VALUATION METHODOLOGY OF THE REGIONAL LABOR MARKET CONDITIONS

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Abstract

The development and use of valuation methodology for the regional labor market conditions, based on the index approach, made it possible to rank the studied regions for the purpose of identifying the situation in the labor market of the region. Aggregation of the labor market in the study region showed that in the Sverdlovsk region, the aggregated labor market index has the highest value – 0.649. The Chelyabinsk Region ranks second among the four regions in this index – 0.575. In the Tyumen region it is 0.558. The situation on the labor market in these regions can be described as prosperous with a high potential for the development of the labor market. The index has the lowest value in the Kurgan region (0.277), where a slight lag in this indicator is recorded. Within the framework of social partnership, it is possible to coordinate the interests of the subjects of the regional labor market regulation policy. The current phase of socio-economic transformation is characterized by an active search for solutions to the problems of regional development. Through the mechanism of the labor market, rates of wages and employment of the population are established. Employment of the population is a necessary condition for its reproduction, since the people's living standards depend on employment. Regulation of the regional labor market is important. The regional labor market is one of the indicators, the state of which allows us to judge the stability, well-being and effectiveness of the socio-economic policy.

Keywords: Labor market, regional market, index approach, social partnership
1. Introduction

The regional labor market is a system of relations with the coordinated interests of employers and employees within the region (Agafonov, 2018). It in many ways determines the sustainable development of the region's economy and its efficiency.

The labor market is an essential element of the regional economic system. The level of well-being of the population and the dynamics of economic growth depend in many ways on its conjuncture (Koksharova et al., 2019).

The main component of the state and development of any region is the population, the main demographic and qualitative characteristics, the gender and age composition of the population, which determine social and economic development. The possibility of realizing labor as a fundamental factor of social production depends on the state of the labor potential of the regions. One of the main evaluation indicators of the economic potential of the development of the labor market in the region is the assessment of the labor potential of the region.

The importance of valuation of the regional labor market is related to how a certain labor market system allows you to evaluate the following issues:

- determination of the staffing needs in the priority development areas of a specific region;
- determination of the degree of employment and unemployment;
- getting an opportunity to evaluate the system of training graduates of educational institutions.

The labor market regulation policy in many ways determines the state of the labor market in the region and the possibilities for its further development. The labor market regulation policy in many ways determines the labor market conditions in the region and the opportunities for its further development.

2. Problem Statement

The scientific hypothesis of the study is that the solution to the problem of improving the level and quality of life of the population of the region depends on the effectiveness of the methods and tools used by the executive bodies of state authority that activate the mechanisms of social partnership at all stages of the development and implementation of socio-economic policy for regulating the regional labor market, aimed at ensuring the harmonization of the interests of subjects interested in regional development.

3. Research Questions

The subject of the study is the organizational and economic relations that arise in the process of implementing and developing a regional labor market policy in the region.

4. Purpose of the Study

The purpose of the work is to develop theoretical and methodological provisions that reveal the features of the elaboration and effective implementation of the regional socio-economic policy of labor market regulation.
5. Research Methods

The labor market as a scientific issue is the object of close attention of both domestic and foreign researchers (Giguere & St-Arnaud, 2020; Koptyakova, 2019; Lu & Hou, 2020; Ulceluse, 2020). Methodological and theoretical foundations of state regulation of the labor market are revealed in the works of Averina (2020), Agafonov (2018), Gagarinova (2019), Gatin (2019), Tatyankin (2019), Matveeva and Mikhalkina (2015) and others.

The research used general scientific methods of cognition of socio-economic phenomena, dialectical, complex, comparative, tabular methods of visualization of statistical and calculated data.

To analyze the labor markets and the policy of their regulation in the Russian Federation and the Ural Federal District, we used official statistics from Rosstat, the results of research by regional rating and analytical centers, and legal acts regulating labor relations.

6. Findings

The elaboration of a labor market regulation policy in the region should be preceded by an analysis of the state and potential of the labor market development. This will ensure the effectiveness of the labor market regulation policy and create conditions for the development of effective tools. It is necessary to calculate an integral indicator to evaluate the state of the labor market in the region. For this purpose, it is proposed to use the system of the following indicators (tables 1–2).

Table 1. The system of indicators for evaluating the state of the labor market in the region*

| Indicator symbol | Indicator name | Calculation method |
|------------------|----------------|-------------------|
| Q1               | The level of the number of the able–bodied population aged 15–72 years in the total population of the Ural Federal District for 2017–2019, % | Number of able-bodied population aged 15–72 years / Total population of the Ural Federal District for 2017–2019 |
| Q2               | The level of the number of employees in the total population of the Ural Federal District for 2017–2019, % | Number of employees / Total population of the Ural Federal District for 2017–2019 |
| Q3               | Level of participation in the labor force of the population aged 15–72 years in the Ural Federal District for 2017–2019, % | The number of the labor force (employed and unemployed) of a certain age group / The total population of the relevant age group |
| Q4               | Average monthly nominal gross salary of employees of the Ural Federal District for 2017–2019 (rub.) | Average nominal gross monthly salary of employees |
| Q5               | Average per capita money income of the population of the Ural Federal District for 2017–2019 (per month, rub.) | Average money income of the population of the Ural Federal District for 2017–2019 per month per capita |
| Q6               | The unemployment rate of the Ural Federal District for 2017–2019, % | Number of unemployed of a certain age group / number of economically active population |
| Q7               | The level of registered unemployed | Number of registered unemployed of a
The system of indicators for valuation of the state of the labor market of the Ural Federal District for 2017–2019 (Rosstat, 2019)

