

DOI: 10.15838/ptd.2026.4.144.3

UDC 332.1 | LBC 65.049

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ASSESSMENT OF SPATIAL BALANCE IN THE CONTEXT OF THE ECONOMIC WELL-BEING OF MUNICIPALITIES

**ELIZAVETA A. BELOUSOVA**

Ural State University of Economics

Yekaterinburg, Russian Federation

e-mail: Belousova-unir@usue.ru

ORCID: 0000-0001-5355-5243; ResearcherID: W-2254-2019

One of the important characteristics of the economic wellbeing of a municipality is spatial balance, as it reflects the proportionality of the development of the regional economy in space. The aim of this article is to assess this indicator. Methodologically, the study is based on the principles of the spatiotemporal and systems approaches, as well as the theory of regional economics. Spatial balance of municipal economic development is defined as the proportionality of the distribution of the regional reproduction process among municipalities, which ensures commensurate economic outcomes for the population residing in their territories. The assessment is proposed to be carried out by calculating the average deviation from unity of the presence indices for socioeconomic indicators reflecting the reproduction stage. The proposed definition and assessment methodology constitute the scientific novelty of research in this area. The methodology was tested on data from 69 municipalities of the Sverdlovsk Region for the years 2010, 2015, and 2020–2024, which made it possible to compare the current spatial balance with the period of active economic growth. The analysis results showed that spatial disproportionality generally tend to decrease, but in 2024 it started to grow. Among the antileaders in spatial balance are: Verkhnyaya Pyshma Urban Okrug, Reftinsky Urban Okrug, Zarechny Municipal Okrug, and Verkhnesaldinsky Municipal Okrug. They concentrate a large volume of investment and real sector output, which, on the one hand, ensures economic growth, but on the other hand, significantly

For citation: Belousova E.A. (2026). Assessment of spatial balance in the context of the economic well-being of municipalities. *Problems of Territory's Development*, 30(4), 29–43. DOI: 10.15838/ptd.2026.4.144.3

increases anthropogenic pressure and may adversely affect their longterm sustainability. The paper also revealed that consumption is traditionally concentrated in the administrative center of the region and is largely shaped by nonresidents. With regard to the stage of distribution of local budget revenues, a trend has been identified towards their relatively stable and uniform dispersal across almost 90% of municipalities.

Municipality, region, spatial development, economic space.

ACKNOWLEDGMENT

The research was carried out at the expense of the grant of the Russian Science Foundation 25-28-01430, <https://rscf.ru/project/25-28-01430/>.

Introduction

The economic well-being of a municipality is a construct developed to assess economic progress at the micro level within the theoretical framework of sustainable development (Belousova, 2022). Balanced spatial development serves as one of the means of achieving economic well-being, since it is aimed at shaping and improving the settlement system, the location of productive and non-productive activities, and the infrastructure framework. The link between spatial and sustainable development lies in the fact that sustainable development sets the goals, while their attainment occurs on a physical basis and depends on its capacity. Balanced spatial development, in turn, makes it possible to address social objectives (ensuring access to services when siting social infrastructure, residential comfort in housing construction, etc.), environmental objectives (ensuring an even anthropogenic load on the environment and optimizing the use of scarce natural resources), and economic objectives (maintaining the spatial flexibility of economic activity and reducing the costs of overcoming distance).

From the standpoint of material well-being, balanced spatial development of the economic

sphere is of greatest importance. At the same time, regionalization processes are intensifying (Shabunova et al., 2026), which at the municipal level means the need to increase the self-sufficiency of local socio-economic systems. Spatial imbalance in economic development can become an obstacle to meeting the material and non-material needs of the local community and to retaining the population and economic actors in a given territory.

The aim of this study is to assess the spatial balance of the municipalities of the Sverdlovsk Region. In line with this aim, the following objectives are set: 1) reviewing the literature to characterize the concept of “spatial balance”; 2) determining a methodology for assessing spatial balance; and 3) carrying out calculations to assess the spatial balance of the municipalities of the Sverdlovsk Region.

Theoretical foundations of the study

Dictionaries define “balance” as “the relationship between interrelated indicators of an activity or process”¹ as well as “full correspondence, an equal relationship between things; equilibrium”². According to G.B. Kleiner, however, it is not entirely correct in economics to equate balance and

¹ Balance. Available at: <https://slovarozhegova.ru/word.php?wordid=972> (accessed: 20.05.2026).

