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POPULATION CHANGES IN LARGE POLISH CITIES IN THE END OF 20TH CENTURY

ABSTRACT. In this paper, the authors consider the processes of population changes in ten largest Polish cities in the end of 20th century. Three development stages have been distinguished, that is urbanization, stabilization and depopulation. Key components of population changes were natural increase in the first and third stage and migration balance in the stabilization stage. The analysis showed that large cities differ both in terms of the dynamics and character of changes, as well as the advance of the process. Based on this, four groups of cities have been distinguished. Additionally, the Central Statistical Office prognosis for these cities has been analyzed.

KEY WORDS: population changes, cities development stages, large cities, Poland

INTRODUCTION

Throughout almost the whole post-war period there has been an increase in the urban population from 31.8% in 1946 to 61.9% in 1998 (Jelonek, 2001). However, the process of urbanization in Poland was mainly the process of urbanization of large cities. The main components of changes were: high natural increase, migration from the rural areas, especially to large cities, and administrative border changes (Parysek, Kotus, 1995; 1997).

Since early 1980s there has been a decrease in large cities growth dynamics caused by the negative natural increase and the leveling out of the inflow to the cities (Parysek, 2002, Górecka, Koziół, 2004). At present, in most of the large cities one may observe the decrease in the number of inhabitants, and the cities themselves are undergoing strong spatial and structural changes (Parysek, 2002).

The objective of this paper is to analyse the population changes and their most important components, and at the same time the attempt to determine the main directions of their development. For the analysis ten largest Polish cities have been chosen: Bydgoszcz, Gdańsk, Katowice, Kraków, Lublin, Łódź, Poznań, Szczecin, Warszawa and Wrocław. All of them have more than 300 thousand inhabitants, are the regional centers and the centres of agglomerations.

The time period (1980 – 2001) chosen for the analysis is considered specific. In the period in question there has been a change in large cities development tendencies, which were the consequence of socio-economical changes. As the main components of population changes migration balance and natural increase have been taken into account, as there were no important administrative border changes in the analysed cities in this period.

DEVELOPMENT STAGES OF LARGE POLISH CITIES AT THE END OF 20TH CENTURY

At the end of 20th century there has been a decrease in growth dynamics in the largest cities, caused by ongoing decrease in natural increase and decline of migration inflow as a result of deglomeration processes (Fig. 1).

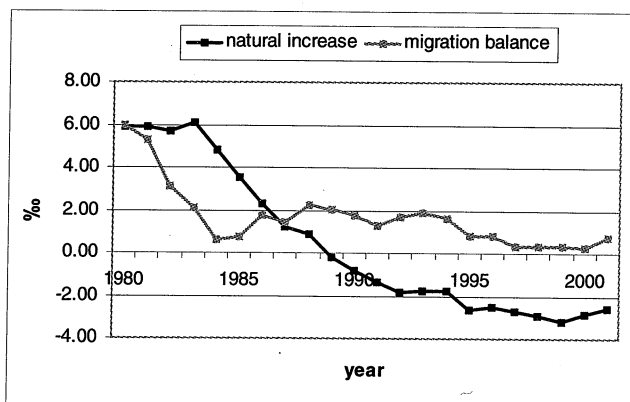


Fig. 1. Natural increase and migration balance in the largest Polish cities at the end of 20th century

Source: Rocznik Demograficzny, 1981-2002

The population of the largest cities had been growing until the end of 1980s, although since the beginning of 1990s the decrease has been observed (Fig. 2). Depopulation of these cities is a result of negative natural increase and, in case of some of them, also the negative migration balance. Moreover, the dynamics

of the depopulation process of the cities is smaller than their growth dynamics in the post-war period.

