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SPATIAL HETEROGENEITY OF URBAN DEVELOPMENT IN THE CONTEXT OF THE FORMATION OF ECONOMIC WELL-BEING OF TERRITORIES

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Territorial inequality remains an urgent and significant problem of the present time, and its consequences are social and economic in nature, reinforcing the polarity of the development of the economic space of the regions. Questions about the impact of territorial inequality on the well-being of the population have mixed answers. The aim of the study is to develop a methodological approach to the analysis of spatial heterogeneity of urban development, taking into account the interrelation of interregional and intraregional (urban) inequality in the context of the formation of economic well-being. The hypothesis of the research suggests that, first, cities largely determine inter-regional inequality, and second, long-term urban development should go beyond the classical growth economy and take into account the criteria of economic well-being. The cities – administrative centers of the constituent entities of the Russian Federation – were chosen as the object of research. The analysis uses indicators characterizing the provision of individual benefits to the population, reflecting the material well-being of the population, as well as the dynamics of economic development of cities. The time frame of the study covers the period 2013–2023. There is a continuing high heterogeneity of cities, especially in terms of housing starts and investments, with some tendency to smooth out in the period 2013–2023. A more even distribution of cities in the country is observed in terms of wages, housing and doctors, but these imbalances are stable

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over time. We have established that the composition of cities with extreme values remains stable in most indicators. In general, the differentiation of cities in the country is more significant, and the intra-regional distribution of cities (within federal districts) is more uniform. The conclusion is made about the significant role of cities – administrative centers in the formation of inter-regional inequality. We determined that to ensure a balanced spatial development of the country, targeted support and creation of conditions (investment, infrastructure, etc.) for outsider cities are required, as well as monitoring of cities in the "middle" position. In the context of ensuring economic well-being, the implementation of measures aimed at improving the quality of life and the development of several strong cities in the region is of strategic importance, which reduces dependence on one center.

Region, economic space, city, administrative center, heterogeneity, well-being.

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Introduction

Currently, the problems of territorial inequality remain relevant and significant for regional science and practice. Agglomeration processes lead to increased imbalances between regional centers and the periphery, as well as within them, which creates risks for the sustainable development of the country as a whole. The continuing contradiction between the desire for balanced development of territories and the actual practice of increasing the spatial heterogeneity of cities requires new regulatory mechanisms. To overcome the existing imbalances, measures are needed based on an analysis of the causes and patterns of spatial heterogeneity, taking into account the interrelationship and interdependence of intraregional (urban) and interregional inequality.

The issues of studying the spatial heterogeneity of territories at different levels have long occupied a special place in the works of Russian and foreign scientists (Travish, 2009; Lyubovnyi, 2018; Buchwald, 2021; Liu et al., 2023), as well as practitioners in the field of regional management. At the same time, more attention is focused on studying inter-regional inequality (Zubarevich, Safronov, 2024), imbalances in regional development, and the study of inter-municipal heterogeneity and imbalances in urban development is limited. However, it is cities that are of particular importance for the sustainable development of the economic space, concentrating the population, social infrastructure, and resources, "acting as growth points with development potential" (Lappo, 2019), and spatial organization of the economy. The Spatial Development Strategy of the Russian Federation for the period up to 2030 with a forecast up to 2036[1] defines the need to solve the problem of interregional imbalances, intraregional differences in socio-economic development due to population concentration in relatively large cities, and uneven development of social infrastructure.

We should note that modern research covers a wide range of these problems, factors, consequences of territorial inequality and their management. The work of O.V. Kuznetsova presents the results of assessing of the level and dynamics of socio-economic development of cities of different types; it shows that, despite a slight decrease in their heterogeneity, differentiated approaches to regulating their spatial development are required (Kuznetsova, 2022).

The calculations carried out by I.V. Manaeva confirm the high unevenness of the distribution of cities in the economic space of the regions, the concentration of the population in large cities. The paper shows that an uneven system is influenced by crisis factors and contributes

[1] The Spatial Development Strategy of the Russian Federation for the period up to 2030 with a forecast up to 2036: approved by Governmental Decree 4146-R, dated December 28, 2024.

to the development of instability in society (Manaeva, 2019). The work of T.B. Mel'nikova presents the study of the homogeneity of cities by clustering them based on a set of knowledge localization factors; the results confirm the need for a differentiated approach to urban development management, depending not only on population size, but also on geographical location (Mel'nikova, 2023). Liu Zhaoyu and colleagues propose a system for assessing the urban spatial structure of Beijing from three points of view – the configuration of urban functions, the intensity of economic activity, and the spatial distribution of the population; the research proves that the spatial distribution of the population is a key factor influencing the spatial heterogeneity of the development rate (Liu et al., 2023).

