statistics show particular event in the 59th World Statistical Congress of ISI (Hong Kong, 2013) and the 60th World Statistical Congress of ISI (Rio de Janeiro, 2015) some sessions meetings relevant to all regions of the world the problems of cross-border statistics.

Urgent tasks that need to be addressed to create an integrated system of statistical studies of cross-border areas are as follows:

- Improving the monitoring of socio-economic phenomena based on statistical and administrative databases;
- The study and use of additional sources outside the statistical information (Big Data), such as data from the mobile network

operators, automated road traffic meters, banking information systems;

- Combining information from administrative registers and representative surveys;

- Use of “mirror statistics”;

- Development cooperation between countries in the field of:

- designation of research areas,

- standardization of methods and forms of monitoring and research,

- conducting joint research in cross-border areas.

- Creating a unified information infrastructure of cross-border areas.

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MODERN TRENDS OF FORMING SOCIAL PROCESSES IN THE RURAL AREAS

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The statistical regularities of the formation of social processes reflect the nature of the effect of the objective laws of society development in the particular conditions of place and time. Disturbing, negative regularities of employment dynamics, the regularities of structure change and the ratio of the employed population in the agricultural sectors have been revealed in the rural areas of Kharkov Oblast.

During 1998 – 2015 the number of employees engaged in the production of agricultural products at the agricultural enterprises of Kharkov Oblast fell by 5 times and made up 23543 people in 2015. The relative magnitudes of the dynamics in the context of the branches differ from each other significantly. 16705 people were engaged in the production of crop products in 2015. This is 3 times lower than in

1998. At the same time, in the livestock sector, the number of employees has decreased by almost 10 times and now the amount is only 6,838 people. The rates of employment decline in the livestock sector significantly exceed the rates of the agriculture sector. Over the past eighteen years, the number of employees in the crop sector has declined on average during the year by 2011 people (or 6.34%), in the livestock sector – by 3469 people (or 12.47%).

There have been significant changes in the structure of employment. On average at the enterprises of Kharkov Oblast until 2000, the specific weight of livestock workers was 54 - 56%. Since 2000, there has been a continuous process of increasing the proportion of the employed population in the crop sector. If in 1998 44% of workers were engaged in agriculture, by 2015 this indicator grew to 71%. If in 1998, there were 77 workers in the crop sector per 100 livestock workers; in 2015 244 people were engaged.

Identifying the regularities of the connection between phenomena, we found out that, first of all, such trends are due to a change in the specialization of the farms in the region. After 2000, most of them began a gradual transition to cultivation of crop production (mainly grain and sunflower) and the abandonment of livestock sector development. For example, in Kharkov Oblast, just only the herds of dairy cows decreased from 217838 to 34924 heads during the 18-year period (in 6,2 times). In 2015 only 122 farms (22% of the total number of the agricultural enterprises) out of 558 agricultural enterprises of the oblast were engaged in the production and sale of milk. In 1998 the specific weight of such farms was 92% (496 out of 537).

The development of the livestock sector is the basis for the country's food security, it ensures that the farms have circulating assets. The livestock sector is one of the factors that reduces social tension in the countryside, provides employment for the rural population, and guarantees stable incomes. This sector, like no other, requires serious financial and credit resources, investments, direct state support.

Agricultural enterprises do not have access to cheap loans. The minimum resource for their development was a special taxation regime for activities. Since January 1, 2017, agricultural producers

have been transferred to the general system of VAT taxation. As compensation, the subsidized order is now proposed. Among the problem types of agricultural activities, which are planned to be subsidized, is called production of livestock products. The mechanism for implementing subsidized support in practice is complicated by the fact that it requires the adoption of a number of subordinate acts at the state level.

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TRADEMARKS IN THE WIPO STATISTICS DATABASE

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In conditions of high competition and glut of markets, trademarks play a pivotal role in the marketing strategy of every business. Trademarks (brands) are also valuable, transferable assets, which can be used as negotiating tools in business transactions and as security for financial transactions. A major step in eliminating wasteful expense and reducing risk is to register the trademark early so that it is legally secure and others cannot free-ride on it.

