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LABOR MARKET OF SINGLE-INDUSTRY CITIES:
STATISTICAL ANALYSIS OF THE STATE AND TRENDS

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Abstract

The labor market of single-industry towns is characterized by a number of features. The need of the study is explained by the high degree of dependence level of socio-economic development of territories of this type on changes in its state. Therefore, the purpose of this study is to conduct a statistical analysis of the state and trends characteristic of the labor market of single-industry towns in emerging market countries as exemplified by single-industry towns in the Chelyabinsk region of the Russian Federation. In the process of achieving the research goal, the variety of approaches for interpretation of the concept of "single-industry town" was systematized; the system of criteria reflecting the economic content of the concept of "single-industry town" was analyzed taking into account, on the one hand, the change in their role in the system of urban settlement and, on the other hand, the specific conditions and challenges of urban development in countries with emerging markets. The identified criteria for statistical analysis of the labor market single-industry towns were tested. The statistical analysis of the labor market of single-industry towns revealed a number of its inherent features and trends: a rapid decline in the resident population; an increased level of unemployment compared to the average conditions of the regional labor market and its inevitable growth in the event of modernization of production processes at a city-forming enterprise; narrow production specialization of the labor force, determined by the needs of the key buyer - the town-forming enterprise.

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1. Introduction

Modern realities demonstrate the increasing significance of single-industry towns (hereinafter referred to as the monotowns) in the development of the national urban systems of countries with emerging markets, which is due to the following factors: firstly, a significant number of territories of the indicated type, amounting to 2400 units or 2.0% of the total number of cities in the world today (Yakimov, 2009); secondly, the intensification of polarization processes in the developed territorial space; thirdly, monotowns undertake some functions of capital cities, become drivers of the development of the territories surrounding them.

2. Problem Statement

The research problem of state and tendencies of the labor market in monotowns has a special significance for countries with emerging markets, which are characterized by serious imbalances in the development of settlement systems due to the influence of institutional transformations, uneven processes of modernization of national socio-economic systems and irrational decisions in the field of economic policy.

3. Research Questions

Monotowns within the Chelyabinsk region of the Russian Federation serve as the research area. It should be noted that at the moment on the Chelyabinsk region territory, the status of a monotown has 16 municipalities that have concentrated more than 30.0 % of the population of the total population of the region (table 1). The monotowns of the Chelyabinsk region are quite differentiated by the level of socio-economic development, 7 of them are classified as the first category of single-profile municipalities with the most difficult socio-economic situation, 5 – single-industry municipalities with risks of socio-economic situation decline, and only 4-single-industry municipalities with a stable economic situation.

Table 1. Leading regions in the concentration of monotowns with a population of more than 20.0% of the total population of the territory

Territorial entity of the RF	Population percentage in monotowns, %	Quantity of monotowns, units	Cat. 1. Single-industry municipalities w/most difficult socio-economic situation	Cat. 2. Single-industry municipalities w/risks of socio-economic situation decline	Cat. 3. Single-industry municipalities w/stable economic situation
Kemerovo region	60.2	24	9	11	4
Chelyabinsk region	32.3	16	7	5	4
Vologda region	30.7	4	3	1	-
Republic of Khakassia	29.2	6	2	4	-
Sverdlovsk region	28.9	17	5	6	6
Republic of Tatarstan	26.7	7	2	4	1
Arkhangelsk	25.3	7	2	3	2

region					
Samara region	24.5	2	1	-	1
Republic of Karelia	22.7	11	6	5	-
Amur region	21.4	4	2	2	-

4. Purpose of the Study

The purpose of the study is a statistical analysis of state and tendencies specific to the labor market of monotowns in countries with emerging markets. This purpose defines the objectives of the study: to systematize approaches to the interpretation of the concept of “single-industry town/ monotown”, to examine a system of criteria that reflect the economic content of the concept of “monotown” and taking into account, on the one hand, a change in their role in the urban settlement system, on the other hand, specific conditions and challenges of urban development in countries with developed emerging markets; to test the identified criteria for a statistical analysis of the labor market in monotowns.

5. Research Methods

The research is based on the following methodological principles.

Firstly, the change in approaches to the definition of a "monotown" is due to external economic, social, and political shocks and due to accumulation of a certain critical mass of changes in the internal environment. This process is neither linear nor continuous. In emerging market countries, the role of external shocks in the development of urban settlement systems is significantly higher than in developed market economies.

