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**POPULATION AGEING IN TOWNS  
OF THE MAŁOPOLSKIE VOIVODESHIP  
AS CONCERNS ECONOMIC ACTIVITY**

From the turn of 80 and 90s an intensive process of population ageing has been observed in Poland. It was caused not only by social-economic transformation but also by general demographic-social trends, which have been long-since taking place in European countries (Długosz, 2002 a, c; 2003). The decrease of population growth caused by the falling fertility level and the increase of average life longevity are the main reasons for this situation on a macro scale. The economic situation is an additional factor in our Polish reality, which has been stimulating the level and trends of a ceaseless decrease in population migration for a long time. All this makes the Polish society age intensively (Długosz, 1997, 1998). This phenomenon was initiated in rural areas (Długosz, 2001) but in recent years it has been strongly marked in Polish towns (Długosz, 1999, 2002 b) in which general trends as well as internal conditions have been particularly evident.

The aim of this article was to present this situation in towns of the Małopolskie Voivodeship in 1984–2000 – the period from the culmination of the “echo” of the demographic high to birth “lows” in recent years. The basis of the estimation of the level and dynamics of the investigated process were comparable statistical data for particular towns published in statistical yearbooks of the Central Statistical Office (GUS, 1986, 1994, 2002) in the scheme of the age of economic activity according to the criteria applied in our country. Thus talking about the young population or the agreed upon “old”, one should consider respectively the pre- or post- productive age population, taking into account the gender struc-

ture. The analysis of the level and population ageing as regards activity was conducted on the basis of statistical data for towns functioning incessantly in the period under study (to the year 2000) within the Małopolskie Voivodeship. Only in the case of six centres, which were qualified as towns in the meantime (Alwernia, Ciężkowice, Czchów, Nowy Wiśnicz, Skąła and Świątyni Górne), the results are fragmentary due to a lack of complete data.

At the end of 2001 in the Małopolskie Voivodeship (Fig. 1) there were 55 towns (of 880 in the whole country), which concentrated 1,629.9 thousand inhabitants, constituting 50.3 percent of the voivodeship's total population. That means in the relation to the total population of Poland, the fraction of the voivodeship's urban population was 6.8 percent and had not changed considerably since 1988. However, the relations in the number and structure of the voivodeship's towns changed in the reference to total number of towns in Poland (Table 1) mainly through the creation of new centres.