The results of the above studies are consistent with the idea of the complexity of cities and the choice of directions for their development. For instance, the work (Rolfes, Wilhelm, 2024) examines the complexity of the city as an object of research and management. Noteworthy is the work (Alberti et al., 2018), which shows that understanding the complex dynamics linking changes in cities with socio-ecological and technical changes is crucial for obtaining new ideas about their future, while complexity is considered as a self-organizing development. Accordingly, the question arises about the impact of the complexity and diversity of cities on their development processes. There is no consensus among scientists on this aspect.

S.Yu. Pakhnina's article shows that increasing the role of cities in the regional economy is a natural process, but the growth of such concentration leads to negative consequences: increasing the asymmetry of the country's space, increasing the burden on the environment, etc., a special role is given to the connectivity of the economic space of the region, the development of inter-municipal cooperation of territories at different levels (Pakhnina, 2023).

The insignificant influence of the development of the administrative centers of most regions on the growth of the regional economy as a whole is evidenced by P.V. Druzhinin's study. The author concluds that "accelerating the formation of agglomerations in the current conditions is likely not to lead to more effective regional development" (Druzhinin, 2022). S.A. Frick and A. Rodriguez-Pose note that there is no single relationship between urban concentration and economic growth: urban population concentration favors economic growth in high-income countries, while this effect is not typical for developing countries (Frick, Rodrigues-Pose, 2018). J.A. Urrutia-Mosquera and colleagues, in a study of sustainable urban development and mobility, conclude that differences in the level of urban infrastructure development are the main source of spatial heterogeneity of the city, its connectivity, and population mobility (Urrutia-Mosquera et al., 2024).

The result of different positions regarding the role of heterogeneity in urban development has been the emergence of different approaches to its regulation. These issues are often explored from the perspective of ensuring sustainable urban development. A number of scientists identify resistance, restoration, adaptation and transformation as the principles of urban sustainability, and its characteristics include redundancy, reliability, adaptation, resources, and innovation (Ribeiro, Gonsalves, 2019). The work of S.P. Zemtsov and A.A. Mikhailov shows the need for a policy of sustainable urban development. The authors conclude that an equalizing policy can reduce economic growth, and entrepreneurship concentrated in large cities also acts as a factor in regional development, primarily from the point of view of non-resource (service) industries (Zemtsov, Mikhailov, 2024). H. Wang, G. Peng and H. Du consider the digital economy development as a factor in increasing the urban development sustainability (Wang et al., 2024). The concept of urban heterogeneity in modern cities is reflected in the article (Hussein, Al-Jameel, 2025), which states the need to preserve the unique identity of cities based on the development of differentiated approaches to their management. The research results of the heterogeneity of the sustainability of urban technological networks show that

increasing their sustainability requires industry development based on high efficiency of data transmission, economic leadership and investment in research, as well as an institutional environment (Yang et al., 2025).

A. Asuah and A. Zumelzu substantiate the importance of maintaining the existing diversity of cities by making changes to the municipal regulatory plan (Asuah, Zumelzu, 2020). An interesting study (Shamsuddin, 2020) reflects the idea of resistance to sustainability as a new problem, in which management systems create barriers to change, flexibility, and adaptability during implementation.

It is worth saying that special attention should be paid to the question of what impact urban development inequality have on the population. In the framework of studies of subjective well-being, the absence of a direct link between the growth of economic well-being (gross product growth) and happiness is recorded (Easterlin, 1974; Dvoryadkina et al., 2024). Studies of the economic well-being of municipalities (Dvoryadkina, Belousova, 2023) confirm the hypothesis that the most economically prosperous cities in the traditional sense have more opportunities to ensure the well-being and happiness of the population.

Thus, the following areas of research related to urban development inequality can be distinguished despite the commonality of the issues of the considered works: first, the study of the causes and consequences of inequality (infrastructural, social, etc.); second, the methodological foundations for assessing urban inequality, and third, the study of tools and methods for regulating imbalances. in the development of cities. However, there are practically no works studying urban inequality in comparison with interregional inequality, while such studies are necessary to understand the interdependence of urban and regional development processes in order to develop the most effective solutions to address imbalances in order to achieve more balanced and equitable development. Therefore, it is necessary to solve the problem related to the lack of an integrated scientific approach to the study of the relationship and interdependence of intraregional (urban) and interregional inequality to work out effective tools for regulating spatial development.

The aim of the study is to develop a methodological approach to the analysis of spatial heterogeneity of urban development, taking into account the interrelationship of interregional and intraregional (urban) inequality in the context of the formation of economic well-being. This work continues the authors' research in the field of interregional heterogeneity (Antipin et al., 2024; Antipin et al., 2025) and economic well-being, which determined the problematic of the article (territorial inequality) and the research context (economic well-being of municipalities).