| Subject | 2017     | 2018     | 2019     |
|---------|----------|----------|----------|
| Able-bodied population (%) | 59.7 | 60.2 | 59.4 |
| The Ural Federal District | 30.2 | 29.9 | 29.6 |
| Tyumen region (without autonomous districts) | 58.6 | 59.3 | 58.6 |
| Chelyabinsk region | 58.7 | 60.9 | 59.5 |
| Kurgan region | 58.7 | 59.6 | 58.6 |
| Sverdlovsk region | 66.3 | 65.9 | 65.2 |
| Level of participation in the labor force of the population aged 15–72 years (%) | 69.4 | 69.0 | 68.4 |
| The Ural Federal District | 46.1 | 46.3 | 45.9 |
| Tyumen region (without autonomous districts) | 49.7 | 50.7 | 51.2 |
| Chelyabinsk region | 42.9 | 41.8 | 40.3 |
| Kurgan region | 47.6 | 47.3 | 47.2 |
| Sverdlovsk region | 47.4 | 66.6 | 65.8 |
| Average monthly nominal gross salary (RUB) | 43977 | 47807 | 50186 |
| The Ural Federal District | 40473 | 44913 | 44990 |
| Tyumen region (without autonomous districts) | 32253 | 35219 | 40440 |
| Chelyabinsk region | 25433 | 28159 | 32226 |
| Kurgan region | 34760 | 38052 | 40900 |
| Sverdlovsk region | 33643 | 34955 | 36882 |
| Average per capita money income of the population (per month, rubles) | 27672 | 29162 | 31835 |
| The Ural Federal District | 23719 | 24386 | 25187 |
| Tyumen region (without autonomous districts) | 20660 | 20334 | 20391 |
| Chelyabinsk region | 35210 | 36735 | 38238 |
| Unemployment rate (%) | 5.6 | 4.7 | 4.3 |
| The Ural Federal District | 5.0 | 4.4 | 4.1 |
| Tyumen region (without autonomous districts) | 6.6 | 5.6 | 5.1 |
The system of indicators allows you to determine the macro-state of the regional labor market, identify existing problems. This system is used as a basis for conducting a comparative analysis of the labor markets of heterogeneous, different objects of research.

The suggested indicators are relative. This allows them to be used for comparative interregional analysis. Among these indicators, there are those that have a negative impact on the state of the labor market, and those that affect it positively. The first group of indicators includes: Q1, Q3, Q8, Q9. The second group of indicators is formed by: Q2, Q4, Q5, Q6, Q7.

A private index is calculated using the following formulas for each of the selected indicators:

1) if there is a direct liaison between the variables, the following formula will be used (1):

\[ I_{yi} = \frac{Y_i - Y_{\text{min}}}{Y_{\text{max}} - Y_{\text{min}}} \]

2) if there is an inverse liaison between the variables, the calculation will be carried out according to the formula (2):

\[ I_{yi} = \frac{Y_{\text{max}} - Y_i}{Y_{\text{max}} - Y_{\text{min}}} \]

where \( I_{Qi} \) is the index of the Q indicator in the i-th region; \( Q_i \) is the value of the Q indicator in the i-th region; \( Q_{\text{max}} \) is the maximum conditional value of the Q indicator; \( Q_{\text{min}} \) is the minimum conditional value of the Q indicator.
Next, the aggregated index of the state of the labor market is calculated. In this case, the calculation was based on 7 indicators, the source data for the calculation of which were presented in the statistical collections of Rosstat. The aggregated indicator is defined as the arithmetic mean of the private indices, including seven indicators \((n=7)\), according to the formula (3):

\[
I_{cpm} = \frac{\sum_{i=1}^{7} I_{yi}}{7}
\]

The total index value will vary between 0 and 1. The closer the index value is to 1, the more stable the state of the labor market and the higher the potential for its development.

Next, the regions are ranked by the value of the general index (table 3).

Table 3. Ranking of regions by the value of the composite integral indicator*

| Index value | The situation on the labor market |
|-------------|----------------------------------|
| 0.00–0.25   | A crisis situation with a low potential for the development of the labor market |
| 0.26–0.50   | Medium-stressed situation with an average potential for the development of the labor market |
| 0.51–0.75   | Low-stress situation with above-average development potential |
| 0.76–1.00   | A favorable situation with a high potential for the development of the labor market |

Note: *according to the authors

The methodology for evaluating the state of the labor market, proposed by S.M. Agafonov (2018), is universal, which is provided by the use of an index approach, and can be used for interregional comparisons.