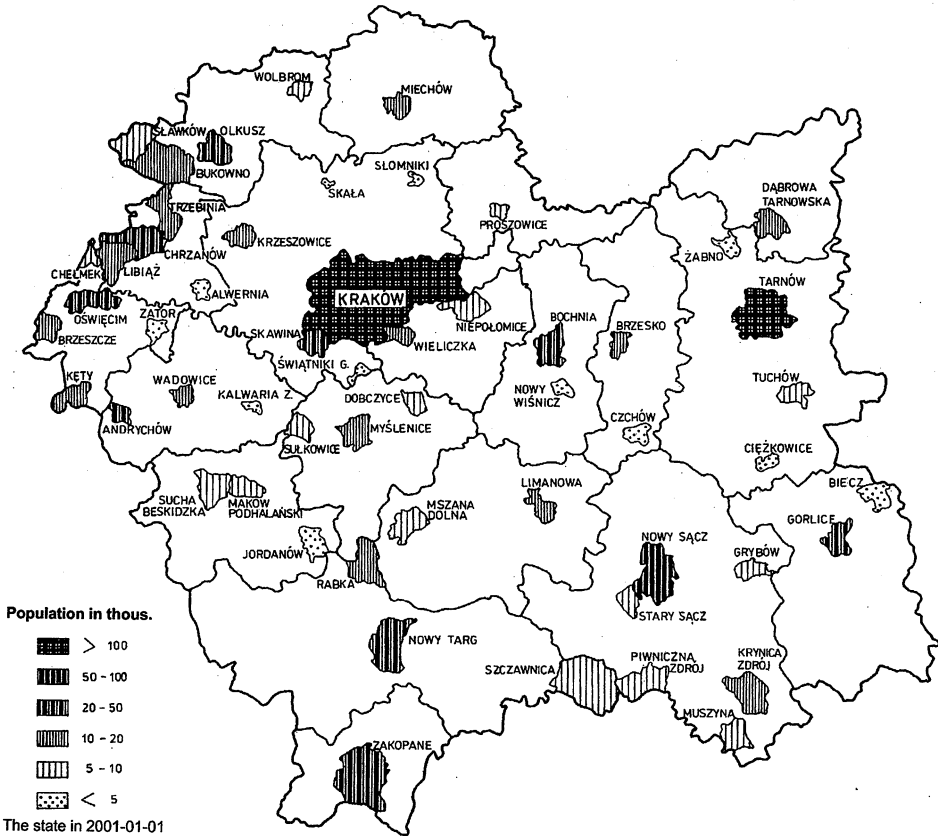


Fig. 1. Towns in Małopolskie Voivodeship

POPULATION AGEING IN TOWNS OF THE MAŁOPOLSKIE VOIVODESHIP...

Table 1. Quantitative and size structure of towns of Małopolskie Voivodeship against the background of Poland

TOWN GROUPS ACCORDING TO THEIR NUMBER AND POPULATION AND PERCENTAGE IN RESPECT TO THE VALUES FOR POLAND		1984			2001		
		POLAND	MAŁOPOLSKIE VOIVODESHIP		POLAND	MAŁOPOLSKIE VOIVODESHIP	
		NUMBER	NUMBER	PERCENT	NUMBER	NUMBER	PERCENT
under	number of towns	258	8	3.1	287	12	4.2
5,000	population (thou.)	766.9	33.1	4.3	882.9	42.8	4.8
5-10	number of towns	187	17	9.1	181	16	8.8
	population (thou.)	1,319.9	119.5	9.1	1,285.2	114.5	8.9
10-20	number of towns	165	11	6.7	183	15	8.2
	population (thou.)	2,369.5	161.8	6.8	2,680.2	228.0	8.5
20-50	number of towns	122	10	8.1	137	9	6.5
	population (thou.)	3,842.6	296.0	7.0	4,221.9	295.3	7.0
50-100	number of towns	41	1	2.4	50	1	2.0
	population (thou.)	2,858.3	69.7	2.4	3,359.4	84.4	2.5
over	number of towns	39	2	5.1	42	2	4.8
100	population (thou.)	11,075.4	853.4	7.7	11,446.9	861.8	7.5

Source: own study on the basis of GUS Statistical Yearbooks

Therefore, the share of the smallest towns and those in the population class of 10-20 thou. is increased in 1984-2001 while a significant decrease was recorded in the remaining classes, which resulted in changes in the percentage of the population in particular town categories. Apart from groups mentioned above, the share of inhabitants increased insignificantly only in the group of centres with populations from 50 to 100 thou. The share of population in the towns of the Małopolskie Voivodeship decreased in the remaining categories in respect to the general situation in Polish towns.

Thus, what was the level of population ageing like in towns in the period under study? In order to avoid subjective division according to set criteria, for particular population age categories the values of which were presented in cartograms, identical quartile class distribution was accepted for three time periods. Such approach allowed an investigation into how the situation changed in the following years.

