

## DECENTRALIZATION OF THE ZAGREB URBAN REGION

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### **Abstract**

Since 1971 Zagreb urban region has been showing decentralization tendencies in its population development, while the decentralization of employment significantly lags behind. Migration is the principal component of population change.

**Key words:** urban region, decentralization, suburbanization, population, employment

## INTRODUCTION

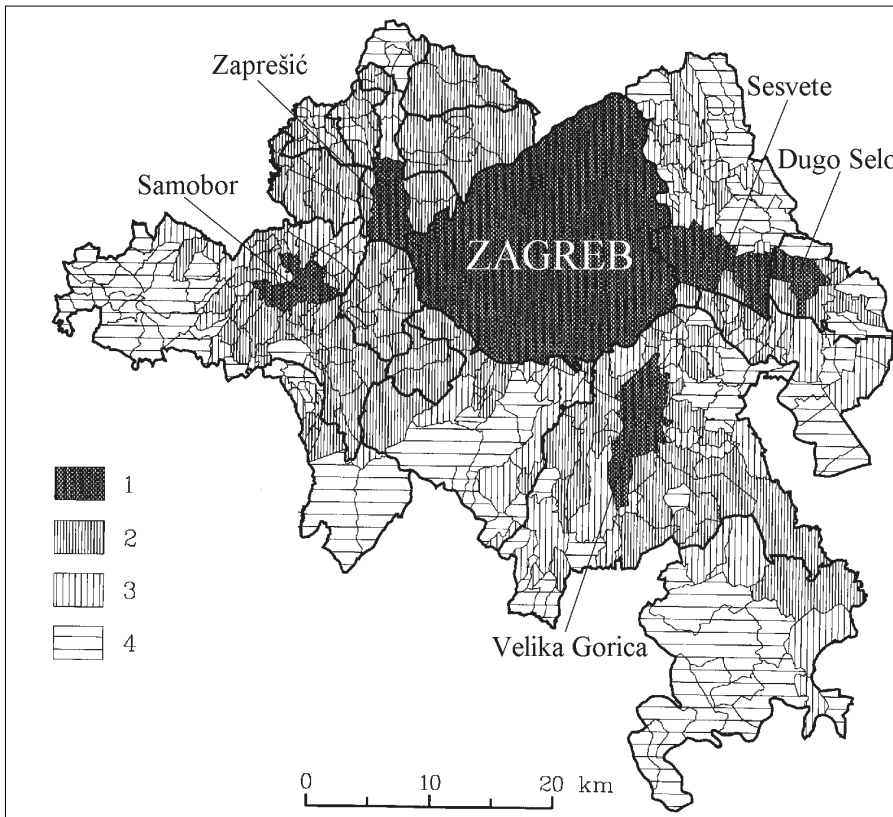
Zagreb contains 30% of Croatia's urban population and it is 4 times bigger than the second largest city, Split. Its metropolitan area, defined as a socio-economic urban region, has nearly one million inhabitants, which is more than a fifth of total population of the country.

According to the latest version of M. Vresk's model (1997), applied to the data from the 1991 census (relevant data from the last census are not available yet) processed according to the current territorial constitution, the socio-economic urban region of Zagreb includes 15 surrounding municipalities, beside the city itself and 2 suburban boroughs.

Beside Zagreb as the central city, there are 341 other settlements, among which five satellite towns stand out: Sesvete, Velika Gorica, Zaprešić, Samobor and Dugo Selo, which contain more than 40% of population of the suburban area. Most of the other settlements are small – the largest among them has only 3300 residents, and as much as two thirds of them have less than 500 residents.

The socio-economic characteristics of the population in 1991 (these are also the latest available data at the moment) show that most of the settlements are strongly urbanized. Such settlements form an almost continuous area in the west part of the agglomeration, while the east part still features urbanization axes along the major traffic corridors (figure 1). Most of the rural settlements are in peripheral and isolated parts of the region. Regardless of the fact that the negative influence of the city prevailed in them, they are integral parts of the urban region because they are dependent on it.