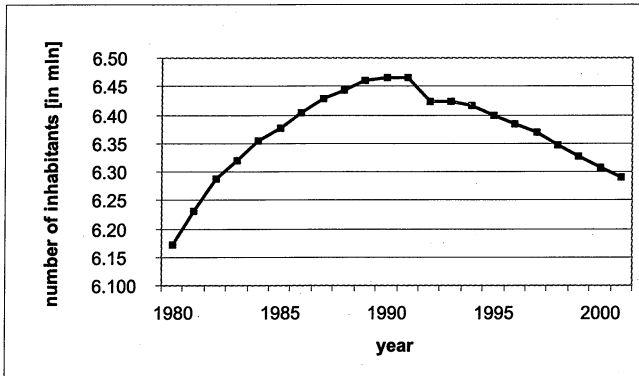


Fig. 2. Population changes of the largest Polish cities at the end of 20th century.
 Source: Rocznik Demograficzny, 1981-2002

One can describe the tendencies of population changes with the square function graph (Fig. 3). Based on this graph, one can distinguish three main stages: urbanization (growth of population), stabilization and depopulation (the decline in the number of inhabitants). The individual stages differ both in terms of the nature and dynamics of population changes, as well as the demographic processes which mould them.

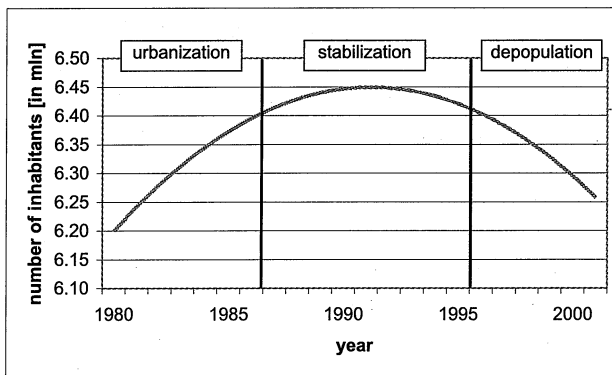


Fig. 3. Development stages of the largest Polish cities at the end of 20th century.
 (self-work)

In order to characterize the main components of population changes the Pearson correlation coefficient had been calculated. The coefficient had been calculated for the number of inhabitants of the cities in each stage, natural increase and migration balance (Table1).

Table 1. Correlation coefficient for major components of population changes in large cities

	STAGES OF POPULATION CHANGES		
	URBANIZATION	STABILIZATION	DEPOPULATION
Population growth	0.78	-0.40	0.84
Migration balance	0.20	0.65	0.30

Source: own calculations

In the first stage (1980-86) there has been significant increase in the number of inhabitants caused mainly by the high natural increase (5.02‰), as well as positive migration balance (2.99‰). By the end of this period the decrease in dynamics of population changes has been observed in the largest cities, which were entering the stabilization stage (1987-94).

The mentioned stage can be characterized by negative natural increase (-0.17‰) and not large migration balance (1.33‰), the latter being the key component of population changes in that period. In the last stage (1995-2001) the number of inhabitants of the largest cities has been decreasing and the process is caused predominantly by negative natural increase (-3.99‰); migration balance has been very low (0.05‰).

POPULATION CHANGES IN THE LARGEST POLISH CITIES

The process of population changes in the largest Polish cities is quite varied. The cities differ both in terms of the dynamics and character of changes, as well as the advance of the process (Table 2). However, one may notice similarities in these changes and therefore divide them into four groups.

Table 2. Development stages of the largest Polish cities

	maximum population	urbanization	stabilization	depopulation
Bydgoszcz	1998	1980-1989	1990-1999	2000-2001
Gdańsk	1987	1980-1985	1986-1996	1997-2001
Katowice	1987	1980-1982	1983-1991	1992-2001
Kraków	1991	1980-1986	1987-2001	
Lublin	1998	1980-1989	1990-2001	
Łódź	1988	1980-1983	1984-1991	1992-2001
Poznań	1990	1980-1987	1988-1996	1997-2001
Szczecin	1994	1980-1988	1989-2001	
Warszawa	1987	1980-1983	1984-1994	1995-2001
Wrocław	1991	1980-1986	1987-1995	1996-2001

The first group of cities is represented by Łódź and Katowice (Fig. 4). Both of the cities had entered the stabilization stage in the beginning of 1980s, reaching their maximum population at the end of 1980s. Since the beginning of 1990s there has been a constant decrease in the number of inhabitants. In case of Łódź this is being caused mainly by negative natural increase and in case of Katowice - also by negative migration balance.

