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CHANGES IN THE POPULATION OF OSTROŁĘKA CAUSED BY POPULATION GROWTH AND MIGRATION

ZMIANY W LICZBIE LUDNOŚCI OSTROŁĘKI POWODOWANE PRZYROSTEM NATURALNYM I MIGRACJAMI

Introduction

Ostrołęka is one of the few urban centers in Poland located in areas where there are no mineral deposits such as coal, copper ores, sulfur, which managed to transform from a small town with less than 10,000 inhabitants¹ in 1946 into a medium-sized town. In 2000, Ostrołęka's population exceeded 55,000 inhabitants. Within 65 years, the town increased its population by about 45,000 people. Having said that, the question arises as to what were the sources of the increase in population that boosted its demographic potential. Apart from administrative changes which, as a result of absorbing by the town new inhabited areas², the only sources contributing to the change in the number of inhabitants are the population growth and the migration balance resulting from the difference between the influx and the outflow of population³. The aim of the article is to indicate the changing importance, with the passage of time, of the population growth and migration in the increase in the population of Ostrołęka until 2002 as well as its decrease within the next 13 years. The author does not investigate what factors contributed to the changes in the number of inhabitants of the town. This problem was discussed in other publications⁴. The content of the article comes

¹ In 1946, 732 locations had city rights in Poland, in 601 of them the number of residents did not exceed 10,000; 10 cities had between 50 and 100 thousand residents. In 2015, there were 915 cities in Poland, of which 506 with less than 10 thousand residents and 48 with 50–100 thousand residents.

² The population of Ostrołęka is analyzed in constant administrative boundaries of 28.5 km².

³ Only permanent migration of the population is considered.

⁴ Vide, among others: J. Och, *Problemy uprzemysłowienia i rozwoju infrastruktury Ostrołęki*, [In:] *Z prac Studenckiego Koła Naukowego Geografów*. Ed. W. Rakowski. Monografie i Opracowania, No. 37. Szkoła Główna Planowania i Statystyki, Warszawa 1974; W. Rakowski, *Uprzemysłowienie a proces urbanizacji (na przykładzie powiatu ostrołęckiego)*. Monografie i Opracowania, No. 37. Szkoła Główna Planowania i Statystyki, Warszawa 1974; S. Berezowski, *Formowanie się regionu Ostrołęki*. Rocznik Mazowiecki

down to the analysis of numbers related to population growth and migration and certain reflections resulting from this analysis. For the years 1946–1975, due to the lack of comprehensive data, the population growth and migration balance of the population were only estimated⁵. It was an important period for the town, since in the mid-1950s the construction of the power plant started, followed by pulp and paper factories construction. As a result of economic activation, the town in the years 1946–1975 tripled the number of inhabitants; therefore, in order to comprehensively cover the problem, this period should be taken into account in considering the changes in the population of Ostrołęka after the Second World War. All the more, since such approach to Ostrołęka has not been found in scientific literature so far⁶.

For the next period, 1976–2015, the data on natural internal growth and population migration will be discussed divided into 3 subperiods: the times of the Polish People's Republic (until 1989), the period of the first 9 years of economic transformation, when Ostrołęka was still a voivodeship town (until the end of 1998) and the remaining period of 1999–2015, when it was downgraded to a county town, and the new economic policy of the state preferred the development of large cities. Due to the limited volume of the article (editorial requirements of "Zeszyt..."), the figures referring to natural internal growth and population migration included in tab. 3 and 4 are calculated as the annual average for five-year periods. On the other hand, tracking the population of Ostrołęka at the end of each year required taking into account the total population growth, which is presented in tab. 5, 6 and 7.

The population of Ostrołęka against the background of selected towns in the years 1946–2015

The content of this part of the article should be treated as an introduction to the factors influencing the population change in Ostrołęka. An important element of these considerations is the comparison of population growth against other selected towns, which since 1 June 1975 became the headquarters of voivodeship authorities. The selection of the towns was made on the basis of the nearest neighborhood and a slightly larger number of inhabitants than Ostrołęka in 1946, when Ciechanów and Suwałki had about 4,000 inhabitants more than Ostrołęka, Łomża about 5,000 more and Biała Podlaska about 6,000 more. In 1955, this difference increased with respect to Ciechanów, Łomża and Suwałki, and

(Warszawa) 1970, Vol. III; M. Ciechocińska, *Czynniki determinujące procesy rozwojowe obszarów peryferyjnych na przykładzie regionu etnograficznego Kurpi*. Zeszyty Naukowe OTN 1990, Vol. XII.

⁵ Except 1960 and 1965. For these years, the data was taken from the publication: *Statystyka miast i osiedli 1945–1965*. GUS, Warszawa 1967 pp. 320–383.

⁶ About changes in the number of residents of rural areas, vide: W. Rakowski, *Procesy zmian ludnościowych na terenie Kurpi w latach 1950–1988*. Zeszyty Naukowe OTN 1998, Vol. XII.

decreased in relation to Biała Podlaska (tab 1). Until 1960, the gap between the population of Ostrołęka and the remaining four towns had been increasing. The acceleration of development occurred especially in Biała Podlaska. In 1970, the difference in population in the analyzed towns decreased. Ciechanów and Łomża had about 2,000 inhabitants more than Ostrołęka and Suwałki and Biała Podlaska slightly more. At the end of 1975, Ostrołęka was ahead of Ciechanów in terms of the number of inhabitants and narrowed the gap in regard to the other three towns. Under the conditions of the new political and economic system, in 1990 Ostrołęka had 7,000 more inhabitants than Ciechanów, but 3,000 fewer than Biała Podlaska and about 10,000 fewer than Łomża and Suwałki, and this difference remained approximately until the year 2000, when the four towns (except Suwałki) reached the highest number of inhabitants in their long history. In 2015, Ostrołęka, Ciechanów and Łomża had already about 3,000 fewer inhabitants than in 2000, and Biała Podlaska about 1,500 fewer. Compared to 1950, in terms of the number of inhabitants, Ostrołęka was ahead only of Ciechanów. The remaining 2 towns still have a bigger population than Ostrołęka. In particular ten-year periods, the average annual growth of inhabitants was as follows:

