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## ECONOMIC AND GEOGRAPHICAL ANALYSIS OF SMALL AND MEDIUM ENTERPRISES DEVELOPMENT IN THE BREST REGION

A comprehensive analysis of small and medium enterprises development level is illustrated using the example of the Brest region. The statistical analysis of small and medium enterprises of the region is carried out. Based on the calculated indices the typology of administrative and territorial units of the Brest region in terms of SMEs development is given.

The component evaluation and rating of small and medium entrepreneurship in the context of the administrative districts is also represented in the study. The results of the component evaluation allow assessing the dynamics of small and medium-sized businesses development at the microregional level and classifying the administrative and territorial units.

As a result of a comprehensive analysis of the small and medium enterprises economic and geographical consistent patterns of business development were identified.

Spatial analysis of the small and medium enterprises development in the Brest region has revealed the relative equability of the level of SMEs development. As it was predicted, the leading position according to the level of development is occupied by the cities and large surrounding districts.

**Keywords:** small and medium enterprises, index of SMEs development level, component evaluation of SMEs, entrepreneurship, administrative districts.

### *Сергій Дем'янов. ЕКОНОМІКО-ГЕОГРАФІЧНИЙ АНАЛІЗ РОЗВИТКУ МАЛОГО І СЕРЕДНЬОГО ПІДПРИЄМНИЦТВА У БРЕСТЬСЬКОМУ РЕГІОНІ*

У статті представлений комплексний аналіз рівня розвитку малого і середнього підприємництва в розрізі адміністративних районів Брестського регіону, на основі розрахункових показників запропоновано типологію адміністративно-територіальних одиниць Брестського регіону за рівнем розвитку МСП, проведено компонентну і рейтингову оцінку малого і середнього бізнесу. На підставі комплексного аналізу були виявлені економіко-географічні закономірності розвитку підприємницької діяльності в Брестському регіоні.

**Ключові слова:** мале і середнє підприємництво, індекс рівня розвитку МСП, компонентна оцінка МСП, підприємницька діяльність, адміністративні райони.

### *Сергей Демьянов. ЭКОНОМИКО-ГЕОГРАФИЧЕСКИЙ АНАЛИЗ РАЗВИТИЯ МАЛОГО И СРЕДНЕГО ПРЕДПРИНИМАТЕЛЬСТВА В БРЕСТСКОМ РЕГИОНЕ*

В настоящей статье представлен комплексный анализ уровня развития малого и среднего предпринимательства в разрезе административных районов Брестского региона, на основе расчетных показателей предложена типология административно-территориальных единиц Брестского региона по уровню развития МСП, проведена компонентная и рейтинговая оценка малого и среднего бизнеса. На основании комплексного анализа были выявлены экономико-географические закономерности развития предпринимательской деятельности в Брестском регионе.

**Ключевые слова:** малое и среднее предпринимательство, индекс уровня развития МСП, компонентная оценка МСП, предпринимательская деятельность, административные районы.

**Introduction.** The SMEs is one of the key aspects of the sustainable development of the Republic of Belarus' regional economy. Small and medium businesses provide significant contribution to the formation of gross domestic and regional products, to the intensification of technological innovation and R & D implementation in the industry; unemployment reduction and employment increase of the working-age population in the developed countries.

State support and proper regional policy is a key factor in the effective development of small and medium-sized businesses, as it helps to create favorable and predictable conditions for the development of small and medium-sized businesses and provides financial support to business entities. The governmental program on the assistance of small and medium-sized enterprises functions in Belarus at the state level. This program aims to promote the development of SMEs and to improve business environment and infrastructure of small and medium-sized businesses [1, p. 4].

**Scientific background.** The study of economic and geographical consistent patterns of small and medium

business development is a relatively new problem field in modern geographical science. Works of such economic geographers as V. Saltykovskij [2], O. Shestoporov [3], A. Shekhovtsov [4], T. Grishina, etc. and economists L. Dogil [5], V. Ivchenko [6], S. Mazol [7], A. Orlov [8], devoted to the study of the territorial aspect of SMEs development should be mentioned.

**Main purpose.** Scientific research of the problems of SMEs development is of the great importance to the regional economy. The research is aimed to present an integrated economic and geographical evaluation of small and medium-sized businesses development level in the Brest region.

**Key research findings.** Sustainable socio-economic development in the conditions of transitive economy of Belarus depends on the business activities of SMEs. Small and medium enterprises have a higher degree of industrial mobility and adaptation to the changing market conditions than the public sector. As a result, SMEs is considered to be a key factor ensuring sustainable economic growth in the regions.

