

**CDSSES 2020****IV International Scientific Conference "Competitiveness and the development of socio-economic systems" dedicated to the memory of Alexander Tatarkin****DEPOPULATION AND MIGRATION OUTFLOW AS A FEATURE OF REGIONAL ECONOMIC DEPRESSION**

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**Abstract**

According to Tatarkin, regions are territorial socio-economic systems. Transformations of regions and their subsystems are not necessarily characterized by self-development. It applies to depressed regions where industrial production has declined for many years. It is relevant to consider the social consequences of economic depression, including negative changes in the demographic subsystem of such territories. The Kirov region belongs to the depressed regions, as the volume of industrial production by 2018 decreased to 59% compared to 1991, and GRP per capita was 45% compared to the national average the same year. It is necessary to evaluate demographic consequences and manifestations of economic depression. The Kirov region has been characterized by depopulation since 1991 and a steady migration loss since 2000. The research methodology is based on demographic statistics: the current registration of natural and migration movements. The author concludes that the natural decline has a central role in the decline in the Kirov region population in the 1990s and 2000s. However, irretrievable interregional migration leads to the loss of the most valuable part of human potential - young people and skilled labor resources are of great importance.

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## 1. Introduction

The period of significant transformations in Russia, which was the transition to a market economy, was accompanied by an increase in crisis phenomena in various spheres of society and increased interregional socio-economic differentiation. It was explained by objective factors: differences in regions in the sectoral structure of the economy, starting conditions at the beginning of the transition period, which determined the possibilities for adaptation to new conditions, and by subjective factors: priorities of the federal center policy to support subjects of the Russian Federation in a difficult economic situation. The improvement in the economic situation in the 2000s due to the recovery of energy prices was different in the regions of the country's largest territory and did not lead to a decrease in regional inequality (Moroshkina, 2018; Zubarevich, 2019).

Transformational processes formed regions of a depressive type. They are characterized by the fact that in the past they showed all the features of steadily developing territories, occupying leading positions in the country in some industries (Kuznetsova, 2015). Depressed regions in developing countries are territories with poor transport accessibility, and, the solution to the problems of such territories is infrastructure development (Talpur et al., 2018). Generalization of the experience of studying depressed regions shows them as industrial areas, which distinguishes them from underdeveloped regions. The group of depressed regions includes at least 10 constituent entities of the Russian Federation, including the Kirov region, where negative trends in the economy have been observed for decades. In the context of a protracted economic depression for a long period, various demographic consequences are inevitable, which are predominantly negative, since the total territorial depression in Russia always has an extremely powerful social trend: the social potential, following the economic one begins to collapse rapidly and these processes put pressure on each other (Leksin & Shvetsov, 2007).

## 2. Problem Statement

The study of transformational processes is based on a systematic understanding of the regions considered integral territorial socio-economic systems (Tatarkin, 2013) on the territory where the economic and demographic regional subsystems interact. Interrelated changes in territorial systems can be characterized by self-development and degradation. It is relevant to consider the social consequences of the economic depression, which include negative changes in the demographic subsystem of such territories.

Russian and foreign researchers studied the issues of the impact of negative processes in the regional economy on the demographic sphere. Using data on 82 regions of Russia for 2000–2015, Wang et al. (2019) show that a decrease in the gross regional product per capita and an increase in unemployment are closely related to the regions' migration outflow.