	Ostrołęka	Ciechanów	Łomża	Suwałki	Biała Podlaska
1950–1960	185	217	355	365	202
1960–1970	1175	821	968	1006	1310
1970–1980	1587	939	1586	1514	1285
1980–1990	1271	1015	1852	2059	1343
1990–2000	508	362	578	784	588
2000–2010	-211	-264	-189	43	-97

Table 1

Population of Ostrołęka in the years 1946–2015 compared to selected towns, which since 1 June 1975 became voivodeship towns

Years	Ostrołęka	Ciechanów	Łomża	Suwałki	Biała Podlaska
1946	9 279	13 588	14 173	13 670	15 496
1950	10 409	16 237	15 272	15 456	13 689
1955	12 257	18 406	18 818	19 105	15 714
1960	15 216	20 803	19 253	19 868	20 486
1965	17 844	21 190	22 564	22 033	22 570
1970	22 160	24 451	24 949	25 520	26 797
1975	28 040	27 349	29 006	30 558	31 765
1980	38 027	33 839	40 813	40 662	39 647
1985	44 097	38 805	51 155	51 406	47 027
1990	50 737	43 986	59 335	61 256	53 075
1995	54 162	46 813	63 338	66 624	56 453
2000	55 818	47 607	65 112	69 092	58 958
2005	53 831	45 947	63 819	69 268	58 082

2010	53 710	44 963	63 221	69 527	57 984
2015	52 611	44 506	62 737	69 370	57 414

Source: own study based on: *Statystyka miast i osiedli 1945–1965*. GUS, Warszawa 1967 pp. 304–316; *Rocznik Demograficzny* (Demographic yearbook) from the years 1967–1968, 1971, 1976, 1981, 1986, 1991, 1996, 2001, 2006, 2011, 2016.

So, in the years 1950–1960, Suwałki and Łomża were the fastest growing towns, and in the next decade Biała Podlaska and Ostrołęka, then Ostrołęka and Łomża, but in the years 1980–2010 Suwałki. In the whole period of 1950–2015, the greatest average annual population growth was in Biała Podlaska, though (857 persons), then in Suwałki (829), Łomża (730) and much smaller in Ostrołęka (649), and the smallest in Ciechanów. These three urban centers in the north-eastern part of Mazovia compete with each other about the zone of influence. These are depopulating rural areas⁷. The loss of voivodeship administrative functions suffered by these towns contributed to the decrease in their settling attractiveness due to the liquidation of lucrative jobs. The establishment of higher vocational schools by the state admittedly led to an increase in the level of education⁸ of the society, but, at the same time, accelerated the process of the outflow of people to larger cities, especially to Warsaw, and also abroad.

The significance of population growth and migration balance in the increase of the population of Ostrołęka in the years 1947–1975

Until 1955, the data on population growth and migration was not published because of strict censorship. Within the next few years, the only available data on Ostrołęka is from the years 1960 and 1965. Having the data on urban population growth in Poland, the population growth in Ostrołęka can be roughly calculated. These are, of course, estimates, but close to reality.

The population growth in Ostrołęka in the years 1947–1950 can be estimated at 18%, and for the years 1951–1955 at 19%, and for the next five-year periods much less (tab. 2). Knowing the number of inhabitants of Ostrołęka in particular years⁹, the total population growth can be calculated; subtracting from which the population growth, the migration balance was calculated. In the years 1947–1950, 1951–1955 and 1961–1965, the population growth had a bigger significance than the migration balance in the total population growth of the town (tab. 2). In the remaining periods, the migration balance was dominant, especially in the years

⁷ W. Rakowski, *Proces wyludniania się Puszczy Białej i jego konsekwencje*, [In:] *Brok i Puszcza Biała. Przeszłość, środowisko geograficzne, kulturowe i przyrodnicze*. Ed. J. Kazimierski, Ciechanowskie Towarzystwo Naukowe, Ciechanów 1989.

⁸ W. Rakowski, *Typologia miast i gmin województwa mazowieckiego pod względem kształcenia ludności*. *Rocznik Żyrardowski* (Wyzsza Szkoła Rozwoju Lokalnego) 2008, Vol. VI.

⁹ Cf *Rocznik Województwa Warszawskiego* from 1957–1974, WUS, Warszawa.

1966–1975. Its share in the total population growth of Ostrołęka in the years 1966–1970 amounted to 76% and in the next five years even to 82%. It was exactly in this period of time when the development of the town accelerated and therefore, the influx of people was much higher than the outflow. In absolute numbers, in the years 1947–1975, on average, annually the population increased by from 222 people as a result of the population growth and up to 646 as a result of the migration balance. Due to the prevalence of the influx of people over the outflow, on average, the population of Ostrołęka grew in particular periods by the following number of inhabitants:

1947–1950	by 111
1951–1955	by 145
1956–1960	by 352
1961–1965	by 255
1966–1970	by 658
1971–1975	by 966

As a result of high population growth and favourable migration balance, the population of Ostrołęka in the years 1947–1975 grew by almost 19,000 inhabitants.

Table 2

Population growth and migration balance of the population of Ostrołęka in the years 1947–1975

Years	Population growth			Migration balance	Total population growth	% share of migration balance in total population growth
	in %	in absolute numbers				
		annual	for the period			
1947–1950	18	171	684	446	1 130	39,5
1951–1955	19	225	1 125	723	1 848	39,1
1956–1960	15	240	1 200	1 759	2 959	59,4
1961–1965	10	270	1 350	1 278	2 628	48,6
1966–1970	7	205	1 025	3 291	4 316	76,2
1971–1975	8	210	1 050	4 830	5 880	82,1
in total	X	X	6 434	12 327	18 761	65,7

Source: own study (estimation) based on various sources.

