SECTION 5
STATISTICS OF MACROECONOMICS AND MICROECONOMICS
Room 2605

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Thursday, April 22, 2004

15.30-15.50 **The System of the Statistical Indicators Used in the Estimation of the Touristic Sustainable Growth**

Author: Associate Professor ***Elisabeta R. Roşca***, PHD, The „Ştefan cel mare" University of Suceava

Abstract

The paper *The System of the Statistical Indicators Used in the Estimation of the Sustainable Growth* presents the importance of the *quality* in all the activities, indifferent of the economic or social domain. More the economic difficulties, indifferent of their nature can't be approached without the assurance the criterions of the quality and without the respect for the principles of the *Total Quality Management*.

The quality in the services domain and especially in the touristic services domain is a doubtful concept, many times with a subjective contain. So if the tourists visit destinations which do not correspond with their expectations or with their degree of the information, they will leave these destinations early and didn't come again. This kind of situations determine dissatisfied clients and the reductions of the holiday budget and for their avoidable are applied so-called the *strategies of the control of quality*, with the goal to assure a balance between the touristic development and its activities at the level of quality expected by the consumer which gives the confidence of the profit on the long term in the touristic industry and the confidence of the consumer satisfaction (with other words assures the sustainable growth of the touristic activities) and attracts the tourists which want to improve their *experience*.

The paper presents some points of view concerning the concept of touristic services quality (Gronroos, Lehtinen and Lehtinen, Parasuraman) and especially defines the concept of the quality services dynamics, integrated in the total quality management psychology, which finds the application in the managerial process and the process of services designing and which enjoys by a breeder recognition in the speciality literature. The paper presents a model of the application of the concept under the form of a *cybernetic system of the dynamic service quality*, a model which contains three basic participants to the realization of the touristic services which are: the customers, the service deliverer and the strategist.

The system allows the formation of three flows of information which are:

the flow of information from the customer which assure, on the one hand, the transmission of the information as a result of the quantitative marketing research, obtained by direct measurement, towards the management and, on the other hand, the transmission of the impressions gather from the direct contact with the service, obtained by the qualitative methods of the motivation research, to the customer;

the flow of information between management and the service deliverer, which assure the transmission to the service deliverer of the quality standards of services (the quality is in a permanent growth as a result of the training process) and the transmission of the impressions of the services deliverer about the quality of services, to the management;

the flow of information and services to the customer, which contains the transmission from the management of the image of excellent service to the customer and the market and the transmission of the impressions gather form the direct contact with the service of the customer to deliverer services.

The application of the cybernetic system in all stages of the incentive/reward programmes will assure improvement of the operational systems. This operational commitment will project a quality image to customers and employees, being a marketing and public relations tool directed to the customers, employees and managers.

The paper presents the concept of the sustainable growth which in a general acceptance supposed the correlation of the economic development with the evolution of natural environment, the demographic, social, politic and cultural phenomenons. The theoretic bases of the sustainable growth concept are in the paper of the American economist Robert D. Hamrin, *A Renewable Resource Economy*, edited in 1983 to New York. Afterwards, the concept was brought back in the debate by the occasion of the international summits and it came into view for the tourism too.

So for Romanian tourism which is in a prolonged period of regress the growth can make only in the conditions of the sustainable growth. The using of natural resource in the assurance of the sustainable growth of tourism follow two aspects which are:

the progress of the touristic activity in a high quality natural environment;

the exploitation and the conservation of the natural touristic resource in a reasonable way, taking their limited character into consideration.

The touristic development determines the growth of human pressure about the environment because: the growth of touristic infrastructure and the general infrastructure which are necessary in the human activities, the intensity of the commercial exchanges, the growth of human flows and the gone through distances.

