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DECENTRALIZATION OF ECONOMIC ACTIVITIES IN THE METROPOLITAN AREA OF SPLIT

1. INTRODUCTION

It appears that the spatial structure of metropolitan areas across the world is undergoing substantial changes. To a large extent, those changes in the structural evolution of metropolitan areas are driven by the fact that central cities are expanding their footprint into their surrounding areas. Large metropolitan areas, according to Ingram (1998), are converging to more similar decentralized structures with multiple sub-centres, decentralized manufacturing and services employment. Similarly, Hoover and Giarratani (1999) point to the rapid sprawl and coalescence of originally discrete cities and towns into larger metropolitan complexes. Metropolitan areas typically have a number of sub-centres which combine to form a polycentric development pattern. It seems that decentralized multinuclear aspect is becoming a basic characteristic of the urban development pattern.

The location of economic activity has preoccupied economists' minds for a very long time. The phenomenon of increased concentration has been examined thoroughly during the last decennia both in the US and in Europe. The New Economy is focused on the appearance of an explanation for increased agglomeration, since many studies have suggested that companies tend to locate closer to each other. The process of decentralization, on the other hand, has been somewhat less studied. However, in recent years, some empirical studies have showed that economic activities (even typically central ones) have been decentralizing, i.e. gradually shifting from central urban areas to the suburbs. Due to this phenomenon some

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of the classical stylized facts of urban economics based on the monocentric city structure may no longer hold.

This paper is organized as follows. The subsequent section gives an overview of factors that might have an influence on the (de)centralization of economic activities within metropolitan area. The third section presents Split metropolitan area and methodological issues encountered in defining its boundaries. Different parameters of the decentralization of economic activities in Split metropolitan area are presented and discussed in the fourth section. In the final section, we conclude and discuss the implications of our findings and the limitation of the study.

2. THEORETICAL PERSPECTIVES ON (DE)CENTRALIZATION OF ECONOMIC ACTIVITIES

The attractiveness of central urban areas for the location of industry and services stems from different locational factors. The concentration of economic activities, its causes and consequences, has been the central issue of spatial economics. Prior to the establishment of the New Economic Geography, the location of economic activities has been exogenously treated, across given spatial distribution of natural endowments and/or technologies. This strand of literature holds that economic activity will be spread or concentrated over space according to the spread or concentration of these underlying features. However, along with the advances in analytical tools in economics in past three decades there has been a revival of spatial issues in economics. Much of this is due to establishment of the New Economic Geography. Within this strand of literature location is endogenous, determined by a combination of decreasing trade costs and increasing returns to scale combined with the spillovers stemming from the proximity to other economic agents. Access to markets for goods becomes an important determinant of the location of economic activities. Indeed, this approach to economic location and agglomeration has been used to explain the growth of cities around the world. According to Krugman (1995), production is concentrated in the city largely because high transportation costs to city from elsewhere in the country push people to the city as consumers and push firms there as producers. More precisely, certain centripetal forces tend to pull population and production into agglomerations. Among those forces, he points to natural advantages of particular sites, market-size external economies (access to markets – backward linkages, access to products – forwards linkages and thick labour markets) and pure external economies (knowledge spillovers). Hence, factors contributing to the attractiveness of central areas, such as possibility of face-to-face contacts, backward and forwards linkages, experience and idea sharing, realization of agglomeration

economies etc., all work as concentration-enhancing factors. Glaeser and Kahn (2001) argue that the primary force enhancing centralization in central areas seems to be the urban advantage in speeding the flow of ideas.

Recent trends, however, indicate that much of the inherently centralized economic activities have started to re-locate into suburban areas. It seems that deconcentration-enhancing factors pull people and economic activities from the centre concentration to low-density surrounding areas. Krugman (1995) refers to those factors as centrifugal forces (market forces: commuting costs, urban land rent, pull of dispersed resources, and nonmarket forces: congestion, pollution). Jensen (1996) particularly points to market forces, arguing that metropolitan decentralization is a natural outcome of the spatial market in operation where the concept of resource migration becomes a basic and natural part of the dynamics of the space-economy. Higher costs associated with congestion, higher rents and wage costs drive basic and manufacturing industry away from the most congested areas and high land value areas (Jones, 2000). Hence, economic activities, foremost manufacturing industry, might have strong motives to decentralize their industrial units and buildings to metropolitan hinterlands.