We solve the following tasks to achieve this aim: to assess the dynamics and level of spatial differentiation of the administrative centers of the Russian Federation according to key indicators of economic well-being; to identify and characterize stable groups of leading and outsider cities, as well as to determine their spatial localization in the context of federal districts; to propose scientifically sound recommendations for regulating the identified spatial heterogeneity.

Materials and methods of the research

The hypothesis of the study suggests, first, that cities largely determine inter-regional inequality, and second, long-term urban development should go beyond the classical growth economy and take into account the criteria of economic well-being. To verify it, the results of the analysis obtained in the framework of this article will be compared with the conclusions presented in our earlier works. The cities – administrative centers of the constituent entities of the Russian Federation were chosen as the research object, due to their significant role (economic, social, and managerial) in the development of regions[2] and their impact on interregional inequality. At the same time, we excluded the federal cities of Moscow and Saint Petersburg from the analysis.

[2] The number of cities studied ranged from 90 to 83 depending on the administrative-territorial structure.

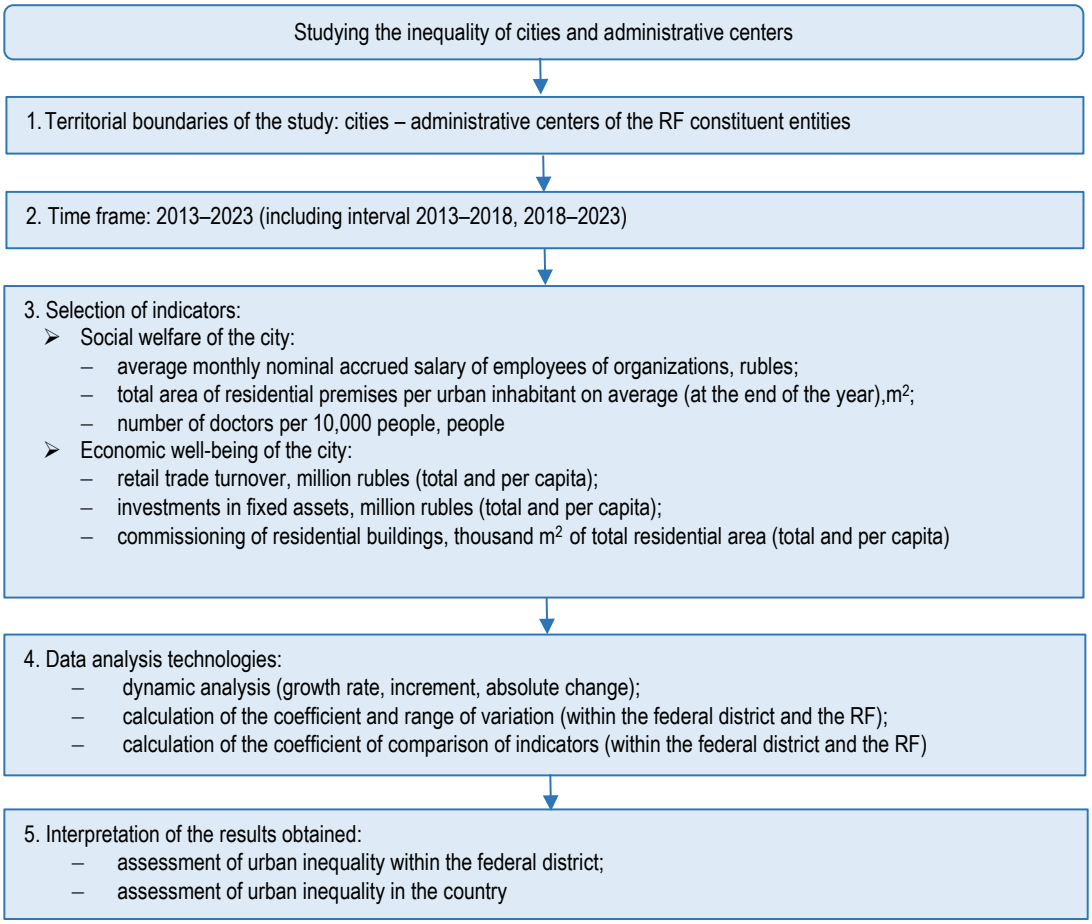

Figure 1. Description of the study of cities' inequality – administrative centers in the aspect of economic well-being research

Source: Regions of Russia. The main socio-economic indicators of cities. 2014–2023. Available at: https://rosstat.gov.ru/folder/210/document/13206

The time limits of the study are represented by the period 2013–2023, which, as part of the data analysis, is divided into five-year intervals. The analysis uses indicators characterizing the provision of individual benefits to the population, reflecting the material well-being, as well as the dynamics of economic development of cities.

Figure 1 shows the key elements of the study.