The paper presents the concept of *ecotourism* as a model of sustainable account of touristic resource, as the most valuable form of manifestation of sustainable tourism. The touristic sustainable growth concept about the ecotourism appears from the necessity to protect the nature for the future, especially the fragile species and the tropical woods but it knew an extension above the whole touristic industry, which used as resource the exception natural spaces and also the values of cultural and historical patrimony, about the prism of modification of behaviour of the customer begining from the residence to the foreign touristic destinations. The paper presents the *relationship between the sustainable tourism and ecotourism* and the importance of resource for the development of touristic activities. Taking to account this last aspect, the paper presents the system of indicators used for analysis touristic resource, which contains the following groups:

the indicators for determination of touristic potential of relief, which refers to the altitude, the breaking up on the horizontal line of relief, the breaking up on the vertical of relief;

the indicators for determination of favourable climate for tourism, which refers to: the average of the sun shine duration, the annual average temperature, the average of multiannual number of winter and summer days, the annual average of wind speed etc.;

the indicators for determination of touristic hidrografic potential, which refers to certain parameters (the depth, the temperature, the colour, the mineral degree, the therapeutics value etc.) for the surface water, the natural and antropic lakes, the Black Sea etc.;

the indicators for determination of touristic potential of flora and fauna, which emphasize elements like these: the position, the ways of access, the surface, the structure of species, the age, the presence of monuments of nature etc.;

the indicators for determination of touristic potential of protected areas, which characterize the position and the ways of access in territory, the surface and the structure of species, their originality, their scientific value and the protection degree;

the indicators for determination of touristic potential of balnear factors, which characterize the natural mineral water, the sea water and beach, the muds, the salt mine etc.;

the indicators for the determination of touristic potential of cultural and historical resource, which refers to the type of monument, the position and the ways of access in territory, the type of property, the touristic agreement for tourism etc.;

the indicators which characterize the touristic sector, which refers to the general development indicators and the specific to touristic destinations indicators;

the additional indicators for sustainable growth of touristic activities.

15.50-16.10 Some Aspects Concerning the Comparisons in Time and Space of Synthetic Macroeconomics Indicators

Author: Associate Professor ***Elisabeta R. Roşca***, PHD, The „Ştefan cel mare" University of Suceava

Abstract

The paper *Some Aspects Concerning the Comparisons in Time and in Space of Synthetic Macroeconomics Indicators* presents the two concepts which are at the base of evidence at the macroeconomic level in different countries: *the system of national accounts*, and *the system of material production* or *the system of national balance*. Because an analysis of the all specific indicators of two systems isn't possible, the paper stopped about the principals synthetic macroeconomics indicators which are presented in the international publications.

At present, the problem of the international comparisons of the development levels is less a hierarchical problem for the countries and more it follows to establish the development stage in which there are different countries and there perspectives. Obvious, to make these comparisons is necessary that the compared countries to use the same methodological criterions and the same indicators, aspect which can't be satisfied in the all countries because between these are territorial differences and also differences in the calculation methodologies of indicators determined by the different methodologies of macroeconomic evidence and the modifications in the same system which appear in time.

The comparative analysis of the economic development level in different countries involves the approach of the following problems: to establish the indicators which must consider in the analysis, to establish the methodology which is at the base of calculations of these indicators, the selection of the compared countries, to specify the purpose of the comparable analysis. From this point of view, the principals indicators used in study of the economic differences between countries are the gross domestic product and the national income per capita but for these indicators, in the international statistics, these are more economic categories, which have different way for calculation and these are: the gross domestic product, the gross national product, the national income, the material product (gross and net). Not in the last time, in the studies of international comparison, as a rule, they take into consideration the indicators which calculate the structure of the national economies in different countries, about which can be emphasized the sectors which about the economic politic are priorities.

Another idea taken off the paper is that for the quantitative and qualitative comparative analysis isn't enough one synthetic indicator but must to establish a system of synthetic indicators which permit a wide international comparatively. Yet the basic indicators in the macroeconomic statistics is considered the gross national product, although its using in the international comparison can be made in some limits because in different countries the existed data don't assure a total comparatively. So there are countries in which gross national product establishs by the adjustment of national income, in other countries gross national product has a modified value because the inflationary trends, being necessary the calculation of gross national product in current prices and in comparative prices and also there are many difficulties to convert gross national product in the national currency, there are many problems in connection with the currency rate of exchange which must take into consideration the real purchasing

power of the currency.

