Spatial policy of regional metropolis development in Ukraine: conceptual principles of formation

Abstract. Concentration of financial, socio-cultural, economic and informational flows of society development in large cities and areas of their influence in the region (regional metropolises), as well as realisation of socially significant functions in modern conditions, are important determinants of the country’s efficient mechanisms of spatial policy development. The authors analyse the basic preconditions and determinants of spatial development of regional metropolitan cities. They explain the necessity of development, as well as the conceptual basis of spatial policy of regional metropolises. The priority areas, strategic priorities and objectives of the spatial policy for the development of regional metropolises as units of concentration of development potential and core elements of economic growth are identified. It has been emphasised that an increase in the economic potential of regional metropolises will not only contribute to the territorial balance of Ukraine, but will also ensure the connection of its regions to global communications and processes through the transfer of development impulses in the surrounding areas and will have a positive impact on the transformation of the economic structure and development of promising new spatial forms of business activity.

Keywords: Metropolisation; Spatial Policy; Metropolitan City; Regional Metropolis; Metropolis Area; Development

JEL Classification: R12; R19; R58

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1. Introduction

In today’s global economic integration and institutional transformation processes of metropolitanisation are the most important processes of spatial development. Formation and development of metropolises as powerful poles of economic growth, the spread of their influence on the socio-economic development of the surrounding areas, as well as inclusion in the network of supranational social, financial, and institutional linkages enable the communities to build reasonable and effective mechanisms for the spatial policy of areas and the development of regions.

2. Brief Literature Review


3. The purpose of the article is to provide reasoning for conceptual foundations for spatial policy development of regional metropolises, namely the definition of objectives, principles, directions and goals of spatial organisation and urban development with metropolitan functions (of regional metropolises) in order to increase their social and economic potential, to promote balanced regional development in Ukraine, to connect the country’s regions to global relationships and processes.

4. Results

Formation and development of metropolises, as a result of the development of metropolisation processes, takes the most important places in the accumulation of capital, information, goods (services) and population, as well as in strengthening their role in socio-economic development. It is justified by two objective factors. Firstly, in spatial aspect, they are the engines of innovation and the core elements of economic growth [11, 80]. Secondly, in terms of settlement, they are catalysts and absorptive centers of migration processes and socio-cultural diversity, generating potential conflicts [12, 50].

The estimation of the development level of metropolis functions of the regional centers in the Western Region in 2005-2014 (Tab. 1) confirmed the status of Kyiv as a regional metropolis in the European metropolitan network (with an integral index which is 4 times higher than the other 5 major cities). Kharkiv, Odessa, Dnipropetrovsk, Donetsk and Lviv can be considered to be the urban centers with a status of regional metropolis as part of a national metropolitan network. They are inferior to the capital in terms of implementation of most of metropolitan functions, but for the analysed period are gradually increasing its metropolis potential. The highest growth rate was in the city of Lviv - 4.2% a year.

Based on the analysis of 5 regional metropolises, the authors have defined the development of metropolitan functions of the city of Donetsk (until the year 2014) - administrative and economic; the city of Dnipropetrovsk - economic and investment; the city of Kharkiv - educational, scientific and innovation; the city of Odesa - political, logistical, cultural and tourist; the city of Lviv - political, transport, cultural and tourist.

The synergy of interaction between financial, socio-cultural, economic, human, information flows in metropolitan space causes problems:

1) of territorial nature related to conflicts of land interests: concentration and acquisition by metropolitan cities signs of financial, logistics, business and cultural centers of backbone value is the reason for changing the territorial organisation of cities and the emergence of a number of spatial conflicts related to crowding of urban space, uneven development of individual segments of the property market, the spatial expansion of adjacent peripheral areas by large metropolitan cities and deepening of regional socio-economic disparities;
2) of infrastructure nature associated with compaction and an increasing load on transport, infrastructure, utilities (water, sewage, electricity and heating, waste disposal, etc.);
3) of social nature, related to social polarisation and deepening disparity in incomes of the population: concentration of functions of power and influence, management and control in large metropolitan cities, causing distortion of the structure of employment as a result of collapse of the traditional industrial sector and the accelerated development of services which is manifested in the proportion of highly paid staff employed in corporate management sector and an increase in the percentage of low-skilled workers in the service sector and the areas of consumer services, tourism, entertainment and recreation;
4) of ecological nature associated with environmental load and mental stress in the course of social interactions and communication between individuals in the metropolitan area: the psychological characteristics of life in modern cities, where metropolitan is characterised by formalisation of personal relationships, weakening of moral principles, reduced depth of interpersonal contacts, increased nervousness stemming from the rapid and continuous changes in domestic and foreign experience causing a number of problems of physical and psychological health, as well as increased deviant socialisation;
5) of public nature regarding the need to ensure equal, in both quality and quantity, access of regional metropolitan residents and their peripheries to the system of administrative services.

