Unemployment and Indicators of its Assessment

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Abstract: - The article presents a streaming model of unemployment, analyzes the scale of inflow and outflow into the category of unemployed, estimates the "reserve" (number of persons who retain the status of unemployed for more than three months), as well as their share in the total number of unemployed. The relevance of the study is determined by the need to monitor the labor market not only in the context of an economic downturn and to use for this new indicators characterizing unemployment. The aim of the work is to assess the state of the labor market based on the analysis of the flows of the unemployed. Calculations were made based on data from labor force surveys of the Federal State Statistics Service of the Russian Federation for 1999-2019.

During the period under review, the Russian labor market demonstrated some instability, despite the decline in the unemployment rate. The inflow and outflow from the unemployed category is quite intensive, but the decline in the share of those who retained the status of the unemployed is replaced by an increase in this indicator. The most stable state of the labor market was observed in 2012, when the share of the "stock" of the unemployed in their total number decreased by 13.2% compared to the previous year. A significant increase in the share of the unemployed who retained their status in 2015 was associated with a sharp reduction in outflow and testifies to the growth of tension in the labor market. An analysis of the flows of unemployed by age showed that persons under the age of 30 make up almost half of the inflow into the unemployed category, but the duration of job search here is shorter, which mitigates the problem of youth unemployment.

Key-Words: - labor market, unemployment, valuation, flow model, duration of job search, unemployment risk.

1 Introduction

Unemployment is a complex socio-economic phenomenon that affects millions of people and acts as a kind of indicator of the state of the economy, reacting to failures in the functioning of market mechanisms.

International Labor Organization (ILO) in the report "World Employment and Social Outlook - Trends 2020" noted that in 2019 the global unemployment rate was 5.4% and is projected to remain almost unchanged for the next two years, although the unemployment rate observed between 2009 and 2018 has stalled. At the same time, approximately 188 million people of 15 years old and over were unemployed, and the main decline in employment growth was associated with slowdown in economic activity, especially in the manufacturing sector. But, given the high level of uncertainty about how trade and geopolitical tensions in the coming years will affect business and consumer confidence, and hence job creation, the report pointed out that it is difficult to predict how the situation on the labor market will develop. The decrease in the number and level of unemployment in Russia was assessed by ILO experts as positive shifts in the development of the Russian labor market.

However, ILO special report in April, 2020 indicated that about 25 million people were at risk of losing their jobs due to the pandemic. General Director of ILO appealed to employers, urging them to take the necessary measures in time to prevent the spread of infection in order to prevent an increase in unemployment. In this regard, it is obvious that constant monitoring of the state of the labor market is necessary. "Measuring employment and unemployment is important for economic policy. Internationally agreed measures (such as headcount and unemployment rates based on standard definitions) improve comparability over time and space, but changes in real labor markets and policy agendas challenge these traditional conventions. This task probably implies the collection of new statistical data that will improve the understanding of the labor market" [1].

A compromise or the most effective option was not found when choosing priorities for employment policy: job creation, employment and social stability, profitability of a new project or efficient economy capable of withstanding the challenges of the global crisis. Thus, "in the post-war history of Western European countries with a coordinated economy, the function of maintaining the stability of the labor market was predominant. Stability was ensured by a system of social partnership, a mechanism for coordinating and fixing wages, and the widespread introduction of the minimum wage. Stability was "worked" by strict legislation, which contributed to an increase in the duration of work experience at one workplace. However, gradually the function of stability turned into an excessive regulation of the labor market (rigidities of the labor market). The "rigidity" of the institutional framework in this region has become one of the main reasons for the high unemployment rate, which is slightly decreasing even during periods of economic growth" [2]. In modern conditions "due to the uncertainty of the situation and the impressive consequences of the current technological transformations for production systems and society in general, politicians need reliable preliminary data in order to predict the effect of technological change on professional structure and the development of appropriate policies in the field of science, technology and innovation. New jobs may not correspond to the standard full-time employment model" [3].

There was also a widespread point of view that the Russian worker is limited in mobility, "it clings to his workplace at any cost, it is not ready to change jobs or retrain other professions. The perception of poor geographic mobility added to this. An alternative position is based on the fact that the Russian market is quite dynamic. Firms are actively hiring and firing workers, and the workers prefer not to sit in one place for a long time. We get a super-flexible market in which all conditions are constantly changing, and workers are in constant motion" [4].

