

DEVELOPMENT OF NEW ECONOMIC DISTRICTS IN BELGRADE METROPOLITAN AREA

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Abstract: Paper discusses new economic districts and spatial structures of the economic activities in metropolitan areas influenced by transitional processes and globalisation. It indicates the impacts of new economic trends and economic districts on creation of metropolitan areas' spatial organisation. Paper shows mechanisms of the agglomeration of new economic poles and spatial-economic clusters in metropolitan areas. These mechanisms have consequences on economic and spatial changes, on changes of urban, regional and social structures, on environmental degradation, etc. New economic zones in metropolitan areas are result of market pressures, the increase of economic competitiveness and influences of foreign and domestic companies on the territorial capital of those areas and their urban/ spatial structures. There are indications of possible development impacts on creation of new economic districts with the preliminary analyses of Belgrade metropolitan area. Paper concludes that new economic districts – new industrial, commercial, entrepreneurial zones that developed systematically or spontaneously in the suburban areas (along highways) of Belgrade metropolitan area, have a major role in spatial development of economic activities and in the planning of territorial organization of this area.

Key words: new economic districts, spatial clusters, business activities, sustainable development, urban policy, urban development

1 Introduction

The new economic and social development policy (based on the Lisbon agenda) founded on new knowledge, innovation and entrepreneurship (the development of small and medium-sized enterprises, spin-off companies etc., as a “regional catalysts“ of development), environmental protection and principles of sustainability, represents the new paradigm of spatial and urban development. Harmonisation of strategic aims, policies and instruments is an essential factor for the economic competitiveness and development of urban and regional areas.

For an effective planning of sustainable development and spatial organization in urban areas in Serbia in the following period, it is

necessary to incorporate European strategic frameworks, approaches and planning practises [1,2,3,4]. In the process of economic and social transition in Serbia, coordination to the conditions of EU competitiveness, the development of small and medium-sized enterprises in the industrial sector, services and other business activities, as well as urban policy, is a complex economic and urban planning challenge. Under the pressure of global processes in economic development, the transition of the socio-economic system into a market-oriented economy in Serbia, among other things, has influenced the creation of new economic poles/zones/clusters in urban areas, changes in spatial organization of cities, the appearance of new locational forms of

industries, services, business activities, etc. The document *Serbia's Strategy of Industrial Development 2007-2012* [5], does not deal with the questions of creation of new economic zones/clusters within urban and metropolitan areas in Serbia. Therefore, this paper is trying to demonstrate the need for the research of new economic forms in urban areas, the need for mechanisms of agglomerating activities in spatial/economic clusters and the harmonisation of sustainable urban development in Serbia, based on the example of the Belgrade metropolitan area.

2 New Economic Activities and Visualization of Spatial and Urban Development

2.1 The EU Industrial Policy and Spatial Industrial Development

Framework for new industrial/economic EU policy has been adopted in Lisbon, in 2000. [1,2,3,4]. The elements of the new industrial policy and development strategy of EU are based on industrial competitiveness founded on knowledge, innovations and entrepreneurship. Accordingly, the role of industrial policy is significantly changing. The most important goal in the following period is competitiveness, i.e. the ability of the economy to provide a high and growing standard of living, as well as high rates of employment. Achieving industrial competitiveness which is founded on knowledge, innovations and entrepreneurship presents the core of EU sustainable development strategy. The main target of the industrial policy is the development of potentials for EU expansion, and the main protagonists are small and medium enterprises, with their clusters and innovations. The major elements of the Lisbon Agenda are: (a) vital sustainable economic development and stimulation of planned growth by applying adaptable combined macro-economic policy; (b) preparation for transition towards a knowledge-based economy (industry) and society, by defining the appropriate policies which favour an information-oriented society, and research and development; (c) coordination

of phases of the structural reforms, in order to achieve competitiveness and innovation in conditions of complex markets; (d) modernization of European society, by investing in people and their education.

The role of EU industrial policy as a supranational policy is to: (a) establish a predictable legal framework for the efficient functioning of industry in order to prevent the risk of wasting resources or blocking entrepreneurial initiative; (b) to ensure the conditions for industrial development, since it is the most important activity for the realization of the EU concurrency potentials; availability of technology, managerial skills, skilled work force, entrepreneurship, financial potentials and other factors that together make a competitive and business environment, should be in the focus of activity of industrial policy creators; (c) to provide framework, institutions and instruments necessary for the business environment; (e) to provide a socio-economic and spatial cohesion.