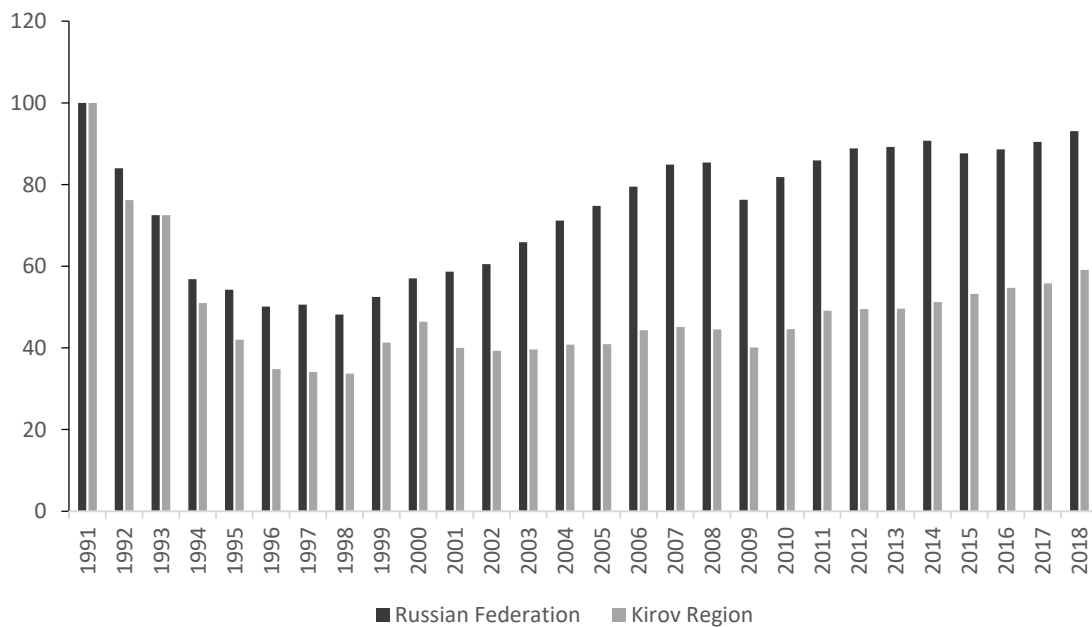
Batunova & Perucca (2020) have analyzed the relationship between demographic and economic development, using indicators for Russia's 78 regions for 1998–2012. Researchers have found that in some cases, the regional economy's transformation processes, leading to a decrease in population, can be successful. It is facilitated by a high share of private capital in the region's economy, economic

specialization in sectors that are less prone to competition and relocation of production, such as agriculture.

Krasnoperova (2017), analyzing the development of depressed regions in post-socialist East Germany, statistically confirms that a high proportion of young people in the region's population, who is the most active part of society with a high creative potential and a more developed ability to assimilate innovations, contributes to the emergence of the region from the state of social economic depression.

Vakulenko & Mkrtchyan (2020) demonstrate that migrants of economically active age most rationally (from an economic point of view) respond to changes in the labor market, income, economic situation in the regions of departure and arrival, and housing indicators.

The demographic manifestations of economic depression should be considered in each region specifically. This research illustrates the example of the Kirov region.



**Figure 1.** Change in the volume of industrial production in Russia and the Kirov region compared to 1991, %

We have previously indicated (Chernyshev, 2017) that the following features are the most obvious criteria for regional depression.

1. The decline in industrial production compared to 1991 expressed by the industrial production index (Figure 1). The economy of a depressed region should retain a pronounced industrial orientation, which distinguishes a region from an underdeveloped one.

2. The relatively low volume of gross regional product per capita is significantly lower than the average Russian level.

3. The unemployment rate must be above the average for the Russian Federation. It is obvious that the economic depression, the decline in production in industrial regions are accompanied by an increase in the unemployment rate.

Kirov region has been repeatedly reasonably pointed out as a region of the depressive type (Leonov, 2005; Semina, 2015). The compliance of the region with the criteria for depression is shown in Table 1.

**Table 1.** Indicators of socio-economic development of the Kirov region compared to the average Russian ones

Indicator	Kirov region	Russian Federation
The level of industrial production in 2018 to the level of 1991, %	59,1	93,1
The volume of industrial production per capita in 2018, thousand rubles	220,4	474,1
Gross regional product per capita in 2018, thousand rubles.	260,3	578,7
The unemployment rate, on average for 2009-2018, %	6,7	5,9

In the post-Soviet period, the region's industrial complex underwent changes connected with the transition to market relations, reduction of government orders, severing of economic ties, transition of enterprises from military production to civilian production. The fall in industrial production was deeper than the national average. Despite some stabilization in recent years, in general, over the post-Soviet period, the volume of industrial production in the region has decreased by 1.7 times. The structure of industrial production has changed. A sharp decline in mechanical engineering, the chemical industry is taking a leading position in the region, both in terms of the cost of manufactured products and in terms of export value. Despite the downturn, the region's economy continues to be industrialized.