² Balance. Available at: <https://gramota.ru/meta/balans> (accessed: 20.05.2026).

equilibrium, since the former refers to the elements of a system, while the latter refers to the characteristics of a system's state (Kleiner, 2015). Kleiner interprets balance as the proportionality (commensurability) of a system's structural components (subsystems), which is a necessary condition for the successful functioning of an economic system in the long term (Kleiner, Rybachuk, 2019, p. 311).

From S.V. Belousova's perspective, "balance can be defined as a spatial characteristic that establishes the relationship of parts within a whole or the relationship of mutually conditioned elements that ensure the normal existence, functioning, and optimal operation of something" (Belousova, 2014, p. 36). In other words, the emphasis in interpreting balance is placed on the relationship among elements that ensures the optimal functioning of a system.

In a general economic sense, S.M. Baskakov considers balance as "the correspondence of a system's established parameters to one another, whose changes are coordinated and proportional" (Baskakov, 2019, p. 95). As the researcher notes, this definition rests on three structural, sequentially interrelated essential characteristics: "First, balance is a phenomenon whose emergence is conditioned by objective economic reality and is associated with the optimal mode of functioning of the economy as a whole. Second, balance is a process aimed at eliminating significant inequalities and disproportions in economic development. Third, balance characterizes the state of the economy and its ability to function stably and harmoniously" (Baskakov, 2019).

The Soviet classic of regional economics A.E. Probst observed that the harmony (optimal proportionality) of all elements of the national economy consists in optimal

development rates (proportionality over time), a harmonious structure of social production (an optimal relationship among its individual branches and elements of reproduction), and the proportionality of social production in space (the harmonious distribution of all social production across the entire country and within economic regions) (Probst, 1982, p. 8). Spatial balance, therefore, means the harmonious distribution of social production across a territory. Balanced spatial development can also be viewed as the state opposite to spatial disproportionality.

In the study by A.I. Antipin and E.A. Shishkina, disproportions in the spatial development of regions are understood as the mismatch between the socio-economic situation and infrastructure provision of regions (Antipin, Shishkina, 2024). The authors analyze the dynamics of the gap between the maximum and minimum values of economic and infrastructural development indicators to determine the magnitude of disproportions, including such indicators as the level of industrial development (gross value added, GVA), investment, electricity consumption, the share of roads meeting standards, and living standard indicators (Antipin, Shishkina, 2024).

Spatial imbalance, understood as disproportion, also features in the work of Chinese scholars. For example, Chen and colleagues examine the spatial differentiation of the efficiency of development and the transition to a green and low-carbon economy in municipalities (Chen et al., 2026). According to their findings, the spatial configuration of municipalities in terms of efficiency is mainly determined by GVA, urban development (urbanization), and consumption (retail turnover per capita). A distinctive feature of their study is the nature of the object: unlike

other similar works, they conduct the analysis not at the level of urban agglomerations or administrative-territorial units, but of cities located in the economic zone of the Yangtze River basin.

The relationship between the spatial imbalance of resource concentration (water and land) and food availability is examined in a study by Guo and colleagues (Guo et al., 2026). To assess this, the authors use coefficients of spatial mismatch between food production and the water and land resources available for agriculture. A particular challenge of such research lies in calculating the available resources. For water resources, this involves measuring the volume of available water from irrigation systems and the amount of precipitation. For agricultural land resources, the total area of cultivated land is used, adjusted by the regional grain crop yield.

It is worth noting that studies of spatial imbalances often use the term “spatial mismatch” in the context of a significant geo-spatial mismatch between cultivated land area, population size, and the economy, which affects the sustainable development of regions. This also makes it possible to interpret spatial balance as the absence of disproportions in resource concentration (Liu, Yang, 2025; Lei et al., 2026).

A team of researchers from the Institute of Economics of the Ural Branch of the Russian Academy of Sciences and Chelyabinsk State University identifies three causes of spatial disproportions: “inertial development (the ‘path dependence’ effect); negative-type deindustrialization (the transition to an export-oriented resource and semi-finished goods economy of an incomplete cycle, the replacement of domestic production with imports); and the redistribution of mobile factors of production (labor, capital, and

knowledge) in favor of the largest urban centers” (Tatarkin et al., 2016, p. 64). As a result, one (rarely two) super-large compact areas (poles) of relative prosperity with a post-industrial economy emerge within a region, while vast adjacent agrarian-industrial territories stagnate (or even degrade), pointing to serious spatial imbalances. What occurs, therefore, is not merely a change in the morphology of space but a coupled transformation of economic, social, and spatial development (a change in the configuration and spatial structure of the territory itself, its systems and complexes) (Suvorova, 2019, p. 56).