The data analysis technologies used make it possible to measure and compare the absolute magnitude of urban inequality. The advantages of the selected methods and parameters are simplicity of calculation and interpretation, scale tolerance, versatility, and operational control. The research methods are systematic, comparative, economic and statistical analysis. The information base of the study was compiled by the official data of Rosstat[3]. The selected indicators, according to the authors, directly reflect key aspects of well-being: material well-being (salary, housing, trade, investment), accessibility of social services (healthcare), dynamics of economic development (investment, construction, trade).

Results

By the end of 2023, the share of the population in urban administrative centers amounted to 27.5% (40.1 million people) of the total population of the country and 36.7%

[3] Regions of Russia. The main socio-economic indicators of cities. 2014–2023. Available at: https://rosstat.gov.ru/folder/210/document/13206

of the urban population; in 2013–2023 the change in the indicator does not exceed +/- 0.1%. In general, the urban population has decreased by 0.2% over 11 years. The largest absolute increase was recorded in Krasnodar (+350.5 thousand people), a decrease in Astrakhan (-65.4 thousand people). In relative terms, the population increased the most in Magas (3.9 times), decreased in Arkhangelsk (-15.7%). The role of the studied cities in the economic development of the country is high – they account for 20.2% (2023) of the total investment in fixed assets and 10.3% (2023) of the total retail trade turnover in the country. However, an analysis of the indicators by cities shows their high heterogeneity *(Fig. 2)*.

According to Figure 2, the greatest heterogeneity is manifested in the indicators of commissioning of residential buildings and investments in fixed assets, cities are least differentiated in terms of average monthly wages of employees, availability of living quarters and doctors. Similar results were obtained when comparing the extreme values, which makes it possible to estimate the inequality scale *(Fig. 3)*.

Data analysis shows a tendency to reduce urban inequality in the country in 2023 relative to previous periods in terms of housing commissioning and retail trade turnover, while wage imbalances, housing provision and doctors remain stable.

According to the data in *Table 1*, the list of cities with extreme values of indicators does not change significantly over the 11-year period. For instance, wages are most polarized in the cities of the Southern and Far Eastern Federal Districts (Elista and Anadyr). Makhachkala consistently has the lowest volume of investments per capita, which is due to both the small volume of investments relative to other cities and the high population. The lowest commissioning of residential buildings is in Murmansk (Northwestern Federal District), while the leading positions are occupied by the cities of the Southern Federal District and the North Caucasus Federal District. The distribution of investments per capita among cities is unstable, while the set of leaders and outsiders is changing in terms of total investment: Irkutsk became the leader in 2023, and Gorno-Altaysk became

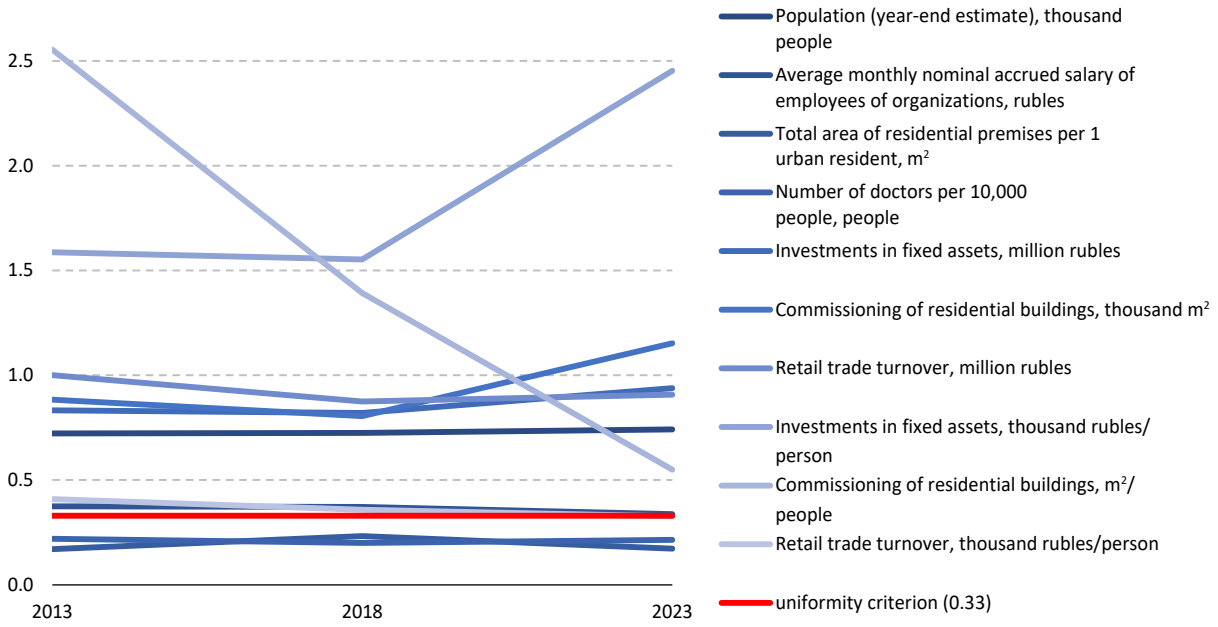

Figure 2. Results of urban heterogeneity assessment (by coefficient of variation)*

* The results of calculating the coefficient of variation are presented.