Taking into consideration variables that can be classified as demographically youthful because it encompasses the share of population in pre-productive age (Fig. 2) it should be determined that in 1984 generally the youngest category of the voivodeship's population was characterised by towns of present southern districts. Along with the average for voivodeship cities amounting to 28.3 percent (total in Poland - 29.5 percent and in Polish towns - 28.4 percent) to the

centres with the highest share of pre-productive population (aged 0–17) belonged Limanowa (38 percent), Stary Sącz (36.7 percent), Nowy Targ (34.7 percent), Mszana Dolna, Myślenice (34.1 percent each) and from outside of this region – Dąbrowa Tarnowska (36.2 percent) and Brzesko (35.1 percent). The lowest share of young population was then recorded in Krakow (24.8 percent), the neighbouring Wieliczka (26.4 percent) and towns in the north-western part of the voivodeship, in particular Trzebinia (26.2 percent). In the voivodeships southern regions this category of towns was also represented by Zakopane (26.1 percent) and Biecz (26.5 percent).

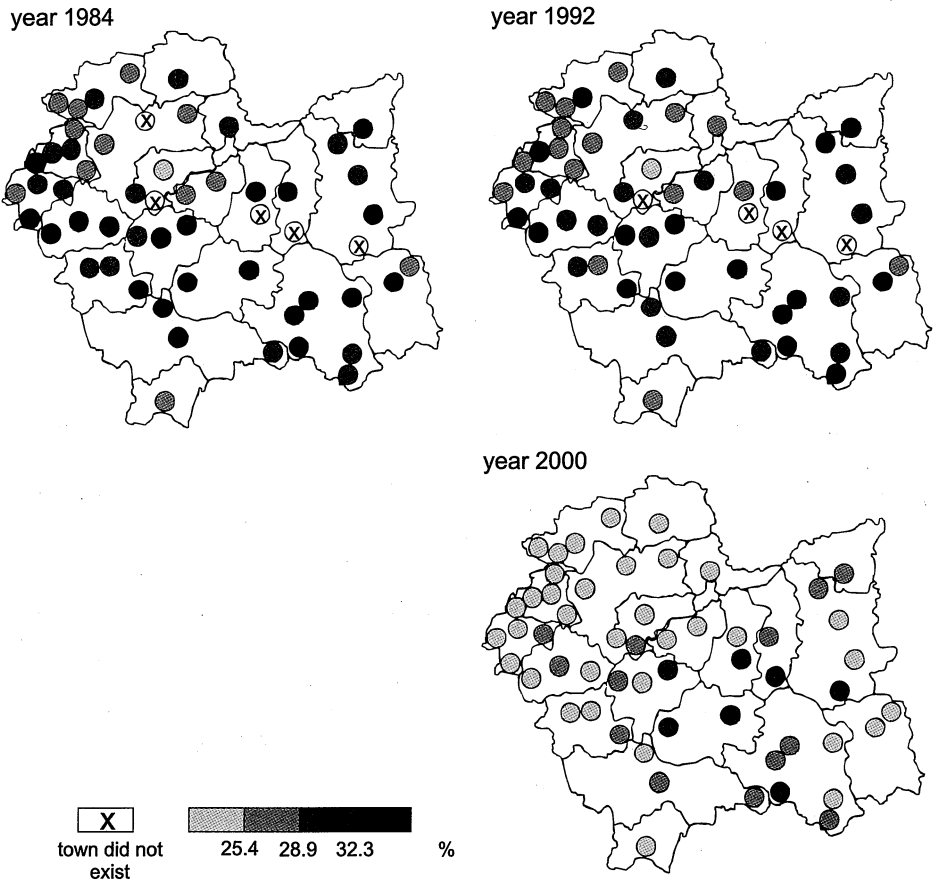


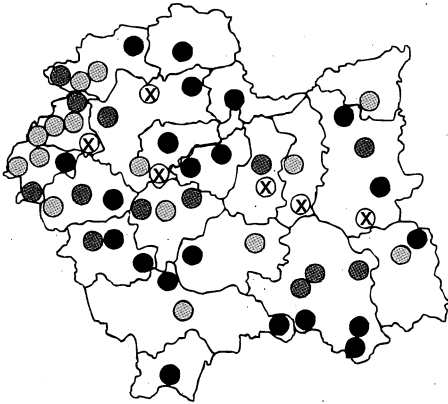
Fig. 2. The percentage of population in preproductive age in towns of Małopolskie Voivodeship