The unemployment rate (according to the standards of the International Labor Organization) in the Kirov region at the end of 2018 was 5.1% and exceeded the national average.

The Kirov region, like other depressed regions, is characterized by a relatively low level of GRP per capita. The share of market services is noticeably lower than the national average one. Over the post-Soviet period, the share of services in the GRP structure has grown significantly, while the share of material production branches has decreased.

Despite the reduction in the gap in a number of indicators characterizing the economic depression, these characteristics of the Kirov region allow to classify this subject of the Russian Federation as a depressed region. In a number of areas, the crisis phenomena in the region intensified in the 2000s. The demographic sphere turned out to be sensitive and vulnerable to changes in the economic situation in the region. The most obvious demographic manifestations of economic depression are the migration outflow of the population of young and working age, which is combined with a natural decline in the population.

### **3. Research Questions**

The specificity of depressed regions in post-Soviet Russia is a significant drop in production, especially in industry, during the transition period. Economic difficulties had a great influence on people's lives. However, the recovery of the country's economy after 2000 affected the depressed region to a lesser extent and did not lead to noticeable improvements in the demographic sphere. The period of increase in the birth rate was short, and the migration decline in the population increased significantly.

### **4. Purpose of the Study**

The purpose of the research is to analyze the course and results of the processes of depopulation and migration outflow in the context of the transformation of the economic system in the depressed region of Russia; to assess demographic consequences and manifestations of the economic depression in the Kirov region.

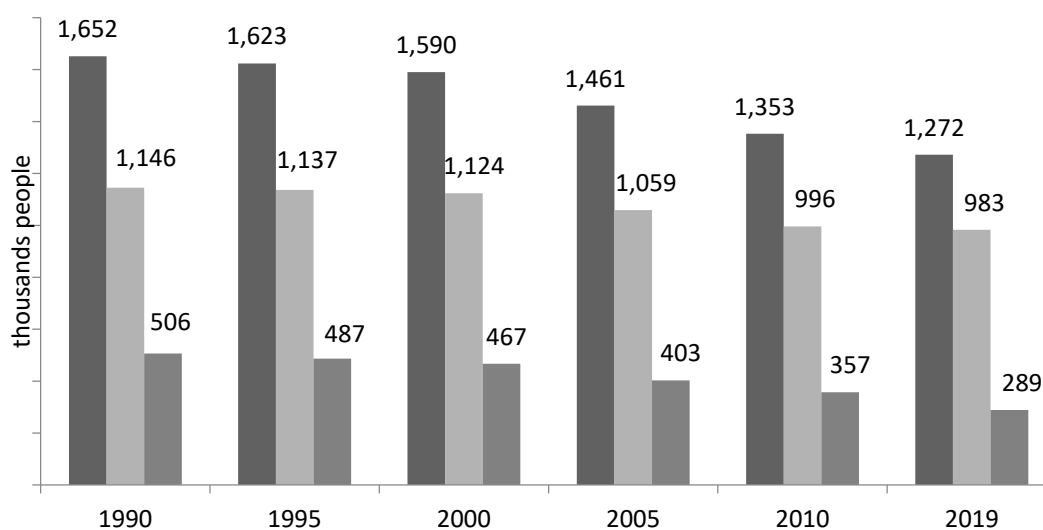
### **5. Research Methods**

Please replace this text with context of your paper. The research methodology is based on the analysis of data from regional demographic and socio-economic statistics. The information base of the study was official data from Rosstat, which characterized natural and migration movement, economic development of the depressed region.

### **6. Findings**

Kirov region is a region with a difficult demographic situation, the natural decline here is complicated by migration outflow. The defining trend during the post-Soviet period was the population decline (Figure 2). In fact, the number of inhabitants in the Kirov region has been decreasing since the 1960s due to the migration loss of the population, especially from rural areas, and later due to a decrease in the birth rate. The exception was 1983–1993, which were characterized by a slight annual increase in the population of the region. Since 1994, the region's population has declined annually. In 1990 1 million 652 thousand people lived in the region, but by the beginning of 2019 the population was slightly more than 1 million 272 thousand people.