In the conditions of the priority given to the formation of the regional development polycentric model, the development of metropolis habitats across the country, promotion of the administrative-territorial reform related to the need to develop a single policy solution require cooperation of all regional localities within the national space. Thus, the objectives of the spatial policy for the development of cities with metropolitan functions (regional metropolises) is as follows: to develop mechanisms, instruments and stimuli of regulatory and administrative, legal, financial and economic nature on spatial (economic, urban, social, etc.) development in the metropolises and their metropolitan habitats which should become the basis for overcoming centre-periphery imbalance and metropolisation challenges of our time; to balance territorial and structural changes in the economies of regions; to optimise regional development on the basis of metropolisation potential of big cities; to strengthen intermunicipal, interregional and international cooperation.

The development of spatial policy of regional metropolises requires consideration of objective laws and subjective factors of territorial organisation of society [14]. They are:

**Tab. 1: Integrated development indices of metropolitan functions of regional centers in the Western Region in 2005-2014**

<table>
<thead>
<tr>
<th>Years</th>
<th>Metropolitan City</th>
<th>Kyiv</th>
<th>Kharkiv</th>
<th>Odessa</th>
<th>Donetsk</th>
<th>Dnipropetrovsk</th>
<th>Lviv</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>100.0</td>
<td>25.0</td>
<td>27.0</td>
<td>21.0</td>
<td>24.0</td>
<td>17.0</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>100.0</td>
<td>25.0</td>
<td>26.0</td>
<td>20.0</td>
<td>23.0</td>
<td>17.0</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>100.0</td>
<td>27.0</td>
<td>28.0</td>
<td>22.0</td>
<td>26.0</td>
<td>17.0</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>100.0</td>
<td>26.0</td>
<td>28.0</td>
<td>23.0</td>
<td>23.0</td>
<td>18.0</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>99.0</td>
<td>26.0</td>
<td>28.0</td>
<td>22.0</td>
<td>22.0</td>
<td>20.0</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>98.7</td>
<td>30.5</td>
<td>29.0</td>
<td>22.6</td>
<td>23.3</td>
<td>20.5</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>98.4</td>
<td>32.0</td>
<td>31.5</td>
<td>26.0</td>
<td>23.8</td>
<td>23.3</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>98.0</td>
<td>32.0</td>
<td>29.3</td>
<td>23.3</td>
<td>24.8</td>
<td>24.6</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>97.5</td>
<td>32.0</td>
<td>29.0</td>
<td>26.0</td>
<td>24.6</td>
<td>24.4</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>97.0</td>
<td>32.0</td>
<td>28.9</td>
<td>27.0</td>
<td>24.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors' calculations based on the methodology proposed in [13].
1) systematic and synergetic nature of social development related to the synergy of social and territorial complexes;
2) evolutionary nature of socio-economic development which is a succession of individual stages, formations, cycles and phases of development of society as a whole and its individual component and territorial components;
3) hierarchical social and territorial structures, as shown in "vertical" accountability and interdependence of components of complex socio-territorial entities; this hierarchy is closely associated with diffuse nature of territorial development of society when any innovations "move" from the core elements of the highest hierarchical level to the core elements of the lower ones, giving them new impetus for their development;
4) multiplicative conditionality of socio-territorial systems is linked to multiplying influence of some factors and conditions of development, which is the cause of formation, along with several other components of the backbone, a number of other ones - complementary, related etc. This mechanism is the basis of integrated regional development.

The strategic priorities for spatial policies of regional metropolitan development are stipulated by the determinants of spatial development of Ukraine:
1) consideration of modern metropolisation challenges in strategic documents related to the regional development of Ukraine;
2) determination of a development model for metropolitan cities (metropolitan regions) and improvement of metropolitan policy for their development through coordination with regional (spatial) policy;
3) justification of reinforcement instruments of the positive impact of metropolisation processes on the spatial development of the country, as well as working out mechanisms of economic and social (interregional and intraregional) integration;
4) development of methodological tools to evaluate and monitor the economic effect of the realisation of metropolitan functions by metropolitan cities;
5) justification of an effective system of institutional, organisational and economic mechanisms of management of metropolitan spaces in the context of the EU integration processes;
6) addressing the challenges concerning conflicts in the urban environment and effective justification for institutional, organisational and economic mechanisms of activation of peripheral areas;

The main priority of spatial policies for regional metropolisation development is creating conditions for a self-contained, integrated and sustainable development of metropolitan cities and their metropolitan habitats, which requires achievement of the following strategic objectives:
1) ensuring the most efficient, in terms of the capitalisation of the country, integration of metropolitan cities and their periphery into the global space of financial and economic, administrative, social and cultural flows;
2) intensification of socio-economic development of peripheral towns versus metropolitan cities territories through distribution of generated by metropolitan cities socioeconomic central flows and formation of new innovative elements of economic growth;
3) achieving spatial and economic connectivity and integration of metropolitan space of the state based on the formation of a national metropolitan network of metropolitan formations of different hierarchical levels, providing connection of the territories and population to the potentials of socio-economic growth.