The spatial layout in this field changed inconsiderably in 1992. Along with the average for voivodeship towns amounting to 27.9 percent (the total in Poland – 29.1 percent and in Polish towns – 28.2 percent) to the centres with the highest share of pre-productive population (aged 0–17) still belonged Limanowa

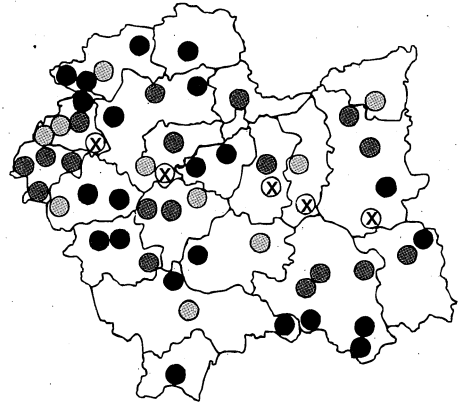
(36.9 percent), Stary Sącz (35.5) and Dąbrowa Tarnowska (35.4) and close to Krakow – Dobczyce (38.1). In turn the lowest share of young population was still characterised by Krakow (24.2 percent), Wieliczka (25.8) and Słomniki (26.5) and, at present, the Silesian Sławków (26.7 percent).

Generally, as for the magnitude of the share of pre-productive population in the towns of the Małopolskie Voivodeship the scheme changed in 2000. Alongside the average for voivodeship towns amounting to 22.1 percent (total in Poland – 24.1 percent and in Polish towns – 22.2 percent), the centres with the highest share of pre-productive population included the newly created towns Nowy Wiśnicz (30.7 percent), Czchów (30.6 percent) again Dobczyce (30.2 percent) and also Piwniczna (29.1 percent). In turn the lowest percentage was again characterised by Krakow (19.3 percent), Krzeszowice (20.3 percent) and the already mentioned Sławków (10.7 percent).

year 1984



year 1992



year 2000

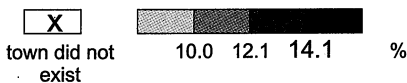
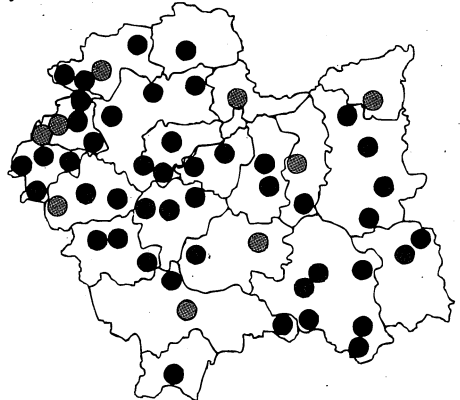


Fig. 3. The percentage of population in postproductive age in towns of Małopolskie Voivodeship

Generally speaking, in respect to the share of the post-productive population, described as the "old", in particular time periods the situation reversed. In 1984 (Fig. 3) with the average for voivodeship towns amounting to 11.5 percent (total in Poland – 11.9 percent and in Polish towns – 10.6 percent) the centres belonging to the category having the highest share of elderly population included Biecz (16.2 percent), Zakopane (14.2 percent), Niepołomice (13.7 percent), Słomniki (13.6 percent), Mszana Dolna (13.3 percent), Kalwaria Zebrzydowska and Wolbrom (13.2 percent each). The group of towns with the lowest share (6.2 percent) included first primarily Skawina (6.8 percent), Andrychów and Brzeszcze (7.9 percent each) and Nowy Targ (8.0 percent).