The enterprises have great responsibility in realizing their competitiveness, as well as in taking on the responsibility for realization of general social interests, like, for instance, helping to fulfil environmental and social priorities. Small and medium sized enterprises are the axis of European industry, since they participate with 2/3 in total employment, around 70% in added value, thus stimulating competition and forcing big companies to advance their efficiency and innovative activities [6]. Research and development policy, knowledge and innovation are essential for sophisticated industries. A very important task of the industrial policy is to stimulate innovative activities and to invest in human resources in order to efficiently utilize and diffuse knowledge. This means that supporting the formation of innovational clusters will be top priority. The formation of a sustainable production structure is the key to industrial productivity growth. The key elements for achieving these aims are: improving the ecological efficiency in the utilization of resources and increased usage of by-products; strengthening recycling industry market possibilities; encouraging the

development of clean technologies; implementing ecological management with special regard to the specific characteristics of small enterprises, etc.

The Lisbon Agenda points out the need for restructuring the enterprises in the countries of Eastern and South-eastern Europe (SEE). This process is especially painful in the countries in transition. Countries in transition show no need for industrial policy coordination. This is partly a consequence of the development of the regional market and intraregional trade, as the initial forms of unification. The above-mentioned processes are quite alarming because of the planning processes in transitional countries, and because of their further lagging back behind the developed EU countries. According to Hare P., Hughes G., [7] the expansion of the EU to the East opens up potential discrepancies due to the loss of one part of the SEE market, because the liberalization of export trade and enlargement of the scope of economy in these countries has had an influence on certain changes in EU competitiveness. Entrepreneurship and small and medium enterprises have a lesser growth in candidate countries for the membership in the EU. Small and medium enterprises are usually located in the border regions in these countries due to lower costs of production, lower cost of local material input (raw materials, energy, etc.) and cheaper skilled work force. As a solution for the possible negative effects on the EU industrial policy, the industrial leaders and politicians are opposed to moving the European industrial production outside the EU because of cheaper labour, lower social costs and regulative flexibility in East Europe. By dislocating a part of industry into the industrial centres of Eastern Europe, the EU removes industrial competitiveness to the extended part of the EU, which, from the point of industrial, global and territorial aspects, opens up new questions.

Membership in the EU implies acceptance of the existence of a supranational industrial policy, which can significantly narrow the policies of member-states, limiting their efficiency due to the complex relations within the EU itself. In the present phase of

transition and development, it is necessary to begin with the harmonization of Serbian development, spatial and economic policy and regulations with the requirements for membership, in order to provide preconditions for efficient planning, functioning and the competitiveness of Serbian territory. In the field of planning the strategic industrial development in Serbia, the following documents are relevant: *Serbia's National Strategy of Economic Development 2007-2012*, [5] and *The Spatial plan of the Republic of Serbia, 1996*. These documents, (except of Spatial Plan of the RS) do not include or only mention in some fragments the field of spatial development, with few comments on sustainable industrial development (in Spatial plan of the RS). Such situation poses a question on how to overcome inefficiency in the industrial sector, and a drastic fall in all parameters of industrial growth, and how to overcome the necessity of restructuring the sector and establishing new industrial policy, as well as how to establish the policy of territorial development of this activity, in order to maximize competitiveness.

In order to avoid the further falling behind the EU countries and to overcome developing problems in Serbia in the period of transition, it is necessary to begin with the harmonization of the relevant regulations with our official industrial development strategies based on sustainability. It is going to be a difficult process, since, apart from solving the problems that EU industry policy creators are facing, there are still many problems caused by our previous inefficient industrial development, such as: structure transformation, improvement of technical-technological levels, achieving higher efficiency, lower unemployment, ecological restructuring, etc. While the EU has started its transition of industrial development towards knowledge-oriented activities and branches, Serbia has started the transition of its economic system towards a market-oriented industry. This opens complex issues of how to approach and to comply with the EU industrial policy in planning industrial development and locations, in the conditions of a necessary 'double jump transition' in Serbia: (1) towards a market-oriented industry/economy, by raising

efficiency (economic, ecological, energy, eco-efficiency, etc.), by development of 'low-carbon' economy; (2) towards the development of 'knowledge-oriented' industry and other economic activities.

