

# Population dynamics of cities in a transborder region in the post-Soviet space: a case study of Russia and Kazakhstan

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**Abstract.** The article is devoted to a comparative demographic analysis of the cities of Russia and Kazakhstan in a cross-border area including four regions. The study is based on materials from the general population censuses and current statistical records and covers the period of 1989-2018. The research identifies a pronounced tendency of the population migration to the regional capitals with simultaneous depopulation of the other cities, peripheral border settlements in particular.

**Keywords:** population, urban population, migration, regional capitals, citizens

## 1. Introduction

The post-Soviet period for the territory of the former USSR was marked by the emergence of new socio-economic conditions that caused significant changes in urban space. In the context of a steady reduction in the number of the resident population of the regions, the transformations of cities that determine the future paths of their development are manifested clearly. The main demographic trends in the cities of Russia and Kazakhstan during the transition period include a decrease in the birth rate and an increase in the overall mortality rate, as well as an intensification of migration movements of the population. By the end of the 1980s, the demographic transition to the contemporary type of population reproduction was completed in Russia and Kazakhstan. However, this process was complicated by the course of political and socio-economic transformations associated with the collapse of the Soviet Union.

In this paper, the cities of a cross-border region located in the south of Western Siberia and the eastern part of Kazakhstan are selected as the object of study. The territories of the Altai Region and the Republic of Altai, as well as Pavlodar and East Kazakhstan regions, belong to this cross-border region. The study area has a common history of settlement and the time of the formation of the first settlements and cities.

The work is devoted to a comparative study of the demographic dynamics of cities in a cross-border region in order to identify its common properties and specific features. During the collapse of the USSR, the state border arose between these regions for the first time. From the middle of the 18th to the end of the 20th century, these four regions were located in one state – in the Russian Empire, and then in the Soviet Union. In the last 25-30 years, internal administrative and territorial

transformations took place in them. In Soviet times, the Altai Region together with the Gorno-Altai Autonomous Region were part of the RSFSR, and the Pavlodar, East Kazakhstan and Semipalatinsk regions were part of the Kazakh SSR. Since 1991, the Gorno-Altai Autonomous Region has become an independent subject of the Russian Federation – the Altai Republic. In Kazakhstan, as a result of administrative-territorial transformations, the Semipalatinsk region was annexed to the East Kazakhstan region in 1997. In addition, in the post-Soviet period, the settlement Yarovoye in the Altai Region received the status of a city, and the city of Irtyshsk of the Pavlodar region, on the contrary, became a village in the 1990s. At the same time, official materials on the former closed city of Kurchatov in the East Kazakhstan region began to be published.

## **2. Materials and Methods**

In the post-Soviet period, scientific works devoted to the problems of urbanization and demographic development of the territories of the former USSR began to appear actively. The features of the flow of these processes in cities and in transboundary regions are reflected in the works of Russian and foreign scientists [1-4]. Our research was based on the following primary sources: the USSR All-Union Census of 1989, All-Russian Population Censuses 2002 and 2010, Population Censuses of Kazakhstan 1999 and 2009, as well as official publications of statistical services [5-7]. Differences in the organization of statistical services of the Russian Federation and Kazakhstan lead to problems of data comparability. Another problem is the provision of detailed demographic information in the context of cities. The work was performed using comparative-historical-geographical, statistical, and geo-information methods.

## **3. Results**

At the beginning of 2018, the total population of 26 cities studied was a total of about 2.6 million people, 1.3 million people each in the regions of Russia and Kazakhstan. The regions studied are characterized by a high proportion of the rural population. Currently, in the Altai Region and the Altai Republic, the level of urbanization is 56% and 29%, respectively (with an average Russian value of 74%). In the post-Soviet period, in the Altai Territory, there was a decrease in the proportion of the urban population, including due to changes in the legal status of the settlements: the majority of urban-type settlements moved into the category of rural settlements. There is only one city in the Altai Republic – Gorno-Altai. This is a unique characteristic not found in any other subject of the Russian Federation.

At the beginning of 2018, the urbanization of Kazakhstan's regions was 60% in the East Kazakhstan region, 68% in the Pavlodar region (the average value in Kazakhstan was 57%). There was an increase in the share of the urban population with a noticeable reduction in rural. The growth rate of citizens was more than 20% in the East Kazakhstan region and 30% in Pavlodar region. The mass migration of the population from the countryside was typical for the last decades, due to which in a number of cities the number of inhabitants did not decrease so quickly and did not change much. At the national level in Kazakhstan, since the last census of the USSR population by now, the rural population of the republic has increased by almost 8%.