Figure 1: Zagreb urban region: settlements by the level of urbanization 1991



(1 - urban, 2 - more urbanized, 3 - less urbanized, 4 - rural)

## POPULATION

Although Zagreb, having grown into a strong economic center since the late 19<sup>th</sup> century, has shown an intensive population growth and has been expanding into the immediate surrounding area, its influence on the transformation of the wider surroundings has been minor until as late as the middle of the 20<sup>th</sup> century. Before World War II the area surrounding Zagreb was almost exclusively agricultural. Trade and service activities were insufficiently developed, which made the surroundings very much dependent on the city. The immigrational attraction of Zagreb, as opposed to overpopulation and economic stagnation of the agrarian surroundings, determined the prevailing direction of migration: net migration of the surrounding area was negative in all intercensus intervals from 1880 until 1948, and population grew solely by natural increase (Žuljić, 1965).

The urban-based industrialization, as the main feature of the post-war socio-economic development concept, implied a strong redistribution of population, that is, polarization of population at all scales – from national to local – with cities as focal points. By the charac-

teristics of population development, employment growth and dwelling construction, one can conclude that polarization effects in Croatia were most intense in the period until 1971 (Vresk, 1996). That was the time – the stage of early transitional society by Zelinski (1971) – of the highest growth rates of urban population and culmination of the rural exo-dus with all its consequences (Nejašmić, 1991).

Since 1971 the rural-urban migration has begun to subside, and commuting has intensified (Vresk, 1985), which are the characteristics of the late spatial mobility transition stage, that is related to the general development stage of late industrialization (Zelinski, 1971). The transformation of rural settlements, owing to employment in the city, and the rise of urbanized areas around it, are the most significant spreading effects in the overall polarization process, with which the focus of population growth moves from the center toward the outskirts of the urban region (Vresk, 1984b, 1997).

*Table 1: Components of the Zagreb urban region: population change 1948-2001*

Zagreb urban region	Population						
	1948	1953	1961	1971	1981	1991	2001
Zagreb	325443	361804	443038	584863	665949	706770	690095
Satellite towns	14822	17646	22990	40296	79089	103307	119600
Other settlements	121570	123766	126102	125124	129693	145380	168466
Suburban ring total	136392	141412	149092	165420	208782	248687	288066
Urban region total	461835	503216	592130	750283	874731	955457	978161
<b>Croatia</b>	3779858	3936022	4159696	4426221	4601469	4784265	4426365

Zagreb urban region	Average annual population change rates (%)					
	1948-1953	1953-1961	1961-1971	1971-1981	1981-1991	1991-2001
Zagreb	2,12	2,52	2,76	1,30	0,59	-0,24
Satellite towns	3,48	3,29	5,47	6,50	2,66	1,46
Other settlements	0,36	0,23	-0,08	0,36	1,14	1,47
Suburban ring total	0,72	0,66	1,04	2,32	1,74	1,47
Urban region total	1,72	2,03	2,36	1,53	0,88	0,23
<b>Croatia</b>	0,81	0,69	0,62	0,39	0,39	-0,78

## POPULATION CHANGE 1948-2001

Since the middle of the last century Zagreb and its suburban area have roughly doubled its population, but while Zagreb has been speeding up its growth, the suburban area has been slowing its down, and since 1971 it has been just the opposite. Zagreb had already had high growth rates before, so that in 1948 about 325 thousand people lived within its current limits. That growth, in which migration had the key role (Nejašmić, 1994), continued in the post-war period, at a quicker pace until 1971. The fact that the population of Zagreb has grown almost by the size of today's Rijeka, the third largest city in Croatia, only in the

1961-1971 decade, of which only one fifth was due to natural increase, illustrate the proportions of the migration pressure on the city. If we add the outmigration from the overcrowded central parts of the city, which have lost almost 16 thousand people at the same time (Žuljić, 1974/75), it is clear to see the kind of spatial problems Zagreb had to face. Their only solution was suburban development, which was reflected in the expansion of the city's administrative range.