The market economy countries compute at the macroeconomic level the following indicators: the gross domestic product, the gross national product and the net national product, more used being net domestic product and gross national product expressed in dollars at the current prices or comparative prices, the indicators which offer the advantage of the unitary methodology for calculation and only one source of publicity respective the specialized structures of UNO.

The countries which used the material production system compute indicators like these: global social product, final social product, national income which in the international comparisons have certain limits connection with the following aspects: they don't included the results of the whole activities because they eliminate the nonmaterial services, they are used in a restricted number of countries, they don't calculated in an unique currency and the conversion is difficult because the currency rate of exchange is fluctuating.

The comparisons in time at the macroeconomic level suppose to put into order the values of a certain indicator (gross domestic product, final consumption, gross capital formation etc.) for the obtaining of a time series, with a great importance for the analysis and the substantiation of the political economic decisions. The comparisons in time of terms of a time series put the problem of the prices in which the aggregates are expressed respective the current prices. In this case the macroeconomics aggregates are named also *nominal aggregates* and the level and the modification of aggregates are determined by the physical volum and the level of prices. To establish if the synthetic indicator has a growth or a less must first to establish the real value of the indicator, because a nominal growth don't involve compulsory a real growth too. So, for example, if is studied the evolution of the gross domestic product in Romania for three years period and the conclusion is that it is in growth, the problem is how to compute the part of this growth which is determined by the modification of the goods and services volum that are part of gross domestic product and how is the part determined by the growth of prices. With other words, if is eliminated from the nominal modification of an aggregate the prices variation by deflation, the result is the real modification. In this example, in the composition of the gross domestic product goes in a great number of goods and services and appears the problem to express the modification of these goods and services into one synthetic numerical expression (in this case, the index of gross domestic product prices), which can be considered as the modification of the general level of prices for the respective synthetic indicator. The problem can be simple in a theoretical situation in which both the prices and the quantities of goods and services will change with the same size but in practice this situation is impossible.

Also, the paper presents the second category of macroeconomics comparisons which are the comparisons in space, in this category the most important being the rate of growth of gross domestic product, the inflation rate, the rate of unemployment, gross domestic product per capita etc. The studies proved that after the second world war, the international comparisons of the economic data were in growth and these raised up a series of difficult problems such as:

the concepts and the definitions which are at the base of calculation of gross intern product and the other synthetic indicators have not the same content, although they have the same name. Even in the international system of macroeconomics calculations (UNO System, EU System) there are many national characteristic features. In these conditions, when there are significant differences between definitions and concepts, these must be made comparable and after that it can pass at the comparison of the indicators.

the values of gross domestic product and of the macroeconomic result indicators are calculated in every country at the national currency. The comparison of gross domestic product values between two or more countries supposes to find an unitary standard about which to express these values (for example, the expression in the same currency or in the same prices), which require the using of the territorial index numbers.

The paper develops theoretical aspects concerning the real solutions to solve the problems which appear in comparisons in time and in space of the macroeconomic indicators.

16.10-16.30 **Cybernetic Indicators System for Measuring the Work Force in Valcea District**

Authors*:** Professor ***Emilia Țițan, PhD, Academy of Economic Studies
Aurora Gherghina, **Head of ITM Valcea**

Abstract

Measuring employment and unemployment, analising the phenomenas on the labour market become a very important issue. Labour statistics matter. Governments use them for planning their employment strategies, trade unions use them in negotiations with employers, even TV and newspaper reports seize on each new published figure as a vital indiactor of national success or failure.

We present a system of statistical indicators in order to measure the various aspects on the labour market, and then apply them to characterize the labour market in Valcea district.

16.30-16.50 **The Analysis of Inflation Phenomena in Romania Using a Simultaneous Equation Model**

Author: Lecturer ***Andreea Iluzia Iacob*****,** Academy of Economic Studies

Abstract

The objective of this study represents the analysis of the inflation phenomena in Romania for the period 1991-2000 using a simultaneous equation model in order to explain the correlation between the dynamics of the salaries and the dynamics of prices. This model will be applied under three forms: one in which the variables are expressed by indices calculated in comparable prices, other in which variables are expressed by indices calculated in current prices and the last in which the variables are expressed in nominal values. By estimating this model it resulted that the dynamics of salaries, prices and of labour productivity contradicts the economic theory concerning their evolution.