The logic of formation and implementation of the concept of spatial policies for the development of regional metropolises must be guided by the following general principles:
1) unity and consistency - the system of metropolitan formations of different hierarchical levels functions within legitimate framework of the administrative-territorial structure of the country and is consistent with the state, regional, urban, socio-economic, infrastructure policy and a unified system of spatial planning;
2) integrity and polycentrism - objects, institutions, institutions and links between them within the space of metropolitan space form it as an integral organised environment, which makes it possible to create the centre of metropolises and multiple nuclei (centres) on the periphery of the metropolitan habitats;
3) interrelation, complexity and complementarity - a metropolitan city (regional metropolis) is a spatial formation that is formed on relationships and dependencies between objects, institutes and institutions, both in spatial subsystems of a metropolitan city and between spatial subsystems of lower hierarchical level within metropolitan sub region and facilities, institutes, institutions of over-metropolitan rank (including inter-regional, international and global relationships and dependencies) which complement each other and form a comprehensive system of metropolitan space in the integrity of the functional interaction.
4) concentration, proportionality and efficiency - building architectures of metropolitan space should be justified by optimal proportions of spatial subsystems, their rational distribution in accordance with the resource-settlement network and infrastructure accessibility which provides maximum economic efficiency of their spatial organisation;
5) synergy, subsidiarity and management - maximum synergy for metropolitan space through the interaction of its spatial subsystems based on building effective cooperation mechanisms (inter-municipal, interregional and global) and systems of governance institutions.

Specific principles of building space policies of regional metropolises are principles arising from the understanding of integration of Ukraine in the global socioeconomic processes, and conditioned by the signing of the Association Agreement with the EU. As it is known, special attention of the European policy of spatial development policies is paid to urban development that focuses on how to enhance competitiveness in the conditions of social, cultural and environmental challenges [15]. Among the initiatives of the European policy of urban development the following initiatives should be singled out: green cities (environment-friendly cities); open cities (cities that promote integration between different population subgroups); innovative cities (urban policy focuses on supporting sustainable energy, transport, communications and healthcare); creative cities (cities that creatively contribute to the development of culture). In direct connection with urban development policies, rural development policy is being implemented by the European community that focuses on promoting diversification of economic activities, improving the quality of life and deepening of social integration of rural areas [16].

The basic principles of managing the implementation of strategic objectives of spatial policies for regional metropolises development are principles of metropolitan management, based on accepted approaches to the organisation of democratic governance of any open systems (the ones based on transparency, accessibility, accountability, fairness, legitimacy, representativeness, subsidiarity, protection of key rights and freedoms, etc.) determines the organisation of adequate management of metropolitan formations in the 21st century [17]. They are aimed at: the efficient use of resources of metropolitan regions; increasing the quality of local democracy in metropolitan region; promoting interregional and intraregional integration; organising effective decision-making; finding a balance between the prospects of reconstructing city space and their territorial expansion into the nearby suburban area; developing of an integrated infrastructure and communication network; provision of effective management opportunities for economic competition, as well as the efficient use of natural resources and preservation of the unique identity of individual components of local metropolitan region.

Metropolitan management as an institutional basis for constructing spatial policy for regional metropolises development can be realised in the form of formal and informal institutions within region formation and its sub-systems on both the vertical and the horizontal principles, which contribute

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to the strategic goals of metropolis development. To achieve goals of metropolitan management, a variety of tools metropolisation and delimitation of metropolitan formations of different hierarchical levels; 2) development of methodology of statistical support (indicators, indexes), evaluation and monitoring of events and phenomena of metropolisation that reflect both quantitative indicators of functional metropolitan influence of metropolitan cities and qualitative processes and connections of metropolises with surrounding territories and metropolitan entities of national and supranational level; 3) creation of mechanisms for the intensification of socioeconomic development of peripheral compared to metropolitan cities and territories based on the distribution of generated by the metropolitan cities of socio-economic centrifugal flows and stimulating innovation and investment development of new centres of business activity and economic growth, which involves the activation of tools for spatial planning and forecasting of metropolitan regions development, coordination of city planning documentation and master plan of development of administrative structures adjacent to the metropolitan city, and the development of a coherent system of infrastructure provision for the metropolis development; 4) development of mechanisms and institutional forms of management and cooperation within the metropolitan structures of different hierarchical levels, which ensure coordination of their current and strategic activities, based on the separation of areas of competence, responsibility and financial resources development.