Population growth and migration balance in Ostrołęka in the years 1976–1989

It is worth beginning by mentioning that on 1 June 1975, Ostrołęka, along with another 31 cities, became the headquarters of voivodeship authorities. Thus, apart from the industrial function, also administrative and political functions gave the

city new impulses for development. Therefore, in the period of 14 years, the town's population rose by about 22,000 inhabitants, including 12,344 as a result of child births, and at the same time, due to the deaths of people of all ages, the population decreased by 3,187 people. As a result of these processes, the population growth was 9,157. In demographic literature it is claimed¹⁰ that an important factor influencing population growth is the number and the ratio of marital relationships. In the case of Ostrołęka, the number of marriages rose from 277 in 1976 to 387 in 1983, and fell to 299 in 1989. The number of marriages, as well as the number of births, deaths and the resulting population growth considerably fluctuated. To illustrate: the number of births was the lowest in 1976 (680), and the highest in 1983 (1,055 children), and decreased since that year. The number of deaths was also the smallest in 1976 (171) and the highest in 1988 (268). In turn, the population growth was from slightly over 500 in 1976, 1977 to 800 in 1983.

In the years 1981–1985, divided into subperiods (tab. 3), compared to the previous period, on annual average, the number of marriages, births and deaths as well as the population growth was higher because there was such a tendency all over the country as well. At the end of the 1980s, the opposite phenomenon was observed (except for deaths), namely despite the increase in the number of inhabitants of Ostrołęka, on average annually there were fewer marriages, fewer children were born and there was a lower population growth than in the preceding period.

Per thousand inhabitants, all 4 factors comprising natural internal population growth were lower, but population growth fell the most, and the number of deaths fell minimally. The relatively high population growth rate in Ostrołęka during the discussed period of 1976–1989 was partly caused by high population influx and a favourable migration balance. The highest population influx was in the years 1977–1980 and the lowest in the years 1984–1987 when there was economic stagnation¹¹ in the country. If the size of the population influx ranged from 1094 people (1985) to 2489 (1979), the intra-national outflow (country) fluctuated between 380 (1989) and 737 (1982).

Table 3

Natural internal population growth in Ostrołęka between 1976 and 2015. Average annual population growth in five-year periods

¹⁰ Cf F. Stokowski, *Demografia*. PWE, Warszawa 2015.

¹¹ Cf W. Rakowski, *Migracje ludności wiejskiej w okresie zastoju w rozwoju gospodarczym Polski (na przykładzie województwa radomskiego)*. Zeszyty Naukowe Muzeum Wsi Radomskiej 1987 and E.Z. Zdrojewski, *Wpływ migracji definitywnych na przyrost rzeczywisty i zmiany struktur ludności w Polsce w latach 1975–1996*. Wydawnictwo Politechniki Koszalińskiej, Koszalin 2000.

Years	In absolute numbers				Per 1,000 inhabitants			
	marriages	births	deaths	population growth	marriages	births	deaths	population growth
1976–1980	326	796	198	598	9,6	23,4	5,8	17,6
1981–1985	363	987	233	754	8,4	22,8	5,4	17,4
1986–1990	310	838	261	577	6,2	16,7	5,2	11,5
1991–1995	261	686	317	369	4,7	12,3	5,7	6,6
1996–2000	298	569	321	248	5,1	9,7	5,5	4,2
2001–2005	322	529	351	178	5,4	9,0	5,9	3,1
2006–2010	369	567	384	183	4,6	9,8	6,6	3,2
2011–2015	294	530	375	155	5,1	9,3	6,6	2,7

Source: own study based on the data of Departament Demografii GUS (Polish Central Statistical Office).

Hence, the migration balance was the highest in 1979 (1858 people) and three times bigger than the balance of 1985 (509 persons). A relatively high balance of intra-national migration was partly minified by a negative balance of international migration.

The average annual population influx to Ostrołęka was much larger in the years 1976–1980 than in the later periods, while the outflow declined significantly only in the late 1980s when the demand for labour was drastically lower in the country. The positive intra-national migration balance in 1981–1985 on average annually was by 48% lower than in the previous period, but in the late 1980s slightly increased thanks to a lower outflow of population (tab. 4).

Relating the size of the influx and outflow of the population to and from Ostrołęka to 1,000 inhabitants, in the selected years, this ratio was as follows:

	Influx	Outflow
1976	61,1	23,2
1979	71,0	18,0
1981	46,0	15,0
1985	24,3	13,3
1989	26,4	7,6

The intensity of both the inflow and outflow was very high in the second half of the 1970s and declined in the late 1980s over twofold. Hence, the balance declined from 53‰ in 1979 to just 18.8‰ in 1989. Relating the number of people flowing in to the number of people flowing out, in simplification, we get the efficiency of migration, which in the years 1976-1980 was in the proportion of 3.30: 1 as 2.20: 1 and in the last period as 1.53: 1. These numbers indicate a decrease in the efficiency of migration. We are unable to determine what the

percentage of native inhabitants of the town was and what was the percentage of immigrants who arrived earlier, among the people flowing out. In addition, we do not know the composition of the balance, that is, what kind of people it consists of in terms of sex, age, marital status, level of education.

The data shown in tab. 5 enables examining the share of the population growth and the migration balance in the total population growth of Ostrołęka. In the whole period of 1976–1989, only within 4 years (1982–1985), there was a slight advantage of the population growth over the migration balance. In the remaining years, the situation was reversed, and in some years the migration balance was definitely dominant in the total population growth. To illustrate this, the migration balance share in % in the selected years was: 68.3% in 1976, 73,1% in 1977, 47,8% in 1982, 62,3% in 1989 and in the whole mentioned period 61,8%.