In turn in 1992, with the average for voivodeship towns amounting to 12.5 percent (total in Poland – 13.2 percent and in Polish towns – 12.0 percent), the group of the oldest towns measured in terms of the highest shares of post-productive population included the newly created town of Skała (17.5 percent), still Zakopane (16.6 percent), Biecz (16.6 percent) and Sławków (15.4 percent), Wadowice (15.2 percent) and Kalwaria Zebrzydowska, Trzebinia and Wieliczka (14.3 percent each). The lowest share of "old" population was still observed in Chełmek (7.7 percent), Nowy Targ (8.6 percent), Olkusz (8.5 percent), Limanowa and Brzesko (8.7 percent each).

Generally, particularly as for the magnitude of the percentage of the post-productive population in the towns of Małopolskie Voivodeship, the layout changed in the year 2000. Along with the average for voivodeship towns amounting to 14.9 percent (total in Poland – 14.7 percent and in Polish towns – 14.2 percent), the highest share of post-productive population was observed in newly created towns, i.e. Alwernia (18.0 percent) and Skała (17.1 percent) and still Zakopane (17.9) and Biecz (17.5 percent). In turn the lowest share of population in post-productive age was characterised that year by Dobczyce (10.0 percent), Dąbrowa Tarnowska (10.4 percent), Olkusz (10.7 percent), Chełmek and Libiąż (11.0 percent each).

In a typical scheme the relations of the elderly to youth population are defined by the demographic ageing index, therefore in this case the relations of the accepted categories defined as the ageing index (Fig. 4). According to this measure in 1984, with the average for voivodeship towns amounting to 40.7 (total in Poland – 40.4 and in Polish towns – 37.1), the oldest society was characteristic first of all in Biecz (61.0), Zakopane (54.3), Wieliczka (52.7), Krakow (52.1) and Słomniki (50.0), while the youngest was in Chełmek (18.1), Limanowa (21.7), Skawina (22.1), Nowy Targ (23.0) and Andrychów (23.1).

The spatial layout in this field changed insignificantly in 1992. Along with the average ageing index for voivodeship towns amounting to 44.9 (total in Poland – 45.3 and in Polish towns – 42.5) still the oldest society was characteristic in Zakopane (61.2), Krakow (57.6) and Biecz (56.9) and the newly created town of Skała (60.0), while the youngest was in Limanowa (23.5), Chełmek (24.3), Olkusz (25.7), Nowy Targ (26.8) and Andrychów (27.5).