Statistical data of the employment rate in small and medium business prove the fact that SMEs play an important role in the solving of problems with the employment of working population. The percentage of people employed in micro-enterprises, small and medium-sized enterprises at the national level in 2015 makes up 31.9%, with 30.8% in the Brest region [9]. The absolute index of employment in small and medium business was 1 417.6 thousand people in Belarus, with 182.3 thousand people in the Brest region.

However, trends in the development of small and medium-sized businesses at the national and regional level are negative. The rate of employees at small and medium-sized enterprises has decreased in the country as a whole. In 2010-2015 this index decreased by 8.8% (17.7 thousand people) in the Brest region. During 2010-2015 mixed trends in the number of small and medium-sized enterprises (SMEs) were observed: the number of SMEs in the Republic of Belarus had been increasing up

to 2015, and then declined by 5.9%; in the Brest region an increase had been observed until 2013, and then it decreased by 5.1% in 2014.

The density of small and medium business in Belarus and the Brest region counts for 11.3 and 7.6 per 1 000 people respectively, which can be compared to neighboring countries (11-15 units). However, the degree of SME impact on socio-economic development of Belarus is considerably lower than in the European countries.

In 2015, 10 620 small and medium-sized businesses had been working in the Brest region. In relation to 2010, an increase in the number of small and medium-sized enterprises was 11.7%, but the number of medium-sized businesses has a steady downward trend, which adversely affects the development of the private sector. Major indices, characterizing SME development in the Brest region in 2010-2015, are shown in Table 1.

Table 1

**Major indices of SME development in the Brest region**

	The number of SMEs, units		The average number of employees, thousand people		Revenue from sales, trillion BYN	
	2010	2015	2010	2015	2010	2015
Medium enterprises	410	353	71.0	57.8	4.7	21.5
Micro enterprises	7753	8880	37.0	34.9	3.1	14.7
Small enterprises	1343	1387	53.1	48.4	5.4	22.0

Small and medium-sized businesses form 24.4% of GRP of the Brest region (2015), with the highest value recorded in 2012 – 30.1%. Medium-sized organizations dominate in the structure of small and medium enterprises, forming 9.1% of GRP. There had been an increase in the number of small and medium-sized businesses until 2013, but then negative trends in the development of small and medium-sized businesses were observed. That can be attributed to the deterioration of the general state of the economy and the crisis on the market of goods and services. The growth of the absolute indicators of revenue from product sales is offset by inflation.

There is also a decrease of other indices characterizing the development of small and medium-sized businesses. Thus, the share of SMEs in the total industrial production decreased from 19.5% in 2010 to 17.6% in 2015 [9], and there was a slight increase (+ 1.2%) in the number of medium-sized organizations during this period.

In context of administrative and territorial units, the industrial output per capita is the highest in Kamenets, Pruzhany, Bereza and Ljahovich districts, while the lowest figures are observed in the key economic centers (Figure 1). This fact can be considered as a consequence of the specialization of SMEs: in the cities of regional subordination, small and medium business is focused on the service sector (trade, the repair of vehicles and household goods) while in the administrative districts SMEs are specialized in small-scale industrial production.

According to the type of organizations in the struc-

ture of SMEs micro-enterprises dominate in all types of districts (over 75%). Small enterprises also occupy a significant position (in big cities). The presence of relatively high percentage of medium-sized businesses is noted in the administrative districts of the Brest region (in the economic centers with a population of less than 45 thousand people), due to the industrial specialization of SMEs in these districts.

In order to evaluate the level of small and medium enterprises development in the Brest region, the method of calculation of SMEs level index (T. Grishina) [10] and the method of calculation of the component SMEs evaluation (S. Baluk) have been applied.

When calculating the index of SMEs development level in the region, the following territorial criteria have been taken into consideration: the turnover of SMEs, population, area and the investments at the SMEs main capital. The index of SMEs development level in the region is calculated using the following formula 1, where:

I – index of SMEs development level (units);

V – turnover of small and medium-sized enterprises in the region (billion BYN);

N – population of the region (thousand people);

S – area of the region (thousand square kilometers);

W – fixed investment in SMEs (billion BYN).