Secondly, there is the need for a comprehensive approach to the characterization of the concept of "monotown". In this approach, it is necessary to use a set of criteria characterizing the specifics of the internal environment, especially the relations with the external environment, constraints, and challenges emerging within the country-specific socio-economic, political system.

Thirdly, the analysis of the state and tendencies specific to the labor market of monotowns in a particular country should be carried out using methods of institutional-evolutionary analysis, which allows identifying what changes are caused by stable institutional factors in the historical perspective. On the other hand, the use of methods of institutional-evolutionary analysis allows characterizing the extent to which the vector of identified changes is relevant to the strategic challenges facing cities in emerging markets.

6. Findings

The results of the study of the variety of definitions of the category "monotown", offered by the Russian researchers identified the lack of a single fundamental approach to the interpretation of the notion.

According to the most known approach of "monotowns", the identity of monotown is revealed using numerical characteristics that at first glance seem formal, but are shown to be significant indicators

of urban development. This is a kind of quantitative approach, that has been researched by Berdnikova (2019), Gritsky (2009), Zdorovtsova and Kolesnikova (2014), Ivashina and Ulyakina (2011), Ruvinsky (2010), Yakimov (2009), and others. In the definitions of the most influential representatives of the quantitative approach, the following are suggested as key criteria for determining monotowns:

- the part of the town-forming enterprise in the gross territorial product/industrial output of all municipal enterprises;
- the part of employment in the town-forming enterprise in the total employment of the economically active population of the territory;
- the part of tax revenues received from the town-forming enterprise in the total tax revenue of the municipal budget.

Despite the prevalence of a quantitative approach to the study of the development of monotowns, it still has some disadvantages. The main disadvantage is the difficulty of establishing multi-purpose absolute thresholds for quantitative criteria for global or national scales and long time intervals.

The representatives of the qualitative approach to the definition of "monotown" appeal to the content of the functions performed by this type of municipality. Lappo (2006), Leksin and Shvetsov (2000), Maslova (2007, 2009), Miklyaeva (2007), Prosvirin (2010) consider the monocentric nature of the economy and the performance of a certain set of vital functions for the development of surrounding territories - material and technical support, industrial production to be the key criterion for classifying a city as a "monotown".

The qualitative and quantitative criteria for classifying a town as "monotown", proposed by Russian researchers, are systematized in Table 2.

Table 2. Qualitative and quantitative criteria for classifying a town as "monotown"

Qualitative criteria	Quantitative criteria
Presence of one enterprise / group of interconnected enterprises that determines the socio-economic processes in the municipality	Part of the town-forming enterprise in the gross territorial product / industrial output of all enterprises of the municipality
Low level of diversification of the spheres of employment of the town population	Part of employment at the town-forming enterprise in the total employment of the economically active population of the territory
Significant remoteness of the town from other, larger municipalities	Part of tax revenues from the town-forming enterprise in the total tax revenues of the budget of the municipality
Low level of infrastructure development providing the city's connection with the outside world	Presence of one enterprise / group of interconnected enterprises, which is the owner of the objects of the social and communal sphere or engineering infrastructure, serving part of the population of the city

The synthesis of the considered approaches to the disclosure of the essence of "monotowns" is the third approach, which indicates the need for their complex characteristics-simultaneously through clearer quantitative and qualitative criteria. This approach is shared by the legislative authorities of the Russian Federation, defining a single-industry city as a municipality that meets the following criteria simultaneously:

- a municipal entity has the status of an urban district or urban settlement, with the exception of municipalities where, in accordance with the law of the subject of the Russian Federation, the legislative (representative) authority of the subject of the Russian Federation is located;

- the permanent population of the municipality exceeds 3 thousand people;

- the number of employees from one organization (one of the branches of legal persons in the municipality or several organizations) engaged in the territory of the municipality of the same main economic activity or activities within the framework of unified production-technological process) reached in the period of 5 years preceding the date of approval of the list of monoprofile municipal formations of the Russian Federation (monotowns), 20.0% average number of employees of all organizations, operating on the territory of the municipality;

- implementation of one of the specified organizations (one of the branches of a legal entity in a municipality or several organizations) activities for the extraction of minerals (other than oil and gas), and (or) production and (or) processing of industrial products.

Thus, in the system of criteria that allow revealing the essence of single-industry cities in the modern paradigm of socio-economic development, as a tool for statistical analysis of the state and trends characteristic of the labour market, we can distinguish the following:

- the number of permanent population as of January 1 of the current year, people;

- the relative share of employees of the town-forming enterprise in the average number of employees of all enterprises operating in the territory of the municipality, %;

- the number of unemployed citizens registered with the employment service, in the population of working age, %.