According to the census of December 1988, in the total population of 47,944 inhabitants of Ostrołęka there were 54.2% of people who flew in, while in Łomża 51.8%, in Biała Podlaska 52.8%, in Ciechanów 52.7%, in Płock 50.4%, in Suwałki 50.8%¹². It should be added, however, that among the settled inhabitants, the main subpopulation consists of children and adolescents up to 19 years old, while among the inhabitants who flew in - of people aged 30 and over. The years 1988 and 1989 finish the times of the Polish People's Republic and the period of the industrialization of the country, as well as the economic activation of underdeveloped areas to which the Kurpie region undoubtedly belonged.

Table 4

Migration of the population of Ostrołęka in the years 1976–2015. Average, annual number of people flowing in and out in particular five-year periods

Years	In absolute numbers			Per 1,000 inhabitants		
	influx	outflow	balance	influx	outflow	balance
1976–1980	2119	642	1477	62,4	18,9	43,5
1981–1985	1377	626	751	31,9	14,5	17,4
1986–1990	1316	469	847	26,3	9,3	17,0
1991–1995	977	480	497	17,5	8,6	8,9
1996–2000	748	609	139	12,8	10,4	2,4
2001–2005	569	840	-271	9,6	14,2	-4,6
2006–2010	536	902	-366	9,2	15,5	-6,3
2011–2015	448	830	-382	7,9	14,6	-6,7

Source: own study based on the data of Departament Demografii GUS (Polish Central Statistical Office).

¹² Cf *Migracje ludności w Polsce w latach 1979–1988*. GUS, Warszawa 1992.

Table 5

Population growth, migration balance and total population growth in Ostrołęka in the years 1976–1989

Years	In absolute numbers			Population at the end of the year	Developmental type
	Population growth	Migration balance	Total population growth		
1976	509	1 098	1 607	29 647	C
1977	526	1 433	1 959	31 606	C
1978	589	1 554	2 143	33 749	C
1979	647	1 851	2 498	36 247	C
1980	718	1 451	2 169	38 416	C
1981	728	1 191	1 919	40 335	C
1982	755	692	1 447	41 782	B
1983	800	746	1 546	43 328	B
1984	742	625	1 367	44 695	B
1985	742	501	1 243	45 938	B
1986	659	756	1 415	47 353	C
1987	553	810	1 363	48 716	C
1988	609	1 026	1 635	50 351	C
1989	580	957	1 537	51 888	C
In total	9 157	14 813	23 970	X	C

Source: own study based on the data of Departament Demografii GUS (Polish Central Statistical Office)

Natural internal growth and population migration in Ostrołęka in the years 1990–1998

This period is characterized by the dynamism of economic, social as well as political processes taking place already in a new capitalist system. There was a period of deindustrialisation of the country which caused unemployment, impoverishment of society, lack of sense of security. At the same time, these are also the years when Ostrołęka was still a voivodeship town providing permanent employment to about 500 people. In addition, it had two important industrial plants which could not be liquidated because of their strategic importance for the country. Taking into consideration the fact that although Ostrołęka's community must be classified as a traditional one, compared to the years 1976-1988, the number of marriages decreased, as well as the number of births, and, in particular, the population growth was decreasing, especially per thousand inhabitants (tab 3). The number of marriages was from 236 to 287, and births from 524 in 1998 to 757 in 1990. Thus, with a relatively stable number of deaths (from 274 in 1990 to 337 in 1998), the population growth decreased from 483 (in 1990) to 187 (in 1998), that is over twice (by 158.3%). Meanwhile, in Polish towns in general, within those years,

the population growth decreased more, namely from 68,700 to 5,200¹³. Compared to other Polish towns, Ostrołęka had a considerably high population growth per thousand inhabitants, that is 9.6‰ in 1990 (towns in Poland 2.9‰) and 3.4‰ in 1998 (towns -0.2). It is exactly thanks to a still high birth rate, which in 1990 amounted to 15‰ (towns 13.0‰), and in 1998 9.5‰ (towns 9.1) and a lower death rate (Ostrołęka 5.4‰ in 1990, towns 9.5‰ and respectively 6.1‰ and 9.3‰ in 1998), Ostrołęka was still distinguished by its relatively high population growth (see figures 1 and 2). Migration contributed to a positive population growth. The influx to Ostrołęka by 1993 exceeded 1,000 people a year, and in the following years it was slightly smaller. Taking into account the outflow, which was twice lower than the inflow until 1993 and was still lower than the inflow until 1998, the balance was from 148 people in 1997 to over 600 in 1990 and 1991 (tab. 6). A higher balance in intra-national migration was minified by a negative international migration balance. Compared to the period of 1976–1980, the intensity of population inflow to Ostrołęka was significantly reduced (fig. 3) with only a minimal decrease in the outflow (1990: inflow 22.2%, outflow 9.0%, 1998: 15.1% and 10.2%).

This data shows the declining dynamics of the town's development. It was a period of nationwide reforms, in many cases unsuccessful. The scale of economic restructuring conducted in the macroscale influenced not very auspicious, demographic processes in the microscale. However, Ostrołęka was more resilient, compared to many other towns, to the negative impact of the national and global environment, as evidenced by a still positive population growth and migration balance, which slightly surpassed the population growth within six years, as illustrated in the data presented in tab. 6. As a result of a positive population growth and migration balance, the number of permanent residents increased in the years 1989–1998 by 6713 people, that is by 11.3%, while in towns in Poland, in general, only by 1.01%. The significance of these numbers is unequivocal, indicating that, despite the dynamic processes in the national economy, Ostrołęka continued to develop.