In addition, the unemployment rate does not provide a reliable and complete picture of the state of the labor market, since it does not take into account the time factor, that is, the duration of the job search. Given the positive socioeconomic implications, high unemployment may be preferable if the duration of unemployment is short. Short terms of job search, as a rule, indicate the mobility of the labor force, the intensity of flows of various categories of the population in the labor market, the presence of a developed infrastructure of the labor market, which ensures the rapid adaptation of free labor resources to the changing economic situation. Therefore, in addition to the unemployment rate, the most important indicator characterizing the state of the labor market is the duration of unemployment, which largely determines the depth of the negative socio-economic consequences of this phenomenon: the longer the period of unemployment lasts, the lower the probability of re-employment and the level of human well-being.

2 Materials and Methods of Assessment

Unemployment, like most economic categories, has positive and negative sides. It acts as a factor that determines the competition between workers in the labor market, and as a reserve army of labor, which is necessary in case of structural changes in the economy. At the same time, this phenomenon carries with it a number of negative aspects that can lead to economic destabilization and social cataclysms.

Unemployment is a socio-economic phenomenon, which means that it affects the interests of society and the state, as well as an individual and his family. Accordingly, its consequences are manifested in almost all areas of economic and social life.

Of course, the "protagonist" here is a person. However, the consequences of unemployment are reflected in the state of the national economy as a whole, its branches and regions. However, the positive aspects have limitations and can be considered positive only in comparison with negative consequences of unemployment.

Thus, unemployment is a multifaceted phenomenon and affects the interests of society and the state, as well as all agents of the market economy: workers and employers. On the one hand, the reasons for this phenomenon inevitable for a market economy are the constantly changing nature and content of labor and production, the cyclical development of the economy and socio-demographic factors, and on the other, the duality of its consequences, the likelihood of positive and negative effects, suggest that unemployment is associated with the problem of uncertainty and risk.

Unemployment, when, for example, its positive effects are manifested, contributes to the achievement of favorable economic performance. But at the same time, a low level of unemployment and the desire to achieve full employment of the population can lead to the preservation of inefficient jobs, an increase in stagnant unemployment and an

increase in spending on social protection of the unemployed, and cause a decrease in the motivation of workers to improve their qualifications.

However, in any case, unemployment and its socio-economic consequences lead to costs or losses, which can be conventionally grouped into two groups. The first includes direct losses or costs, which are forced to go as a result of an increase or decrease in unemployment, enterprises and organizations, various state institutions and citizens directly related to this problem. The second group consists of indirect losses or losses incurred by the country's economy due to the fact that part of the able-bodied, economically active population cannot find application in the existing socio-economic system and does not create a useful product.

Given the ambiguity of the consequences of unemployment, their assessment is associated with the need to determine specific indicators of such an assessment, allowing drawing a conclusion about the degree of risk and costing effectiveness. The generally accepted thesis is the recognition of the greatest danger of stagnant unemployment, when job searches take a long period of time. The critical point of unemployment, which corresponds to the least risky state of the economy and social tension in the country, is recognized as the "critical point" of the scale assessing unemployment and its socio-economic consequences, which allows making informed decisions in the choice of macroeconomic and employment policies. At the same time, if the actual production of Gross Domestic Product (GDP) deviates from its potential (production capabilities of the economy), then this leads to losses caused by the incomplete use of resources, including labor.

Estimation of losses in the production of the gross product from unemployment is carried out on the basis of the ratio, which was empirically established by A. Oaken at the beginning of 1960s: with an increase of 1% in the actual level of unemployment compared to its natural level, GDP production lags to 3%. Later studies show a ratio of 1:2, although a number of foreign sources use a ratio of 1:2.5 or 1:3. This pattern is confirmed by studies of the Russian labor market [5, 6].

However, the practical definition of the natural level of unemployment and hence the benchmark for the same "natural", balanced development of the economy, is far from unambiguous and very difficult. Considering that the object of macroeconomic research is a complex system in general, inputs and outputs, their mutual dependence, in our opinion, and unemployment as a macroeconomic indicator should be analyzed as flows of “input”-“output” and “stocks”. Since the most risky is long-term, stagnant unemployment, then in terms of the "stock", i.e. retaining their status for a long period of time unemployed, it is possible to assess the level of unemployment, its consequences and economic losses (costs).