Spatial imbalance thus takes shape as the simultaneous presence of spatial disproportions in socio-economic processes and in the configuration and structure of space, its systems and complexes. In the work of A.I. Tatarkin and co-authors, three sets of indicators – social, economic, and environmental activity – are used for a composite assessment of the level of balance in the economic activity of two regions (the Sverdlovsk Region and the Chelyabinsk Region). The scoring approach, combined with the specified criteria, is applied as follows: indicators reflecting negative types of environmental activity (deterioration of the environmental situation) are assigned one point when they increase and three points when they decrease.

T.V. Uskova and S.S. Patrakova propose a comprehensive understanding of spatial balance as a state of economic space in the duality of statics and dynamics, characterized by the stable and co-directional development of system-forming elements aimed at achieving positive economic and social effects (Uskova, Patrakova, 2024). This requires meeting the conditions of proportionality (no growth in disproportions

between rural and urban elements of the regional system), coherence of development goals, and connectivity (the presence of stable, intensive, and parity-based linkages between elements). The authors' approach to assessing the balanced development of urban and rural territories seeks to formalize these conditions and rests on two methods: scoring (based on conditions set by the researcher) and the calculation of an integral indicator by aggregating heterogeneous indicators.

The rural–urban dichotomy often lies at the center of research on spatial imbalance. For example, Indonesian scholars view spatial imbalance as spatially conditioned inequality (or spatial exclusion) in access to public facilities, infrastructure, and economic resources (Sjaf et al., 2025). The authors share the view that the causes of inequality are rooted in the historical neglect of rural regions, the concentration of investment in urban centers, and the uneven distribution of resources, which may further exacerbate structural poverty and hinder regional economic growth and “spatial justice”. In their study, the level of regional hierarchy of spatial inequality, taking into account the accessibility of infrastructure facilities or public services, is assessed using scalogram analysis. Particular attention is paid to data collection, for which an original Data Desa Presisi (DDP) methodology was developed. It comprises a population census, a spatial approach, and the participation of local communities. Spatial data are obtained through mapping with drones, which makes it possible to create a working map containing information on building and dwelling numbers that is subsequently used for the census and surveys. The spatial inequality model is built from calculations of the accessibility of public infrastructure

and public services using the maximum entropy principle; groupings by the human development index; and assessments of the socio-economic conditions of local communities using the Williamson economic inequality index.

Another axis of spatial imbalance is the center–periphery dimension, within which inequality in socio-economic development between central and peripheral territories comes to the fore (Bieleman et al., 2026). In that study, spatial imbalance is assessed through narrative analysis, since a mixed-method approach is used, combining a systematic literature review with expert interviews on selected cases in the European Union.

Another example of spatial imbalance among territories that differ in their locational characteristics is presented in a study of health service provision in South Korea (Kim et al., 2026). The authors identify an uneven distribution of medical services both between metropolitan and provincial regions and between large urban centers and rural areas. To this end, they apply an index method and calculate two indices: the mismatch index (DISC), which reflects the degree of spatial imbalance between supply and demand, and the service-load mismatch index (DISTRES), which shows the difference in capacity between service delivery and demand.

In both cases (rural versus urban and center versus periphery) spatial imbalance is largely attributable to problems of transport and communication connectivity. As a study of India notes, many rural and semi-urban areas remain cut off from major transport corridors, which limits their socio-economic potential and exacerbates regional inequality (Halдар, Mistri, 2026). An analysis of the prospects

for the Marrakech–Fes motorway project in Morocco shows that improving spatial connectivity through a new transport artery, while improving the economic situation in the adjacent territories, may create long-term problems of high carbon intensity in rapidly growing regions. Despite reducing economic inequality, the project may lead to an increase in environmental inequality (Arbouch, 2026).

The results of the analysis suggest that different types of spatial disproportion can be distinguished depending on the cause of their emergence, corresponding to the parameters of economic space: location (base potential), changes in connectivity (external and internal), or concentration (of resources, population, and economic activity). Furthermore, one can conclude that the tools used to assess spatial imbalance in the studies reviewed vary depending on how the essence of spatial imbalance is understood. Both a normative approach, which relies on balance criteria, and an approach based on measuring the scale of imbalances are employed.

