

Analysis and Planning of Labor Productivity in the Country and the World

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Abstract—The article systematizes the trends of economic growth and labor productivity of the leading countries of the world and Russia. The data of official statistics and expert estimates on the dynamics of labor productivity in the economy of Russia and other countries are analyzed, and the influence of the most important factors of the revealed changes is determined. Methodological approaches used in international practice to determine labor productivity and efficiency are considered.

Keywords—*labor productivity; methods for assessing the effectiveness of labor; post-industrial society; services; increasing productivity, activities to increase productivity*

I. INTRODUCTION

Currently, the term "productivity" is widely used abroad as an indicator of the efficiency of enterprises. This concept is more capacious than the definition of labor productivity. The author of the work, "Performance Management: Planning, Control, Enhancement," an American scientist D.S. Sink writes: "Productivity is, quite simply, the relationship between the products produced by the system and the costs of producing this products. The system introduces costs in the form of labor (human resources), capital (physical and financial assets), energy, materials and information. These resources are converted into products (goods and services). " During the period of the planned economy, the output indicator was widely used, which was perfectly suited for enterprises of that type. This indicator is measured by the number of products produced per unit of working time or per one average employee or worker per year (quarter, month). Currently, the number of enterprises in the service sector far exceeds the number of enterprises engaged in production. In modern labor economics, according to M. Castells, it is customary to single out two main types of activity - generic and self-programmed. By generic include highly specialized work, rigidly associated with a specific gender production. Self-programmed work is based on knowledge, skills and abilities, level of education, intelligence (IQ level), as well as

experience and results of work, confirmed by certificates, diplomas, titles. In order to measure the performance of this type of activity, an indicator of labor bones is used. In the 90s of twentieth century the domestic labor economy has not inherited from the planned period the practice of working with the labor intensity indicator. The only exceptions are the methodological development of research institutes of labor in this area. The labor intensity, measured in man-hours, more accurately captures both the costs of living labor and the loss of internal shifts.

Labor productivity is the main measure of the level of development of the country, the leading factor in economic growth and reflects directly and indirectly the cost and quality of human capital. In the economic system, this concept is considered as a significant factor in the competitiveness of the economy, the basis of economic growth and the welfare of the country. Increasing labor productivity becomes the key to increasing company revenues, allowing them remaining profitable, to strengthen their competitive position in the market. The magnitude of labor productivity, its dynamics are one of the most important, if not the decisive condition for achieving an ever higher level of competitiveness of the socio-economic system, and ultimately, the quality of life of the population.

In a broad sense, productivity is the relationship between the effect obtained in the labor process (the output of the system) and the expenditure of resources (on the production of this production) [1]. In the past three decades, the concept of labor productivity has been rethought, but the problems of methodology and its measurement have remained. International and national organizations, as well as centers of labor productivity created in many countries, use various methods to measure this indicator. The presence of a sufficiently large number of ways to measure performance leads to the fact that each gives its own result. Formed databases on labor productivity show further comparisons and determine correlations between them.

II. RELEVANCE OF THE PROBLEM

The dynamics of labor productivity is always calculated by the Federal State Statistics Service in general for the economy and types of economic activity, whose products are each sold primarily at the best market prices. In recent years, certain economic changes have taken place in the Russian Federation. According to experts, the basis for further economic growth should be increased productivity. For this reason, it is required to more efficiently and effectively dispose of human resources and capital as the best way to create stability in the economic growth and competitiveness of the country.

There are three options for changing the level of labor productivity in Russia. Graphically, they are presented in the Table 1.