Between 1990 and 2019, the population of the region decreased by 380 thousand people or by 23%, while the urban population decreased by 14%, the rural - by 43%. The post-Soviet dynamics of rural population decline is one of the highest in Russia. This trend was recorded both by the All-Russian Population Censuses in 2002 and 2010, and by the data of current statistical records. The population decline affected all municipalities of the region, except for the regional center of Kirov, which slightly increased the number of residents due to administrative transformations and interregional migration. According to Rosstat forecasts, the trend of population decline will continue in the coming years, it will be 1131.6 thousand people in 2036 (Population projection of Rosstat for the Kirov region until 2035).



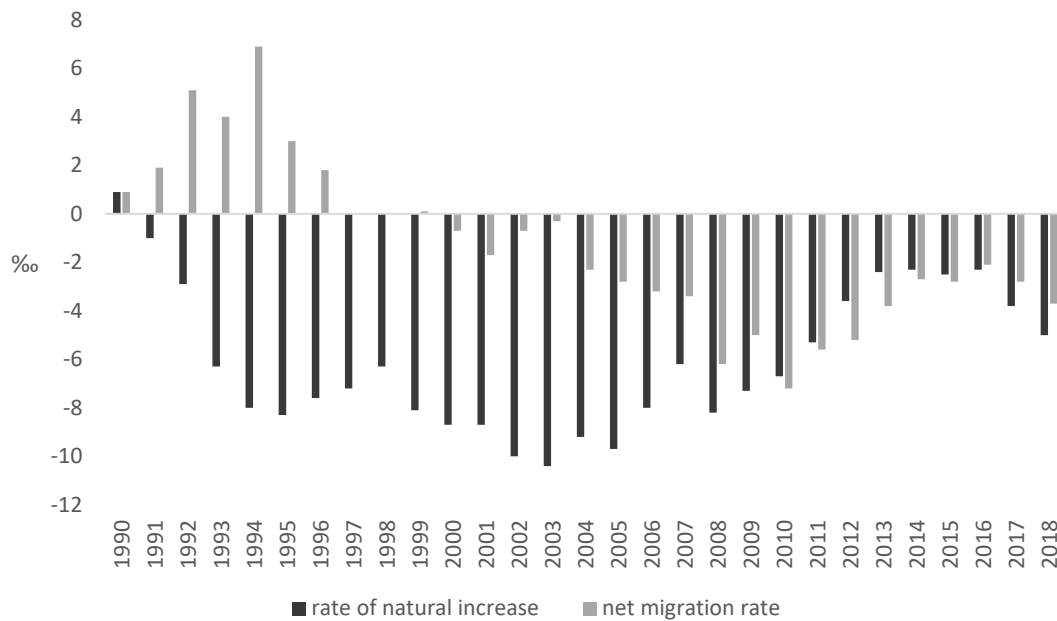
**Figure 2.** The population of the Kirov region in 1990–2019 (by the beginning of the year)

The natural decline played the main role in the decline of the population in 1994-2009, it first appeared in 1991 (a year earlier than in the country in general). Since that time, mortality and natural loss increased annually until 2003. In 1991-1999. the natural decline was fully or partially made up by the positive balance of migration. However, since 2000 the migration decline has been observed again (Figure 3).

With the decline in fertility and the subsequent aging of the population, an increase in total mortality was inevitable. 2003 was the most difficult year for the Kirov region in terms of the ratio of mortality and birth rates, when the number of deaths exceeded the number of births by more than 2.1 times. There was a decline in mortality from 2004 to 2017. Since 2018 mortality has increased again. The specificity of the depressed region is a high mortality rate due to external causes. The main external causes are suicide, transport accidents, alcohol poisoning and homicide are also important. In rural areas the mortality rate and natural loss is higher than in cities due to the age structure of the population and difficulties in obtaining health services.

From 2000 to 2013 there was an increase in the birth rate, which was mainly due to a favorable age structure of the population (a large number of women were born in the 1980s), as well as an improvement in the economic situation in the country (an increase in the standard of living due to transfers from the federal level, maternity capital, etc.). However, in recent years a small generation born in the 1990s has entered reproductive age.