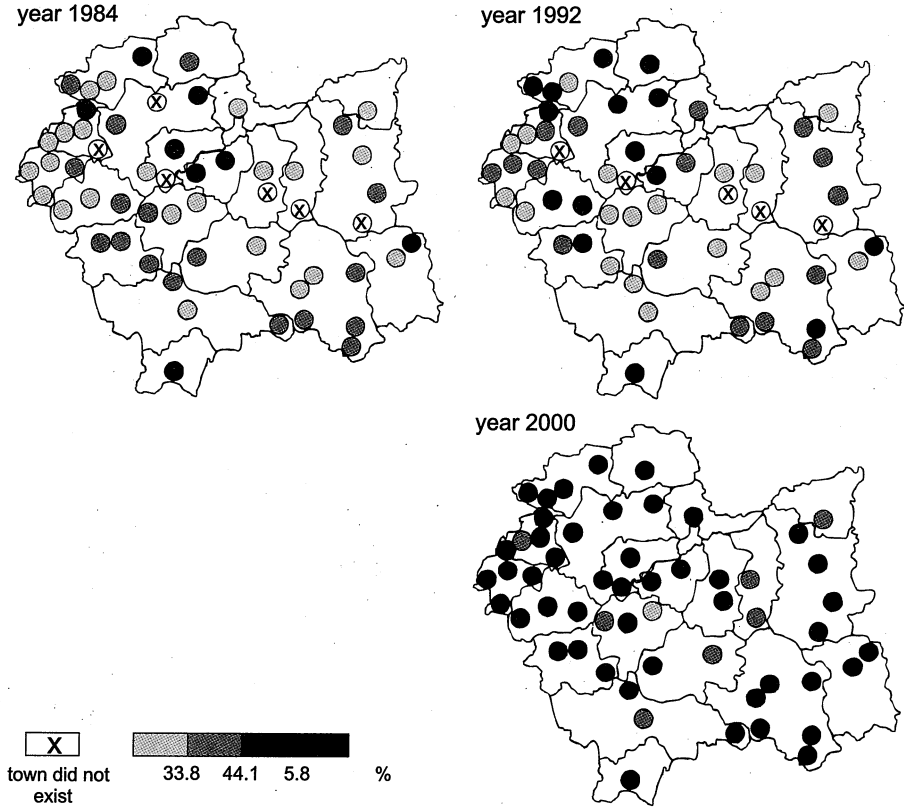


Fig. 4. The age structure of population according to ageing index in towns of Małopolskie Voivodeship

The values of the ageing index in 2000 were subject to more distinct polarisation. Along with the average for voivodeship towns amounting to 67.3 (total in Poland – 61.1 and in Polish towns – 63.8), the oldest population category was recorded in Krakow (85.3), Sławków (84.5), Alwernia (82.8), Krzeszowice (82.0), Zakopane (78.6) and Oświęcim (77.3), while the youngest – Dobczyce (33.0), Dąbrowa Tarnowska (38.9) and Limanowa (39.0).

In a more spatially polarised way the layout of the process in the towns of the Małopolskie Voivodeship was shown using the demographic ageing index  $W_{sd}$  (Długosz, 1997–2003,) which, transferring to the categories of economic activity age in this case, can be written as:

$$W_{sd} = [U_{(A)t} - U_{(A)t+n}] + [U_{(P)t+n} - U_{(P)t}] \text{ where:}$$

$U_{(A)t}$  – the percentage of population in the productive age at the beginning of the investigated period

$U_{(A)t+n}$  – the percentage of population in the productive age at the end of the investigated period

- $U_{(P)t+n}$  – the percentage of population in the post-productive age at the end of the investigated period  
 $U_{(P)t}$  – the percentage of population in the post-productive age at the beginning of the investigated period

In 1984–1992 (Fig. 5), with the average for voivodeship towns amounting to 1.4 (total in Poland – 1.6 and in Polish towns – 1.7), the highest dynamics were characteristic in Brzeszcze (8.0), Wadowice (6.3), Rabka (5.3), Sławków (5.2), Myślenice (4.5) and Oświęcim (4.3), while the lowest – Piwniczna (0.1) and Kęty, Libiąż, Sucha Beskidzka and Szczawnica (0.2 each). In turn of nine centres in which the population underwent rejuvenation the highest parameters were characterised by Dobczyce (-6.2), Niepołomice (-3.1) and Jordanów (-3.0).

1984 - 1992

1992 - 2000

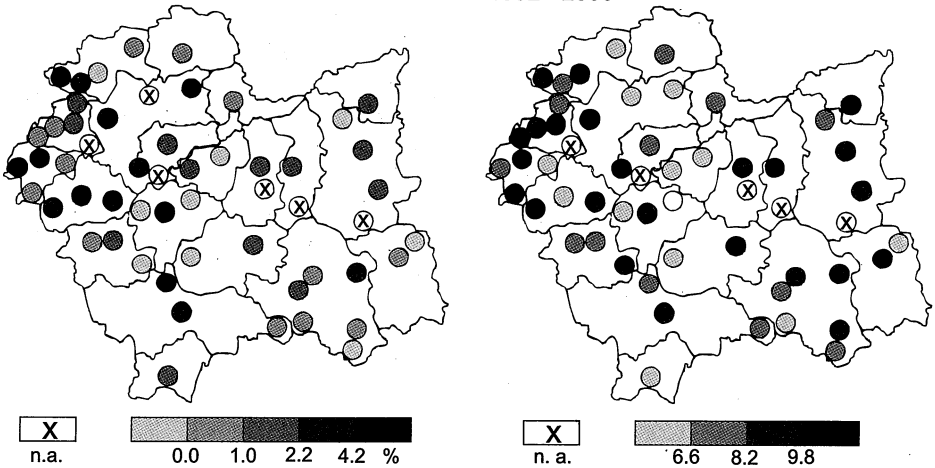


Fig. 5. The population ageing in towns of Małopolskie Voivodeship according to Wsd index