2.2 Visualisation of Spatial Development of Economic Activities

Glasson J., Marshall T., [8] indicate that „the EU has no competency in spatial planning, yet its influence on the planning policies of Member States has been increasing particularly after publication of the ESDP in 1999”. Starting from premise of Krugman A. [10] that „one of the best ways to understand an economy is to study its cities“, we indicate the new approaches based on the concept of visualisation of spatial development of economic activities in urban areas. For example, in visualisation of development of spatial structure of large urban areas in Northwest Europe, different forms of central activity places occur (e.g. urban agglomerations based on coal and steel complex, port cities with important industrial functions, big industrial cities, metropolitan “green belts”, open spaces in gravitation area of big urban agglomerations, large recreational areas, megalopolises, polipolises, etc.) and create frame for common development policy [11]. This policy is not dealing only with urban development and land-use planning, but also with high policy of economic development and its territorial allocation or “spatial disposition of economic development” whose focal point is on visualisation of the spatio-economic structure. European space maps created within ESPON (European Spatial Planning Observation Network) framework and based on diverse indicators signify the conceptualisation and politisation of visualisation of spatial structures in European regions and cities according to economic concentration. In the context of polycentric development ESPON has identified around 40 functional urban areas and metropolitan spaces of European growth. Conceptualisation and visualisation of European spatial changes by using maps and spatial models, seek to create metaphors for

different spatial forms, like the „Pentagon“ area (London-Hamburg-Munich-Milan-Paris); „Golden Triangle“ (London-Paris-Ruhr); „Blue Banana“ (Birmingham-Brussels-Bon-Frankfurt-North Italy); „Grape“ (European polycentric regions), „Sunbelt“ (from Valencia along Mediterranean till Northern Italy); „Red Octopus“, „Delta“ concept, „Developing Corridors“ etc. Creation of “zones of global economic integration” is evident in European area, especially in the periphery. In these areas, the investments in traffic infrastructure have been intensive.

Economic growth of big cities is based on knowledge and high-tech activities, as well as on polycentric spatial structure. For example, the so-called “megalopolity“ area of Central and Capital Cities in Northwest Europe creates basis of mega-city region with notable political and other controversies in the process of European territorial cohesion. The vision of sustainable development of this area is stated in post-ESDP transnational visualisation process by “vision diagram”, by mapping the overall economic and territorial development (central zone, continental zone, open zone, island zone) with structuring the total activities, characteristics, priorities, functional connections, etc. [11]. The critics of vision process indicate the character of this approach hegemony, the usage of alternative scenarios for stimulation of vision approach and the fact that urban hierarchy produces big financial investments and implications on economic decision makers. Zonneveld W. [11] suggests usage of “vision“ in spatial planning of documents which include the territory visualisation.

For an effective strategic planning of sustainable economic development and disposition in Serbia in the following period, we need to incorporate and focus on the Lisbon agenda while preparing the national development strategies; to adapt spatial development of economic activities to the principles of the Territorial Agenda of the EU [12] and Leipzig Chapter on Sustainable Development Cities [13], etc.

3 Sustainable Urban and Spatial-Economic Development

According to Heilbroner R., Milberg W. [14], a certain crisis of visionary ideas is evident in modern economic thought. In a way, the utopian vision of society and economic growth in the social-realistic planning system in the development of post-communist areas has been opposed to political pluralism and market-oriented economy.

The latest discussions concerning potential spatial development are not possible without taking into consideration the visions of socio-economic development. However, in economic theory the ideas of certain schools about the vision of economic development have always been divided between free market and/or state regulation. Two key global tendencies have influenced the socio-economic and spatial changes – the globalization of economy and the transformation of post-communist economic systems and state into a market economy, political pluralism and the strengthening of institutional frameworks. The concept of sustainable development, as a challenge in harmonizing economic, social, political, environmental and spatial dimensions could serve as a suitable frame for “depreciation of influences“ of globalization processes and socio-economic transitions on all levels of planning. Due to the influences of the latter processes, spatial organization of cities and settlements, regardless of big regional differences, is characterised by a “Planetary“ syndrome of standardizing lifestyles and organization of work for people, together with a homogenization of urban structures and processes (the so-called European monopoly [15], in *the sense of unification of places, spatial structures, the expanding new economic zones in cities areas*).

According to Jakšić M. [16], the challenge of the 21st century is not in establishing a fixed and final *utopia*, but in creating an *ev-topia*. In other words, instead of *u-topia* – the creation of an *ev-topia* (a place that evolves, develops), meaning a system of stimulating and applying knowledge and adjusting skills to the conditions, uncertainties and aims of the surroundings. As the mechanisms of perception

and acquiring knowledge have a social character, social relations are based on territory, so is the development of economy based on knowledge together with mechanisms of urban planning and territorial policies. Principles of sustainable development should be added to these [9].

Transition of the social and economic system in Serbia towards a market-oriented economy has, among other things, a certain effect on the changes in spatial organization of economic activities, on the initialisation of new locational-spatial industrial forms, complex models of regional, technological, urban development, etc.