Trademarks can be registered by filing an application with the relevant national or regional Intellectual Property office(s), or by filing an international application through the Madrid system, which facilitates the acquisition of trademark rights in multiple jurisdictions. The regulation of legal relations in the field of trademark protection at the international level takes place within the framework of various international agreements and conventions, administered by the World Intellectual Property Organization (WIPO).

WIPO Statistics operates a system of absolute and relative indicators that characterize the level of inventive activity in various countries worldwide and sectors of economy; also provide an opportunity to explore the current patterns of development of certain segments of the intellectual property sphere at the global level, and to

carry out a comparative analysis of inventive activity. Trademarks are classified according to the International (Nice) Classification of goods and services, which contains 45 classes. Class counts are used to make trademark registration activity internationally comparable.

An estimated 6 million trademark registrations were filed worldwide in 2015. The total number of classes specified in applications reached 8.45 million. China's office registered trademarks in which about 2.23 million classes were specified, followed distantly by the USPTO, the EUIPO and the office of Turkey. According to the level of inventive activity (resident trademark application class counts relative to population) the leading countries are: Switzerland, the Republic of Korea, Australia and Germany.

At most offices, trademark applications are filed mainly by residents seeking protection within their domestic jurisdiction. Globally, 27% of the total registration class count in 2015 was attributed to non-residents. The nearly 49,273 international trademark applications filed through the Madrid system in 2015, were up 21.9% on 2010, reflecting growing membership and a general upward trend in applications worldwide. The leading international applicants are transnational corporations, among which in the top-5 are: Swiss pharmaceutical company Novartis, Germany retailer Lidl Stiftung, French cosmetics and beauty company L'Oréal, Philips Electronics of Netherlands; Pharmaceutical company Richter Gedeon Nyrt of Hungary.

Unlike most forms of intellectual property, trademarks may be maintained indefinitely by payment of renewal fees at defined time intervals. It is not possible to estimate the number of trademarks in force worldwide. But for 130 IP offices with data, 36.5 million trademarks were in force in 2015.

Nice Classification statistics offer insights into the relative importance of different goods and services. Among classes that received the most applications in 2015 were: advertising, business management and office functions - 10.5%; scientific, photographic, measuring equipment, computers and software - 7.1%; education, entertainment and sporting events - 5.9%; articles of clothing - 5.7%.

Reliable WIPO statistics indicators are an important tool in understanding a situation in competitive environment worldwide, and are undoubtedly of interest both for national business structures and for foreign investors.



STATISTICAL INDICATORS OF MILITARIZATION

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Militarization refers to subordination of all the spheres of social life to the objectives of military buildup. The increasing role of military sector in the national economy is causally linked to the economic capacity of a country: while the excessive buildup of military sector trigger tensions in the expenditure side of the public budget, underestimation of its development can entail fundamental problems in military security. Instead of searching for balance between security needs and economic realities, many countries have preferred to transform the economic system in view of the military needs, with rapidly increasing the fighting efficiency of military forces or units in parallel with fostering militaristic thinking in the public, based on the belief that the country's readiness to wage war is a synonym to prosperity.

The ratio of military and macroeconomic capacities at country level is conditional on the adopted military doctrine. Comparative analysis of the militarization of countries in the globalized world implies bringing national specifics in the security field to a common denominator. This analytical function is assumed by the system of international ratings, where each rating is built on the chosen priorities of a study, for example: the degree of militarization at country level is measured by the Global Militarization Index (GMI), the rank of the most powerful armies in the world is measured by the Global Fire

Power, the rank of the firepower of armies is measured by the Military Strength Indicator (by the version of Credit Suisse) etc.