The main aspects of spatial development policies of metropolitan cities should be defined as follows:

1) rationalisation of urban space (urban development) policy by revising strategies for the use of urban space of metropolitan cities for the possibility of consolidation of urban space (in case of availability of irrational building processes in the city), the need to expand the city by surrounding suburbs and rural areas, the appropriateness of high-altitude environment of the city (due to the demolition of the existing low-rise residential (industrial) buildings that do not bear a significant historical value and building multi-storey ones instead of them); processing capabilities of using underground space of the city (for transport networks dispersal projects);

2) use of redistributive mechanisms of spatial planning for regions development and balance of interests of the metropolises and peripheral areas, which will allow to extend the positive economic impact of regional metropolises as «economic locomotives» of the development of the national and regional economies to a greater territory of the state; introduction of redistributable redistribution, organisational tools and economic mechanisms of activation of peripheral areas potential is possible due to «disperse residential settlements and business activity from the regional centre as a pole of competitiveness to other localities that will form the points of growth throughout the region» [18, 183];

3) study and assessment of schemes options for planning territories that provides for industrial zones around metropolitan cities with the removal of some of the companies and placement of new industrial parks, IT-companies, technopolises and logistics centres, and provision of tax preferences and subsidized support to companies whose business relocation from metropolitan centre into potential areas of the region growth (medium and small towns, villages) are possible. The implementation of alternative planning solutions will improve the environmental situation in cities and increase the level of employment in the surrounding areas and the territories freed from metropolises can be used for the construction of new facilities of quaternary sector, business infrastructure and enterprises of the V-VI technological structures; 4) creation of a model of polycentric spatial development of metropolitan region that aims to promote the comprehensive improvement of the economic potential of metropolitan cities and peripheral branches of economic activity (e.g., cities of lower rank), and to eliminate the asymmetry of socioeconomic development of certain localities within the metropolitan region;

5) activation of mechanisms of economic and social interregional and intra-regional integration, which includes the creation of infrastructure, i.e. transport, information, financial, networks between cities with high potential of economic growth and less developed (rural) areas and small towns providing the latter with more financial autonomy to improve business activity at the level of various administrative-territorial subdivisions, as well as the possibilities of circular labour migration; capitalisation of remote settlements potential, etc.; implementation of an interregional cooperation mechanism based on principles of combination and mutual strengthening of equal growth centres by establishing interregional cooperation ties, implementation of joint projects for interregional metropolitan areas (economic dipoles) with the introduction of depression neutralization mechanisms in the surrounding areas; introduction of common standards for living conditions (health, education, water supply, environmental safety) to exclude population mobility because of unacceptable living conditions; provision of equal access to public transport, telecommunications, administrative, financial and other services to form spatial cohesion by improving their quality [19, 13];

6) development of revitalizing and re-urbanising programs for metropolitan spatial development, which should provide conditions for the formation of the coordination re-urbanisation processes and needs of sustainable development not only in the centre, but in the whole area of metropolitan area in general.

Given the long-term interests of spatial development within the formation of metropolitan spatial policy in Ukraine, it is necessary to:

• conduct a comprehensive analysis of the economic potential of all settlements of the country and determine potential growth areas in the region along with the regional metropolitan centres;
• identify key barriers and factors of metropolitan sub-regions, including environmental and social conflicts, demographic, social and economic processes;
• develop a system of measures and incentives to create a favourable environment for innovation and increase investment attractiveness and residential competitiveness for regional metropolises in national, European and global metropolitan networks;
• develop and adopt the legislation related to the concept of spatial development of the country with a separate division for state metropolitan policy, including complex of levers, tools and incentives for the development of national metropolitan network, as well as mechanisms of its coordination with economic, city-building and infrastructure policies; promote the involvement of national metropolitan capitalisation processes and inclusion in national and European regional metropolitan networks that will significantly improve their competitive position and provide an opportunity to benefit from partnerships with other metropolises.

5. Conclusions

The spatial policy of regional metropolises development should be based on the maximum use of their potential,
namely opportunities for spatial distribution of their generated positive social and economic effects. Spatial planning and model of polycentric spatial development, the use of organisational and economic mechanisms of improvement of the economic potential of metropolitan cities and their metropolitan habits will contribute to eliminating asymmetries in economic and social development of the country. This requires determination of a perspective model of regional metropolises development, development of national territorial policy, as well as justification of tools of enhancement of the positive impact of metropolisation processes on spatial development of the country.

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