Source: Regions of Russia. The main socio-economic indicators of cities. 2014–2023. Available at: https://rosstat.gov.ru/folder/210/document/13206

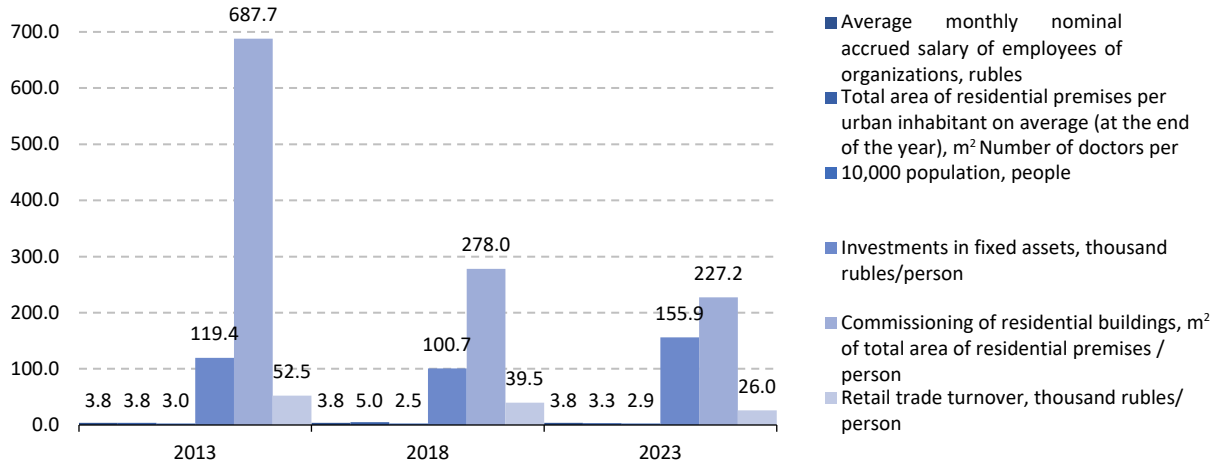

Figure 3. Results of the assessment of urban inequality (based on the calculation of the comparison coefficient)*

* It is calculated as the ratio of the maximum value of the indicator to the minimum.

Source: Regions of Russia. The main socio-economic indicators of cities. 2014–2023. Available at: https://rosstat.gov.ru/folder/210/document/13206

Table 1. Distribution of cities by extreme values of indicators

	Average monthly nominal accrued salary of employees of organizations, rubles	Total area of residential premises per urban inhabitant on average (at the end of the year), m²	Number of doctors per 10,000 people, people	Investments in fixed assets, thousand rubles / person	Commissioning of residential buildings, m² of total living space/person	Retail trade turnover, thousand rubles / person
2013						
min	Elista	Makhachkala	Barnaul	Makhachkala	Murmansk	Magas
max	Anadyr	Magas	Chita	Naryan-Mar	Magas	Krasnodar
2018						
min	Elista	Simferopol	Sevastopol	Makhachkala	Murmansk	Makhachkala
max	Anadyr	Magas	Khanty-Mansiysk	Naryan-Mar	Magas	Krasnodar
2023						
min	Elista	Kyzyl	Sevastopol	Makhachkala	Murmansk	Makhachkala
max	Anadyr	Magas	Khanty-Mansiysk	Salekhard	Krasnodar	Krasnodar
According to: Regions of Russia. The main socio-economic indicators of cities. 2014-2023. Available at: https://rosstat.gov.ru/folder/210/document/13206						

the outsider. It is worth noting that according to the specified data set, the distribution of cities is differentiated, i.e. it does not help to single out an unambiguous leader or outsider. Accordingly, it is of interest to consider and assess inequality within federal districts *(Tables 2–4)*.

In 2013, there was a significant intra-regional heterogeneity (by federal districts) in terms of per capita investment in fixed assets, commissioning of residential buildings and retail trade turnover. For other indicators, the distribution is relatively uniform. The greatest wage inequality is observed in the cities of the Urals (UFD) and the Far East (FEFD). The largest inequality in housing provision is in the cities of the North Caucasus Federal District, which is due to the processes of urbanization, population concentration, and housing affordability. Inequality in access to medical services is greatest in the cities of the CFD and UFD, which may indicate the concentration

Table 2. Assessment of the heterogeneity of urban development within federal districts, 2013*