Depopulation is a reflection of cardinal changes in the economy of a depressed region, but it is also explained by the influence of other factors and changes in the population's age structure. The decline in the birth rate in the depressed region is significantly affected by the decline in the population of reproductive age due to the migration outflow.



**Figure 3.** Decrease (increase) of the population of the Kirov region by components in 1990–2018

The main feature for all depressed regions of Russia and at the same time one of the manifestations of the economic depression is the population decline as a result of internal Russian migration (Chernyshev, 2017). The Kirov region is distinct as a migration donor for the more developed territories of Russia. A negative migration balance is noted with all federal districts, except for the Far East, and in some years the Siberian and North Caucasian ones. The largest migration outflow is observed to the Moscow and St. Petersburg regions, Krasnodar Territory, Tatarstan.

Considering the migration situation in a depressed region, according to the theory of migration factors by Lee (1966), we can conclude that a difficult economic situation, including employment problems, low wages, etc., is a pushing factor. Young people who grew up in economically depressed regions, qualified middle-aged professionals and the elderly population often prefer to leave for other parts of the country, where there are more opportunities to meet their needs: employment, quality medical and educational services, and various risks are lower. On the other hand, low incomes of the population hinder the formation of savings and may deter migration. Vorobeva and Grebenyuk (2017), having analyzed the outflow of the population abroad from the constituent entities of the Russian Federation, have concluded that the lowest indicators of the intensity of emigration are observed in the regions of the Russian Federation that are “depressed” socio-economically.

In international migration during the post-Soviet period, there was an increase in migration with foreign countries due to stressful and return migration in the 1990s, caused by the collapse of the USSR, and in the 2000s due to economically driven migration from the countries of Central Asia and the Caucasus. The depressed region is attractive for migration for people from these regions of the post-Soviet space.

The bulk of migration takes place within the region. Despite the fact that this type of migration does not change the population of the region, it is an example of an increase in space polarization,

concentration of the population and its activities in individual sites of a depressed territory during the demographic desertification of the interregional periphery (Kashnitsky, 2020). Interregional migration has made a significant contribution to the increase in the number of residents of the regional center.

In general, there has been a decrease in the population and labor resources of the depressed region due to migration to more developed regions of Russia or foreign countries and due to depopulation.

In addition to reducing the demographic potential, the depressed region is faced with a decrease in other resources necessary for socio-economic development. Depressed regions are prone to financial capital outflows (Palkina & Kislitsina, 2018). Business structures and the population can invest a significant part of the income received in a depressed region in more prosperous territories. It increases the unevenness of development, contributing to the preservation of the depressed territory in this state. The negative impact of demographic and investment factors interacting with each other intensifies the economic depression. At the same time, the presence or relatively slow reduction of resources of one type cannot compensate the lack of another type of resources.

## 7. Conclusion

The most obvious demographic manifestation of the economic depression in the Kirov region is the migration outflow of the population to other regions, caused by low wages and rising unemployment. This leads to the loss of the region's most valuable part of human potential - young people and skilled labor resources. The decline in the population of the Kirov region is also due to natural decline.

The development of economic depression is cumulative: economic problems lead to demographic problems, which complicate the economic situation. This circle is difficult to break without outside help. Interregional inequality is increasing as resources needed to revive a depressed region tend to stick to high-growth areas.

Therefore, it can be noted that the solution of the socio-economic problems of the depressed region is impossible without the participation of the federal center. It is necessary to develop and implement a coordinated social, demographic and migration policy, adapted for each depressed constituent entity of the Russian Federation and having a common goal - preserving labor resources and, ultimately, overcoming the economic lag of depressed regions.