The index of SMEs development level allows make the geographical comparison of regions, which differ in absolute values of SMEs turnover, area and population. The calculation of indices of SMEs development level in

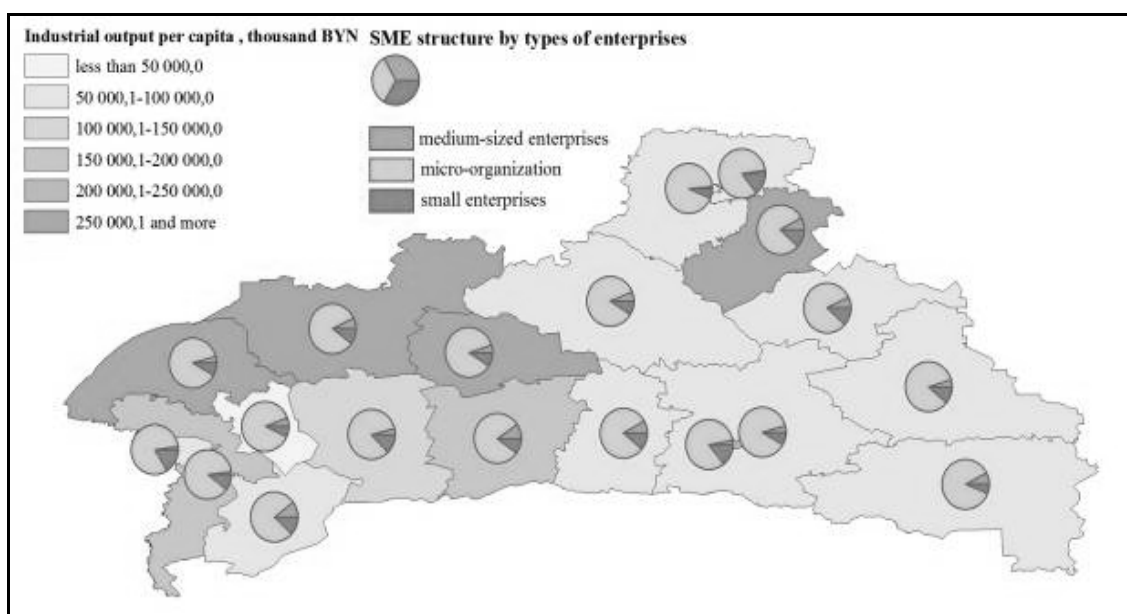
the context of the administrative and territorial units of the Brest region in 2015 is presented in Table 2.

The estimated figures of SMEs development level index in the context of districts in the Brest region, shown in Table 2, allow classify ATU by the level of SMEs development on the basis of the indices:

1. Regions with a high level of SMEs development (250.1 and higher). Brest is the only one belonged to this group (5.3% of the total number of ATU), concentrating 38.1% of SMEs in the region and 28.1% of the industrial output.

2. Regions where the level of SMEs development is above average (200.1-250.0). This group is represented by the cities of Baranovichi and Pinsk (10.5% of the total number of ATU), which concentrate 17.1% of SMEs in the region and generate 11.1% of the industrial output.

3. Regions with an average level of SMEs development (150.1-200.0). The group includes only one district - Brest (5.3% of the total number of ATU). The high level of SMEs development in this district is determined by its close position to the regional center.



**Fig. 1. Spatial differentiation of the administrative and territorial units in the Brest region according to the industrial production of SMEs per capita and the structure of SMEs**

**Table 2**  
**Index of SMEs development level in the context of the administrative and territorial units (ATU) of the Brest region**

Name of ATU	V	N	S	W	I	Rating
Brest	8835.80	335.6	0.15	310.4	353.4	1
Baranovichi	1914.10	178.9	0.09	45.7	212.0	2
Pinsk	1535.70	137.5	0.05	62.3	203.7	3
Baranovichi district	625.20	32.5	2.17	46.9	42.0	18
Bereza district	1502.40	64.2	1.41	63.6	83.8	7
Brest district	1664.10	40.4	1.54	16.5	165.0	4
Gantsevichi district	617.50	28.5	1.71	19.2	63.1	14
Drogichin district	834,00	38.4	1.86	16.4	79.1	10
Zhabinka district	777.70	24.5	0.68	51.8	81.7	8
Ivanovo district	1069.00	40.1	1.55	38.6	79.9	11
Ivatsevichi district	1521.70	55.7	2.99	96.1	60.4	15
Kamianiec district	1763.00	36.2	1.69	115.7	91.8	5
Kobrin district	1854.40	85.9	2.04	50.9	89.4	6
Luninets district	1131.70	68.6	2.71	179.7	35.1	19
Lyakhovich district	1100.70	26.7	1.35	89.9	74.4	12
Malorita district	603,00	24.6	1.37	16	74.1	13
Pinsk district	1009.20	47.2	3.26	49.8	51.2	16
Pruzhan district	1773.00	48.7	2.83	77.2	80.6	9
Stolin district	929,00	74.7	3.34	30.2	47.4	17

4. Regions with the SMEs level below average (100.1-150.0). No one ATU falls within this group.

5. Regions with low levels of SMEs development (50.1-100.0). This is the most numerous group and it is represented by 12 districts (63.2% of the total number of ATU), which concentrate 29.6% of SMEs and generate 46.4% of the industrial output.