The study of unemployment as flows and stock provides an opportunity to analyze it in motion, to assess the scale of inflow and outflow from the unemployed category, as well as long-term unemployment. Accordingly, this makes it possible to make more informed decisions when implementing state policy on the labor market.

Thus, unemployment is a dynamic phenomenon, its composition is constantly updated under the influence of two main streams: entry into the category of the unemployed and exit from it.

At the same time: Increase in unemployment = inflow - outflow, i.e.:

$$\Delta U = U^{+} - U^{-}, \quad (1)$$

where

ΔU is the increase in the number of unemployed,

U^{+} is the influx into the unemployed category,

U^{-} is the outflow from the unemployed category.

The scale of these flows largely determines the degree of tension in the labor market. Obviously, if the inflow is greater than the outflow ($U^{+}>U^{-}$), this can lead to an increase in the unemployment rate, and vice versa, a larger outflow ($U^{+}<U^{-}$) will reduce the value of this indicator. In addition, equality of inflow and outflow is possible ($U^{+}=U^{-}$), respectively, the unemployment rate in this case will not change.

However, millions of people remain unemployed for a long period of time and the total number of unemployed (U) can be represented as follows:

$$U = U^{+} + U^{-} + Us, \quad (2)$$

where

Us is the number of unemployed who have retained their status.

Over time, it is the unemployed who retain their status for a long period of time, lose their professional knowledge, skills and qualifications. The competitiveness of this group of unemployed, and hence the probability of finding a job and leaving the army of the unemployed, is decreasing. They are becoming more and more insecure about the prospects of their employment, they are getting used to a low standard of living, labor motivation and economic activity is deformed, which is so necessary in a dynamic and mobile modern labor

market and serious demographic problems, decreases.

The rationale and methodology for calculating the indicators of the flow model of unemployment were presented in [7, 8].

3 Results

The statistical basis for this study was the results of labor force surveys conducted by the Federal State Statistics Service of the Russian Federation.

The scale of the input flow (inflow) is determined by the number of unemployed with a duration of unemployment of up to 3 months, since a longer period of job search reduces the likelihood of employment, and in Russia, for a third of the unemployed, this period does not exceed 3 months, and it is during this period that significant outflow from the unemployed category. The rationale for the choice of this duration of job search was presented by us in the article [7], in the foreign literature a four-week period was proposed, although later it was pointed out that such a criterion was arbitrary when assessing flows in the labor market [1].

To calculate the flow of exit from the category of unemployed, one can use relation [5], and the number of those who retained the status of unemployed: relation [6].

The dynamics of unemployed flows in the Russian labor market is shown in the Figure 1.