Natural internal growth and population migration after Ostrołęka lost its status of a voivodeship town

On 31 December 1998, Ostrołęka, as well as a number of other Polish towns, ceased to be a center of voivodeship authority. Although the liquidation of the voivodeship offices took several months, the town lost one of its important town-forming functions, becoming an urban county and at the same time a rural county. As a voivodeship town, Ostrołęka used to serve a much larger area, inhabited by about 380,000 people, than as a county. An important event on a national scale was the phenomenon of zero population growth in 1999 for the first time after World War II, and, in towns, negative natural population growth (prevalence of the

¹³ Cf. Rocznik Demograficzny 2016. GUS, Warszawa, p. 32.

number of deaths over births). In this unfavorable environment, the number of births in Ostrołęka was still higher than the number of deaths because the number of marriages was still large and amounted from 265 in 2014 to 396 in 2008. The number of marriages was the highest in the years 2006–2010, when the inhabitants born between 1978–1985 (during the time of the increased population growth) reached the age of 25–29. It should be stressed, however, that the marriage rate in the years 1999–2015 was much lower than in the days of the Polish People's Republic (tab. 3). The number of births was generally more than 500 and the number of deaths ranged between 316–383 (except for 2008 and 2014, when it exceeded 400). By contrast, the population growth fluctuated over time and ranged from 69 in 2014 to 252 in 2000 (tab. 7). The birth rate ranged from 9.1‰ in 2014 to 11.3‰ in 2009 while in towns, in total, in Poland from 8.4‰ in 2002 to 10.6‰ in 2009. Correspondingly, the death rate in Ostrołęka ranged from 5.7‰ in 2000 to 7.8‰ (in 2014) and in towns in Poland from 9.1 to 10.4 (2015). With the lower death rate than the birth rate, the population growth in Ostrołęka ranged from 1.3‰ in 2014 to 4.6‰ in 2000 (fig. 2). That is unlike in towns in total, where most of the time during this period it was negative (fig. 2).

Table 6

Population growth, migration balance and total population growth in Ostrołęka in the years 1990 – 1998

Years	Population growth	Migration balance	Total population growth	Population at the end of the year	Developmental type
1990	483	688	1 171	53 059	C
1991	417	650	1 067	54 126	C
1992	383	511	894	55 020	C
1993	382	574	956	55 976	C
1994	363	336	699	56 675	B
1995	302	415	717	57 392	C
1996	295	213	508	57 900	B
1997	285	148	433	58 333	B
1998	187	281	468	58 601	C
In total	3 097	3 816	6 913	x	C

Source: own study based on the data of Departament Demografii GUS (Polish Central Statistical Office).

It can be assumed that Ostrołęka's loss of voivodeship functions did not affect natural internal growth in this town. A different situation occurred in permanent migration of the population. The influx of people decreased almost twice in comparison with the 1990s, and the outflow significantly increased, including the outflow to foreign countries. From 2001 to 2015, the annual number of people leaving Ostrołęka exceeded the number of immigrants. Therefore, the negative

migration balance ranged from 123 in 2002 to 420 in 2005 and 403 in 2014. This data shows the loss of the town's settling attractiveness. Of course, this was caused not only by the loss of voivodeship functions by the town, but also by the change in the concept of regional development in Poland. It consists in the spatial concentration of socio-economic life in several selected major cities, which is very beneficial for the great international capital that cares for its own interests. In addition, it should be borne in mind that, with a stabilized population of the country since 1990, and a negative international migration balance, total population growth in one town (municipality) leads to the loss of inhabitants in other towns (municipalities).

The scale of the decreasing population influx to Ostrołęka is better reflected in its intensity per thousand inhabitants, which was 62.4 in the years 1976–1980 and only 7.9 in the years 2011–2015 (tab. 4) and the outflow 18.9 and 14.6.

The outflow ratio fluctuated less than the inflow. A town, even in a state of economic stagnation, will always be the destination of both influx and outflow of population, as some people change their place of residence for family, professional, environmental and health reasons. In such a situation, the intensity of migration of the population will fluctuate between 8–15%, as was the case with Ostrołęka in the last years discussed. At the same time, the migration balance will most likely be negative, and after some time natural population loss will also occur. This phenomenon is already affecting many towns in Poland and most rural communes. Ostrołęka is still characterized by positive population growth, but since 2003 negative migration balance has exceeded the population growth and the number of permanent residents has been slowly decreasing (tab. 7). In most years, the negative migration balance was twice bigger than the population growth. Therefore, since 2002, when Ostrołęka reached its maximum number (59,226) of permanent residents, by 2015 there were 2624 people fewer. A further decline in the number of residents can be stopped by creating new jobs. Perhaps the construction of a new power unit in the power plant, which will boost employment, will stop the town's depopulation.

A careful reader will surely notice the divergence in the data concerning the number of inhabitants of Ostrołęka presented in tab. 1 and tab. 5, 6, 7. Well, in 1980, the population of Ostrołęka shown in tab. 5 was by 389 bigger than the data shown in tab. 1. On the other hand, in 1990 (tab. 6) it was already 2322 bigger, in 2000 by 3959 and in 2015 by 3991 (tab. 7). The divergence in the numbers of inhabitants between the data in tab. 1 based on the data taken from "Roczniki Demograficzne" GUS (Demographic Yearbook of the Central Statistical Office) and the data resulting from population growth and migration balance, is caused by the fact that in "Roczniki Demograficzne" factual data is provided including the people temporarily de-registered (students, people staying abroad, in other towns). On the other hand, the data presented in tab. 4, 5, 6, 7 shows permanent migrations to and from the town. So, in 2015 almost 4,000 (as many as the population of Serock) residents of Ostrołęka registered for permanent residence in the town, did

not live in it, so they did not create demand for goods and services. This is the case in towns where there are too few jobs at all or unattractive, poorly paid jobs. The opposite situation happens in most towns located near Warsaw, where the number of permanent residents is smaller than the number of people actually residing there. For example, in Legionowo in 2015 lived 3,500 people temporarily registered. In total, in Ostrołęka in 2015, there were 56,602 inhabitants registered for permanent residence, but in fact there were 52,611 people dwelling there. Similarly, in Poland at the end of 2015, according to GUS, there were 38,437,000 inhabitants¹⁴ registered for permanent residence, but over 2,000,000 Polish citizens were dwelling abroad then, mostly from the areas most affected by unemployment and poverty.