Decline of the rural exodus (Nejašmić, 1991; Mikačić, 2000), residential suburbanization (Bašić, 1989) and reduction of the natural increase (Nejašmić, 1996) had slowed down Zagreb's population growth, and in the last intercensus period a drop of the total number of residents occurred for the first time. The comparison between Zagreb alone, Zagreb urban region and Croatia shows that the polarization in the population development of the country continues even in the conditions of weakened, even negative general population dynamics, with a decentralization of the agglomeration occurring at the same time.

The tendencies of suburban area's population development are the result of a differentiated population change of individual settlements. At the beginning of the observed period, agrarian settlements absolutely prevailed in Zagreb's surroundings, and as for today's satellite towns, only Samobor had basic characteristics of a town (Žuljić, 1965). Migration of the population increased by natural growth into the city was the main feature of the population dynamics. As a result of Zagreb's growing urban functions as early as in the pre-war era, centrifugal forces of the city appeared, propelling the process of structural transformation of the surrounding area. The gravitational links at first, and at a later stage of development, relocation of certain activities into the surrounding area, led to major changes in population trends. Settlements located in the immediate vicinity and near major traffic routes have gradually taken upon themselves a part of the migration pressure on the city. At the same time, agrarian overpopulation in conditions of poor traffic connection to Zagreb led to a rural exodus of the surrounding area's peripheral parts.

The quickest population growth is observable with local centers that have taken on characteristics of satellite towns by growing functional ties with Zagreb, particularly since the 1970s. Employment growth and development of a secondary traffic network around the satellite towns, enhanced the possibility of employment of the population from surrounding settlements, which quickened their socio-economic and functional transformation and increased their migration appeal. Rerouting a part of the immigrants into smaller settlements in their commuting area has been reducing the migration pressure on the satellite towns since the 1980s, slowing down their population growth in favour of other settlements.

In other settlements of the suburban area, despite great mutual differences, general population trends are opposite to those of urban settlements: slowed-down growth, even a slight drop in the 1961-1971 period (when two thirds of all settlements were losing population),- then a speed-up of growth, and in the last intercensus interval their population dynamics have leveled with those of the satellites. The negative tendency, that has prevailed until 1971, was caused by the rural exodus, which had affected much of the Zagreb's surroundings. The positive tendency, growing stronger after 1971, reflects the expansion of the suburbanization process or the so-called rural urbanization and the formation of Zagreb metropolitan area. The fact that the majority of depopulated settlements kept mostly rural

characteristics, while the quickest population growth is typical of settlements with a higher degree of socio-economic transformation, confirms the mutual dependence between population development of settlements and the degree of their functional integration into the urban region.

With the change of population trends of individual components of the urban region, their shares in total population also change. At the stage of concentration population, Zagreb's share went up to 78% in 1971, after which it has been reducing to the current 70% (the same as in 1948), with a tendency of further decrease. Population growth of the suburban area has the characteristics of marked polarization, whose focal points are the satellite towns. Their share in the population of the suburban area has quadrupled in the last half-century, but this trend was stopped in the last decade, indicating the beginning of a new phase, in which diffuse suburbanization will become the dominant form of agglomeration development.