In this paper we do not analyze the location decisions of households. Instead, we focus on the location of economic activities within the metropolitan area. However, in a model with centralized employment, we might argue that the suburbs would be attractive choice for those households that prefer more affordable larger homes and other suburban amenities. Households' preferences are nowadays more inclined towards more spacious residence units. Further, the households' disposable incomes and automobile usage rates have been increasing. Additionally, hinterland is more environmentally preserved and healthier area to live in compared to the core of the city. Indeed, many empirical studies document a substantial suburbanization of the households. This phenomenon can be also seen as a factor contributing to decentralization of economic activities. In this story, job decentralization occurs when the benefits of being near decentralized labour force are sufficiently high compared to the benefits of being located in urban centres. The endogeneity between the location of workers and jobs makes it difficult to hypothesise on the causation direction between the two, i.e. whether jobs follow workers or vice versa. Some authors argue that it is much more likely for economic activities to follow the locational preferences of their workers than to determine them. Population and employment track each other well, and according to Glaeser and Kahn (2001) workers' residential preferences appear to be extremely important for the locational decisions of economic activities.

In their paper, Donghwan *et al.* (2002) show that most firms no longer have to seek locations in traditional high-density centres to achieve agglomeration economies; they can either do without them or find them in low-density regions. There are other possible benefits to firms of decentralization, including underused local transportation capacity in outlying areas, better access to key transport nodes

to external markets, reduced parcel assembly and demolition costs, lower labour unionization rates, lower taxes, and proximity to other suburbanizing firms and residents. Additionally, the benefits of deconcentration are expanded by increased connectivity and technological progress, including transportation and telecommunication developments. Access to and from hinterland is nowadays facilitated by the development of transport networks, which are intrinsic causes of expanding cities. New transportation investments, in particular motorway construction, can be a powerful stimulant for new development and deconcentration. The de-coupling of back-office from headquarters operations made possible by low-cost communications makes it possible for some firms to co-locate in core areas and in the periphery. Further, the congestion confronted in accessing the dense concentration has also contributed to decreased attractiveness of central locations.

Among other factors that can have an effect on firm's decision to decentralize are local governments' (business-friendly) policies. It is not yet obvious if central cities are more business friendly, compared to adjacent peripheral municipalities. However, it seems that it is small peripheral municipalities that undertake more business friendly policies, given that they have administrative power to carry out such policies (or that they are supported by the central government). Namely, many of those traditionally agricultural and underdeveloped municipalities have been tempted to relax controls on the development of agricultural land and offer tax benefits to commercial and industrial enterprises to invest and locate in the municipality. This has increased the supply of land in the surrounding areas, making it easier for investors and households to find the desirable parcel. Moreover, to increase the availability of the land for business purposes, many countries, Croatia in particular, have proclaimed the beneficial effects of business zones located at the outskirts of large cities. By different policy instruments, national governments have stimulated the establishment of such zones. Glaeser and Kahn (2001) find that political boundaries do impact employment density, which suggests that local government policies significantly influence the location of industry. Some firms might decentralize to receive a different bundle of public goods.

Mainly due to data unavailability, fewer studies have examined the spatial distribution of employment than the spatial distribution of population in cities. However, those studies that have been carried out in the past three decades indicate that there is a marked tendency for employment to decentralize – the proportion of jobs in the centre falls over time and most new growth in employment is located out of the centre (Ingram, 1998). Glaeser and Kahn (2001) examine the decentralization of employment using zip code data on employment by industry. The central finding is that most American cities are decentralized, with on average less than 16% of employment in metropolitan areas being located within a three mile radius of the city centre. They analyze factors that drive the suburbanization of industry, such as land costs, access to ideas, access to workers and transport savings for inputs and outputs. Their findings indicate that predicted

worker suburbanization is the best predictor of industry suburbanization. On the other hand, De Bruyne (2002) finds that in Belgium employment decreases as one moves away from the centre, which is in line with the predictions of the New Economic Geography literature.