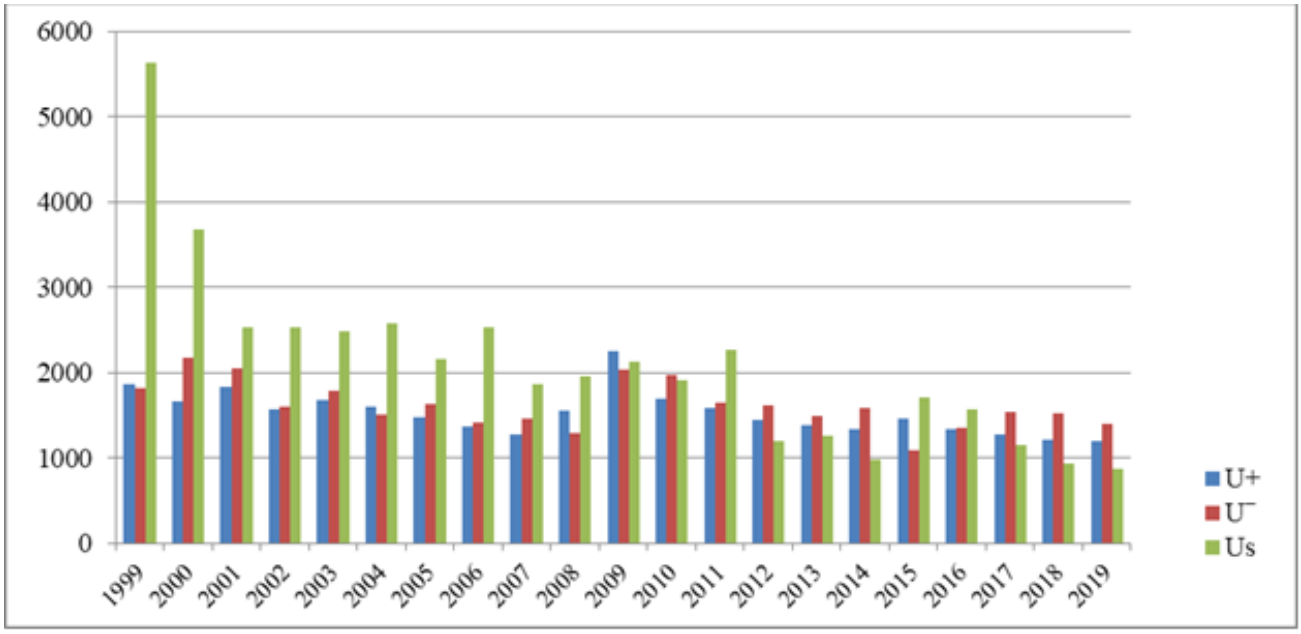

Fig. 1. Dynamics of unemployment flows in Russia, thousand people

The data presented in the graph show that in the period under review, all the above possible options for the ratio of the inflow and outflow scales from the unemployed category were observed. In 1999, when the highest unemployment rate was registered in Russia (about 13%), the inflow to the unemployed category and the outflow were approximately the same, but the number of unemployed who retained their status was the largest and significantly exceeded the scale of flows. It should also be noted that in 2009, during the financial crisis, the absolute number of all flows was approximately the same. It was during this period that the relative indicators: the share of the corresponding flows and stock in the total number of unemployed, also almost became equal (Figure 2).

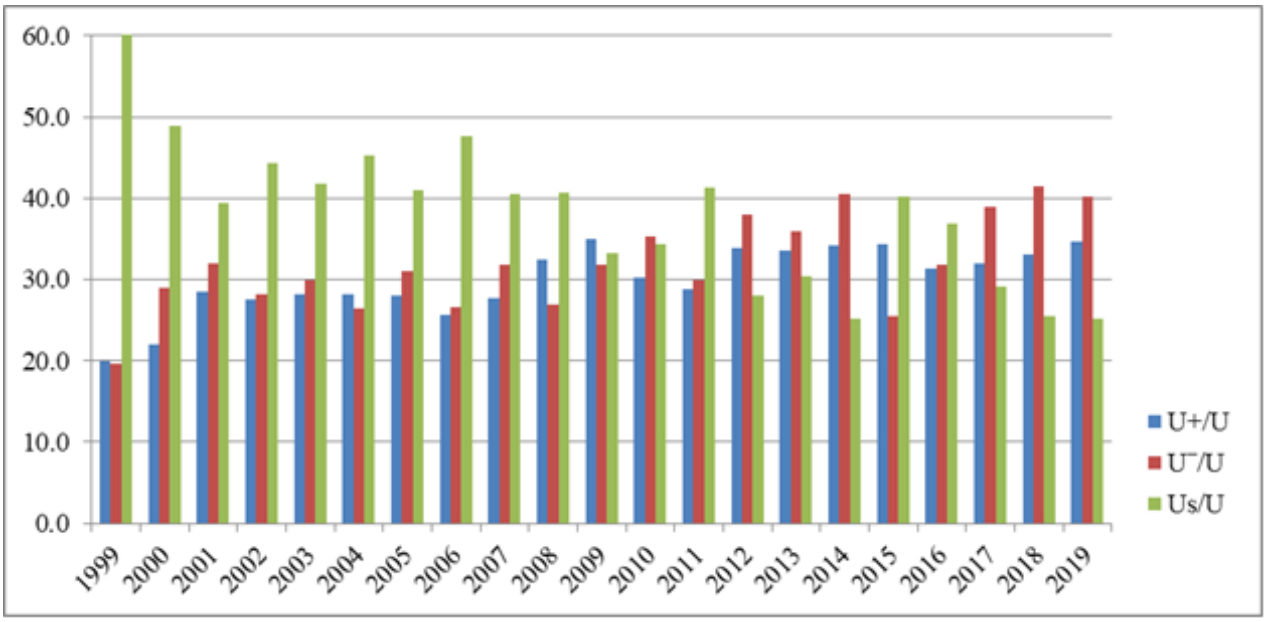

Fig. 2. Dynamics of unemployed flows, % of the number of unemployed in Russia

The Russian labor market has shown some volatility, despite the decline in the unemployment rate. In this regard, we note a significant increase in the share of the unemployed who retained their status in 2015, which was mainly due to a decrease in the number and share of unemployed in the outflow from this category, an increase in the duration of job searches and indicated an increase in tension on the labor market.