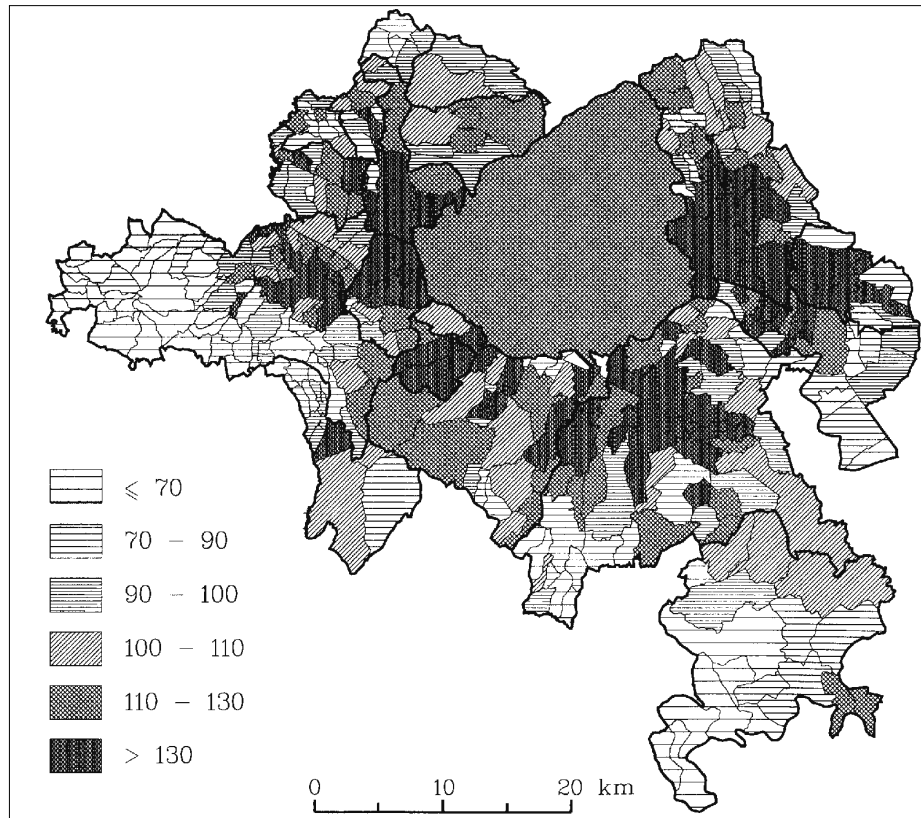
## STAGES OF URBAN DEVELOPMENT

Tendencies of population development of the components of the urban region correspond to certain stages of metropolitan evolution. Development of the Zagreb urban region until 2001 fits into the four-stage cyclic model of metropolitan development (Berg et al., 1982): out of eight theoretical phases (two in each stage), three are clearly distinguished. The first phase according to model, the absolute centralization (when migration from the surrounding area exceeds its natural increase, and total population of the agglomeration grows because of migration into the city), has obviously been skipped: since the beginning of industrial urbanization, the suburban area has not shown a drop in population in any of the intercensus intervals, although the net migration has been negative until 1971 without exceptions – natural increase made up for the loss (Žuljić, 1965; Laušić, 1987). Until 1971 the population development of the Zagreb urban region has had the characteristics of relative centralization: the city population, where net migration gain exceeded natural increase, grew faster than the population of the surrounding area, where natural increase was higher than the net migration loss. The period between 1971 and 1991 represents a phase of relative decentralization: the population of the suburban area grew faster than the city population, and both components of their population growth were positive. Finally, in 1991 the phase of absolute decentralization begins: the city population is being reduced, while it grows in the suburban area.

While it was an almost continuous area of population growth at the beginning of the last century, in the following decades Zagreb's surroundings have experienced a contraction of growth zones to the belts along major traffic routes (mostly railroads), with expansions around local centers. The build-up of the suburbanization process brings a demographic recovery to a certain number of settlements, and the expansion of the population growth zones is most noticeable in commuting areas of the satellite towns (figure 2). At the same time, the traditionally emigrational peripheral parts of the region (particularly in far west and southeast) are rapidly losing population, with the increasing contribution of the natural depopulation to the total loss. In the latest phase, the population growth zones are also

expanding to the areas between major traffic corridors (figure 3), which is most prominent in the east part of the agglomeration, a destination receiving significant immigration from neighbouring Bosnia and Herzegovina and other parts of Croatia, caused by war (Antić, 2001).