For the analyzed period, the resident population of monotowns of the Chelyabinsk region decreased by 11.6 thousand people or 1.0%, which is shown in table 3. The decrease in the resident population of monotowns of the Chelyabinsk region is due to both natural decline and negative migration processes, associated with modern processes of managing production activities at town-forming enterprises, the activation of procedures for the release of labour as a result of structural and technological changes resulting in the termination of employment at the initiative of the employer. It is curious that the negative trend is minimally expressed, and sometimes even inversely, in monotowns of the second category — mono-profile municipalities, in which there are risks of worsening socio-economic conditions (Miass, Chebarkul), and the third category — mono-profile municipalities with a stable economic situation (Ozersk, Snezhinsk, Trekhgorny).

Table 3. The dynamics of the resident population of single-industry cities of the Chelyabinsk region: for 2017-2019 (person, as of January 1 of the current year)

Monotown name	2017	2018	2019	The absolute change for the analyzed period, people	Relative change for the analyzed period, %
Asha	29 946	29 274	29 276	-670	-2.2
Minyar	9 342	9 017	9 017	-325	-3.5
Sim	13 170	12 893	12 645	-525	-4.0
Verkhny Ufaley	27 879	26 885	26 884	-995	-3.6
Zlatoust	167 978	166 885	165 375	-2 603	-1.5

Karabash	11 178	10 854	10 854	-324	-2.9
Magnitogorsk	418 241	416 521	413 267	-4 974	-1.2
Miass	151 856	151 673	151 275	-581	-0.4
Nyazepetrovsk	11 752	11 539	11 539	-213	-1.8
Ozersk	79 265	79 069	78 811	-454	-0.6
Bakal	19 590	19 009	19 009	-581	-3.0
Satka	42 214	41 798	41 339	-875	-2.1
Snezhinsk	50 759	51 048	51 488	729	1.4
Trekhgorny	32 355	32 715	32 613	258	0.8
Ust-Katav	22 536	22 042	22 042	-494	-2.2
Chebarkul	39 914	40 378	40 932	1 018	2.6
Total	1 127 975	1 121 600	1 116 366	-11 609	-1.0

The values of the following criterion, which allows revealing the features of the labour market in monotowns in the current paradigm of socio-economic development, - the part of employees of the town-forming enterprise in the average number of employees of all enterprises operating in the territory of the municipality, are presented in table 4. The values of the criterion allow stating that the labour market of a single-industry city serves, first of all, the needs of the town-forming enterprise, dominance who as a subject of highly specialized demand for labour. This implies a number of features of the analyzed market of monotowns:

- Firstly, the specific conditions of competition - the dominance of monopsony and the dominance of the buyer of labour on the labour market - the town-forming enterprise;
- Secondly, the narrowness of the professional structure of demand, determined by the needs of the key buyer of labour - the town-forming enterprise, and, therefore, the narrowing of the professional structure of labour supply;
- Thirdly, low diversification of areas of employment.

It should be emphasized that the gradual transition of monotowns (mainly the first category, i.e. single-industry municipalities with the most difficult socio-economic situation - Asha, Bakal, Karabash, Minyar, Nyazepetrovsk) from purely industrial specialization to diversification, which is logical in the conditions of the aspiration of a monoprofile city to fulfil an integrative role.

Table 4. The dynamics of the relative share of employees of the town-forming enterprise in the average number of employees of all enterprises operating in the territory of monotowns of the Chelyabinsk region for 2017-2019

Monotown name	The average number of employees of all organizations, people			Average number of employees of the monotown, people			Relative share, %		
	2017	2018	2019	2017	2018	2019	2017	2018	2019
Asha	10404	10268	10209	4213	4173	4087	40.5	40.6	40.0
Bakal city	2716	2682	2551	1046	1042	972	38.5	38.9	38.1
Verkhny Ufaley	7682	7018	6650	679	40	24	8.8	0.6	0.4
Zlatoust	41160	38593	37724	3979	3660	3631	9.7	9.5	9.6
Karabash city	3069	3075	3147	1388	1403	1406	45.2	45.6	44.7
Magnitogorsk	149941	146536	145639	18465	18391	18303	12.3	12.6	12.6
Miass	53527	53823	53706	4721	4626	4543	8.8	8.6	8.5
Minyar	1242	1446	1461	543	554	567	43.7	38.3	38.8