The review of interpretations made it possible to identify several factors contributing to spatial balance: the proportionality of the components of a territorial system, inclusiveness in the regional space (resulting in its optimal functioning), and proportionality of distribution among territorial systems (for example, among municipalities within a region). In our view, the spatial balance of municipal economic development can be understood as the *proportionality of the distribution of the regional reproduction process among municipalities, which makes it possible to ensure commensurate economic*

outcomes for the population residing in their territories. Accordingly, spatial balance can be measured by assessing the proportionality of each municipality's participation in the regional reproduction process (production, distribution, exchange, and consumption).

The proposed theoretical approach and methodology are relatively simple to apply and rely on accessible statistical data, while at the same time making it possible to take into account the state and dynamics of the reproduction process as a space-forming factor.

Materials and methods

To assess the spatial balance of municipalities, we calculate the spatial balance index (*ISI*), based on presence indices. Each presence index is computed as the ratio of a municipality's share in a regional indicator to its share in the region's population, using the following formula:

$$IP_m = \frac{x_{im}/x_m}{y_i/y}, \quad (1)$$

where IP_m is the presence index for indicator m ;

x_{im} is the value of indicator m for the i -th municipality;

x_m is the regional value of indicator m ;

y_i is the population of the i -th municipality;

y is the regional population.

An IP_m value of 1 is considered balanced, at this level the municipality's population participates proportionally in the outcomes of the reproduction process (for example, in the consumption of goods and services or in receiving investment). Values below 1 mean that the population of a given territory

receives less investment or consumes less. Values above 1 are interpreted as a disproportionately large concentration of a given process in the territory under analysis compared with other territories in the region.

The socio-economic indicators used in the spatial balance index are presented in *Table 1*, which reflects the stages of reproduction.

Thus, the spatial balance index should make it possible to analyze how proportionally municipalities are included in the region's economic space across the main stages of the

reproduction process. The full calculation algorithm is presented in the *Figure*.

Let us specify the formula for calculating the spatial balance index for a municipality:

$$ISI = \sum_1^4 \frac{|1-IP_m|}{4}. \quad (2)$$

The information base for the study was municipal statistics from Sverdlovskstat for 2010, 2015, and 2020–2024. The calculation was not performed for all municipalities: rural and urban settlements (21 municipalities)

Table 1. Indicators of the spatial balance index

Indicator	Stage of reproduction
1. Fixed capital investment, thousand rubles	Distribution
2. Retail trade turnover, thousand rubles	Exchange, consumption
3. Goods shipped of own production, works and services performed in-house (excluding small businesses), thousand rubles*	Production
4. Agricultural output (at actual prices), thousand rubles*	Production
5. Local budget revenues, thousand rubles	Distribution
* Indicators 3 and 4 are summed, after which their share in the corresponding regional sum is calculated. This method of calculation is intended to compensate for the presence of different spatial types among the set of municipalities. Source: own compilation.	

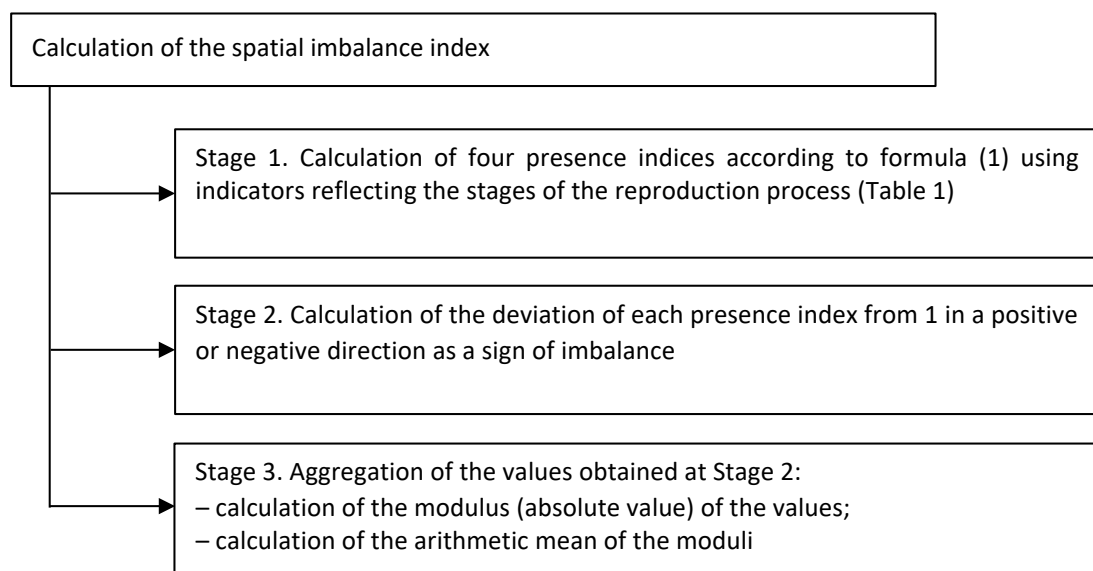


Figure. Algorithm for calculating the spatial balance index

Source: own compilation.

were excluded, as were four urban okrugs that are closed administrative-territorial entities. The final set comprised 69 municipalities. The selected period makes it possible to compare trends in spatial balance over the last five years with a period of economic growth.