Figure 2: Settlements of the Zagreb urban region by the population change index 1971 – 1991



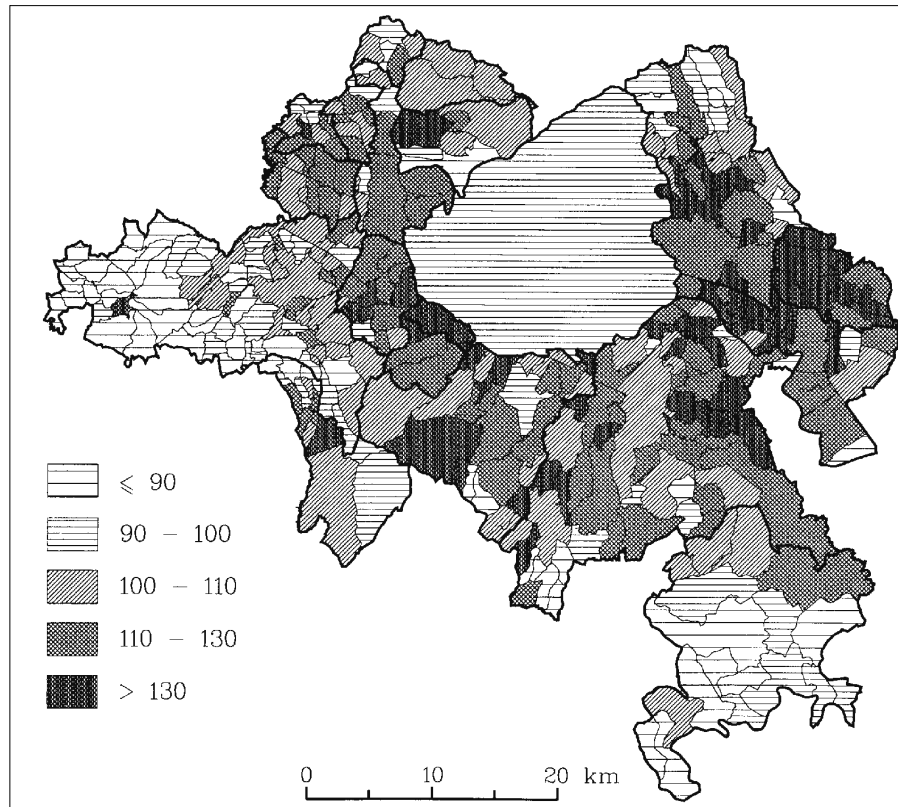
## THE ROLE OF IMMIGRATION

Migration is the key factor of differentiated population development of the components and individual settlements of the Zagreb urban region, which is reflected in the correspondence between population growth and the share of incomers in total population (figure 4). The structure of incomers by the time of their arrival (figure 5) reflects a decline of the migration pressure on Zagreb in the course of time and rerouting of immigration to the satellite towns and urbanized settlements of the suburban area.

Almost a half of all settlements had more immigrant than indigenous population in 1991 (these are still the latest relevant data), among which satellite towns had the highest

share (70.7% on the average). Generally, the share of incomers is decreased with the degree of socio-economic transformation of settlements (the more urbanized ones have 48.1%, the less urbanized 40.9%, the rural 33.6%), as well as the average population dynamics. A relatively low (51.8%) and decreasing share of incomers in the population of Zagreb is not surprising considering the reduced intensity of immigration, but also the effect of mortality and reemigration on the reduction of the older immigrant contingents, and the effect of birth-rate on the growth of the indigenous population.