Territorial Agenda (TA), 2007, [12] as a new strategic European document on territorial development and cohesion includes a few key challenges: 1) climate change; 2) prices of energy resources; 3) globalization; 4) the EU expansion; 5) excessive exploitation of ecological and cultural resources; 6) demographic challenge. TA priorities are: 1) polycentric development and innovations; 2) management and correlation between urban and rural areas; 3) promotion of clusters in transboundary areas; 4) expansion of the European road network TENS; 5) risk management due to climate change, trans-European risks; 6) ecological structures and cultural resources.

Institutional suggestions of TA are directed towards the protection of the EU territorial cohesion, i.e. of the EU members, as well as towards the focus on ESPON 2013, implementation of the instruments for assessment of territorial impact – TIA (Territorial Impact Assessment) in spatial development policies.

Potential implementation of TA in spatial planning of the economic/ industrial development in Serbia should rely on defined priorities – territorial cohesion and sustainable territorial development:

- (a) polycentric spatial development and introduction of innovations in all segments of industrial and social activities;
- (b) better relations between urban and rural areas (positioning of business activities and industry in metropolitan area, medium and

- small towns, boundary and undeveloped regions, corridors, rural areas, etc.);
- (c) promotion of clusters in all Serbian regions;
 - (d) better utilization of the potentials of corridors and TENS network in the country;
 - (e) including the risks of climate change into corporate planning and management, and the 'low-carbon' economy at this level, as well as infrastructure efficiency;
 - (f) resources management (water, energy resources, ores and minerals, land, etc)

Development and spatial organization of the industry in Serbian urban areas should be based on: a) general and specific development goals (competitiveness of industry in knowledge-based segments of classic and high-tech branches) which include relevant European policies; b) respect for the inherited characteristics of the existing spatial structure in this field; c) new location factors of the industry and potential territorial limitations; d) new location-spatial forms in industry (technology, industrial and science parks, high-tech agglomerations – development corridors, economy zones, free zones, business incubators, etc.; e) criteria of territorial allocation of investments into this area, the principles of sustainability, low-carbon oriented production, etc.; f) development of instruments for the implementation of spatial planning, etc.

From the aspect of the proclaimed new policy of EU concurrency, a dominant role of the knowledge-based economy, innovations and entrepreneurship can be seen, i.e. the so-called 'learning economy', as well as the 'low-carbon economy'. The issue of different options for future spatial development can be raised in line with the continuing fundamental changes in knowledge and innovations.

4 The Identification of Expanding Economic Activities in Urban Areas

In the Green Paper on EU cities [17], the basic aims of urban development have been defined, based on the improvement of the quality of environment in these territories: (1) environment protection and management,

which means reduction of uncontrolled pressure and growth of various activities, with the restoration of cities; (2) the curtailment of city participation in the causes of pollution, which means careful planning of the economic activity expansion and the use of spaces in the city that have been already ruined by devastated industrial and commercial objects. It is often the case that such objects in the cities are abandoned because of old technology and for other reasons, so it has been suggested that these spaces (brownfields) are put to good use by reconstructing them. The experiences of urban planning in Eastern-European cities have been directed more towards new green-fields and less towards activating brown-fields.

Apart from this general European trend of curtailing regional differences, establishing new "economic poles of development" (and spatial clusters) in metropolitan peripheries is also significant in planning spatial development. According to Burdach J. [9], it is a matter of a new discourse in peripheral growth (metropolitan). New economic poles in metropolitan areas are a result of a high participation of the public sector (especially in providing heavy infrastructure, support in curtailing spatial unbalance, etc), but also in attracting foreign and local investments.

In studies and explanations of the development of functions/activities of spatial cluster in a defined territorial entity, agglomerating mechanisms play an important role. For example, new industrial zones and production complexes show various mechanisms of spatial/economic clusters on cities, metropolitan and regional levels. According to Burdach J. [18], three types of mechanisms stand out and lead to different spatial clusters of activities: 1) spatial branching based on incoherent agglomeration; 2) spatial branching as an industrial complex (coherent agglomeration) and 3) spatial branching based on social networking (coherent agglomeration).