16.50-17.10 **The Analysis of the Public Services in Romania in the Territorial Profile Using Cluster Method**

Author: Lecturer ***Andreea Iluzia Iacob*****,** Academy of Economic Studies

Abstract

The objective of this study represents the analysis of the public services in Romania in the territorial profile by applying the cluster method, using STATISTICA 5.5 programme.
In order to apply the cluster analysis were used data corresponding to 12 public services for the 40 counties of Romania (except Bucharest Municipality and Ilfov) – data provided by the Romanian Statistical Yearbook- for the year 2000, The purpose of this method is to group the individuals (Romanian counties) by applying Joining Method (Tree Clustering), using Euclidian distances, based on a Complete Linkage and also to group the variables (indicators concerning public services) using Ward's method. In the last case the grouping is realised using Pearson correlation coefficient. Other method used in order to classify the individuals (Romanian counties) by clusters is K-Means Clustering Method. Finally, it resulted that the three clusters obtained by applying Joining Method (Tree Clustering) coincided with the three clusters obtained by applying K-Means Clustering method.

17.10-17.30 **Statistical Analysis of the Discrepancies between Supply and Demand on the Labour Market, from a Training Perspective**

Authors*:** Lecturer ***Simona Ghiță, Academy of Economic Studies
Professor ***Emilia Țițan,*** PhD, Academy of Economic Studies
Lecturer ***Cristina Trandaş,*** Academy of Economic Studies

Abstract

In this paper we analyse the matching problems regarding the supply and demand on the labour market, based on short-term projections. The paper offers solutions for reducing the mismatches problems on the regional labour market by means of training policies focused on unemployment. We define the quantitative supply shortages and the qualitative supply

shortages. The analysis is realised for various educational types, and it shows that both additional training programmes and retraining programmes for unemployed workers may improve their opportunities on the labour market, while at the same time reducing labour market inequalities.

Matching problems between demand and supply can be of a quantitative nature, or of a qualitative nature:

> ***quantitative matching problems*** refers to the discrepancies between the amount of workers having specific skills, who are available on the labour market and the number of available jobs, for which these workers have the adequate skills;
>
> ***qualitative matching problems*** refers to the discrepancies between the level and type of skills, acquired by those offering their labour services and the requirements imposed on workers in jobs for which they have the adequate skills.

We distinguish between the ***additional training programmes***, which can increase the workers' skills in their own field of work, and ***retraining programmes***, which retrain workers in another field of work. This means that additional training programmes can be an effective instrument in reducing qualitative discrepancies, while retraining programmes are more effective in reducing the quantitative discrepancies.

Since training programmes take time, training policies will be more efficient if they can anticipate the future expected labour market mismatches.

We define ***the indicator for future recruitment problems*** ($IFRP_i$) in a certain labour market segment „*i*", which compares labour demand and suited labour supply („suited labour supply" meaning the unemployed workers, who are searching for a job, and who have the adequate required skills and experience for that job). If $IFRP_i$ is smaller than 1, there are no job openings for the less suited unemployed workers, which don't have the appropriate skills for a certain desired job.

The indicator for the type of mismatch (ITM_i) is defined as the ratio between the number of expected job-openings which cannot be fulfilled by the suited job-seekers, and the number of less suited job-seekers, in labour market segment „*i*", and indicates the number of remaining job-openings in segment „*i*" per less suited job-seekers in that segment.

The two indicators described above help us in characterising the specific type of demand-supply mismatch in various labour market segment. There can be three different situations:

1. ***Excess supply***, meaning the number of suited job-seekers exceeds the number of expected job-openings, i.e. $IFRP_i < 1$. In this situation, the less suited job-seekers have no chance to find a job in their own segment. Still, retraining might improve their perspectives on the labour market;
2. A ***qualitative supply shortage***, meaning there is a shortage of suited job-seekers ($IFRP_i > 1$). However, there are sufficient available less-suited job-seekers ($ITM_i < 1$). Since the less-suited job-seekers do not satisfy entirely the requirements imposed by the employers, they can improve their position and chances to obtain a job in the future by following additional training programmes.
3. A ***quantitative supply shortage***, meaning there is a shortage on both suited and less suited job-seekers ($IFRP_i > 1$ and $ITM_i > 1$). As mentioned before, additional training might improve the labour market perspectives of the less suited job-seekers, however, these programmes reduce only partialy the discrepancies existing on the labour market in the concerned segment. Retraining programmes ought to be directed to unemployed workers in other labour market segments, preferably in segments with excess supply, in order to increase the supply of workers with adequate skills.