At the beginning of 2018, among the cities of the area under study, the smallest number of residents is registered in Charsk (East Kazakhstan region), and their number is 6.9 thousand people, and the maximum is registered in Barnaul (Altai Region) – 632.4 thousand people. Most cities (17) belong to the small group with a population of up to 50 thousand people, 8 of them are in the East Kazakhstan region and in the Altai Region, 1 is in the Pavlodar region. The remaining 9 cities are classified as follows: a group of medium (50-100 thousand people) includes 2 cities, and large cities (100-250 thousand) include 3 cities. Also, 3 cities are the more larger cities (250-500 thousand) and 1 city is the largest (500-1000 thousand) (Table 1).

**Table 1.** Population dynamics of the cities of the Altai Region, the Republic of Altai, East Kazakhstan and Pavlodar regions, thousand people [5-7].

<b>Russian Federation</b>						
No.	City name	1989	2002	2010	2018	Change (%) 1989-2018
<i>Altai region</i>						
1	Barnaul	601.8	600.7	612.4	632.4	5.1
2	Biysk	233.2	218.6	210.1	201.9	-13.4
3	Rubtsovsk	171.8	163.1	147.0	144.1	-16.1
4	Novoaltaisk	53.6	60.0	70.4	73.4	36.9
5	Zarinsk	50.2	50.4	48.5	46.6	-7.2
6	Kamen-na-Obi	42.5	44.4	43.9	40.8	-4.0
7	Slavgorod	34.9	34.3	32.4	29.9	-14.2
8	Aleysk	30.3	28.6	29.5	29.0	-4.4
9	Yarovoye	21.8	21.4	18.6	18.1	-16.9
10	Belokurikha	14.4	14.5	14.7	15.2	5.2
11	Gornyak	15.8	15.8	13.9	12.7	-20.1
12	Zmeinogorsk	12.2	11.6	11.0	10.5	-13.9
<i>Altai Republic</i>						
13	Gorno-Altai	46.4	53.5	56.9	63.2	36.1
<b>The Republic of Kazakhstan</b>						
No.	City name	1989	1999	2009	2018	Change (%) 1989-2018
<i>Pavlodar region</i>						
1	Pavlodar	330.8	300.5	317.3	334.9	1.3
2	Ekibastuz	134.6	127.2	125.0	134.1	-0.4
3	Aksu	47.1	42.3	41.7	42.3	-10.2
<i>East Kazakhstan region</i>						
4	Ust-Kamenogorsk	324.5	311.0	303.7	329.0	1.4
5	Semey	334.4	270.0	299.3	321.8	-3.8
6	Ridder	68.7	56.3	50.5	48.7	-29.1
7	Zyryanovsk	52.8	43.9	39.3	36.4	-31.2
8	Ayagoz	42.7	38.5	37.5	38.3	-10.4
9	Shemonaikha	23.6	19.9	19.1	18.2	-23.0
10	Zaisan	17.0	16.0	14.4	15.9	-6.1
11	Kurchatov	–	9.3	10.1	12.4	–
12	Serebryansk	14.1	11.9	10.1	8.6	-39.1
13	Charsk	10.4	9.5	8.6	6.9	-34.1

The following regional capitals have the greatest demographic potential: Barnaul (Altai Region), Pavlodar (Pavlodar Region), Ust-Kamenogorsk (East Kazakhstan Region), and Gorno-Altai (Altai Republic), with a population of more than 60 thousand people, is an exception. Semey has a special place (in the past Semipalatinsk), more than 320 thousand people live in it. In the 1990s, in Semey, the population decreased more than in any other city in question in Kazakhstan (by almost 65 thousand people or by 20%). However, then the number of city residents began to grow, almost returning to the 1989 level. Probably, the abolition of the Semipalatinsk region and the loss of metropolitan functions in Semey affected such a sharp decline.

There was a decrease in the number of urban residents by almost 65 thousand people (-2.4%) in the studied regions over the past 25-30 years. However, it mainly falls on the cities of Pavlodar and East Kazakhstan regions, in which the total decrease amounted to over 53 thousand people. In the Russian regions, the decline was much smaller.