3. THE METROPOLITAN AREA OF SPLIT – DEFINITION AND SPECIFICATION

Most developing countries, including Croatia, are undergoing major demographic transition, with economic, social and technological modernization leading to falling death rates and rapid population growth, this all fuelling the urbanization process. Also the largest Croatian coastal city, the city of Split, has been undergoing major transformations, particularly during the last two decades. These changes encompass all the spheres of the socio-economic reality, with the most important being the transition from centralized to market-oriented economy. The process of transition in the 1990s to a large extent has rendered most of the Croatian cities in institutional vacuum without any clear vision and strategic plan of development. This has given rise to somewhat destructive and impeding processes, particularly in the urban spatial development and planning sphere. However, in recent years, some institutional and political attempts from central and, in some cases, local governments were made to reverse these negative trends.

When addressing issues of the urban development of the city of Split, we believe that it is of major importance to consider its metropolitan, rather than administrative boundary (figure 1). Namely, in reality cities flow imperceptibly across administrative boundaries and there are strong multidimensional links between the centre and adjacent municipalities. The establishment of metropolitan area is an important prerequisite for an analysis of urban trends, since statistics based on administrative boundaries will not reflect, in most cases, the actual role played by a city. Unfortunately, the existing regional and local spatial plans are ignorant of the ongoing process of metropolitanization and even more of metropolitan decentralization. At the same time, the responsibility for land use management remains divided between different administrations and this fragmentation of management, frequently exacerbated by the political tensions of neighbouring administrations, may lead to incoherent and uncoordinated land use management. There is no all-embracing and comprehensive spatial plan of the whole metropolitan area, which is an essential precondition for the analysis of the urban dynamics and coherent strategic planning.

For the purpose of this study we define ‘imaginary’ boundaries of the metropolitan area of Split. The establishment of metropolitan area boundaries, however,

is a subject of many debates. There is no universal definition of the metropolitan area. For that matter, there is no strict definition of a city or city centre, which complicates the attempts to define the metropolitan area properly. Here, we adopt the common practice of drawing the boundary around area in which people daily commute. More precisely, a simplified model of distance related to travel time is employed. Using a travel time of 60 minutes, a radius from the central city can be drawn, which varies according to mode and efficiency of transport, but which for the purposes of this study is defined as 40 km.¹ The further away from the centre we go, the less strong and frequent are links and daily communication between the centre and periphery. No matter how good the transport connections, travel time places absolute constraints on how far people will travel on a regular basis (Jones, 2000). All people ultimately have time constraint beyond which commuting is not viable. Hence, a larger radius would make less sense.

This results in functional urban area where the core of the metropolitan area (the centre of urban region) and the peripheral areas (the adjacent municipalities) are closely interwoven. Instead of 188,000 inhabitants of the administrative central area, metropolitan area is populated by 348,288 inhabitants (*Statistical Yearbook*, 2001). Geography of the metropolitan area of Split makes sprawl somewhat difficult. It consists of three 'belts': inland, coastal zone and islands. These belts are separated by mountainous barriers and sea, which created climate differences, influenced communication channels and the way of living.

As for the location of economic activities, up to the end of the 1990s there was aggregation of businesses, workplaces and functions in the very centre of the metropolitan area. This pressure has resulted in congestion and deterioration of living conditions in the city of Split. On the other hand, abandoned peripheral areas have been characterized by low economic activity, but healthy and unspoiled environment. This dichotomy has contributed to creation of inequality and imbalance, which resulted in deep disparities between the centre of the metropolitan area and its hinterland. Due to lack of integrative spatial and economic planning of the metropolitan area, entrepreneurs willing to relocate their business in the hinterland were often faced with administrative obstacles, poor regulatory environment, unsolved claims of ownership and reluctance of local authorities to cooperate. However, over time and particularly in the last ten years, there have been some changes that have enabled important economic activities to migrate to the edge of the agglomeration. A major precondition and strongest factor that contributed to revitalization of the hinterland is the new infrastructure, notably a motorway that was built in 2005.