Finally, we define a ***similarity or competition index***, which measures the prevailing substitution possibilities between different educational types. It is equal to 0 (no similarity) if both compared types of education have no overlapping occupations, it is equal to 1 (perfect similarity) if the occupational structure of both compared educational types is completely equal, meaning that the relative number of workers in each occupation is equal

for these two educational types.

In the end, we apply these theoretical foundations on several labour market segments in Romania, which confront with discrepancies between supply and demand, and we compute the three indicators. Based on the obtained results, we formulate the solutions for reducing these discrepancies.

Friday, April 23, 2004

15.30-15.50 **Methodology of Econometrical Analysis of Dynamic Series**

Author: Professor ***Ion Pârțachi***, PhD, Academy of Economic Studies of Moldova

Abstract

The development of economic phenomena or process is often conditioned by not only external reasons, but internal regularity of the phenomenon too. In this article, we want to accent attention to the methodology of the study of dynamic series, to show an instrumentation of the investigation of dynamic series from the point of view of its internal structural peculiarities. This instrumentation will be important later on for a construction of prognostic and imitation models, which, in its turn, compose a base of solution of such models as: a) opening of the mechanism of genesis of observations of time series, b) construction of optimal prognosis, c) elaboration of a strategy of management of analyzed processes.

This article investigates the application of different criteria, which can permit to analyze the structure of the components of dynamic series. Formal decomposition of the components, characteristics of the components of dynamic series is the base for achievement of final points of the investigation. As result of the determination of the properties of, for example, casual component, we'll limit a multitude of models by the following classes of model: 1) class of stationary time series, 2) class of non-stationary time series, 3) class of non-stationary time series with stochastic trend, which can be deleted by consequent differentiation of the series. The series of first and second class of model are class of TS (trend stationary) series; the series of third class are DS (difference stationary) series. TS and DS trajectories of development are being distinguished cardinally; therefore the determination of the series to one of another class is very important task.

15.50-16.10 **Measuring Informational Quantity Contained in Observation Dates**

Author*:** Professor ***Gheorghe Ruxanda, PhD, Academy of Economic Studies

Abstract

The paper presents an attempt to evaluating the information quantity contained into the data used in quantitative analyses, on the basis of the connection between a series of variability measures and Shanon entropy.

It is outlined the fact that the entropy and the information are measures monotonously increasing of observations variance.

At the same time, it is calculated the information quantity for various probability laws, as, for instance: normal law, χ^2 law, uniform law etc.

16.10-16.30 **Projection Methods for Sub-National Population**

***Author*:** Senior Lecturer ***Constanța Mihăescu*,** PhD, Department of Economic Statistics and Forecast, Academy of Economic Studies

Abstract

The cohort component method is used for projections at different geographical levels, but for small areas it claim supplementation. Small area populations are subject to commonplace events that nonetheless have dramatic consequences on a local scale, such a demolition of old houses for new housing developments, or for roads, schools, car parks,

offices, or shops. The statistically tidy and regular sequence of changes assumed in the cohort component method cannot encompass abrupt and irregular external influences of this type. Consequently, it is essential to incorporate into projection work knowledge of the local area and prospective developments on short, medium or long term.

16.30-16.50 **Economic growth and its determinants in transitional economies**

Author: Teaching Assistant ***Ramona Paun*****,** PhD candidate, Academy of Economic Studies

Abstract

Lots of researchers became interested in studying the economic growth and identifying the factors that lead to it. Studies made by those showed that banking sector development and financial markets are among the most important ones. The problems appear when we consider transitional economies where both factors are usually underdeveloped or do not reach the level of those in developed countries. Besides, transitional economies are well known for their high rates of inflation and we want to see how this affects growth.