Results of the study

At the first stage, presence indices were calculated for each stage of the reproduction process. The results show that the greatest contribution to the spatial imbalance of economic development in the municipalities of the Sverdlovsk Region comes from the unevenness of the investment process. Over the period analyzed, the average deviation of the corresponding presence indices from unity (the balanced value), whether upward or downward, ranged from 0.63 to 1.03. The functioning of the real sector – as measured by the indicators “Goods shipped of own production, works and services performed in-house (excluding small businesses)” and “Agricultural output (at actual prices)” – was characterized by somewhat less unevenness, ranging from 0.67 to 0.90. For the consumption process (retail trade turnover), the interval was 0.37 to 0.63, while the least unevenness was observed in the distribution of budget funds, ranging from 0.37 to 0.48. A general trend toward decreasing unevenness can also be identified for 2020–2023 compared with 2010–2015, with the exception of budget fund distribution, whose imbalance shows a tendency toward stability with a narrow range of *ISI* values.

The leaders in disproportionately high concentration of investment resources are industrial centers: Zarechny Municipal Okrug, Sredneuralsk Municipal Okrug, Verkhnesaldinsky Municipal Okrug, Verkhnyaya Tura Urban Okrug, Kachkanarsky Municipal Okrug, Kushvinsky Municipal Okrug, and

the municipal entity “City of Yekaterinburg”. At the same time, a disproportionate deficit is especially visible in small, remote, or depressed territories: Tavdinsky and Tugulymsky municipal okrugs, municipal entity “City of Alapayevsk”, Degtyarsk and Pelym municipal okrugs, Verkhneye Dubrovo Urban Okrug, Makhnevskoye Municipal Entity, Malyshevsky Municipal Okrug, and Staroutkinsk Municipal Okrug.

The analysis shows that consumption has traditionally been concentrated in the region’s administrative center, the only municipality whose presence index exceeds 1 (in some years, the nearby Aramilsky Urban Okrug and Zarechny Municipal Okrug also exceeded this threshold). The most disproportionately low level of consumption (presence index below 0.2) is recorded in Makhnevskoye Municipal Entity, Krasnoufimsky Municipal Okrug, Irbitskoye Municipal Entity, and Taborinsky and Kamyshevsky municipal districts. However, the disproportionate concentration in the municipal entity “City of Yekaterinburg” (with an index of 2.1 in 2010–2015) declined to 1.5 in 2020–2023 and fell below unity to 0.83 in 2024. Given that the presence indices of all other municipalities are below unity, we suggest that consumption (the “Retail trade turnover” indicator) is generated by non-residents of the region.

The municipalities that are balanced in terms of population and concentrate the product of the real sector of the economy (presence indices in the range of 0.9–1.2) include the municipal entity “City of Yekaterinburg,” Bogdanovich Municipal Okrug, Berezhovsky Municipal Okrug, and Revda Municipal Okrug. Disproportionately high concentration is recorded in Reftinsky Urban Okrug (average presence index of 3.8), Verkhnyaya Pyshma Urban Okrug (5.3), Verkhnesaldinsky Municipal

Okrug (2.4), and Kachkanarsky Municipal Okrug (2.3). Throughout the entire period under review, low concentration (presence index less than or equal to 0.2) is observed in Taborinsky and Slobodo-Turinsky municipal districts; Artinsky and Artyomovsky municipal okrugs; Verkhoturksy, Novolyalinsky, Sosvinsky, Tavdinsky, Tugulymsky, Shalinsky, and Bisertsky municipal okrugs; and Degtyarsk and Karpinsk municipal okrugs.

Income distribution is calculated through the sum of the region's consolidated budget (which is why most indices are below unity), yet this reveals an unambiguous tendency toward relatively stable distribution: over the

entire period, almost 90% of municipalities have a presence index for this indicator ranging from 0.4 to 0.8. The exceptions are territories that concentrate (and require) larger budget allocations: Taborinsky Municipal District (average 1.39), Volchansky Municipal Okrug (1.31), and Garinsky Municipal Okrug (1.12), as well as Asbestovskiy Municipal Okrug and Pervouralsk Municipal Okrug, which show disproportionately low concentration relative to other municipalities (0.39 and 0.38, respectively).