To summarize this part of the elaboration, let us notice the changing significance in particular periods and years, of the population growth and migration balance in the total population growth in Ostrołęka. So, the average annual population growth and migration balance in particular periods were as follows:

	population growth	balance
1947–1960	215	209
1961–1975	228	627
1976–1989	654	1049
1990–1998	344	424
1999–2005	195	-187
2006–2010	183	-366
2011–2015	155	-383

Although Poland as a whole had been experiencing economic difficulties since 1976 and until 1989 the development was minimal, in case of Ostrołęka those were the most favourable years in terms of demographic development. However, the loss of voivodeship functions by the town caused a slow decline in the number of inhabitants, as the outflow of population exceeded the inflow, and the population growth did not manage to compensate for the negative balance.

Table 7

Natural internal growth, migration balance and total population growth in Ostrołęka in the years 1999–2015

Years	Population growth	Migration balance	Total population growth	Population at the end of the year	Developmental type
1999	219	42	261	58 862	B
2000	252	7	259	59 121	B
2001	177	-162	15	59 136	A
2002	213	-123	90	59 226	A

¹⁴ Rocznik Demograficzny 2016..., p. 30.

2003	168	-267	-99	59 127	H
2004	181	-385	-204	58 923	H
2005	154	-420	-266	58 657	H
2006	147	-386	-239	58 418	H
2007	204	-336	-132	58 286	H
2008	140	-377	-237	58 049	H
2009	226	-409	-183	57 866	H
2010	196	-323	-127	57 739	H
2011	178	-354	-176	57 563	H
2012	179	-359	-180	57 383	H
2013	188	-492	-304	57 079	H
2014	69	-403	-334	56 745	H
2015	162	-305	-143	56 602	H
In total	3 053	-5 052	-1 999	x	H

Source: own study based on the data of Department Demografii GUS (Polish Central Statistical Office).

Town developmental type from a demographic point of view

With figures referring to population growth and migration balance (tab. 2, 5, 6, 7), Webb's method¹⁵ can be used to establish the population development typology of Ostrołęka. For 8 combinations which may cause population changes, in case of Ostrołęka 4 combinations appeared allowing to assign the town to the following types:

– type A, when population growth exceeds negative migration balance. This type occurred in the years 2001–2002,

– type B, when population growth exceeds positive migration balance. This type occurred in the years 1947–1950, 1951–1955, 1961–1965 (a slight prevalence), 1982–1985, 1994, 1996–1997, 1999–2000,

– type C, when migration balance exceeds positive population growth. This type occurred in the years 1956–1960, 1960–1970, 1971–1975 (tab. 2), 1976–1981, 1986–1989, 1990–1993, 1995, 1998,

– type H, causing population loss, i.e. negative migration balance exceeds positive population growth. This type occurred in the years 2003–2015.

Having the data on population growth and migration balance for the 6 periods from the years 1947–1975 and the following 40 years (1976–2015), it can be said that type C occurred most often in the analyzed period, that is for 37 years, then type B for 23 years, type H for 13 years and rarely type A – for two years. Types of changes A, B, C lead to an increase in population and type H to its loss. From a demographic point of view, the situation when types B and C occur is the most favourable, and this type of relationship between population growth and migration

¹⁵ For more on this topic vide: T. Pakulska, W. Rakowski, *Typologia województw z punktu widzenia rozwoju ludności w latach 1989–1993*. Studia Demograficzne 995, No. 1(9).

balance was most frequent in Ostrołęka, leading to a high increase in its demographic potential and there is hope that the decrease in the number of inhabitants occurring since 2003 will not be a permanent process.

In order to deepen the considerations undertaken in this article, it would be necessary to analyze in the future:

1. migrations, that is where the population flows in from and where it flows out to, and what the demographic characteristics of the migrants are, and how the town benefits from it,

2. at what age women give birth to their first, second, third, ... child and possibly with a division according to their birthplaces,

3. age and sex of the deceased, possibly the causes of their death,

4. the changes that have taken place since 1950 in terms of sex, age, socio-occupational structure, sources of income of the town inhabitants,

5. the problems mentioned above should also be analyzed with reference to Ostrołęka's hinterland or its entire subregion.

