ADVANTAGES AND CHALLENGES OF MODELS OF UNEQUAL DEVELOPMENT OF TERRITORIES IN THE CONTEXT OF GLOBALIZATION

U. A. Otajanov
Tashkent State University of Economics, Associate Professor, Department of Management and Marketing, Doctor of Economics,

Sattorov Sanjar Abdumurodovich,
Independent researcher at Termez State University.

ANNTOTATION
The article discusses the advantages and problems of uneven development models of regions in the context of globalization. It emphasizes the need to focus on the distribution of resources between regions, rather than intra-regional distribution problems, to more closely model the behavior of decision-makers and planners and their interactions using optimization models to manage processes.

Keywords and phrases: uneven development of regions, model, intra-regional distribution, resource, management, optimal model, interaction, modeling.

Introduction

Against the background of changing perspectives in economic geography, the purpose of the issue of uneven development of regions is twofold. First, it enables the further development of diverse lines of thought in economic geography to deepen our understanding of uneven economic development and related regional challenges.

Second, it attempts to highlight emerging trends along with emerging constellations of processes and power domains that determine the evolution of interregional imbalances in the era of globalization. As such, it seeks to show how and where new institutional and policy interventions may be needed, and at what scale.

Research shows that regional development planning has different meanings in different countries as well as at different regional levels. This may be partly due to national variations in the form of territorial development (in some countries, regional growth is balanced, in others, interregional imbalance). It can also be a reflection of the place and role of regional development planning in different countries**.**

Analysis of literature on the topic. Foreign scientists I.Ansoff [1], A.I.Anchishkin [2], L.E.Basovsky [3], S.D.Beshelev [4], F.G.Gurvich are responsible for assessing the socio-economic development and prospects of the region. [5], K. Bowman [6], the problems of evaluating the effectiveness of regional entrepreneurship and small business in the national economic sectors were discussed by T. Ahmedov [7], A.A. Qayumov, Kh.M. Nazarova [8] from Uzbek economists. , F. Egamberdiev[9], B. Ruzmetov[10], A. Sodikov[11], A.S. Soliev[12], A.M. Sodikova[13], H.S. Mukhitdinov[14], I .S.Abdullaev[15] and others researched in scientific works.

In spite of the carried out scientific and research works and conducted scientific and theoretical research, precisely in the conditions of today's globalization and democratic market reforms, the issues aimed at improving the comprehensive statistical analysis of socio-economic development and assessment of prospects, and the evaluation of the factors affecting it based on statistical models are systematically covered. not given, not fully studied as an object of research.

Following Leontev's early work on national input-output modeling[16], Isard formulated a general interregional input-output model[17]. However, although this model was developed in the 1950s, it is still not widely used. A direct reformulation of the Leontev model as a regional input-output model has achieved great success.

It has been used in different countries at all geographic levels, often supplemented by independent econometric estimates of import, export, and consumption functions. Spatial general equilibrium models have been little used due to the lack of theories and the lack of statistical data to support or refute them. To overcome this problem, Lefebvre developed a spatial general equilibrium model, but the brief approach to the transport sector led to some problems[18]. The theoretical analysis of location by Koopmans and Beckmann[19], as well as classical studies by Hotelling, suggest various reasons why market equilibrium cannot be maintained even theoretically in a multi-regional system[20].

The past decade has seen significant development in the use of equilibrium models to study regional land use patterns. These models, often called "new models of the urban economy", derive from the work of Alonso[21] and Muth[22] on the functioning of the urban housing market. They have reached the stage of application in many cities, especially in combination with balanced urban transport models. There has been increased interest in integrated land use and transport models at the regional and interregional scale, as well as in disequilibrium or partial equilibrium types. The first major models of urban and

regional processes belong to this category. Some of them, for example, the non-core model developed by Lowry, have been very successful and have led to the development of a new class of models, which are currently called "spatial interaction models" [23]. Wilson[24] is the most prominent representative of this modeling approach. Of course, other models have been developed, including the very large Forrester transport models[25] developed in the US, which have not been successful and have not even reached the application stage.

It can be seen that the approval and application of the concept of "central place" in regional development planning is based on a certain rule. Rather than dealing with territorial units, such approaches assume that territorial development takes place in a network of interconnected villages, towns and cities that form a hierarchy. The concept is somewhat related to the idea of growth poles, which was developed by Perroux in relation to the French territorial planning system[26], although growth poles usually refer to a non-spatial system, the concepts of centrality are theoretically understandable and have not played a very important role in the development of quantitative models.

Nevertheless, the conceptual importance of the centrality and growth pole models should not be underestimated. These ideas have been used as a basis for policy formulation as well as for policy evaluation in a number of European countries. In many cases, the same conditions can be derived from programming and simulation models. The primal-dual relationship of linear programming provides a framework by which the results of the optimization approach can be interpreted as market equilibrium.

Although Tinbergen's models were established on a comprehensive basis, they were still based on cost minimization by linear models. They were followed by a number of other planning models with minimization of transport and/or investment costs as the main objective.