For the purpose of testing the methodology proposed by S.M. Agafonov, the regions studied above were used: the Tyumen region (without autonomous districts), the Chelyabinsk region, the Kurgan region and the Sverdlovsk region.

We will encode the regions to calculate the method: \(R_1\) – Tyumen region (without autonomous districts); \(R_2\) – Chelyabinsk region; \(R_3\) – Kurgan region; \(R_4\) – Sverdlovsk region.

We will calculate the main indicators of the state of the labor market to evaluate the state of the labor market in the regions (table 4).

Table 4. The main indicators of the state of the labor market of the studied regions, %*

| Indicator | \(R_1\), % | \(R_2\), % | \(R_3\), % | \(R_4\), % |
|-----------|-------------|-------------|-------------|-------------|
| Q1        | 29.9        | 58.8        | 59.7        | 59.0        |
| Q2        | 46.1        | 50.5        | 41.7        | 47.3        |
| Q3        | 65.8        | 71.7        | 61.3        | 66.6        |
| Q4        | 43 459      | 35 971      | 28 606      | 37 904      |
| Q5        | 29 556      | 24 431      | 20 462      | 36 728      |
| Q6        | 4.5         | 5.8         | 8.3         | 4.8         |
| Q7        | 0.6         | 1.2         | 1.6         | 1.1         |

Note: *according to the authors

The average data for the region for 2017–2019 are shown here and below.
Next, for each of the selected indicators, we define $Y_{\text{max}}$ and $Y_{\text{min}}$ and calculate the private indices using the following formulas (2) and (3) (table 5).

**Table 5.** The maximum and minimum values of the main indicators of the state of the labor market of the studied regions, %*

| Indicator | Maximum value, $Y_{\text{max}}$, % | Minimum value, $Y_{\text{min}}$, % |
|-----------|-----------------------------------|-----------------------------------|
| Q1        | 60.9                              | 29.6                              |
| Q2        | 51.2                              | 40.3                              |
| Q3        | 71.9                              | 58.6                              |
| Q4        | 44 990                            | 25 433                            |
| Q5        | 38 238                            | 20 334                            |
| Q6        | 9.1                               | 4.1                               |
| Q7        | 1.7                               | 0.6                               |

Note: *according to the authors

The choice of the minimum and maximum values for each indicator (Table 5) was made on the basis of statistical data on the analyzed subjects.

We will evaluate the private indices (table 6), which complement the objective characteristics given on the basis of statistics, and give an adequate representation of the important aspects of the life of the regional society.

**Table 6.** The value of private indices for the studied regions*

| Indicator | R1       | R2       | R3       | R4       |
|-----------|----------|----------|----------|----------|
| Q1        | 0.123    | 0.846    | 0.867    | 0.849    |
| Q2        | 0.407    | 0.701    | 0.112    | 0.490    |
| Q3        | 0.432    | 0.669    | 0.252    | 0.464    |
| Q4        | 0.615    | 0.366    | 0.120    | 0.430    |
| Q5        | 0.478    | 0.222    | 0.023    | 0.836    |
| Q6        | 0.913    | 0.705    | 0.286    | 0.863    |
| Q7        | 0.937    | 0.514    | 0.277    | 0.613    |

Note: *according to the authors

We will calculate the aggregated index of the state of the labor market ($I_{\text{slm}}$) for each region (table 7).

**Table 7.** Aggregated labor market index for each region*

| Indicator | R1       | R2       | R3       | R4       |
|-----------|----------|----------|----------|----------|
| $I_{\text{slm}}$ | 0.558    | 0.575    | 0.277    | 0.649    |

Note: *according to the authors

The calculation of the aggregated index of the state of the labor market in the regions showed that it is the most important in the Sverdlovsk region, which indicates a more stable state of the labor market.
in this region. The index takes the lowest value in the Kurgan region. The Chelyabinsk region ranks second among the four regions in this index.

7. Conclusion

The results of the application of a comprehensive methodology for evaluating the state and development of the regional labor market can be summarized in three conclusions:

- demand is less than supply;
- demand is greater than supply;
- the demand in the regional labor market is equal to the supply.

A more effective use of the existing potential opportunities for the development of the region can be carried out on the basis of the strategic co-orientation of the region and the country as a whole. The multi-factor nature of the region's development potential affects the entire range of economic activities of the region, the socio-economic system as a whole, and its productive forces. Increasing the level of efficiency of the use of the development potential of the region implies the need for its valuation.

The valuation of the potential level of the regions that are part of the Ural Federal District is necessary for further optimization of activities in terms of the development of these regions and economic growth. The analysis should include not only quantitative, but also qualitative, as well as structural characteristics of the economy of the regions of the Ural Federal District. The comprehensive and integrated development of the region is determined by the economic and social efficiency of the functioning of regional systems, the level of optimization of the use of existing opportunities.

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