6. Regions with a very low level of SMEs development (less than 50.1). This group includes 3 districts (15.7% of the total number of ATU). Luninets and Stolin districts, taking into consideration some indices, occupy a higher position than others, however, great territory of these districts is a main cause for such a low level of development. The low level of SMEs development in Baranovichi district is determined by insufficient critical weight of SMEs in the city of Baranovichi that prevents an overflow of SMEs in this district.

The given above classification reflects the geographical comparison of regions in terms of the level of SMEs development, but it does not give a complete picture of their economic performance. To solve this problem the method of the component evaluation of SMEs offered by S. Baluk was used [11]. The list of indicators includes the following ones: Small and medium enterprises: A1 - number of small enterprises per 1000 employees; A2 - number of employed at small enterprises per 1000 employees; A3 - amount of the industrial output produced by small enterprises (billion byn); A4 - level of small enterprises profitability (%); A5 - share of the unprofitable small enterprises in their total number (%); A6 - amount of the industrial output produced by small enterprises per employee (million byn / person). The study period is 2010-2015. The meaning of the component evaluation: the higher the index, the higher the level of SMEs development (Table 3).

Table 3

*Component evaluation and rating of SMEs development level in the context of ATU of the Brest region*

Name of ATU	Component evaluation		2015/ 2010	Rating, 2010	Rating, 2015	2010/ 2015
	2010	2015				
Brest	4.842	3.239	-1.603	1	2	-1
Baranovichi	2.225	1.432	-0.793	9	17	-8
Pinsk	2.374	1.027	-1.347	6	19	-13
Baranovichi district	1.719	2.622	+0.902	14	6	+8
Bereza district	2.406	2.567	+0.161	5	8	-3
Brest district	3.000	3.351	+0.352	2	1	+1
Gantsevichi district	0.791	1.537	+0.745	19	16	+3
Drogichin district	1.321	1.964	+0.643	17	14	+3
Zhabinka district	2.486	2.603	+0.117	4	7	-3
Ivanovo district	2.016	2.066	+0.050	11	11	0
Ivatsevichi district	1.732	2.526	+0.794	13	9	+4
Kamianiec district	2.336	2.871	+0.536	7	4	+3
Kobrin district	2.289	2.063	-0.226	8	12	-4
Luninets district	1.975	1.992	+0.018	12	13	-1
Lyakhovichi district	2.765	2.963	+0.197	3	3	0
Malorita district	1.463	1.593	+0.130	16	15	+1
Pinsk district	1.568	2.278	+0.709	15	10	+5
Pruzhany district	2.035	2.667	+0.632	10	5	+5
Stolin district	0.824	1.363	+0.539	18	18	0

While comparing to the previous results of SMEs development evaluation, the author faced with contradictory indicators. The dynamics of the component evaluation and rating of ATE shows the following trends:

1. Indices of the component evaluation of SMEs development in the administrative districts including the large cities (Brest, Baranovichi, Pinsk and Kobrin) have much decreased.

2. The largest rating growth is marked in Baranovichi (+8), Pinsk and Pruzhany (+5) districts. At the same time Pinsk (-13), Baranovichi (-8) and Kobrin district (=4) have significantly lowered their position.

3. The positions of Ivanovo, Lyakhovichi and Stolin districts haven't shown any significant changes due to equivalent dynamics of SMEs development in these dis-

tricts of the Brest region.

The negative dynamics of Brest, Baranovichi and Pinsk ratings is a consequence of a significant reduction in performance and profitability of the of SMEs activities. This may be the indicator of growing influence of crisis in the economy and of the reducing attractiveness of SMEs organization in large cities. The data on Baranovichi and Pinsk district evaluation demonstrates, on the contrary, attractiveness of these districts for the development of SMEs. Brest, Drogichin, Kamenetz and Pruzhany districts, accumulating a significant amount of industrial production and having a positive trend of the component evaluation of SMEs development level, could become suitable for the successful development of small and medium-sized businesses.

The results of a comprehensive analysis of small and medium enterprises development level in the ATU of the Brest region are shown in Figure 2.