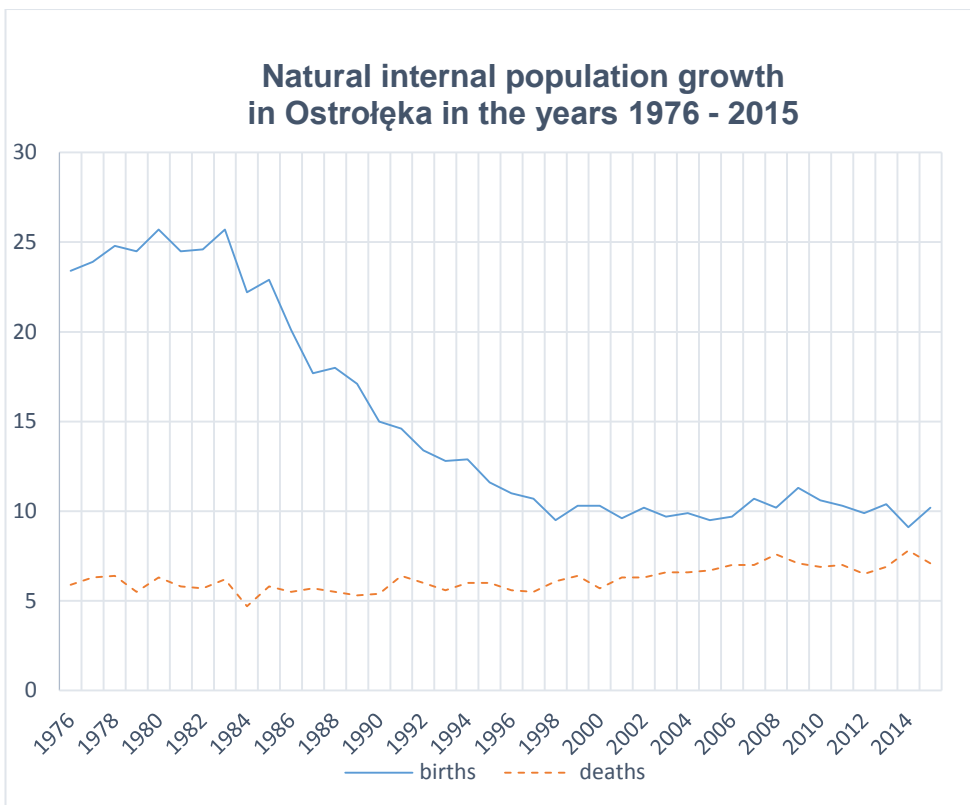


Figure 1

Natural internal population growth in Ostrołęka in the years 1976–2015

Source: own study based on the data of Departament Demografii GUS (Polish Central Statistical Office).

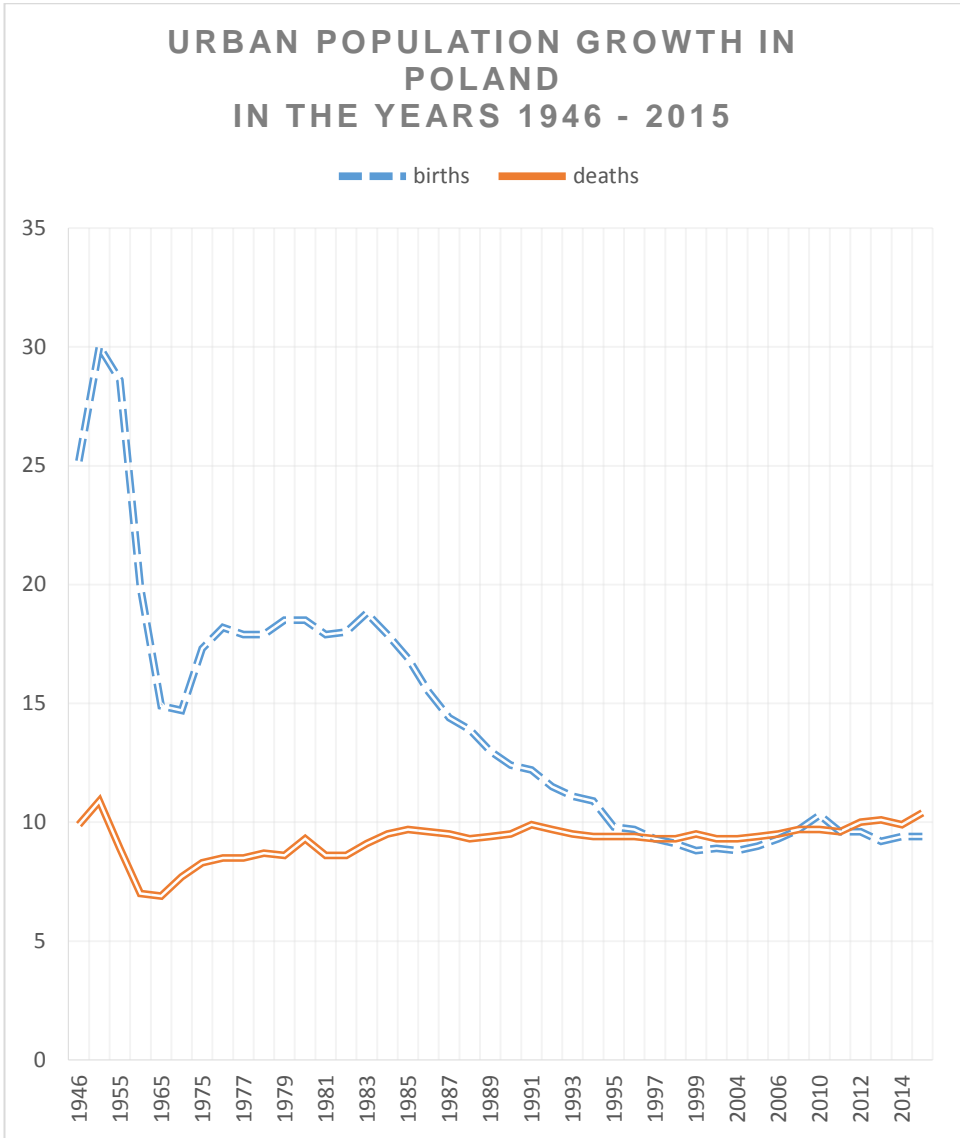


Figure 2

Urban population growth in Poland

Source: own study based on the data of Departament Demografii GUS (Polish Central Statistical Office),