Consideration of the dynamics of the urban population allows us to identify a number of features. In the period 1989-2018, there was a decrease in the number of citizens in half of the cities (6 in the

Altai Region, 7 in the East Kazakhstan Region). For another group of cities located on the territory of Kazakhstan regions (Pavlodar, Ust-Kamenogorsk, Semey, Ekibastuz, Aksu and Kurchatov), this indicator was decreased by 1999 and then slow increase by 2018. At the same time, at present, only Pavlodar and Ust-Kamenogorsk have the number of inhabitants more than their figures were in 1989. Opposite changes were recorded in Zarinsk, Kamen-na-Obi and Slavgorod, in which the increase in the number of citizens was replaced by its reduction after 2002. In the post-Soviet period, the population increases only in Barnaul, Novoaltaisk, Gorno-Altai and Belokurikha. In recent years, on the territory of Kazakhstan regions, all cities of the Pavlodar region (Pavlodar, Ekibastuz and Aksu), as well as a number of cities of East Kazakhstan region (Ust-Kamenogorsk, Semey, Ayagoz, Zaisan and Kurchatov), demonstrate a positive demographic dynamic.

#### **4. Discussion**

In the period from 1989 to 2002, the growth of cities was recorded only in the Russian regions such as (a) the capital centers (Barnaul and Gorno-Altai), (b) monotowns (Novoaltaisk and Zarinsk), and (c) Belokurikha, a city resort. Reducing the number of citizens is typical of the rest of the cities of the Altai Territory, but not more than 10%. The opposite process was observed in the cities of Kazakhstan. It was particularly apparent in the border cities with the mining industry (Zyryanovsk, Ridder, and Shemonaikha). The deterioration of the economic situation most acutely affected them, as well as the peripheral cities of the East Kazakhstan region (Ayagoz, Zaisan). All of them lost more than 1/5 of the population from the 1989 level. In other cities of Kazakhstan, the decline was not so sharp.

There was a significant influx of population in the Russian regions during the 1990s, especially in small towns, which is explained by the emigration from the former Soviet republics. Thus, in the period from 1990 to 2000, more than 170 thousand people entered the territory of the Altai Region from Kazakhstan, which accounted for about 7% of the total migration flow from Kazakhstan to Russia. However, later on, these migrants often left the points that became transit for them, as they could not provide the desired socio-economic conditions.

After 2002, the situation has changed. However, some trends of the previous decade have remained. In the Russian regions, the cities of Barnaul, Novoaltaisk, Gorno-Altai, Aleysk continued their demographic growth. Gornyyak (mining industry, border position with Kazakhstan) and Yarovoye (change of economic profile, closure of a chemical plant) were in a worse position. Biysk is also one of the leaders in population reduction in the 2000s. Until 2002, the decline was 6.3%, the decline was more than 13% from 2002 to 2018. In Kazakhstan, after 1999, the population growth began to be recorded in all cities of Pavlodar region, as well as in Ust-Kamenogorsk and Semey, and industrial cities – Aksu and Kurchatov. The rest of the cities of Kazakhstan regions are characterized by a slowdown in the rate of decline in the number of citizens, observed in the 1990s.

In the current decade, the demographic dynamics have not changed significantly, the groups of growing and shrinking cities remain the same. The decrease in urban population is recorded in Biysk and Kamen-na-Obi, as well as in all border towns (Slavgorod, Yarovoye, Rubtsovsk, Gornyyak, Zmeinogorsk, Shemonaikha, Ridder, Zyryanovsk). The migration growth is observed in the regional capitals, major cities and industrial centers (Ekibastuz, Novoaltaisk), and the migration outflow continues in other cities, especially located near the state border of Russia with Kazakhstan.

#### **5. Conclusion**

The analysis made it possible to identify a number of features of the dynamics of the urban population in the cross-border region in the post-Soviet period. In the early 1990s, in the Altai Region and the Altai Republic, the population continued to increase due to the excess of migration growth over natural loss. However, over the entire study period, the population in urban areas of the Russian regions decreases, with the exception of Barnaul, Belokurikha, Novoaltaisk, and Gorno-Altai. The post-Soviet time is characterized by a concentration of the population in the regional capitals, and the decline is recorded primarily in peripheral cities, in which significant changes also occurred in the

structure of the economy. Several other processes took place in the Kazakhstan regions. In the 1990s, they were characterized by the mass emigration of the European population – Russians, Ukrainians, and Germans. The migration outflow resulted in negative demographic dynamics. After the exhaustion of the migration potential, the reduction in the number of citizens slowed down, and then a steady growth was recorded in a number of cities. In general, at the present stage of development, demographic trends similar to the Russian regions can be traced in the cities of Kazakhstan regions. Among these tendencies, the following can be noted. The population is reduced to capital and largest cities while reducing the number of citizens in small and medium-sized urban settlements, which leads to a further deepening of the polarization process.

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