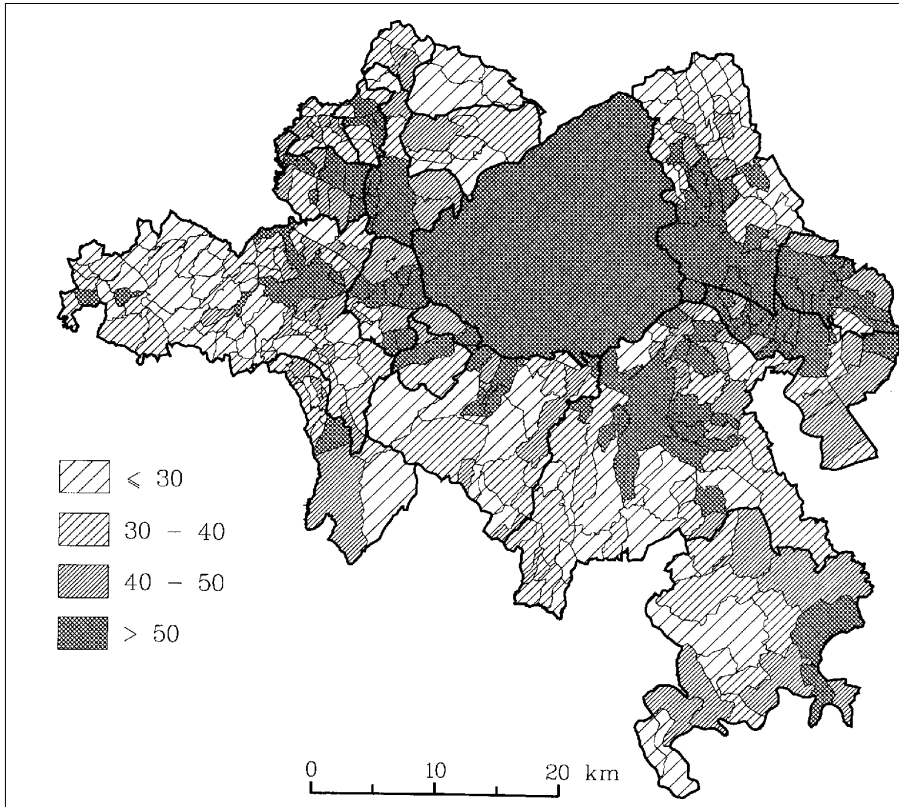
Figure 3: Settlements of the Zagreb urban region by the population change index 1991 – 2001



In the immigrant population of Zagreb in 1991 majority moved in from other Croatian municipalities (69.1%), the share of immigrants from abroad is also significant (27%, most of them from the territory of former Yugoslavia, mostly Bosnia and Herzegovina), while the local immigrants cover an insignificant 2.7%. Although Zagreb has mostly grown on account of the surrounding area at the beginning of its speedy growth, the change of its significance from a local center to the leading economic center in the (former) country, attracted immigrants from a much larger area, which has continuously reduced its dependence on the emigrational potential of the surroundings. Besides, the strengthening of functional ties

with Zagreb has provided a gradual stabilization of population in the surrounding area, which has had a positive net migration since the 1970s, as well as a reverse migration flow – from the city into suburban settlements. In the settlements of the suburban area, regardless of the degree of urbanization, local migrants make around 60% of all the incomers, but the statistics unfortunately does not show the number of those arrived from Zagreb.

*Figure 4: Settlements of the Zagreb urban region by the share of immigrants in the total population 1991*