A special segment is the youth labor market. The literature notes that young people in almost all countries face the problems of unemployment and are in a more difficult situation than adults. Low levels of human capital have been cited as the reason why young people around the world are at a disadvantage, which may be due to the fact that some young people do not receive at least compulsory secondary education, or because when they reach high levels of secondary or higher education, they miss other key components of human capital, namely general and specific work experience. This low level of human capital among young people is correlated with the mismatch of jobs and the requirements of firms and the competencies provided by young people [9, 10]. But at the same time, it should be noted that "long-term value shifts indicate that work is losing its importance, and the need for employment is less influencing the decision of students to get a higher education" [11], and "digitalization is one of the key challenges for modern labor markets. The destructive consequences of this process are associated with the displacement of human labor, while the transformational ones consist in changing the content of work and strengthening the functionality of human workers" [12].

In addition, in many countries a special group of young people has formed that is "not in employment, education or training" (NEET). However, this group is unstable, and "NEET status at the moment does not seem to be an unambiguous hopeless trap for Russian youth. The probability of finding a job next year is about 50% for unemployed NEET and about 30-40% for inactive NEET". Nevertheless, the lack of decent work and a long period of unemployment, especially if young people have to deal with this at the beginning of their labor activity, can lead to a decrease in labor motivation and the formation of a distorted model of labor behavior.

In Russia, the youth labor market is also characterized by a higher unemployment rate. So, in 2019, the unemployment rate was 4.6%, and in the age group less than 19 years old was 24.7%, for people from 20 to 24 years old it was 14.4%, which is significantly higher than the general unemployment rate in Russia. However, the duration of a job search for persons under 24 years old is about 1.5-2 months less than the average duration of unemployment. The activity of young people in search of work is confirmed by the analysis of inflow into the category of unemployed by age (Figure 3).

Persons under the age of 30 make up almost half of the inflow into the category of unemployed, and most of them are young people under 24 years (30% or more). It is necessary to note the significant scale of the outflow in 2015, against the background of the reduction in the outflow, the number of those who retained the status of unemployed increased.