Research methodology. Analysis and synthesis, induction and deduction, economic mathematical modeling, statistical, correlational and regression analysis, expert assessment, scientific abstraction and other methods were widely used in the research process. The practical significance of the research results is used in developing and forecasting regional entrepreneurship activities in the regions of the republic from the developed suggestions and practical recommendations, in the development of targeted program documents for more effective development of the sector.

Analysis and results. There are several different ways of studying the evolution of new theories and models of regional development planning over the past two decades. Some important variations of cross-regional or multi-regional explanatory modeling are described first.

Classification of regional development modeling studies

T/P	Spatial coverage	Model type	
		Explaining and predicting	Planning and Policy
1.	Interregional or multiregional	Check in/out	Multi-regional planning
		Spatial General Equilibrium	Economic Growth
		Central location	Minimize transportation and/or investment
		Migration	
2.	Regional	Check in/out	Mathematical programming
		Core/non-core	Spatial competition
		Growth pole	Availability
3.	Interregional	Urban land balance Optimizing transport/land use	Urban land balance Optimizing transport/land use
		Transportation	
		Spatial interaction	Cost-benefit

All regional development studies use the models presented in the table, but this categorization is not isolated or restricted in any way in scientific research.

Despite the changes in the main planning issues intended, it has remained almost the same for the last twenty years. Later, the following began to appear as important factors in regional planning:

1. Fundamental uncertainties regarding economic development in the medium and long term have increased.
2. Economic integration has increased both domestically and internationally, which means that the regions are increasingly exposed to external economic processes.
3. The shortage of fuel and other raw materials led to focus on the analysis of important economic processes to the problems of technological change.

The above-mentioned three points do not refer to regional processes, but represent examples of general economic phenomena that have regional impact and may have a significant impact on regional development in the future. Changes in economic development, i.e., economic stagnation or rapid structural changes in industries, even in highly industrialized countries, other features of this new order may imply new territorial growth patterns at the national and local levels.

Another example of interest in coupled model systems is the growing attention to the economic aspects of migration processes and the determinants of labor

supply. It also shows a trend towards more accurate solutions to uncertainty and multi-objective problems, which is a very important topic in the field. As some important practical problems of transferability between theoretical models, practical models and the computer programs required for such models, practical regional modeling should focus on maintaining a balance between generality and specificity, not only theoretically, but also in computational practice.

Applied regional systems analysis cannot be used to generate simple quantitative results. The focus on long-term policy issues makes it impossible to derive any policy recommendations that are sufficiently specific for immediate action. A more realistic goal would be to use models to develop quality policy recommendations in the form of general guidelines. In some cases, even this goal is not achieved; however, regional system analysis applied in this context can always be used to gain a better understanding of long-term regional policy issues and their interactions.

In the analysis of regional systems, it is often necessary to create a large number of forecasts showing the consequences of different courses of action and different forms of development, and these forecasts can be very useful for regional planners. Creating these scenarios is an important part of the planning process. Planning scenarios can be developed through a purely verbal process, sometimes aided by road maps, as in physical planning. However, experience shows that this type of process is only viable if the number of planning variables is small.

Computer-aided planning processes become necessary as the size and level of resolution of the problem increases. The economic structure of the area can be seen as the first dimension of the planning process, the spatial structure as the second dimension, and the temporal sequence of activities as the third dimension. If we assume that the economic structure can be represented by 30 production sectors, the spatial structure by 10 subregions, and the temporal structure by 3 periods, a model that includes all interdependencies would need to account for 900 variables. It would be very difficult to design such a system without the help of a formal computer model.

Research shows that applied regional systems analysis cannot be used to generate simple quantitative results. The focus on long-term policy issues makes it impossible to derive any policy recommendations that are sufficiently specific for immediate action. A more realistic goal would be to use models to develop quality policy recommendations in the form of general guidelines. In some cases, even this goal is not achieved; however, regional system analysis applied in this

context can be used to gain a better understanding of long-term regional policy issues and their interactions.

In the analysis of regional systems, it is often necessary to create a large number of projections showing the consequences of all courses of action and different forms of development, and these projections can be very useful for regional planners. Creating these scenarios is an important part of the planning process. Planning scenarios can be developed through a purely verbal process, sometimes aided by road maps, as in physical planning. However, analysis shows that this type of process is viable only when the number of planning variables is small. These variables can be considered as planning tools. As discussed in the review of current research on multi-objective decision analysis, a priori selection of a single objective function is a difficult and risky task. A more realistic approach would be to propose several possible objective functions and then explore the range of solutions obtained. In this way, the problems of stacking conflicting objects could be avoided, but the approach still suffers from the difficulties inherent in solving large-scale systems.

Many planning models can be given precise and statistically reasonable technological constraints: this is certainly true for resource use constraints. Many economic planning models include reasonably clear restrictions on the use of primary resources, labor and other factors affecting production. Network correlations can also be defined with some degree of precision. However, it is much more difficult to identify the behavioral constraints governing the activities of households and other decision makers in an economic system.

A broad description of the evolution of regional development process modeling over the past twenty years has been given, and the theoretical foundations of this type of analysis have been reviewed. Based on the considered opinions, the development of modeling methods in the research work was summarized and some methods and practical use of models were discussed.