In some large cities of Europe, and Serbia as well, (ex. Belgrade, Novi Sad), new economic poles – new economic, commercial, industrial, entrepreneurial zones that have been created by planning or spontaneously in the

suburbia (along motorways, main roads) have a priority in the development and spatial organization planning of the area. The reasons for such a trend are manifold – low price of land, available sites, proximity of residential areas, favourable conditions on site etc. The expansion of work/factory zones in big cities is contradictory to the idea of a sustainable compact city, above all, because of an increase in transportation, greater energy consumption, greater costs of infrastructure, negative effects on the environment, ruin of agricultural land and similar. In this way, the tendency of deurbanization has transformed into suburbanization, because the density of population in peripheral metropolitan areas has rapidly grown, as well as the number of flats, the growth of economic activity, costs of infrastructure, ecology etc. New centres of production and consumption influence the transformation of suburbia (as mainly residential, socially homogenous zones, with lower density in an urban periphery) into post-suburbia (which expresses the transformational process in multi-functional locations). Many different concepts have been concerned with this phenomenon of the transformation of suburbia into post-suburbia, describing it as a “new centrality” outside of the central place, i.e. the creation of a new centre outside the downtown city area. The term “new economic pole” implies various kinds of new dynamic centres with a functional specialization in the metropolitan periphery. The main spatial forms of new economic poles in peripheral urban areas (suburbia) are industrial parks, technological parks, industrial complexes, shopping malls, business-commercial centres, logistics centres, business centres, airport-cities, etc. Lately, the creation of airport development zones has achieved greater importance. These zones have three forms: airport-city, aerotropolis and the airport corridor [19]. Business parks, technology parks, fairs, conference centres, shopping malls, hotel complexes, pleasure and recreational parks and residential complex are usually created within these zones. Successful creation of these zones is usually conditioned by the airport status,

property ownership and location, management mechanism, etc.

According to [18], the concept of classic spatial models of cities (standardized “rings” and sectors) is being more and more transformed into polycentric forms, created by grouping or networking different kinds of locations for different purposes. A tendency of the breaking up of urban structures into different series of specialized and fragmented localities, by way of clusters of activities dispersed inside a populated structure. In that way, more and more an image of a „functional archipelago“ is created in an urban (periphery) fabric, unlike earlier approaches. (For example, in earlier Master plan of Belgrade in 1970’s, the concept of an „archipelago in a sea of green“ was promoted). The cumulative effects of developing new poles lead to a new concept of growth of urban/metropolitan periphery as well. Initial nucleuses of this development are often shopping centres, business-commercial centres etc., which is a consequence of the transition into post-industrial society, i.e. the transfer of agglomerative advantages of cities onto regional/peripheral surroundings. Based on the experiences of European cities, new economic poles have 5,000-10,000 workers [20].

A significant part of urban spaces is occupied by industrial and transportation functions and facilities, often they are very negative. Recently, with privatisation, the process of reactivating abandoned industrial locations (brownfields) in eastern-european cities, including Belgrade is gradually being opened. In cities with a market economy, the industry holds 4-10% (Paris 5.2%, London 4.7%) of the entire developed space [21], while industrial locations in eastern-european cities occupy 15.1-43.8% (Prague 13.4%, Warsaw 15.1%, Sophia 27.1%, Ljubljana 27.4%, Moscow 31.6%, St. Petersburg 43.8%). In Belgrade, it is approximately 18%. However, the general opinion is that due to the price of construction, parking problems et sl., the new dominant trend is construction in new industrial facilities, on free locations in the urban periphery (greenfields).

Clustery deconcentration of business activity leads to a new relation and movement

from the centre of city to the outskirts. The effects of development and concentration of industrial activity and living in the suburbia (post-suburbia), without control of the over-construction phenomenon or urban lots, environmental effects and pollution etc., have an ever-growing, partly explosive character. Post-socialistic “boom“ of the metropolitan periphery is not imminent to only Eastern European and Balkan countries, but to developed metropolitan areas of Western Europe too. The development is shifting from the central compact city nucleus to the inner and outer city peripheries. One of the principle reasons for the socio-economic and spatial transformation of urban areas is the process of tertialization, i.e. the development of services. The main instigator of these processes are usually foreign investments into the services sector (most often it is the banking sector, insurance, shopping malls, sales and exhibit halls, hotels, storehouses and trade etc). The role of city authorities and local investors in this process is relatively small; usually they have a service function in providing suitable conditions on locations.