¹ As a basis for our analysis we use an hour public-transport driving distance from the city centre to establish the metropolitan boundary. The rationale behind this method is the assumption that people living in the peripheral areas daily use public transport to commute to the city centre.

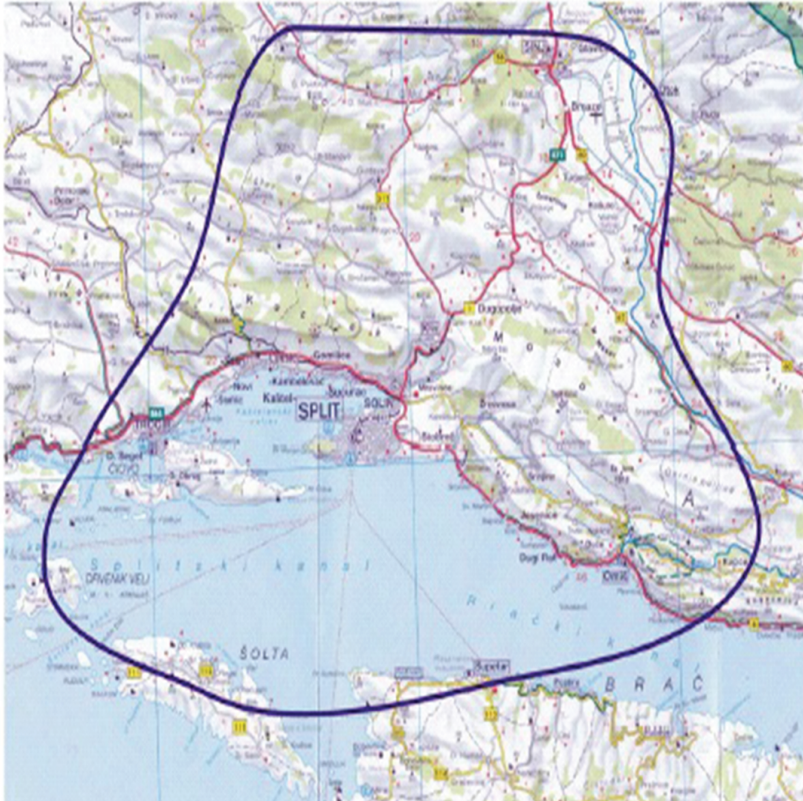


Fig. 1. The metropolitan area of Split
Source: Šimunović *et al.* (2003), pp. 97–109

4. THE METROPOLITAN AREA OF SPLIT – DECENTRALIZATION OF ECONOMIC ACTIVITIES

In what follows we analyze the extent of decentralization of economic activities in the metropolitan area of Split. Ideally, to arrive at a measure of decentralization, we would use data on employment of each economic unit located at different points within the metropolitan area and calculate the proportion of those located outside the central city. Unfortunately, such data do not exist for the metropolitan area of Split. The non-availability and poor quality of statistical and spatial data restrict our ability to investigate this issue more thoroughly. We are left with no other choice, but to employ alternative indicators, which are, admittedly, only a crude measure

of the extent of the decentralization of economic activities, but still show the basic pattern of declining centralization.