Federal District	Average monthly nominal accrued salary of employees of organizations, rubles	Total area of residential premises on average per urban inhabitant (at the end of the year), m^2	Number of doctors per 10,000 population, people	Investments in fixed assets, thousand rubles / person	Commissioning of residential buildings, m^2 of total living space / person	Retail trade turnover, thousand rubles / person
CFD	1.39	1.19	2.29	4.94	3.74	3.43
VFD	1.52	1.26	1.88	4.55	2.11	3.12
NCFD	1.21	3.76	1.46	25.74	44.73	40.84
SouFD	1.59	1.27	1.52	10.65	8.58	3.29
NWFD	2.44	1.23	1.53	34.72	30.97	2.67
UFD	3.20	1.30	2.63	15.35	3.22	3.29
SibFD	1.52	1.70	2.56	3.65	3.48	31.05
FEFD	2.59	1.51	2.17	11.57	14.71	3.00
RF	3.8	3.8	3.0	119.4	687.7	52.5

* The results of comparing the extreme values of the indicators (K av = max/min) are presented.
According to: Regions of Russia. The main socio-economic indicators of cities. 2014-2023. Available at: https://rosstat.gov.ru/folder/210/document/13206

of doctors in the largest cities of the federal district. The large disparity in investment and housing construction in the North Caucasus Federal District and the Northwestern Federal District may be explained by the low investment attractiveness of cities and the limited implementation of infrastructure projects. Inequality in consumer activity (retail volume) is most pronounced in the NCFD and the SibFD, which is related to income levels and the presence of large shopping malls in a limited number of cities.

In general, we can conclude that cities within federal districts are developing more evenly and that they are significantly differentiated across the country. In this regard, differentiated measures that take into account regional specifics will be more effective to equalize the conditions of urban development. Let us pay attention to the dynamics of the heterogeneity of urban development in subsequent periods *(Tab. 3)*.

In 2018, urban inequality is somewhat smoothing out relative to previous periods, but the most significant imbalances in investment and housing commissioning remain. As in 2013, the NCFD and NWFD show the highest values for investment and housing construction, which may indicate a local concentration of resources in individual cities. The UFD and FEFD also maintained a high differentiation in salaries. Based on the data in *Table 4*, let us look at how the heterogeneity of cities is changing in 2023.

In 2023, there is an increase in urban heterogeneity in terms of per capita investment relative to 2018, while smoothing trends remain in other indicators. The largest wage inequality remains in the cities of the Ural Federal District and Far Eastern Federal District, while trends toward smoothing can be identified relative to previous periods (2013, 2018). The distribution of cities for housing has also become more uniform, which is a consequence of the government programs implemented during this period[4]. Retail trade turnover in cities within federal districts is relatively uniform (with the exception of the NCFD cities). High differentiation in terms of investments in the cities of the UFD region (which is explained by the growth of investments in the defense industry and the implementation of infrastructure projects), as well as the Far Eastern Federal District. In general, over the period 2013–2023, there have been trends in smoothing out the heterogeneity of urban development, while these trends are greater within federal districts, where urban development differentiation is

[4] "Family mortgage", "Preferential mortgage", "Far Eastern mortgage" and "IT mortgage". Available at: http://government.ru/rugovclassifier/38/events

Table 3. Assessment of the heterogeneity of urban development within federal districts, 2018*

Federal District	Average monthly nominal accrued salary of employees of organizations, rubles	Total area of residential premises on average per urban inhabitant (at the end of the year), m^2	Number of doctors per 10,000 people, people	Investments in fixed assets, thousand rubles / person	Commissioning of residential buildings, m^2 of total living space / person.	Retail trade turnover, thousand rubles / person
CFD	1.40	1.22	1.99	4.32	4.91	2.88
VFD	1.38	1.37	1.69	4.03	3.32	2.00
NCFD	1.28	3.95	1.76	65.62	33.20	17.68
SouFD	1.54	2.51	1.99	6.43	9.62	3.63
NWFD	2.27	1.19	1.54	36.64	32.51	1.45
UFD	3.10	1.20	2.48	21.68	2.79	3.48
SibFD	1.49	1.80	2.09	3.46	2.26	8.94
FEFD	2.77	1.40	1.98	13.44	24.18	3.01
RF	3.8	5.0	2.5	100.7	278.0	39.5

* The results of comparing the extreme values of the indicators (K av = max/min) are presented.
According to: Regions of Russia. The main socio-economic indicators of cities. 2014-2023. Available at: https://rosstat.gov.ru/folder/210/document/13206