Nyazepetrovsk	2977	2926	2768	560	572	431	18.8	19.5	15.6
Ozersk	31709	31557	31120	-	-	-	-	-	-
Satka	17969	17630	16983	2793	2782	2771	15.5	15.8	16.3
Sim	3775	3701	3647	2414	2382	2364	63.9	64.4	64.8
Snezhinsk	20114	19750	19667	-	-	-	-	-	-
Trekhgorny	13840	13526	13266	-	-	-	-	-	-
Ust-Katav	8444	7567	7391	3614	3313	3269	42.8	43.8	44.2
Chebarkul city	11708	11355	12073	2077	2348	2361	17.7	20.7	19.6

*Note: Statistical information on the city of Ozersk, the city of Snezhinsk, the city of Trekhgorny is not available in the public domain, due to their status - a closed administrative-territorial entity.

A specific feature of the labour market in monotowns is a sharp quantitative and qualitative imbalance between supply and demand of labour, and as a result, an increased level of unemployment compared to the average conditions of the regional labour market is also characteristic of the study site. An exception is single-industry cities in the Chelyabinsk region of the Russian Federation, categorized as 3-mono-profile municipalities with a stable economic situation - Magnitogorsk, Snezhinsk, and Trekhgorny. The number of unemployed citizens registered in employment service bodies as a percentage of the number of the working age population, in the city of Magnitogorsk it is 0.7%, the city of Snezhinsk – 0.6%, the city of Trekhgorny – 0.5% against the regional value – 0.8%.

7. Conclusion

Thus, in the variety of fundamental concepts for classifying towns, there are still no single, universal criteria that reveal the essence of "monotowns". In the parameters recommended by the researchers, there are quite often discrepancies in their threshold values, there is a significant scatter in absolute indicators. However, a statistical analysis of the labour market in monotowns, based on a system of existing criteria and an attempt to systematize its features make it possible to note: a rapid decline in the number of resident population; increased unemployment compared with the average conditions of the regional labour market and its inevitable growth in the case of modernization of production processes at the town-forming enterprise; narrow production specialization of labour, determined by the needs of the key buyer, i.e. the town-forming enterprise.

References

- Berdnikova, G. I. (2019). Theoretical and methodological foundations for the study of employment and self-employment of the population in Russia. *Corporate Economics*, 4(20), 45-51.
- Gritsky, N. V. (2009). *The main trends in the development of socio-production structures of town-forming enterprises in Russia: on the example of the Irkutsk region* [Doctoral Dissertation]. Irkutsk.
- Ivashina, N. S., & Ulyakina, N. A. (2011). Monoprofilny Gorod: theoretical aspects of determining the category. *Vector of science of Tolyatti state University. Series: Economics and management*, 4(7), 31-34.
- Lappo, G. M. (2006). *Cities of Russia: encyclopedia*. Big Russian Encyclopedia.
- Leksin, V. N., & Shvetsov, A. N. (2000). *New problems of Russian cities. Municipalization of social objects: legal and financial decisions*. URSS.
- Maslova, A. N. (2008). *Russian monotowns: how to survive the crisis? Analysis of the socio-economic problems of monotowns in the context of the global financial and economic crisis affecting the state of city-forming corporations*. Institute of Regional Policy Problems.

- Maslova, A. N. (2009). Modern socio-economic problems of mono-industrial cities of Russia. *Scientific expert*, 7-8, 41-44.
- Miklyueva, E. V. (2007). Legal basis for the definition and typology of mono-profile cities. In *Science, Culture, Society: Problems of Interaction: Materials of the All-Russian Scientific and Practical Conference* (pp. 192 – 196). Arkhangelsk State Technical University.
- Prosvirin, A.V. (2010). Single-industry towns: past, present, future. *Problems of Management*, 1, 6.
- Ruvinsky, V. V. (2010). *The problems of single-industry towns cannot be solved without structural changes in the economy*. <https://rb.ru/article/problemy-monogorodov-ne-reshit-bez-strukturnyh-izmeneniy-ekonomiki/6504057.html>
- Yakimov, A. V. (2009). Modern problems of the development of territories. *Bulletin of Ural State University*, 3, 15.
- Zdorovtsova, L. V., & Kolesnikova, O. A. (2014). Features of the labor market of monoprofil cities. *Region: systems, economy, management*, 2(25), 123-126.