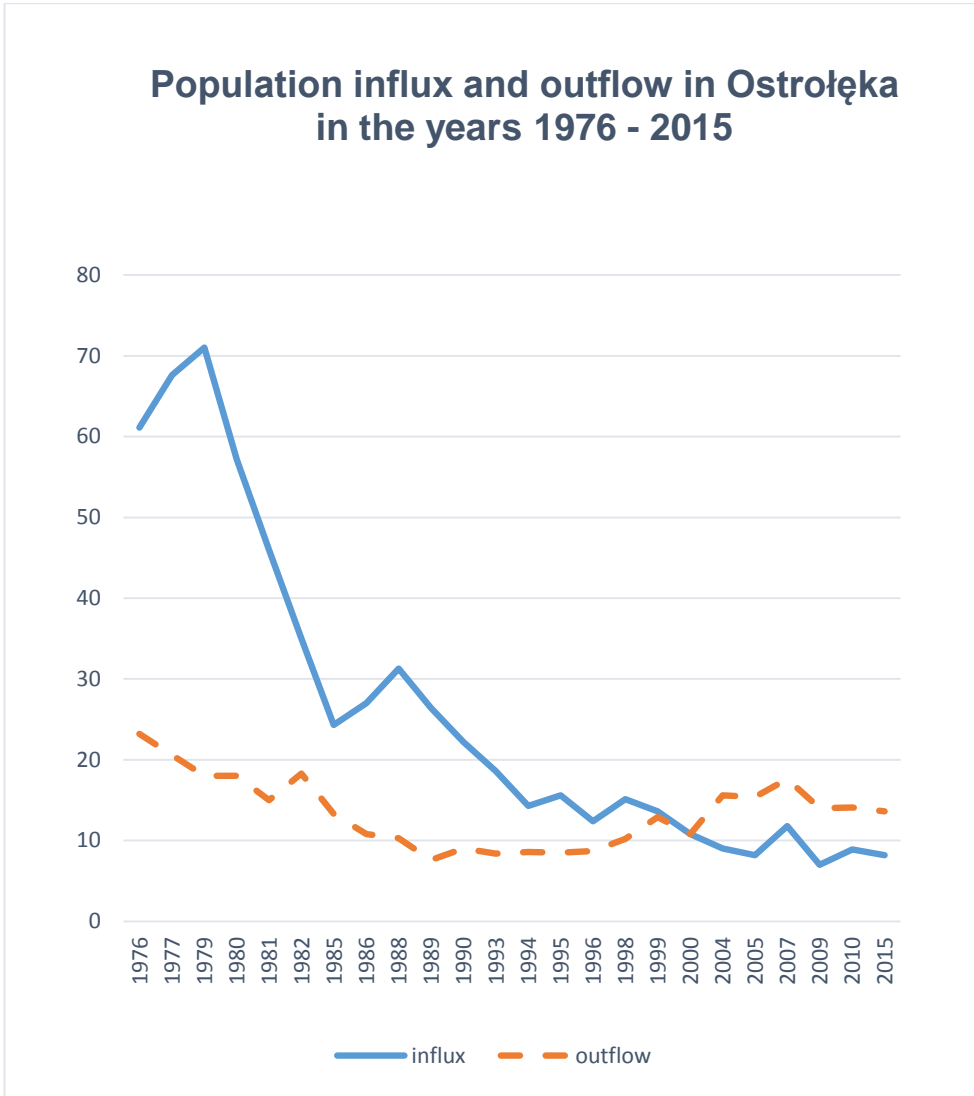


Figure 3.

Population influx and outflow in the years 1976–2015

Source: own study based on the data of Departament Demografii GUS (Polish Central Statistical Office).

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SUMMARY

As in many other countries in the world, great economic, social and demographic changes after the Second World War took place in Poland, too. Against this backdrop, the question arises whether these changes can be observed also in towns located in peripheral and economically underdeveloped areas. Therefore, the subject of discussion is Ostrołęka and its population in the years 1946–2015, population growth and migration as constituent parts of shaping total population

growth of the town. It has been proved in the article that, in particular phases of the town's development, the importance of these elements changed. For example, in the years 1947–1975 with total population growth of 18 761 people, the share of the migration balance was 65.7%, in the years 1976–1989 61.8%, in the years 1990–1999 55.2% and in the years 1999–2015 the outflow of population exceeded the inflow, and the size of the population growth did not manage to compensate for the loss related to the negative balance. As a result of such processes in Ostrołęka there was a population loss of 2000 people. The vast majority of towns and rural communes in Poland are affected by such phenomenon, whereas Ostrołęka, unlike most Polish towns, in the years 1999–2015 still was characterized by positive population growth.

STRESZCZENIE

Podobnie jak w wielu innych państwach na świecie, tak i w Polsce zaszyły po drugiej wojnie światowej ogromne zmiany gospodarcze, społeczne i demograficzne. Na tle tego stwierdzenia nasuwa się pytanie, czy zmiany te daje się obserwować także w miastach leżących na obszarach peryferyjnych gospodarczo zacofanych. Stąd też przedmiotem rozważań jest Ostrołęka i jej liczba mieszkańców w latach 1946–2015 z wyodrębnieniem przyrostu naturalnego i migracji ludności jako części składowych kształtujących przyrost rzeczywisty ludności miasta. W artykule udowodniono, że w poszczególnych fazach rozwoju miasta znaczenie tych elementów się zmieniało. Przykładowo w latach 1947–1975 przy przyroście rzeczywistym ludności 18 761 osób, udział salda migracji w przyroście wynosił 65,7%, w latach 1976–1989 odpowiednio 61,8%, w latach 1990–1999 55,2%, zaś w latach 1999–2015 zanotowano przewagę odpływu ludności nad napływem, a wielkość przyrostu naturalnego nie była w stanie zrekompensować strat związanych z ujemnym saldem. W rezultacie takich procesów w Ostrołęce nastąpił ubytek ludności o 2000 osób. Takim zjawiskiem dotknięta jest zdecydowana większość miast i gmin wiejskich w Polsce, przy czym Ostrołęka w odróżnieniu od większości miast w kraju w latach 1999–2015 ciągle jeszcze charakteryzowała się przyrostem naturalnym ludności.

Key words: population of Ostrołęka, population growth, migration, developmental type

Słowa kluczowe: ludność Ostrołęki, przyrost naturalny, migracje, typ rozwojowy

Chapter II

Poland