The results of calculating the spatial balance index (*ISI*) based on presence indices are presented in *Table 2*.

Table 2. Spatial balance index of the municipalities of the Sverdlovsk Region

Municipality	2010	2015	2020	2021	2022	2023	2024
Baikalovsky Municipal District	0.67	0.49	0.43	0.44	0.39	0.47	0.63
Kamyshlovsky Municipal District	0.79	0.59	0.67	0.56	0.69	0.58	0.70
Nizhneserginsky Municipal District	0.82	0.44	0.46	0.62	0.61	0.58	0.52
Slobodo-Turinsky Municipal District	0.72	0.64	0.57	0.53	0.58	0.66	0.68
Taborinsky Municipal District	0.68	0.73	0.59	0.64	0.79	0.73	0.78
Municipal Entity "City of Yekaterinburg"	0.54	0.45	0.41	0.44	0.43	0.38	0.27
Artyomovsky Municipal Okrug	0.71	0.70	0.60	0.66	0.67	0.66	0.66
Artinsky Municipal Okrug	0.71	0.65	0.61	0.68	0.53	0.64	0.69
Achitsky Municipal Okrug	0.69	0.64	0.60	0.61	0.61	0.38	0.55
Beloyarsky Municipal Okrug	0.69	0.59	0.50	0.49	0.37	0.50	0.56
Bogdanovich Municipal Okrug	0.53	0.31	0.31	0.31	0.35	0.36	0.45
Verkhnesaldinsky Municipal Okrug	0.65	1.18	0.87	0.72	1.05	0.67	0.69
Verkhoturksy Municipal Okrug	0.80	0.53	0.59	0.60	0.63	0.51	0.60
Garinsky Municipal Okrug	0.76	0.56	0.43	0.89	0.48	0.49	0.75
Irbitskoye Municipal Entity	0.58	0.43	0.36	0.38	0.32	0.45	0.58
Kamensky Municipal Okrug	0.74	0.58	0.56	0.59	0.62	0.61	0.70
Krasnoufimsky Municipal Okrug	0.74	0.65	0.68	0.82	0.70	0.56	0.70
Nevyansky Municipal Okrug	0.63	0.58	0.41	0.50	0.46	0.39	0.49
Nizhnneturinsky Municipal Okrug	0.51	0.91	0.43	0.38	0.38	0.36	0.47
Novolyalinsky Municipal Okrug	0.79	0.69	0.64	0.45	0.63	0.64	0.73
Gornouralsky Municipal Okrug	0.75	0.64	0.64	0.65	0.65	0.60	0.65
Pyshminsky Municipal Okrug	0.69	0.63	0.54	0.62	0.59	0.57	0.61
Revda Municipal Okrug	0.61	0.46	0.40	0.38	0.24	0.39	0.68
Rezhevskoy Municipal Okrug	0.65	0.55	0.54	0.55	0.57	0.53	0.64
Sosvinsky Municipal Okrug	0.74	0.65	0.67	0.56	0.65	0.67	0.52
Sysertsky Municipal Okrug	0.66	0.43	0.39	0.48	0.45	0.44	0.54