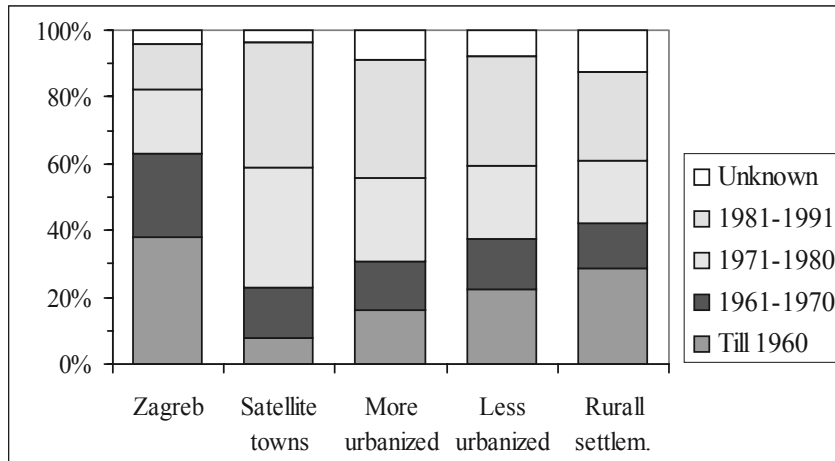


Natural increase has contributed little (just over one tenth) to the total population growth of the suburban area of 15.8% in the last intercensus period, which means that immigration is the main, and with some settlements, the sole factor of growth (except for satellite towns, few settlements have more births than deaths). Satellite towns account for one fourth of total net migration of the suburban area, which is less than their share in total population. Dugo Selo and Sesvete have the highest influx of immigrants, but a high net migration rate is especially present in numerous small settlements in their surroundings, many of which were rural and depopulation until recently. Beside the good accessibility to Zagreb, cheaper building lots in less urbanized settlements certainly contributed to the prevailing focus



of recent immigration on the east part of the urban region, and one also cannot ignore the grouping of immigrants of the same origin around the existing immigrational cores (for example, Little Bosnia in Sesvete).

Figure 5: Settlements of the Zagreb urban region: immigrant population 1991 by periods of immigration



Although natural change of Zagreb population has been negative since the early 1990s, most of the small, but significant drop in total population in the last intercensus period is the result of net migration loss. Nevertheless, a city of complex functional structure like Zagreb will always be attractive for settling of certain population categories, which will at least mechanically rejuvenate its age structure. However, in the conditions of weakened emigrational potential of the areas from which Zagreb and its suburban area have been receiving population, adverse characteristics of natural change could become the main restrictive factor of further development of the Zagreb urban region.

## EMPLOYMENT

Each stage of city development is reflected in adequate changes in the greater surrounding area. The original gravitational area of Zagreb was based on the significance of the city as a sales center, in which the agriculture from the surroundings marketed the majority of its market surplus (Žuljić, 1965). Eventually, forms of more direct economic ties have begun to appear, which is particularly manifested through the growth of commuting workforce and tendencies of relocation of certain economic activities from the city into the surrounding area. Development of employment shows similar tendencies as the development of population, all the more so due to a certain mutual dependence between them, so the degree of metropolitan development can also be assessed by the distribution of jobs.

Although the advantages of developing industrial plants on favourable locations in the gravitational area of Zagreb began to appear in the period before World War II, significant tendencies of spatial expansion of Zagreb's industry into the suburban area and wider surroundings began to appear in the early 1960s (Sić, 1968). This occurred for several reasons: the requirement of slowing down the excessive concentration of activities in the city, the intention to balance the regional distribution of production capacities with the distribution of surplus workforce in the surrounding area, and the requirement to free the city of certain activities that present a burden for it with respect to space and ecology.

In the conditions of communal administrative and territorial constitution of the country, with a centralized decision-making system, the process of circular cumulative causality caused a high concentration of production and service activities in municipality centers of that era. Therefore, the satellite towns, as centers of suburban municipalities of that period, had the highest employment growth rates in Zagreb urban region in the 1971-1981 interval: Dugo Selo 183%, Velika Gorica 142%, Sesvete 130%, Samobor 42%, Zaprešić 32% (Vresk, 1986). Nevertheless, the lowest relative employment growth of 19% in Zagreb exceeded the number of new jobs in all satellite towns combined, several times over in total amount. The economic crisis of the 1980s stopped further employment growth – the number of employed people in Zagreb stagnates between 1981-1991 (actually, it grows until 1987, and then drops), even dropping in the surrounding towns, except Zaprešić. Therefore, despite the indicated tendency of relative decentralization, employment in Zagreb agglomeration in 1991 shows a high degree of concentration: 9 out of 10 jobs are in Zagreb, and the concentration is also observable in the surrounding area to a somewhat lesser degree, where 2 out of 3 jobs are in satellite towns (table 2). 46 out of 341 settlements in the surrounding area have no jobs, and only 35 settlements have more than 100 employed persons.