Table 4. Assessment of urban heterogeneity within federal districts, 2023*

Federal District	Average monthly nominal accrued salary of employees of organizations, rubles	Total area of residential premises on average per urban inhabitant (at the end of the year), m^2	Number of doctors per 10,000 people, people	Investments in fixed assets, thousand rubles / person	Commissioning of residential buildings, m^2 of total living space / person.	Retail trade turnover, thousand rubles / person
CFD	1,41	1,31	2,05	3,13	3,04	1,65
VFD	1,50	1,40	1,74	4,82	1,84	1,70
NCFD	1,32	2,73	2,24	15,48	4,90	10,47
SouFD	1,67	2,15	2,17	4,60	5,28	3,45
NWFD	2,02	1,23	1,67	10,36	85,40	1,96
UFD	2,50	1,23	2,54	42,37	3,45	1,50
SibFD	1,47	1,89	2,01	10,53	3,34	3,35
FEFD	2,62	1,60	2,10	33,05	12,22	3,36
RF	3,8	3,3	2,9	155,9	227,2	26,0

* The results of comparing the extreme values of the indicators (K av = max/min) are presented.
According to: Regions of Russia. The main socio-economic indicators of cities. 2014-2023. Available at: https://rosstat.gov.ru/folder/210/document/13206

less pronounced. The distribution of cities according to these parameters in the space of federal districts and the Russian Federation is of interest *(Tab. 5, 6)*.

Let us consider the distribution of cities that occupy extreme positions according to the studied indicators. An analysis of the distribution of cities with minimal values allows drawing the following conclusions. The composition of cities with minimum values for most indicators in 2013 and 2023 is the same. The list of cities with minimal values for most indicators consistently includes Saransk, Kostroma, Makhachkala, Elista, and Birobidzhan. In some cases, outsider cities are changing (in the CFD, UFD, VFD), which can be considered as a sign of improvement or deterioration of the situation of other cities.

An analysis of the distribution of cities with maximum values shows that cities retain leadership in most indicators both in 2013 and in 2023 (for example, Krasnodar, Stavropol, Salekhard, Anadyr, Kazan), which indicates sustainable development and concentration of resources in them. The most significant redistribution of leading cities occurs in the CFD, VFD, NWFD, and SibFD.

Table 5. Distribution of cities with minimum values of indicators

Federal District			Average monthly nominal accrued salary of employees of organizations, rubles	Total area of residential premises, on average per city inhabitant (at the end of the year), m^2	Number of doctors per 10,000 people, people	Investments in fixed assets, thousand rubles / person	Commissioning of residential buildings, m^2 of total living space / person	Retail trade turnover, thousand rubles / person
CFD	2013	min	Tambov	Yaroslavl	Kostroma	Кострома	Yaroslavl	Kostroma
	2023	min	Tambov	Yaroslavl	Kostroma	Ivanovo	Belgorod	Kostroma
VFD	2013	min	Saransk	Izhevsk	Ulyanovsk	Yoshkar-Ola	Izhevsk	Saransk
	2023	min	Saransk	Izhevsk	Yoshkar-Ola	Ulyanovsk	Saransk	Cheboksary
NCFD	2013	min	Cherkessk	Makhachkala	Cherkessk	Makhachkala	Vladikavkaz	Magas
	2023	min	Vladikavkaz	Makhachkala	Magas	Makhachkala	Makhachkala	Makhachkala
SouFD	2013	min	Elista	Volgograd	Maikop	Maikop	Maikop	Elista
	2023	min	Elista	Simferopol	Sevastopol	Elista	Simferopol	Elista
NWFD	2013	min	Pskov	Syktyvkar	Vologda	Pskov	Murmansk	Arkhangelsk
	2023	min	Pskov	Naryan-Mar	Vologda	Syktyvkar	Murmansk	Naryan-Mar
UFD	2013	min	Kurgan	Khanty-Mansiysk	Kurgan	Kurgan	Kurgan	Salekhard
	2023	min	Kurgan	Khanty-Mansiysk	Kurgan	Chelyabinsk	Chelyabinsk	Khanty-Mansiysk
SibFD	2013	min	Barnaul	Kyzyl	Barnaul	Barnaul	Kyzyl	Kyzyl
	2023	min	Barnaul	Kyzyl	Barnaul	Gorno-Altaysk	Tomsk	Kyzyl
FEFD	2013	min	Birobidzhan	Yakutsk	Birobidzhan	Birobidzhan	Magadan	Vladivostok
	2023	min	Ulan-Ude	Yakutsk	Birobidzhan	Birobidzhan	Magadan	Ulan-Ude

According to: Regions of Russia. The main socio-economic indicators of cities. 2014–2023. Available at: https://rosstat.gov.ru/folder/210/document/13206