End of Table 2

Municipality	2010	2015	2020	2021	2022	2023	2024
Tavdinsky Municipal Okrug	0.81	0.79	0.72	0.72	0.70	0.74	0.78
Talitsky Municipal Okrug	0.74	0.68	0.56	0.57	0.58	0.53	0.63
Tugulymsky Municipal Okrug	0.77	0.66	0.68	0.71	0.66	0.70	0.72
Turinsky Municipal Okrug	0.71	0.64	0.58	0.58	0.62	0.64	0.71
Shalinsky Municipal Okrug	0.75	0.66	0.66	0.68	0.71	0.65	0.68
Municipal Entity "City of Alapayevsk"	0.75	0.74	0.65	0.67	0.64	0.65	0.72
Aramilsky Urban Okrug	0.66	0.42	0.22	0.38	0.34	0.31	0.42
Asbestovsky Municipal Okrug	0.49	0.57	0.55	0.53	0.57	0.53	0.60
Berezovsky Municipal Okrug	0.54	0.45	0.34	0.27	0.30	0.36	0.44
Verkhnyaya Pyshma Urban Okrug	1.86	1.54	1.35	1.30	1.12	0.97	0.98
Verkhny Tagil Municipal Okrug	0.77	3.08	0.57	0.48	0.43	0.42	0.36
Verkhnyaya Tura Urban Okrug	0.74	0.71	0.59	0.42	0.46	0.48	0.40
Volchansky Municipal Okrug	0.68	0.69	0.51	0.53	0.60	0.77	0.87
Degtyarsk Municipal Okrug	0.83	0.78	0.70	0.72	0.63	0.62	0.70
Zarechny Municipal Okrug	2.27	1.83	0.53	0.39	0.40	0.40	0.29
Ivdel Municipal Okrug	0.79	0.50	0.39	0.34	0.33	0.32	0.40
Urban Okrug "the Town of Irbit"	0.66	0.57	0.42	0.51	0.44	0.52	0.55
Kamensk-Uralsky Urban Okrug	0.53	0.50	0.32	0.38	0.36	0.32	0.43
Kamyshevsky Urban Okrug	0.65	0.47	0.50	0.51	0.50	0.44	0.43
Karpinsk Municipal Okrug	0.65	0.66	0.56	0.58	0.51	0.58	0.67
Kachkanarsky Municipal Okrug	0.90	0.42	0.72	1.04	0.53	0.45	0.54
Kirovgrad Municipal Okrug	0.65	0.58	0.43	0.52	0.52	0.46	0.50
Krasnoturyinsk Municipal Okrug	0.81	0.37	0.31	0.32	0.36	0.31	0.39
Krasnouralsk Municipal Okrug	0.43	0.42	0.26	0.30	0.24	0.36	0.45
Krasnoufimsk Urban Okrug	0.69	0.71	0.54	0.51	0.57	0.58	0.62
Kushvinsky Municipal Okrug	0.70	0.53	0.45	0.41	0.40	1.15	0.49
Nizhnyaya Salda Municipal Okrug	1.58	0.71	0.60	0.58	0.67	0.68	0.70
Municipal Entity "City of Nizhny Tagil"	0.58	0.32	0.36	0.36	0.35	0.35	0.52
Pervouralsk Municipal Okrug	0.53	0.53	0.40	0.35	0.40	0.35	0.30
Polevskoy Municipal Okrug	0.60	0.48	0.42	0.52	0.43	0.44	0.58
Severouralsky Municipal Okrug	0.50	1.07	0.35	0.30	0.37	0.36	0.48
Serovsky Municipal Okrug	0.52	0.38	0.53	0.47	0.44	0.42	0.57
Sredneuralsk Municipal Okrug	1.46	1.62	0.29	0.34	0.27	0.61	0.64
Sukhoi Log Municipal Okrug	0.39	0.34	0.32	0.34	0.38	0.37	0.39
Bisertsky Municipal Okrug	0.74	0.55	0.57	0.67	0.62	0.67	0.72
Verkhneye Dubrovo Urban Okrug	0.75	0.74	0.62	0.64	0.63	0.62	0.62
Verkh-Neyvinsky Urban Okrug	0.68	1.54	1.17	0.45	0.27	0.23	0.28
Malyshevsky Municipal Okrug	0.75	0.72	0.66	0.64	0.65	0.63	0.68
Reftinsky Urban Okrug	1.48	2.46	1.14	0.95	0.85	0.73	0.69
Pelym Municipal Okrug	0.75	0.69	0.62	0.62	0.62	0.61	0.67
Staroutkinsk Municipal Okrug	0.81	0.68	0.67	0.67	0.65	0.67	0.67
Makhnevskoye Municipal Entity	0.77	0.75	0.75	0.73	0.58	0.64	0.76
Alapayevskoye Municipal Entity	0.53	0.38	0.43	0.37	0.45	0.47	0.55
Source: own compilation.							

Overall, the *ISI* showed a downward trend, from 0.76 in 2010 to 0.54 in 2023, rising slightly in 2024 to 0.59. Consequently, the general level of imbalance in economic and spatial development is declining, which improves the level of economic well-being. Of the total set of municipalities, 42% have a spatial inequality level below 0.6 (deviation from 1) in most of the years analyzed. At the same time, one can identify the outsiders in terms of spatial imbalance: Verkhnyaya Pyshma Urban Okrug (its *ISI* is gradually declining but remains high: from 1.86 in 2010 to 0.98 in 2024), Reftinsky Urban Okrug (average *ISI* of 1.19), Zarechny Municipal Okrug (average *ISI* of 0.87), and Verkhnesaldinsky Municipal Okrug (average *ISI* of 0.83). By concentrating a significant volume of investment and real-sector output, these territories, on the one hand, ensure economic growth; on the other, however, they substantially increase the anthropogenic load, which in the long term may have a negative impact on their sustainability. In 2024, most municipalities saw an increase in spatial imbalance and a break in the downward trend, except for Zarechny, Reftinsky, Verkhnyaya Tura, and Verkhny Tagil municipalities and the city of Yekaterinburg, which suggests that economically developed municipalities may be able to maintain stable trajectories.