We divide the metropolitan area in the central core area and peripheral surrounding area and look at the number of registered firms and their revenues within those two fractions of the metropolitan area. Given that such data are not available for the time period prior to year 2002, we are not encouraged to do more rigorous time series analysis due to too few observations. In 2002, 70% of total active firms in the metropolitan area were located in the central area. Correspondingly, 74% of all metropolitan firms' revenue was earned in this fraction of the metropolitan area. Those figures indicate centrality of economic activities and the prevalence of the central fraction of the metropolitan area. However, by the end of 2007, the number of firms located in the surrounding area increased significantly. Namely, in the period 2002–2007, total number of active firms in the central area increased by 51%, while the respective increase in the peripheral area amounted to 71%. More precisely, in 17 out of 23 peripheral municipalities that the metropolitan area is consisted of, the increase in the number of active firms was larger compared to the respective increase in the number of firms located in the central area. In some municipalities, for instance, the number of registered firms increased by 460% (Sutivan) or 635% (Okrug). Those figures suggest that the growth of the number of firms and their revenues was faster and larger in the peripheral fraction of the metropolitan area (surrounding area had 38.7% higher rate of growth of the number of firms and 97% higher rate of growth of the total revenues of the firms).

To summarize, while the total number of registered firms in the metropolitan area increased in the whole metropolitan area, this increase was larger in the peripheral than in the central area. Although a very high proportion of the total number of firms is still located in the centre (67%), there is an important indication that the decentralization process of economic activities within the metropolitan area of Split has been started (table 1).

Table 1. The number and the revenue of the firms in the core, peripheral and metropolitan area of Split

Year	Core area	
	total number of active firms	total revenue of firms (M kn)
2002	5,597	20,025
2007	8,467	28,581
Relative change (02–07)	+ 51%	+ 43%
	Peripheral area	
	total number of active firms	total revenue of firms (M kn)
2002	2,393	6,600
2007	4,091	12,154
Relative change (02–07)	+ 71%	+ 84%

Table 1 (cont.)

Year	Metropolitan area	
	total number of active firms	total revenue of firms (M kn)
2002	7 990	26 625
2007	12 558	40 735
Relative change (02–07)	+ 57%	+ 53%

Source: FINA (2004, 2009).

5. CONCLUSIONS

We assume that analysis of decentralization of economic activities (relocation of the economic activities from central areas to periphery) is one major source contributing to the urban decentralization and sprawl. This important issue is, however, largely ignored in the economic and spatial planning of Croatian cities. This paper aims at clarifying and exploring the decentralization of economic activities in one of the largest metropolitan areas in Croatia; namely, the metropolitan area of Split. Using data on the total number of firms that are located in the central and peripheral fraction of the metropolitan area of Split, we have demonstrated that there are some indications of the process of decentralization; despite as yet predominant role of the centre.

In order to accomplish more compact city policies, some relocation of centrally located economic activities, in response to land market forces and life stage demands, and to relieve central overcrowding is inevitable. Thus, spatial development policies at the metropolitan regional scale that effectively contain urban sprawl are necessary. An improved understanding of metropolitan development continues to be critical to urban policy-making, particularly in low-income countries. One important implication of the decentralization of population and economic activities is, for instance, that increases reliance on road-based transport for both passengers and freight.

Although only highlights of this complex topic are discussed in this paper, they are revealing. Many loose ends remain, suggesting numerous ways to refine and extend our understanding of the relationships between city centre and peripheral surrounding areas. Further research should extend the analysis by the consideration of job location patterns by type of industry as well as by size, since we may expect, for instance, the large manufacturing plants to be more decentralized. On the other hand, certain types of skill-intensive and idea-intensive economic activities, such as finance, law and other activities which require good communication and face-to-face contact, are expected to be more centralized. In light of this argument, Kolko

(1999) argues that cities that specialize in services are relatively centralized, while cities that specialize in manufacturing tend to sprawl.

Finally, we would like to point to certain side-effects of the decentralization of economic activities. Namely, it is typically abandoned or idle agricultural land adjacent to existing urban areas that is ideal for urban expansion. Of course, the loss of agricultural land has major adverse impacts on biodiversity. Increasingly urban sprawl has come under criticism from a myriad of groups for the environmental, economic, and social problems associated with its unregulated and unrestrained growth. Leading scholars also argue that suburbs leave their residents isolated and alienated, in part as lengthening commutes leave less time and energy for social interaction.

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