Table 6. Distribution of cities with maximum values of indicators

Federal District			Average monthly nominal accrued salary of employees of organizations, rubles	Total area of residential premises per urban inhabitant on average (at the end of the year), m^2	Number of doctors per 10,000 people, people	Investments in fixed assets, thousand rubles / person	Commissioning of residential buildings, m^2 of total living space / person	Retail trade turnover, thousand rubles / person
CFD	2013	max	Kaluga	Orel	Smolensk	Kaluga	Tver	Smolensk
	2023	max	Tula	Tula	Smolensk	Kaluga	Tula	Tula
VFD	2013	max	Perm	Saratov	Saratov	Perm	Saratov	Kazan
	2023	max	Kazan	Penza	Orenburg	Kazan	Penza	Nizhniy Novgorod
NCFD	2013	max	Stavropol	Magas	Vladikavkaz	Magas	Magas	Stavropol
	2023	max	Stavropol	Magas	Vladikavkaz	Magas	Magas	Stavropol
SouFD	2013	max	Krasnodar	Krasnodar	Astrakhan	Krasnodar	Krasnodar	Krasnodar
	2023	max	Krasnodar	Krasnodar	Astrakhan	Rostov-on-Don	Krasnodar	Krasnodar
NWFD	2013	max	Naryan-Mar	Kaliningrad	Arkhangelsk	Naryan-Mar	Kaliningrad	Murmansk
	2023	max	Murmansk	Kaliningrad	Arkhangelsk	Naryan-Mar	Kaliningrad	Murmansk
UFD	2013	max	Salekhard	Tyumen	Khanty-Mansiysk	Salekhard	Tyumen	Tyumen
	2023	max	Salekhard	Tyumen	Khanty-Mansiysk	Salekhard	Tyumen	Ekaterinburg
SibFD	2013	max	Irkutsk	Irkutsk	Chita	Kyzyl	Novosibirsk	Novosibirsk
	2023	max	Irkutsk	Abakan	Irkutsk	Irkutsk	Novosibirsk	Kemerovo
FEFD	2013	max	Anadyr	Magadan	Anadyr	Anadyr	Blagoveshchensk	Anadyr
	2023	max	Anadyr	Yuzhno-Sakhalinsk	Yuzhno-Sakhalinsk	Anadyr	Yuzhno-Sakhalinsk	Blagoveshchensk

According to: Regions of Russia. The main socio-economic indicators of cities. 2014–2023. Available at: https://rosstat.gov.ru/folder/210/document/13206

Thus, the composition of outsider cities and leading cities within federal districts is relatively constant: with minimum values, it is in the NCFD, VFD, SibFD, FEFD, and with maximum values – in the CFD, SouFD. These trends indicate, on the one hand, the continuing potential of individual cities in the federal district, and, on the other, the persistent lag in urban development and the ineffectiveness of the policy of equalizing their socio-economic development.

Conclusions

The study of the spatial heterogeneity of urban development (administrative centers), taking into account the interrelation of interregional and intraregional (urban) inequality in the context of the formation of economic well-being of territories, allows concluding that, despite the significant role of cities in the socio-economic development of the country, their significant heterogeneity remains. Urban development across the country is the most polarized, with research within federal districts indicating a more even distribution.

The greatest heterogeneity is evident in such indicators as the volume of investments and the commissioning of residential buildings, but over the period under consideration there has been a tendency to reduce it. The least differentiated indicators are average monthly wages, housing and doctors, but these imbalances remain stable over time. The composition of cities with minimum and maximum values for most indicators remains stable, changes are observed only in some regions, which may be due to an improvement or deterioration of the situation in other cities (the comparison base).

The distribution of cities in the country and federal districts presented that the cities of the NCFD are most often in the outsider positions, especially in terms of consumer activity and income, while the cities of the CFD, FEFD are the leaders. These provisions correspond to the conclusions of the authors on interregional differentiation – on the stable leading positions of the regions of the FEFD, as well as the lag of the regions of the North Caucasus in terms of living standards, incomes of the population, and social security of the regions (Antipin et al., 2025). These trends allow speaking about the significant role of cities – administrative centers in the formation of inter-regional inequality. The tendency toward smoothing inequality confirms the relative effectiveness of the government's policy of equalizing territories.

In this regard, it is required targeted support and creation of conditions (investment, infrastructure) for outsider cities to ensure a balanced spatial development of the country, as well as monitoring of cities in the "middle" position (i.e. not having extreme positions). In the context of the study of economic well-being, the implementation of measures aimed at improving the quality of life is of particular importance, and a policy of developing several strong cities is advisable, which reduces dependence on one center.

The theoretical results of the study expand the existing scientific understanding of the spatial organization of the economy and the nature of regional inequality through the prism of urban development as key elements. The practical significance lies in the possibility of using the results to improve regional governance mechanisms, in the process of developing and implementing development strategies, as well as for further scientific and applied research. The limitation of the applicability of the obtained results remains the complexity of their simultaneous use for making managerial decisions. Accordingly, the regulation of the considered heterogeneity parameters will be more effective within the framework of point estimates and solutions. At the same time, the results obtained can be taken into account comprehensively in the strategic planning processes. Our further research will be aimed at studying the issues of regulating inequality (tools, policies, best practices) in the context of ensuring economic well-being.

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