The formation of new economic poles is a result of a general tendency for an international shift of production and services from the city centre to the periphery. In other words, the market mechanisms and factors of international proportions activate the pressure of direct foreign investments into metropolitan/urban peripheries, above all, because of the agglomeration economies, reduction of various costs, acceptable and favourable locational economies in periphery city zones etc. This process has negative repercussions both in spatial-environmental, and in the institutional domain as well. Based on theoretical opinions, experiences from many areas, it seems that the process has a devastating effect on the regional and local institutions, as well as on the local investors, by imposing on them the rules of behaviour, standards, movements and direction of capital. Inside an urban-spatial context, it can be directly observed in the profound changes (quite often in the caving in as well) of the existing spatial organization of a city, city

zonings, propositions, rules and regulation standards for using the building land etc. So, direct foreign investment is the pivot of the development of new economic poles in urban areas (banking, shopping malls, high-tech and business activities, industrial parks, logistics centres and transportation etc). This process has a foothold in the theoretical concept of liberal economy, especially the so-called Smith’s “invisible hands“ of the market. In other words, the processes of illegal construction and expansion of cities are only a consequence of bad legal solutions in the field of planning and building of spaces, poverty of citizens, social and other problems, but they are directly fuelled and/ or initiated by market mechanisms. The process of suburbanization is „artificially“ initiated by economic and social policies as well, but also by inadequate measures of urban policy and policy of urban land (ex. untransformed system of managing the building land, undeveloped instruments of taxing building land and real estate, tax rates, the fee for land development and usage, local taxes, subventions, concessions, etc.) In accordance with economic restructuring (tendency towards tertialization) in urban/metropolitan structure, a stagnation and “disappearance“ of classic industrial zones, complexes, enterprises is evident. A functional conversion of these zones is evident, fuelled on one side by the process of privatization of state enterprises in these zones, and on the other side, by the pressure of direct foreign investment. The process of transformation of these „ossified“ industrial localities is often complicated, slow, expensive and uncertain; that is why the activities of construction and development of new zones/ economic polarities (greenfield investments) in the urban matrix are much more important and are of the large-scale.

According to [22], the post-communist development of eastern-European cities shows a hybrid layout with relics of spatial structures of the socialist era, a phenomenon of structure transformation and new suburban/ posturban spatial layout of clusters. They are nucleuses of new employment growth in city peripheries, and the first early signal of a polycentric structure of a territory. Spatial economy of periphery urban

area is not homogenous. Although, until recently, traditional city peripheries were identified as a mixture of industrial spaces, family homes, traffic corridors and greenery, today they have a more distinct sensitivity to market signals and initiatives in relation to the central city zones. In this space, drawn by the growth of population with a higher education, especially by way of a new infrastructure for research-development institutions, many new high-tech activities of production take place services. There activities of transportation services are developed, logistics, production, wholesale (warehouses, storehouses, etc.) shopping malls and services.

5 Results and Discuss of New Trends of Economic Activities in Belgrade Metropolitan

The process of post-suburbanization is a consequence of activity of commercial powers and it takes place in all metropolitan peripheries, including Belgrade. Significant foreign investments and the development of 106,000 enterprises (of which around 1/3 are in Belgrade) and 90,000 entrepreneurs, illustrate a more significant role of market mechanisms of allocated new economic content in the Belgrade metropolitan area. According to the *Strategy for the association of Serbia into the EU* [23], a development of industrial parks is predicted, which would later grow into clusters, with the provision of necessary heavy infrastructure, possibility of fast construction of business and industrial facilities, fiscal incentives and qualified labour. *The National Investment Plan of the Republic of Serbia* predicts the construction of 49 industrial zones in towns of Serbia.

According to data [24], only in the area of Belgrade, in a “new wave“ of construction 20,000 ha of urban land (farmland) has been found to be under construction in the peripheral area. A housing deficit in Belgrade, numerous refugees and dislocated persons, have caused a significant residential pressure onto the suburbs, and uncultivated farmland of Belgrade agglomeration (ex. Zemun corridor,

belt of motorways to Surčin, Batajnica, Novi Sad, Avala direction, Borča, Ovča, Pančevo direction etc.) as well as the birth of new small enterprises, and the concentration of economic activity in the mentioned spaces. Metropolitan periphery outside the borders of the city of Belgrade is becoming more attractive for settlements (ex. the zones along the motorway Belgrade-Novı Sad, Belgrade-Zagreb, Belgrade-Niš, Ibar direction, Avala direction, Zrenjanin direction, etc.) due to easy access to the corridors, nature etc. In addition, a concentration of economic activity is evident along the motorway from Belgrade to Batajnica, Novi Sad, Novi Beograd, airport “Nikola Tesla”, Dobanovci, Zemun, Pančevo road etc. A great concentration of economic activity has occurred outside the Belgrade agglomeration, on the motorway zones - ex. large industrial zones in Šimanovci (550 ha), Pećinci (500 ha), Krnješevci (250 ha), etc. At motorway exits (corridor X) big shopping centres have been built like „Metro“, „Tempo“, „Idea“, „Rodić“, „Mercur“, „Mercator“, „Veropoulos“, etc. Municipalities which have better traffic and communication links with their surrounding and with the central zone of Belgrade, and have an efficient entrepreneurial local authority and administration, have advantages in attracting new contents. In the Belgrade agglomeration, those municipalities are Pećinci (1,050 ha), Surčin (250 ha), Stara Pazova (1,900 ha), Indjija (930 ha) and others. In the Belgrade administrative area are located 12 industrial zones (about 2,570 ha or 8% of total Belgrade area – Table 1). Total surface of Belgrade administrative area is 3,224 km² with 1,572,000 inhabitants [25, 26] and 680,000 employees. The area of the City of Belgrade is 1,726 ha.