Countries are positioned by militarization level by the Bonn International Centre of Conversion (BICC) on GMI basis. When computing GMI, BICC experts use powerful databases of international organizations such as Stockholm Peace Research Institute (SIPRI), International Monetary Fund, World Health Organization, International Institute for Strategic Studies. Contrary to the ratings of Global Firepower Index and Military Strength Indicator, which measure the military capacity and firepower of countries in absolute terms (military expenditures, numbers of regular military forces, operational status of various types of weapons etc.), GMI, which uses relative values, measures the military burden on economies and societies. GMI is focused on six indicators combined in three units:

- Expenditures: military expenditures as percentage of GDP; military expenditures in relation to health spending;
- Personnel: military and paramilitary personnel in relation to population; military and paramilitary personnel in relation to physicians, military reservists in relation to population;
- Weapons: heavy weapons (armored vehicles, artillery with caliber higher than 100 mm, warplanes and large warships) in relation to population.

The method for aggregating indicators with various measurement units involves: (i) replacement of primary figures by logarithms; (ii) conversion of the latter into the standardized measurement scale from 0 to 1000 using the minimax criterion. Convolution of the converted values of indicators in the total GMI is made using weights provided by BICC experts. It is obvious that the method to compute GMI is far from perfect, but it allows for: evaluating the global trends in military security, the level of military threats and their potential effects; monitoring the developments in the military organization at country level; comparative analysis of militarization processes by country or region. Average expenditures of countries on armaments are nearly 2.5% of GDP. The more militarized is the country, the higher are its expenditures on armaments. Of 152 countries covered by GMI-2016 rating, the most

militarized are Israel, Singapore, Armenia, Jordan, and Russia. The military position of Ukraine has strengthened as a result of the conflict with Russia and the lasting military clash in Donbas: in GMI-2016, Ukraine rose up by 8 positions (from 23 to 15). Also, BICC experts state that East Europe has become more militarized, especially the countries located on the Eastern border of NATO and EU.

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PRODUCTIVE WORK AS A FACTOR OF LIFE QUALITY IMPROVEMENT

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According to UN General Assembly Resolution „Transforming Our World: The 2030 Agenda for Sustainable Development”, approved on September 25, 2015 (A/RES/70/1) one of 17 global goals for sustainable development is to promote complete and productive employment and decent work for everyone (Goal 8).

In terms of dynamic changes taking place in the modern world, as well as rapid development of digital economy, productive employment can be ensured by simultaneous formation of professional and career responsibilities. New economy requires a person to become a bearer of various new features, so-called Soft Skills such as readiness to cooperation and support, culture, communication, willingness to work in team, psychophysiological readiness to work in modern informational environment, ability to learn and train, goodwill to changes and innovations and so on. The system of education should pay great attention to the formation of such personal qualities as resistance to stress, emotional stability of people, confirmatory determination of the central role of personal resources, self-responsible position in relation to professional and economic choice, capability of people to repeatedly change the scope of

application of their own business and personal potential during their life.

In 2015 labour productivity per person employed in Ukraine (within current prices) amounted to 120.4 thousand UAH, which is 0.9% below the level of previous year. In this case, the number of employed population aged 15-70 decreased by 9%. As a result, in 2015 the drop in real GDP was 9.8% compared to 2014. In the third quarter of 2016 GDP per person employed aged 15-70 was 40.2 thousand UAH, which is 3.3% more than the indicator of labour productivity at the national level of corresponding period in 2015, and this happened under the growth of GDP by 2% and reduction of the number of employed population by 1.3%. In comparison, the average level of labour productivity in the USA is 137 thousand USD per person employed.

In 2017 the program of government statistical monitoring involves working out methodological provisions by the State Statistics Service of Ukraine concerning calculation of labour cost index as part of adjustment of methodological and organizational provisions for carrying out the enterprise surveys on questions of labour reward and labour cost statistics in compliance with EU standards, introduction of statistical information and productivity statistics by the Ministry of Economic Development and Trade and the State Statistics Service of Ukraine within the framework of promoting the further development of cooperation among the manufacturers.