Spatial analysis of small and medium-sized businesses development revealed the following patterns:

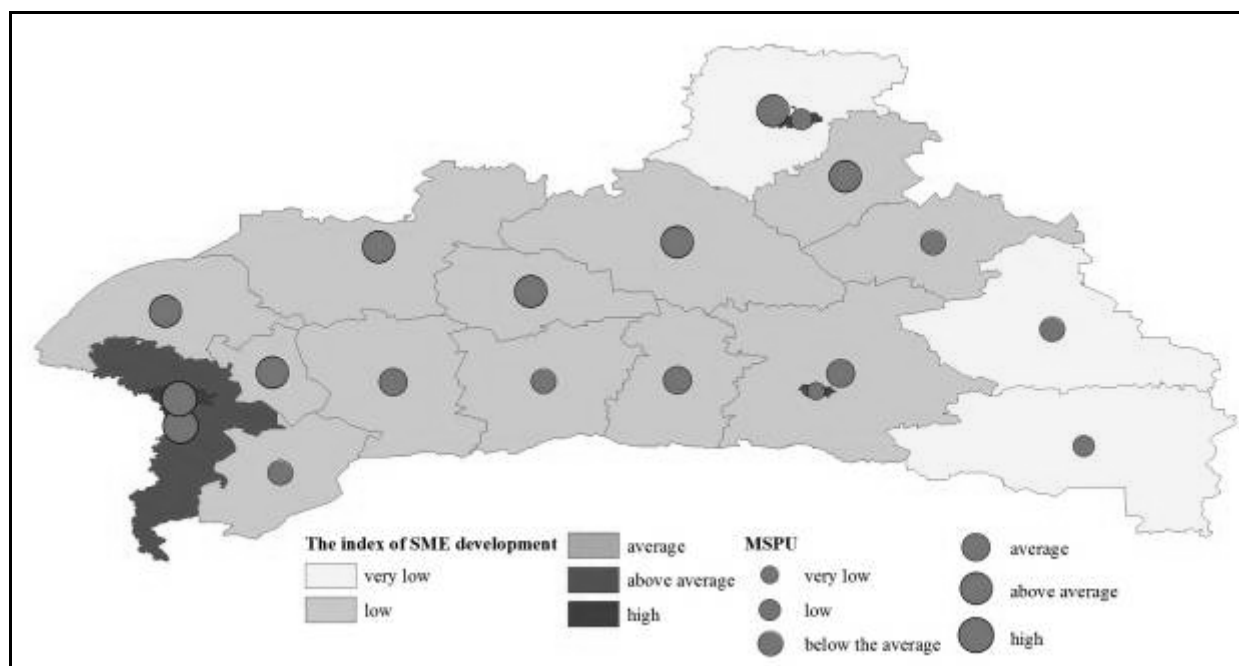
1. A predictably high index of SMEs development and a high component evaluation of SMEs is observed in Brest and the Brest region. This suggests about a significant potential and good prospects for SMEs development in these administrative and territorial units;

2. With high index of SMEs development in Baranovichi and Pinsk, the component evaluation of SMEs indicates the lack of effective development of small and medium-sized businesses in these cities. The great variation of indices among ATU of the region is

connected with an increase in the concentration of SMEs and the absence of the necessary capacities and resources;

3. Baranovichi and Pinsk districts surround the cities and have a higher component evaluation of SMEs, that shows the potential for SMEs development and a good possibility for small and medium-sized businesses to move from large economic centers to the districts;

4. Stolín, Luninets and Baranovichi districts are the most problematic in terms of the level of SMEs development. Stolín district has the lowest indices of the SMEs development level and the component evaluation that is connected with the less developed SMEs, the low indices of SMEs turnover and investment at the main capital.



*Fig. 2. Comprehensive analysis of SMEs development level in the ATU of the Brest region*

**Conclusions.** As a result of a comprehensive analysis of the small and medium enterprises development level in the Brest region economic and geographical consistent patterns of business development have been identified. Based on the calculated indices, the typology of ATU in the Brest region in the context of small and medium-sized businesses development has been offered and the component evaluation and rating of small and medium-sized businesses has been made.

Spatial analysis of the small and medium enterprises development in the Brest region has revealed the relative equability of the level of SMEs development. As it was predicted, the leading position according to the level of development is occupied by the cities and large districts surrounding these cities. However, as it is

shown by the component evaluation, the potential for SMEs development in big cities significantly decreases, while the surrounding districts have the sufficient potential for business development. In the future, optimization of the territorial organization of small and medium-sized businesses in the Brest region will result in an overflow of SMEs in the surrounding districts. Taking into account the structure of SMEs on the types of enterprises and the level of SMEs development in the administrative districts without major economic centers, the development of medium-sized businesses, specializing in the manufacture of industrial products, is predicted there.

The results of the study can be used for the implementation of regional and national programmes on small and medium-sized businesses support and development.

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