Table 1: Key industrial zones in Belgrade Administrative Area

Area	Zone	Surface (ha)
1. City Belgrade (Master plan comprising 10 municipalities)	Gornji Zemun	437
	Autoput	597
	Surčin-Dobanovci	272
	Pančevački rit	610
	Boleč	112
	Vrčin	135
	Velikoselski rit	203
	TOTAL	2,366
2.Lazarevac Municipality	Vreoci	142
	Veliki Crljeni	104
	Lazarevac	32
3.Mladenovac Municipality	Jug 1, 2, 3	120
4.Obrenovac Municipality	Barič	264
	Grebača	342
5.Barajevo, Sopot and Grocka Municipalities	-	-
Total Belgrade area		2,570

Source: Master plan of Belgrade 2021/ and Regional Spatial Plan of Belgrade Administrative Area, 2004.

The biggest industrial zone is the Mining and Energy Generation Basin "Kolubara", located 40 km west to south-west of Belgrade centre. Its surface area covers some 547 km², while the proper production area encompasses ca. 134 km². Industrial and related facilities and installations cover some 62 km². The total area is composed of parts of four local communities/ municipalities (Lazarevac, Lajkovac, Ub, Obrenovac) with 82,000 inhabitants. More than 10,500 people are employed in the mining extraction and energy generation sector [27]. In Belgrade metropolitan area the average annual open cast extraction of lignite coal in the Basin surpasses 29 million tons, and the average annual energy generation by its power plants reaches some 1,161 Gwh. This makes 75% of the total annual lignite coal production in Serbia [28].

According to the Regional Spatial Plan of Belgrade Administrative Area and Belgrade Master Plan, the most important zones for location of industry and other economic

activities are Upper Zemun, Surčin-Dobanovci and Highway and Pančevački rit-Reva, covering the total surface of 2 570 ha [25, 26].

Upper Zemun is a huge zone in spatio-functional structure of the City of Belgrade, covering the area of 437 ha, which has a very good position along the highway Belgrade-Novı Sad. The complexes of pharmaceutical, electro-and food industry, trade, business-commercial, logistic centres are located here along with other activities.

Industry-business zone »Highway« covering 597 ha, has exceptionally attractive position on the contact of the corridors X and X₁ (branch to Budapest), on the crossing of highways Belgrade-Zagreb and Belgrade-Novı Sad, and in the proximate vicinity of railway point and airport, which represents its main location-developmental potential in Belgrade metropolitan area. In the zone branch structure there are chemical industry complex, metal industry complex, goods-transport contents, warehouses, trade-commercial and other business activities. The zone is only partly activated and it is extremely attractive for location of diverse economic activities, but the land needs to be organised and equipped by infrastructure.

Zone Surčin-Dobanovci, which covers 272 ha along the ring-road Highway, railway point and airport "Nikola Tesla" has exquisite location preferences for development of economic activities that demand large scope of cargo transport, fast communications, closeness of airport transport, large areas for object location etc., but also for development of high-tech industry complex and services. Basic demands in location of business activities are targeted on the protection measures of surrounding settlements, environment protection, preservation of quality agricultural land, etc. Location-spatial zone capacities are not used enough due to inadequate infrastructure facilities.

Economy zone Pančevački rit (Reva), covering 610 ha, is among the largest economic localities in spatial organization of economy in Belgrade area. There are complexes of chemical industry, oil refinement, metal complex, electro-industry, graphic activities, engineering,

warehouses and different commercial-business activities. Access to this zone is by road, with possibilities of spatial spreading along the Pančevački road and toward railway station Ovča. For more intensive utilisation of this zone it is necessary to provide waste waters evacuation and implementation of environment protection measures.