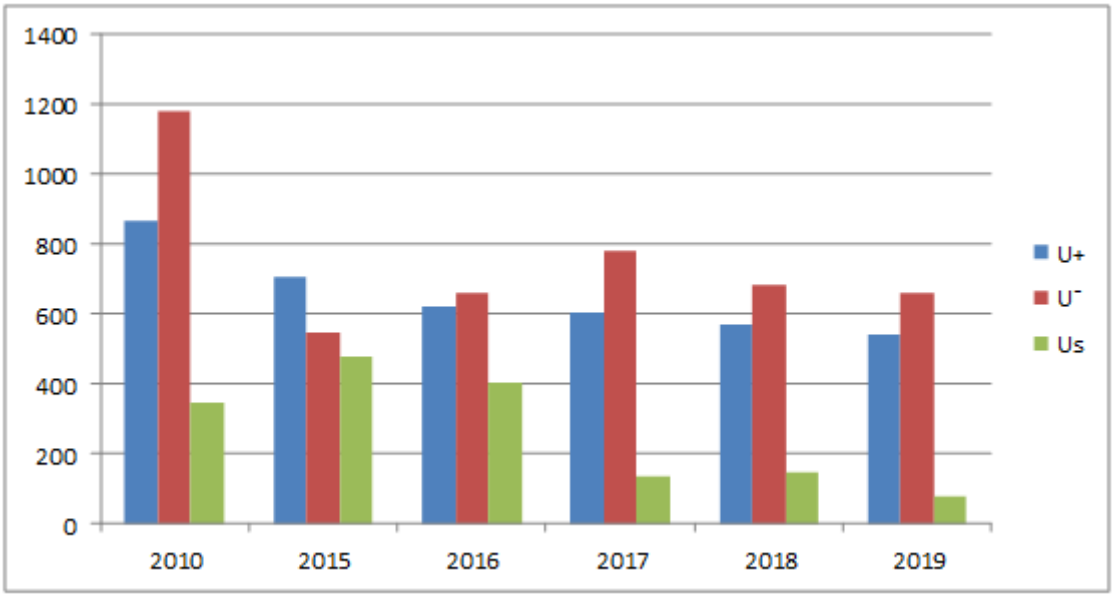

Fig. 3. Dynamics of flows of unemployed of 15-29 years, thousand people

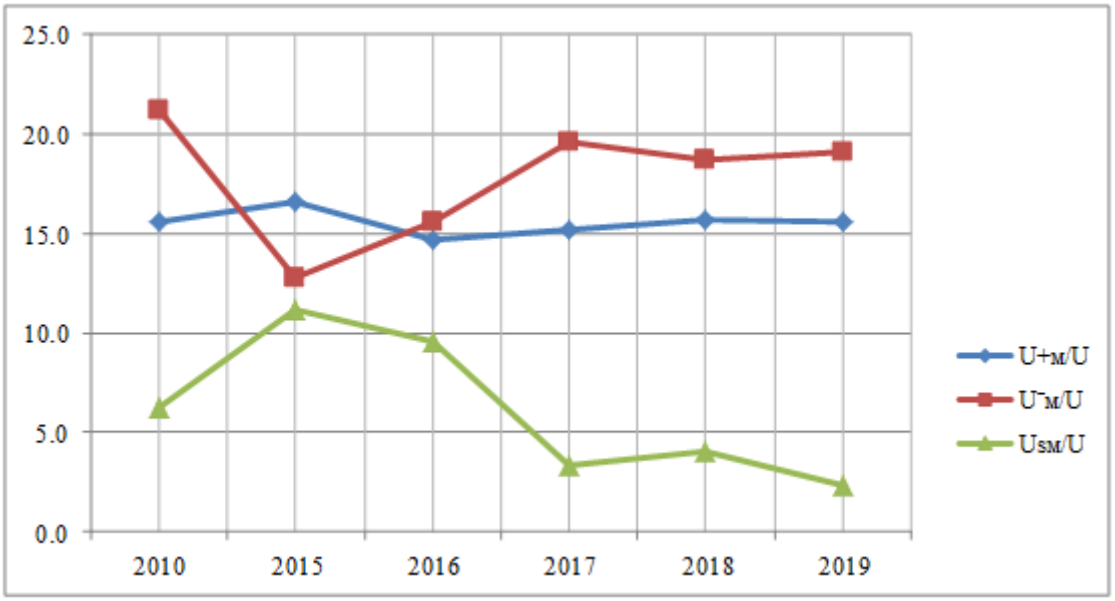

Fig. 4. Dynamics of flows of unemployed of 15-29 years, % of the total number of unemployed in Russia

Young people make up a fairly significant part of the unemployed flows (Figure 4). At the same time, during the period under review, even in the face of a decrease in the level of youth unemployment and predominantly voluntary unemployment, the share of young people in the inflow was relatively stable (approximately 15%). We also note an increase in the share of young people in the overall structure of the outflow and a significant decrease in the composition of those who retained the status of unemployed.

Thus, to a certain extent, the streaming model of unemployment is an indicator of the state of the labor market. Obviously, a risk group will always be represented on the labor market: unemployed who cannot find a work for a long time. Therefore, it is necessary to identify possible directions for managing this risk, which involves, in addition to collecting and processing data, their quantitative analysis, assessment of risk and opportunities to reduce it.

4 Conclusions

The current situation on the Russian labor market is such that the high intensity of flows and predominantly voluntary unemployment are supplemented by a non-critical, but rather stable

"stock volume". This mitigates to a certain extent the negative socio-economic consequences of unemployment. There is no doubt that in the modern economy it is the duration of unemployment that largely determines its macroeconomic consequences and social well-being of a person. Analysis of unemployment as population flows in the labor market allows identifying the features of this phenomenon and evaluate its parameters not only statically, but also taking into account the constant movement and transition of the population from one category to another. However, the persistence of the scale of long-term unemployment may lead in the future to the concentration of the unemployed in this group and a decrease in the level of labor force participation (economic activity), which, against the background of a decrease in the number of able-bodied population and structural imbalances in the modern Russian labor market, may exacerbate employment problems.

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