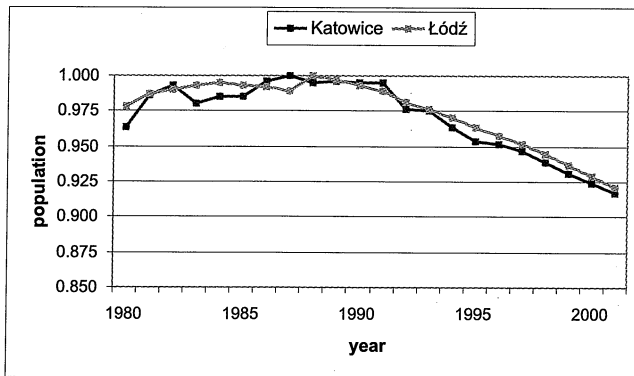


Fig. 4. Population changes in the first group of cities

1.000 = maximum population

Source: Rocznik Demograficzny, 1981-2002

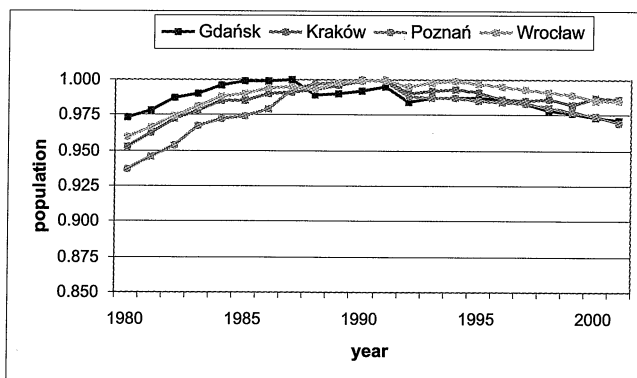


Fig. 5. Population changes in the second group of cities.

1.000 = maximum population

Source: Rocznik Demograficzny, 1981-2002

Gdańsk, Kraków, Poznań and Wrocław (Fig. 5) constitute the second group. In all of the mentioned cities the growth of population had lasted until the beginning of 1990s. They reached their maximum population in the 1987-1991 period. The stabilization stage had lasted since the second half of the 1990s,

followed by the decrease in number of inhabitants, caused mainly by the negative natural increase. Kraków is the exception in the group, as the population of the city is still quite stable - the negative natural increase is balanced by positive migration balance.

The third group consists of Bydgoszcz, Lublin and Szczecin (Fig. 6). All of the cities have entered the stabilization stage by the end of 1980s, and reached their maximum population in the second half of the 1990s. The growth of population there had been mainly triggered by high natural increase and positive migration balance. At present, all of the cities enter the depopulation stage.

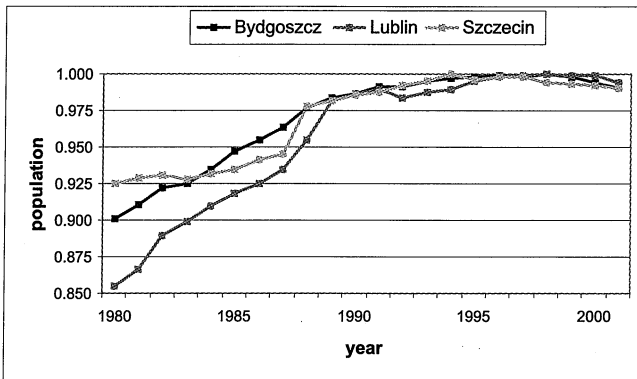


Fig. 6. Population changes in the third group of cities.

1.000 = maximum population

Source: Rocznik Demograficzny, 1981-2002

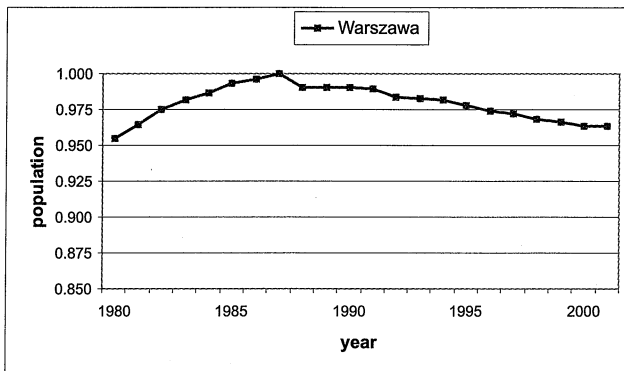


Fig. 7. Population changes in Warszawa.