In 1992–2000 no town in the voivodeship under study was recorded in which the rejuvenation of society occurred. Along with the average for voivodeship towns amounting to 8.1 (total in Poland – 6.5 and in Polish towns – 8.2) the highest dynamics were characteristic in Gorlice (11.9), Olkusz (11.7), Andrychów and Krzeszowice (11.2 each) and Oświęcim (11.0), while the lowest – in the newly created Skąła (4.0), Wadowice and Wolbrom (4.9 each) and Słomniki (5.1) and Mszana Dolna (5.7).

Comparing the  $W_{sd}$  parameters in both periods showed that the pace of population ageing (Fig. 6) gathered momentum in the towns of Małopolskie Voivodeship and on average amounted to 6.7 percentage points (total in Poland – 4.9 pts. and in Polish towns – 6.5 pts.). The highest increase in the population ageing process occurred in the investigated period in Dobczyce (14.3 percentage points), Olkusz (12.2 percentage points), Jordanów (11.8 percentage points) and



Gorlice (11.1 percentage points), while in the lowest degree it occurred in Rabka (1.8 percentage points), Proszowice (2.5 percentage points) and Sławków (3.0 percentage points). A fall in process dynamics between the periods of 1982–1994 and 1994–2000 was only recorded in Brzeszcze and Wadowice.

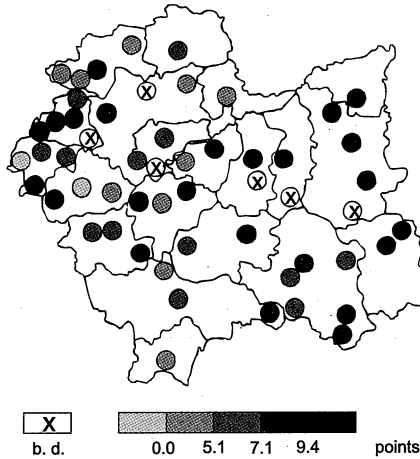


Fig. 6. The dynamics of population ageing changes according to Wsd in towns of Małopolskie Voivodeship in the years 1984/92–1992/2000

As a result of the above analysis, there is no basis for a univocal statement as regards spatial regularities in the state and the process of demographic ageing of Małopolskie Voivodeship inhabitants. It is also difficult to state univocally on the basis of the investigated urban population how the size of the centres goes hand in hand with the level of demographic ageing based on the criterion of the age of economic activity.

However, some regularities that occurred in the towns of the investigated voivodeship in reference to the situation in our country and all urban centres in Poland should be noted. In the case of the pre-productive age population, it was always lower in the years under study in respect to national average and the average for Polish towns. In turn in the case of the post-productive age population, the situation was reversed. The situation influenced the demographic ageing index whose magnitude was only shaken in 1992. If in 984 and 2000 the ageing level in the towns of Małopolskie Voivodeship was always higher than for the total national average and for all towns, then in 1992 it only exceeded the average for total towns.

The higher level of demographic ageing in Małopolskie Voivodeship towns made the global dynamics of population ageing according to the Wsd in the towns under study lower than in all Polish towns while the national average was exceeded only in 1992–2000. This is confirmed by the fact that population age-

ing in Poland in recent years has been taking place because of the demographic situation in towns.

Finally it should be stated on the basis of a comparison of the changes of population ageing dynamics that in the towns of Małopolskie Voivodeship the ageing process is gathering momentum and is more rapid than in Polish towns in general and is decidedly more intensive than the general situation in Poland.

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