Even at that time, the tendency of forming work zones is noticeable in some locations in the suburban area favourable in terms of traffic. This will become even more prominent in the 1990s, when, in the conditions of market economy, the attractiveness of locations along major roads and around motorway-entrance roads grows, where small plants of light and processing industries are being settled, combined with tertiary economic activities, mostly trade (Sić, 1997). These changes, as opposed to a drastic drop of employment in the industrial economy of Zagreb (and the surrounding area as well, but with a much lower share in the total number), undoubtedly caused a revival of the tendency of relative decentralization of employment within the urban region, which will only be precisely quantifiable upon processing of relevant data from the last census.

The marked concentration of jobs, as present in Zagreb urban region, implies an emphasized requirement of commuting. The dominant direction of commuting is obviously from the suburban area into the central city. The commuting area of Zagreb, as the main employment center in the country, covers the largest part of Central Croatia, but previous research (Žuljić, 1957; Friganović, 1970; Vresk, 1984a, 1994) shows that it has been gradually changing – not so much in regional coverage as in the intensity of journeys from certain areas. Commuting from the suburban area has gained strength, while the outside zones have experienced a reduction by the migration of a part of the former commuters closer to the city or by the development of local employment centers. The increase in number and share

of commuters from the suburban area is the consequence of employment of deagrarized population in the city, as well residential decentralization, in short: suburbanization. That is why the number of commuters to Zagreb has been rising faster than the number of jobs (Vresk, 1994), which means that the concentration of population in the city has been slowed down, and the transformation of the suburban area has been intensified.

Table 2: Components of the Zagreb urban region: employment and commuting 1991

Zagreb urban region	Place of work				Place of residence			
	Jobs		Commuters from other settlements		Workers		Commuters to other settlements	
	Number	% of the total	Number	% of the jobs	Number	% of the total	Number	% of the workers
Zagreb	330449	90,0	66185	20,0	269442	75,3	2185	0,8
Satellite towns	24042	6,5	11018	45,8	41122	11,5	27141	66,0
Other settlements	12650	3,4	6557	51,8	47468	13,3	40319	84,9
Suburban ring total	36692	10,0	17575	47,9	88590	24,7	67460	76,1
Urban region total	367141	100,0	83760	22,8	358032	100,0	69645	19,5

## CONCLUSION

In 2001 Zagreb metropolitan area, defined as a socioeconomic urban region, comprised an area with almost a million inhabitants, 70 % of which lived in the central city. That alone indicates a lower stage of the urban development, and the fact that 9 out of 10 jobs in 1991 were found in the city (more recent data are not yet available) substantiate the conclusion. However, since 1971 Zagreb urban region has been showing decentralization tendencies in its population development, while the decentralization of employment significantly lags behind. Until recently satellite towns have been the dominant form of suburban growth, so that 40 % of the population and two thirds of the jobs are concentrated in five of them, while other settlements (most of them more or less urbanized, some still rural) are predominantly small and lack employment. Increasing growth rates of the other settlements and relative decline of the satellites since 1981 indicate suburban expansion into the broad commuting area, especially along main traffic routes. Satellite towns still have the most favourable dynamic and structural features of the population, while other suburban settlements display a pronounced differentiation of population development, depending on their functional integration in the region and the consequential level of urban transformation. Weakened emigration potential of the regions from which Zagreb has been gaining population, the residential suburbanization and the decrease in natural growth have lead to a small but significant decline of its population in the last intercensus period, representing a shift

into a new phase of development of the Zagreb urban region. The principal component of the population change is migration.

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