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## References

- Batunova, E., & Perucca, G. (2020). Population shrinkage and economic growth in Russian regions 1998-2012. *Regional Science Policy and Practice*, 12(4), 595-609. <https://doi.org/10.1111/rsp3.12262>
- Chernyshev, K. A. (2017). The study of permanent migration of economically depressed regions. *Economic and Social Changes: Facts, Trends, Forecast*, 10(4), 259-273. <https://doi.org/10.15838/esc.2017.4.52.15>
- Kashnitsky, I. (2020). Russian periphery is dying in movement: a cohort assessment of internal youth migration in Central Russia. *GeoJournal*, 85(1), 173-185. <https://doi.org/10.1007/s10708-018-9953-5>



- Krasnoperova, I. R. (2017). Factors of transformation of the socioeconomic development in the depressed regions of Germany. *Vestnik Moskovskogo Universiteta, Seriya Geografiya*, 6, 79-87.
- Kuznetsova, O. V. (2015). *Ekonomicheskoye razvitiye regionov: teoreticheskiye i prakticheskiye aspekty gosudarstvennogo regulirovaniya* [Economic development of regions: theoretical and practical aspects of state regulation]. Moscow: Librokom.
- Lee, E. (1966). A Theory of Migration. *Demography*, 1(3), 47-57. <https://emigratecaportuguesa.files.wordpress.com/2015/04/1966-a-theory-of-migration.pdf>
- Leksin, V. N., & Shvetsov, A. N. (2007). *Gosudarstvo i regiony. Teoriya i praktika gosudarstvennogo regulirovaniya territorial'nogo razvitiya* [State and regions. Theory and practice of state regulation of territorial development]. Moscow: URSS.
- Leonov, S. N. (2005). Tipologiya problemnykh regionov na osnove otsenki mezhregional'nykh sotsial'no-ekonomicheskikh i finansovykh razlichiy [Typology of problem regions based on evaluation of the inter-regional socio-economic and financial differences]. *Izvestiya RAN. Ser. Geograficheskaja*, 2, 68-76.
- Moroshkina, M. V. (2018). Mezhhregional'naya differentsiatsiya rossiyskikh regionov: tendentsii i perspektivy sblizheniya [Interregional differentiation of the Russian regions: problem of convergence and divergence]. *Theoretical and applied economic*, 3, 48-60. <https://doi.org/10.25136/2409-8647.2018.3.18700>
- Palkina, M., & Kislitsina, V. (2018). Factors improving investment attractiveness of Russia's depressed regions. *Administratie si Management Public*, 30, 141-153. <https://doi.org/10.24818/amp/2018.30-10>
- Population projection of Rosstat for the Kirov region until 2035 (2020, August 16). <https://kirovstat.gks.ru/folder/23689>
- Semina, I. A. (2015). Typology of transport systems of Russia's depressed regions. *Regional Research of Russia*, 5(2), 137-146. <https://doi.org/10.1134/S2079970515020094>
- Talpur, M., Ali, T., Chandio, I., & Shaikh, F. (2018). Transportation Planning Studies for Socio-Economic Development of Depressed Sub-Regions: A Review. *Mehran University Research Journal of Engineering & Technology*, 37(3), 603-614. <https://doi.org/10.22581/muet1982.1803.14>
- Tatarkin, A. I. (2013). Samorazvitiye territorial'nykh sotsial'no-ekonomicheskikh sistem kak potrebnost' federativnogo stroitel'stva Rossii [Self-development of regional socioeconomic systems as the need for Russia's federal development]. *Economy of Region*, 4, 9-26.
- Vakulenko, E., & Mkrtchyan, N. (2020). Factors of Interregional Migration in Russia Disaggregated by Age. *Applied Spatial Analysis and Policy*, 13(3), 609-630. <https://doi.org/10.1007/s12061-019-09320-8>
- Vorobeva, O. D., & Grebenyuk, A. A. (2017). Emigratsiya iz Rossii po dannym otechestvennogo statisticheskogo ucheta [Emigration from Russia according to national statistics]. *Voprosy statistiki*, 11, 44-53.
- Wang, L., Huang, J., Cai, H., Liu, H., Lu, J., & Yang, L. (2019). A Study of the Socioeconomic Factors Influencing Migration in Russia. *Sustainability*, 11(6), 1650. <https://doi.org/10.3390/su11061650>
- Zubarevich, N. V. (2019). Neravenstvo regionov i krupnykh gorodov Rossii: chto izmenilos' v 2010-ye gody? [Inequality of regions and large cities of Russia: what was changed in the 2010s?]. *Obshchestvennye nauki i sovremennost*, 4, 57-70. <https://doi.org/10.31857/S086904990005814-7>