Conclusions and suggestions. It is appropriate to conclude with a few comments on the future of regional development modeling, with particular attention to the research work being done at the International Institute for Applied Systems Analysis.

1. Systematic-analytical approaches using mathematical models in any research should be complemented by "softer" approaches to problems identified by the humanities and some social and behavioral sciences.

2. There are grounds for researching new quantitative methods of regional system analysis. However, in the very long term, structural stability analysis should be used to examine possible future changes in the composition of regions. Nor is it the only area where major uncertainties need to be assessed through regional development modeling. The composition of regions, which is one of the central problems of the analysis of regional systems, must also be carried out taking into account the main uncertainties.

3. Development scenarios need to be evaluated not only in terms of their benefits, costs, usability, environmental impacts and other factors, but also in terms of flexibility and resilience to unexpected changes in behavior and technology.

LIST OF REFERENCES:

1. Ансофф И. Стратегическое управление. М.: Экономика, 1989, 519 с. 4.;
2.Анчишкин А.И. Наука, техника, экономика. М.: Экономика, 1986, 383 с.;
3.Басовский Л.Е. Прогнозирование и планирование в условиях рынка. Учебное пособие. - М.: ИНФРА-М, 1999. - 260 с.;
4.Бешелев С.Д., Гурвич Ф.Г. Экспертные оценки. М.: Наука, 1973, 246 с. 11.;
5. Гурвич Ф.Г. Основы региональной экономики: Учебник для вузов. - М.: ГУ ВШЭ, 2000. - 495 с.;
6. Боумэн К. Основы стратегического менеджмента / Пер.с англ. Под ред.; Вишнев СМ. Основы комплексного программирования. М.: Наука, 1977, 45 с.;
7.Ахмедов Т.М. Регулирование территориальной организации производительных сил и комплексного развития регионов Узбекистана Т.:Фан, 1992.;
8.Қаюмов А.А., Назарова Х.М, Эгамбердиев Ф.Т., Якубов Ў.Ш. Минтақавий иқтисодиёт. Т.: Университет, 2004.-102 б.;
9.Эгамбердиев Ф.Т. Иқтисодиёт назарияси, ўқув қўлланма.-Т.:Иқтисодиёт-молия нашриёти, 2014 йил.;
10.Рузметов Б. Региональная экономика. Опыт, проблемы, эффективность комплексного развития. -Т.: Фан, 2003. -219 с.;
11. Содиқов А.М. Ўзбекистон минтақаларининг ижтимоий иқтисодий ривожланиши ва уни тартибга солиш механизмлари. И.ф.д. автореферати – Тошкент: Ўзбекистон миллий университети, 2006, 42 б.;

12.Солиев А., Абдуназаров Х. Аҳоли ўсиши ва истеъмолларини ишлаб чиқаришнинг ҳудудий хусусиятлари // Ўзбекистон иқтисодий ахборотномаси. Тошкент, №12, 2003.;
13.Содиқов.А.М, Ўзбекистон минтақаларининг ижтимоий иқтисодий ривожланиши ва уни тартибга солиш механизмлари. И.ф.д. автореферати – Тошкент: Ўзбекистон миллий университети, 2006, 42 б.;
14.Мухитдинов Х. С. Аҳоли турмуш даражасини моделлаштириш // Монография, Тошкент нашриёти 2005,103 б.;
15.Абдуллаев И.С., Рузметов Б. Ҳудудий иқтисодий тизимни ривожланишини прогнозлашнинг комплекс сонли эконометрик моделлари. Монография // “LESSON PRESS”, 2017, 108 б.;
16.Леонтьев В.В. Межотраслевая экономика М.,1997. -315 с.
17.Isard, W. (1951) Interregional and Regional Input-Output Analysis: A Model of a Space-Economy. The MIT Press, Cambridge. https://doi.org/10.2307/1926459
18.Louis LefeberAllocation in Space: Production, Transport, and Industrial Location Contributions to economic analysis (Выпуск 14), ISSN 0573-8555 North-Holland Publishing Company, 1958, p. 151
19.Tjalling C. Koopmans and Martin BeckmannAssignment Problems and the Location of Economic Activities. Econometrica Vol. 25, No. 1 (Jan., 1957), pp. 53-76 (24 pages)
20. Hotelling, H., 1929. Stability in competition. EconomicJournal 39, 41-57.
21. Alonso, W. (1964). Location and Land Use. Harvard University Press, Cambridge, Massachusetts.
22.Muth, R. F. (1969). Cities and Housing. The University of Chicago Press, Chicago.
23.Lowry, I. S. (1964). A Model of Metropolis. RM4035·RC. Rand Corporation, Santa Monica, California.
24.Wilson, A. G. (1970). Entropy in Urban and Regional Modelling. Pion Press, London.
25.Forrester, J. H. (1969). Urban Dynamics. MIT Press, Cambridge, Massachusetts.
26.Perroux, F. (1955). Notes sur la notion de pole de croissance (Notes on the concept of a growth pole). Economie Appliquee, 8:307 ff.