Since 2013 my attention in the articles has been focused on the reasonability of introducing the practice of comprehensive statistical analysis of labour productivity in the system of state statistical institutions, as well as involvement of an appropriate indicator into reports together with the recommendations to consider this indicator at all levels of management hierarchy.

The national social policy should focus on creating preconditions for the growth of motivational potential, labour mobility, labour and productive activity of national human resources; thus, instead of struggling to ensure minimum living wages for every member of society, it is necessary to establish proper conditions for the development of personal productive capacities and provide their effective implementation. After all, high level of job-satisfaction

among people involved in labour and those who use its results will significantly contribute to sustained, comprehensive and stable economic growth and improvement of human life.

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**A STUDY OF THE FINANCIAL SECTOR ON THE
METHODOLOGICAL BASIS
OF THE SYSTEM OF NATIONAL ACCOUNTS:
HISTORICAL ASPECT**

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The System of National Accounts (SNA) is a conceptual framework and international methodological standard for compiling macroeconomic statistics. An important part of the structure of the economy, which is explored by tools of the SNA, is the financial sector. It is represented in all versions of the SNA and in earlier methodological constructions directly or less explicitly. Name of the sector and its composition were changing during the evolution of national accounting.

The prototype of SNA – Richard Stone’s Memorandum “Definition and measurement of the national income and related totals” (1947), prepared for the Sub-committee on National Income Statistics of the League of Nations Committee of Statistical Experts, already paid much attention to financial institutions. They formed two of the five proposed sectors: 1) Financial Intermediaries and 2) Insurance and Social Security Agencies. The document emphasized the importance of financial institutions in the economy and necessity to treat them in the other way than ordinary businesses.

SNA-1953 at sectoral level did not detach financial institutions, combining them into one sector with enterprises. Instead it was supposed to study the financial activity on the industrial level using

Industrial Classification, corresponding to International Standard Industrial Classification of All Economic Activities – ISIC 1948.

SNA-1968 returned the advanced approach to the interpretation of economic structure: one of the four sectors introduced by it was the financial institutions sector, feature of which was participation in financial transactions on the market, providing assumption of liabilities and acquisition of financial assets. On the subsector level there were four components, two of which were related to the monetary component of the financial system – subsectors of the central bank and other monetary institutions. Insurance companies and pension funds, unlike the Memorandum 1947, were transferred from the separate sector of economy on the subsector level. Financial institutions, which were not included to these three subsectors, formed the subsector of other financial institutions.

In SNA-1993 the sector's name was changed to «Financial corporations». As the main type of its activity was considered financial intermediation or auxiliary activities, closely connected with it. Number of subsectors has been increased to five by forming the sector of financial auxiliaries. Subsector of other monetary institutions was named other depository corporations. As a part of it were introduced subcategories of deposit money corporations (*S.1221*) and other (*S.1222*), which allows to consider the approach of SNA-1993 to study of the structure of the financial sector as the most detailed in some ways – the other variants of SNA do not distinguish subcategories level, limited to sectors and subsectors.

SNA-2008 inherited from SNA-1993 the name of sector «Financial corporations». As a «species difference» of this institutional sector is defined the provision of financial services, including insurance and pension funds. Expanding of the definition of financial services was held by incorporating them to the list of services of financial risk management and liquidity transformation. Enhancing of specification of financial corporations sector's composition turned out in increasing of the number of its subsectors from five to nine. New subsectors were distinguished: money market funds (MMFs), non-MMF investment funds, captive financial institutions and money lenders. In addition, insurance corporations and pension funds subsector was divided into separate subsectors. It is also assumed to assign the institutional units

of financial corporations sector to one of the three categories: financial intermediaries, financial auxiliaries or other financial corporations.

Innovations of the SNA-2008 provide its higher flexibility and harmonization with other systems of monetary and financial statistics.