In the spatial structure, **industry zone Novi Beograd** stands out due to good infrastructure, with necessary modernisation of existing production programmes, as well as dislocation of individual objects (for example, „FOB“ - factory of metal products), in order to moderate conflicts with surrounding urban residential-business contents.

Belgrade Master Plan foresees new localities for zone development and location of diverse economy activities, and some of those localities have already been activated. There are usually storage-transport contents, warehouses, logistic and production activities, diverse services. New localities are zones Batajnica, Surčin-Dobanovci (logistic centre), Vrčin, smaller localities along the bypass Highway around Belgrade or on crossing of main roads (on exit routes from Belgrade), Boleč, as well as activating of parts of zone Velikoselski rit. Economy activities in zones Rakovica, Železnik and Novi Beograd need to be restructured in different aspects, with high protection of surrounding environment. Also, there is a need for conversion of production to economy activities in the central part of Belgrade – zones Harbour „Belgrade“, Ada Huja, Mali Makiš, etc.

The process of globalization and the activity of the „invisible hand“ on the market, among other things, is the product of profound spatial, structural, urban and socio-economic changes on all levels. On the territory of Serbia, due to the activity of transitional changes these processes have been significantly boosted. However, they flow spontaneously, randomly and often without adequate planning and management or institutional control. In the period between 1990-2000, due to the many political economic and social happenings in Serbia, „grey“ economy was especially

promoted, with an explosion of illegal construction and an expansion of cities.

The aim of urban planning policy and the concept of clustery deconcentration activities is to prevent the negative consequences of the doom scenario and entropy of urban territories (conversion of the “boom“ development scenario into the so-called „doom scenario“), based on the principles of sustainable development. Considering the fact that the development of new economic polarities in urban peripheries mainly is not linked to regional and national politics, the concept of polycentric urban structure could alleviate the negative effects of the mentioned tendencies. The development of potential implications of new polarities onto the regional environment and development, the manner of coexistence of growth and stagnation areas and/or depression, the disappearance of traditional industrial production, expansion of services, explosive growth of suburbia, is the subject of planning policy of metropolitan area.

The current developing tendencies in the Belgrade metropolitan reflect the growing socio-economic differences through a special „functional archipelago“. In accordance with the experiences of the European metropolitan peripheries, the possible scenarios for the future expansion of new economic polarities in the metropolitan area of Belgrade [29] (1) an actual existence of area growth, mainly along important traffic corridors nearby the city centre, will continue in the future as well. Today this process is visible along the motorways Belgrade-Novı Sad, Belgrade-Zagreb, next to the airports “Nikola Tesla“, etc; (2) the development of new industrial structures (modern production complexes – industrial parks, technology parks entrepreneurial zones, complexes) mainly by government aid, the arrival of multinational companies, the support of EU etc. Apart from technological complexes, the new polarities are the shopping malls, distribution-transportation centres, business centres and others, (3) the prediction that the residential zone of suburbanization will expand in the future onto the green zones and will demonstrate the adverse side of suburbanization; (4) the process of

reurbanization in the Belgrade agglomeration is present sporadically, by way of rehabilitation of the existing industrial zones; (5) the development of new industrial/business spatial forms of the new economic poles of development in the urban and rural area, with the possible development of a big theme park. The establishment of airport city business zone in New Belgrade, construction of Waterland in New Belgrade, construction of Aqualand nearby Dobanovci, along the motorway Belgrade-Zagreb, zones of recreation and wellness park (location Kovilovo and Jakovo) and entertainment like specific economic poles ("funurbia", "indoor tropical environments/islands", "indoor skiing", etc.), (6) and apart from the problems and impossibilities of an accurate prognosis for directing the dynamics and developing processes, it is predicted that the centre of trends in the following decade in the Belgrade metropolitan will move to the periphery.

Conclusions

The development of economic activities within the new economic zones/poles/clusters in urban

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areas can be assessed as a consequence of the process of globalization. Those zones could be some kind of mixture of old spatial structures and the development of new locational models in the urban fabric, under the influence of market and the globalization process of economic activity and investment. In this process are evident: the existence of growth area, mainly along important traffic corridors nearby the heart of the city; development of new locational forms (industrial park, technology park, high-tech corridors), mainly with government aid, foreign investment, etc; large changes onto urban structures of metropolitan areas; over-construction of building locations; the effect on the price fluctuation of real estate in certain parts of metropolitan land; population mobility from the centre to the periphery. It is estimated that the absence of harmonization with the European development policies, urban development and environment in the economic development in Serbian cities could have consequences in the growth of competitiveness of urban economy and sustainable urban development.

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