1.000 = maximum population

Source: Rocznik Demograficzny, 1981-2002

Warszawa should be dealt with separately (Fig. 7), with migrations being the major component of its population changes. The growth in the number of inha-

bitants by 1987 had been caused by positive migration balance. The city had reached its maximum population in 1987. Afterwards, the depopulation process had begun, caused by negative natural increase, and the migration balance still keeps at stable level.

The character of population changes hints at their rank in the national settlement system and their functional differences. The first group of cities includes monofunctional industry centers. In these cities (Katowice and Łódź) the leading industry branches, which were the fundamentals of their growth, had undergone a deep crisis as a result of economical transformations.

The historical capitals of main country's provinces belong to the second group. At present, they are functioning as service and industry centers with over-regional meaning. The third group consists of cities aspiring to the over-regional centers, situated in peripheral influence zones of the cities from the second group.

Population changes in Warszawa are of a medium character between the changes in the first and second group of cities, which is mainly a result of quite high level of migration balance. Migrations significantly limit the influence of the negative natural increase, which has been negative since the half of 1980s.

THE PERSPECTIVE OF THE LARGEST POLISH CITIES' DEVELOPMENT

According to the prognosis of the Central Statistical Office, announced in 2000, the declining trend of population changes in the largest cities will last as far as the prognosis reaches, that is until 2030 (Fig. 8).

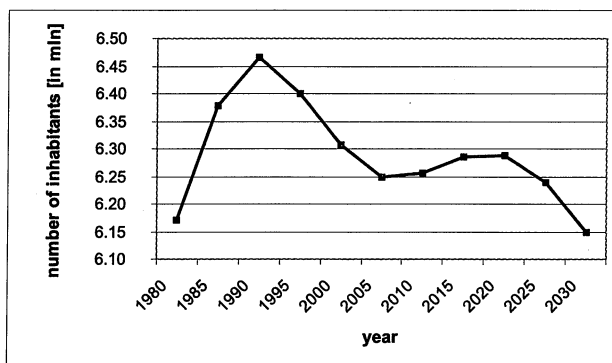


Fig. 8. Prognosis of population changes in the largest Polish cities

Source: Rocznik Demograficzny, 1981-2002, Prognoza ludności Polski..., 2000

An increase in the number of inhabitants of analyzed cities is anticipated for the years 2005-2020; however, it will not be significant, and the number of inhabitants of these cities will not exceed their number in 2001.

After 2020, ongoing decrease in number of inhabitants is anticipated, in 2030 reaching altogether over 22 thousand people less than there were in 1980. Nevertheless, it must be noticed that the prognosis does not take into consideration the migration processes which are extremely difficult to predict and can alter the actual number of inhabitants.

In case of individual cities, the prognosis anticipates different patterns of population changes, yet we can form some groups resembling those distinguished in present article. In case of Katowice and Łódź, ongoing decrease of population is expected.

Gdańsk, Poznań, Szczecin and Wrocław, as well as Warszawa will increase their number of inhabitants until 2020 and then they will return to the declining trend. The expected increase will nonetheless be not significant and the number of inhabitants will not exceed its maximum so far.

Three cities, that is Bydgoszcz, Kraków and Lublin will increase their number of inhabitants until 2020 (Bydgoszcz and Kraków) or 2025 (Lublin) and then, following the general trend, the number of inhabitants will start to decrease. It is worth noticing that the cities, according prognosis, will reach their maximum number of inhabitants ever in the mentioned years.

In case of Bydgoszcz and Lublin, however, the prognosis has not taken into consideration the changes in the population trend at the end of 20th century. Both of the cities had entered the depopulation stage during the last few years and therefore such an increase in the number of their inhabitants seems to be over-calculated.

Once again, it should be stated that the actual number of inhabitants of the cities may vary from the anticipations as a result of migrations which might cause reurbanization process. In the recent years, the growth of migration had been observed in Kraków, Warszawa and Wrocław and we may expect the similar growth in other cities, especially those from the second group.

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