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ANALYSIS OF STATISTICS INFORMATION SUPPORT OF TOURISM IN UKRAINE

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Nowadays the tourism industry is being paid attention around the world. International organizations along with the United Nations are working to improve international recommendations on tourism statistics in order to identify methodological framework for the collection and calculation of all countries irrespective of their level of statistical systems.

The organization of state statistical observations from the statistics of tourism in Ukraine meets the requirements of Articles 4 and 5 of the Law of Ukraine "On Tourism" on the forms and types of tourism, the definition of entities engaged in and / or providing tourist activities; Articles 1 and 14 of the Law of Ukraine "On rehabilitation and recreation of children" regarding types of child care health and rest, as well as ISO 4527 "Touristic services. Accommodation facilities. Terms and definitions".

Today the processes of information technology is being accelerated owing to globalization and integration of resources; it also requires an entirely new approach to legal, economic and informational documentary providing information about tourism, new opportunities for rapid growth as social tourism industry and tourist services.

Tools for state statistical observations of tourism statistics are currently available on the website of the State Statistics Committee of

Ukraine. Dates of state statistical observations are determined by annual plans approved by the regulations of the Cabinet of Ministers of Ukraine.

However, recently there was a need for more detailed information about tourist activities Ukraine, for further calculations and analysis of the impact of tourism on the national economy. It should have regular character, be formed on the basis of statistical reports, which have the same calculation methodology comparable in different time periods in the national economy and internationally. Macroeconomic indicators such information is supposed to conform to national accounts.

However, in Ukraine nowadays accumulation of information enables to make a comprehensive analysis of the statistics of tourism, at the same time it has some significant drawbacks. In particular, the lack of equal division of categories of data, untimely submission of information and it generally does not cover monthly data collected.

So one of the important tasks is to improve the statistics of tourism information provision.

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FORECASTING THE IMPACT OF TRANSITION ON ECONOMIC GROWTH

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Immanent transformation of national economies in the world economic system requires new approaches to the preparation and use of statistical information. This is due to not only the rapid technological development of production, communication and society, but the dominance of the institutional environment in choosing the path of economic development for each national economy.

Statistical modeling in this context leads to a deep understanding of the socio-economic phenomena and processes occurring at the national level. Free access to current statistics enables the researcher to identify the impact of many factors that determine the current state of economic development and offer predictive value of such dynamics.

Importance of Big data implementations into the official statistics allows not only to diagnose the speed of the institutional environment transition but to proceed with nowcasting – “the prediction of the present, the very near future and the very recent past in economics and statistics. Nowcasting models have been applied in many institutions, in particular Central Banks, and the technique is used routinely to monitor the state of the economy in real time.”

Compliance with the requirements of modern statistics of postindustrial society is a priority for both national and international statistical agencies.

Currently, data sets that cover the period from the late 17th century are available for researchers. It is through this prism possible to study growing inequalities in the world, which is the main obstacle to progress.

It is obvious that in the last 150 years the number of successful countries remains almost the same. However others, including former Soviet republics, showing almost no real economic growth, which would allow them to join the group of countries with high income.

This situation is called “path-dependence problem” or effect depending on the trajectory. To solve this problem, it’s vitally important that statistics refer not just to purely economic or social factors, but also the cultural, historical, sociological and political factors. However, particular importance should play institutional factors describing the institutional environment of countries and regions.

Institutions matter, thus institutional statistics is the next step of official statistics development, especially in post-Soviet region, where path-dependence problem determine the trajectory of economic growth and development.

The importance of creating the statistical models that take into account institutional differences between countries and can serve as a

basis for the selection of a new comparative institutional economics and statistics should be implemented into economic research discourse.

Modern economic theory no longer questions the importance of institutions for economic development. The same must be acceptable to the official statistics and statistical modeling of transformation processes.

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ABSTRACTS

IV International Scientific Conference
"Statistics of the XXI century:
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