Conclusion

The theoretical analysis has shown that the spatial effects of economic development are

increasingly studied through the lens of the three dimensions of sustainable development, underscoring the close connection between spatial balance and sustainable development. Drawing on a review of the literature, we formulate an original definition of spatial balance as the proportional distribution of the regional reproduction process among municipalities, one that ensures commensurate economic outcomes for the population living in their territories. This definition captures the essential features of spatial balance: the proportionality of territorial system components, inclusion in the regional space resulting in its optimal functioning, and the proportional distribution among territorial systems (for example, among municipalities within a region).

In line with this definition, we propose assessing the spatial balance of municipalities using a composite index built from four presence indices, each corresponding to a stage of the reproduction process. Taken together, this indicator makes it possible to assess how proportionally municipalities are integrated into the region's economic space.

An analysis conducted on data for 69 municipalities of the Sverdlovsk Region for 2010, 2015, and 2020–2024 revealed that spatial imbalance had been trending downward, but began to rise in 2024. The most significant contribution to spatial imbalance comes from the distribution of investment within the regional economic space.

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INFORMATION ABOUT THE AUTHOR

Elizaveta A. Belousova – Candidate of Sciences (Economics), Leading Researcher, Associate Professor, Ural State University of Economics (62, 8 Marta Street, Yekaterinburg, 620144, Russian Federation; e-mail: Belousova-unir@usue.ru)

Белусова Е.А.

ОЦЕНКА ПРОСТРАНСТВЕННОЙ СБАЛАНСИРОВАННОСТИ В КОНТЕКСТЕ ЭКОНОМИЧЕСКОГО БЛАГОПОЛУЧИЯ МУНИЦИПАЛЬНЫХ ОБРАЗОВАНИЙ

Одной из важных характеристик экономического благополучия муниципального образования является пространственная сбалансированность, поскольку она отражает пропорциональность развития муниципальной экономики в пространстве. Цель статьи – оценка данного показателя. Методологически исследование базируется на положениях пространственно-временного и системного подходов, а также теории региональной экономики. Пространственная сбалансированность муниципального экономического развития определена как пропорциональность распределения регионального воспроизводственного процесса между муниципальными образованиями, которая позволяет обеспечить соразмерные экономические результаты для населения, проживающего на их территории. Оценку предложено производить на основе расчета среднего отклонения от единицы индексов присутствия по социально-экономическим показателям, отражающим стадию воспроизводства. Предложенные определение и методика оценивания составляют научную новизну исследования. Методика апробирована на данных 69 муниципальных образований Свердловской области за 2010, 2015, 2020–2024 гг., что позволило провести сравнение текущей пространственной сбалансированности с периодом активного экономического роста. Результаты анализа показали, что в целом пространственная несбалансированность снижалась, но с 2024 года начала расти. Среди антилидеров по пространственной сбалансированности находятся городской округ Верхняя Пышма, городской округ Рефтинский, муниципальный округ Заречный и Верхнесалдинский муниципальный округ. Они концентрируют большой объем инвестиций и продукта реального сектора, что, с одной стороны, обеспечивает экономический рост, а с другой – существенно увеличивает антропогенную нагрузку и в долгосрочной перспективе может оказать негативное влияние на их устойчивость. Определено, что потребление традиционно концентрируется в административном центре региона, а в целом по региону в значительной степени формируется нерезидентами. Также выявлена тенденция к относительно стабильному и равномерному распределению доходов местного бюджета у практически 90% муниципальных образований.

Муниципальное образование, регион, пространственное развитие, экономическое пространство.

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ИНФОРМАЦИЯ ОБ АВТОРЕ

Елизавета Александровна Белоусова – кандидат экономических наук, ведущий научный сотрудник, доцент, Уральский государственный экономический университет (Российская Федерация, 620144, г. Екатеринбург, ул. 8 Марта, д. 62; e-mail: Belousova-unir@usue.ru)