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METHODS AND MODELS OF STRUCTURAL ECONOMIC ANALYSIS

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The recent publication of the reviewed work is a successfull scientific achievement of high theoretical and applicative value in the utilization of systemic analysis and of structural methods and models in economic systems investigation and design both at a macro and micro-economic level.

In the present conditions of the contemporary technical and scientific revulution, of the unprecedented amplification of the complex socio-economic phenomena and procedures, the methods and techniques of structural analysis and modelling create the premises for improving the activity of economic system scientific design, of analysing their structure, functionality and behaviour.

Based on a long practical experience of the authors, the comprehensive material contained in the work is divided into seven chapters.

The first two chapters (Structure of Economic Systems; A Structural Economic Analysis) present the basic concepts of structural analysis.

At the same time, the main trends appearing in the world in the field of systemic analysis and structural methods are analysed critically, from materialistic-dialectical positions. A critical analysis is made of the relationship between the structuralistic theory and the structural method, the advantages and limits in using the structural method in economy being presented.

Worth mentioning is the almost exhaustive character of the synthesis made, including references to the well known works of L. van Bertalanffy, M. Mesarovic and others.

An important place in the study is occupied by the presentation of the Romanian achievements in the field of economic cybernetics, of the fundamental works written by Acadamician Prof. Manea Mănescu.

In the authors' opinion, the national economy system appears from the point of view of the structural method as a multistructural system, the production, organizational and management structures being outlined within it. The authors underline the decisive role played by the production structure in ensuring the unity and best substantiation of the entire complex of the national economy.

An important place is held by the analysis of the direct and feedback connections established among the three big structural categories of the national economy, the elements determining the changes in the development of structures: the economic development standard, the technical-scientific progress, the efficient use of resources, the volume and efficiency of world economic exchanges, the intensification of international division of labour, etc.

The authors also investigate the complex problem of economic growth tackled from the point of view of structural analysis.

The authors underline the fact that through their very nature, the economic systems are pre-eminently dynamic, the scientific analysis of the evolution of their relations and interconditioning being possible on the basis of the systemic method, of the structural method inclusively, based on an adequate mathematical formalization.

The third chapter of the work presents vectorial analysis methods and techniques of economic structures and the structural changes. Based on concrete data, automatic methods are defined and illustrated for computing the categories one operates with in structural analysis, such as the length of the structure descriptive vector, structural deviations and the distance between the structure vectors, basic elements facilitating the introduction of estimative indices of the structural characteristics of the economic processes and phenomena.

The next chapter examines the structure of production systems on the basis of matrix methods and the graph theory. Linear models of the analysis of structural evolution in economy are also introduced. The theorectical approach of a high scientific standard is accompanied by many practical exemplifications, at a micro and macroeconomic level, as well as a series of original algorithms integrated into an automataic structural analysis system.

The fifth chapter of the work is devoted to the qualitative analysis of the structure, on the basis of entropic sizes characteristic of them, the structural changes in the evolution of the economic systems being underlined.

The mathematically extremely rigorous exposition makes many original contributions to investigating the structural improvements in the economic systems based on the utilization of entropic sizes in estimating the efficiency of each state. The information approach of the structure of hierarchical economic systems is proved, an extremely important element in analyzing the economic systems scheduling, organization and management.

Taking into account the fact that most of the connections established within the structures have an informational character, resulting thereof is the particular importance of the original methods worked out by the authors for the analysis of economic structures on the basis of informational methods.

The sixth chapter of the study underlines the effect of the propagation of structural changes within social production on various synthetic indices used in socio-economic statistics. Aspects of the sensibility

of the structure index, the modifications of territorial structures, etc. are tackled in an interesting and original way.

The last chapter of the study is devoted to the complex problems of economic systems optimization, under its three aspects, respectively the production, organization and management structures for the symultaneous achievement of the structural and behaviour optimum. In conclusion, a series of top results obtained in the world (M. Mesarovic. L. Lasdon, H. Tamura) are presented and problems linked with the relationship between the economic and the structural optimum, the criteria of the structural optimum, etc. are proposed for reflection.

We consider that through its multiple theoretical and practical values, through the numberless original elements, the present study — an outcome of the authors' long scientific investigation and practical experience is a convincing plea for the use of structural analysis methods and models in economy.

The use of a modern mathematical apparatus, the rich illustration of the theory with examples from economic practice, the clear and concise style make of this study a reference material for a large number of specialists in the field of planning, informatics and cybernetics, of those working in the field of economic systems analysis and design.

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