TABLE I INDICATORS OF THE FORECAST OF LABOR PRODUCTIVITY INDICES UNTIL 2030

Development scenarios	The increase in labor productivity (as a percentage of the previous period) by time intervals			
	2011-2015	2016 - 2020	2021 - 2025	2026 - 2030
Variant 1 Conservative scenario	103,6	104,1	103,6	102,8
Variant 2 Innovative scenario	104	104,9	104,6	104
Variant 3 Target scenario	104,6	107,1	105,6	104,2

At the meeting of the Council under the President of the Russian Federation on strategic development and priority projects, the issue of solving the problem of low labor productivity also took place. The President expressed concern about Russia's significant lag in labor productivity from developed countries: "We don't need to speedily increase labor productivity, increase the annual minimum of 5-6%. Behind these figures, increase the efficiency of the economy and enterprises, create jobs and decent wages. If we solve this problem, and the incomes of citizens will increase, they will be able to provide for their families, their children. A good professional perspective will open for young people and that is just entering the labor market". The plan of measures to ensure increased productivity, creation and modernization of high-performance workplaces, approved back in 2014 also confirms this strategy.

In order to achieve sustainable growth in labor productivity in the sectors listed in Table 1, a number of measures have been proposed, such as: the procedure for selecting investment projects and the procedure for granting state guarantees for their implementation have been simplified, taking into account the need for a significant reduction in decision-making time; a mechanism has been established for granting tax concessions to newly created industrial enterprises by a decision of the constituent entities of the Russian Federation within the limits of the total volume of capital expenditures made by them; linkage implemented

provided measures to support industrial enterprises with the requirements for the introduction of advanced production technologies, etc.

TABLE II ACTION PLAN TO ENSURE INCREASED PRODUCTIVITY, CREATING AND UPGRADING HIGH-PERFORMANCE WORKPLACES

Target indicators	2014 year	2015 year	2016 year	2017 year	2018 year
Labor productivity dynamics	101,1	102,1	102,4	103,3	103,3
Labor productivity dynamics for large and medium enterprises manufacturing industry by type of economic activity	108,2	109,5	107,6	108,2	109,9
Labor productivity in the aviation industry	114,2	125,9	110,8	113,5	115,4
The dynamics of labor productivity in rural household	102	103,8	104,3	104	104
Labor productivity in the communications industry	106	106	106	106	106
Dynamics of labor productivity in construction	101	106	106	106	106
The dynamics of labor productivity in transport	104,6	104,8	104,9	105,6	106,8
Labor productivity dynamics in the fuel and energy complex	102	104,1	107	108	108,2

In the opinion of the Government of the Russian Federation, these measures for a steady growth in the labor productivity index will also contribute to increasing the country's competitiveness at the global level. At the moment, cross-country comparisons of the level of labor productivity

are not in favor of Russia. The active inclusion of the Russian Federation in the world market requires the organization of continuous monitoring and a comparative analysis of labor productivity indicators, both in the intercountry and in the interregional context. In this regard, there is an urgent need to develop a methodology for determining the value of integrated labor productivity, taking into account only those components of GDP and GRP that reflect real growth in public goods and national wealth. The list of countries-leaders on labor productivity issue in 2016 and the level of their labor productivity are presented in Table. 2

TABLE III LABOR PRODUCTIVITY LEADERS

	Country	Labor productivity (hourly)
1.	Luxembourg	46.00
2.	Norway	37.00
3.	Australia	29.81
4.	Switzerland	28.35
5.	Netherlands	28.35
6.	Germany	26.00
7.	Denmark	24.20
8.	USA	23.66
9.	Ireland	23.00
10	Sweden	22.58
32	Russia	9.71

Russia in this list occupies the 32 nd place with a productivity level of 9, 71. As can be seen from the data in comparison with developed countries, the level of labor productivity in Russia is unacceptably low. Inside the country, changes are also not taking place for the better. The decline in labor productivity in the economy of the Russian Federation is still happening

The reasons for the fall in labor productivity in Russia are the subject of many studies by both Russian and foreign scientists.

The growth of labor productivity depends on a large number of factors. These are the totality of objective and subjective reasons characterizing the change in the level of labor efficiency. These groups of factors for increasing labor efficiency only together can have a positive effect. At the moment, Russian enterprises are fully focused on financial and economic factors, which does not always lead to optimal solutions, much less promote an increase in labor productivity. Many organizations consider the task of increasing labor productivity only as an investment project and do not want to incur additional costs for the modernization and automation of production. Analyzing statistical data on the costs of technological innovations of organizations, we can conclude that there is a positive trend in this area.

In Russia, in 2015, the volume of domestic expenditures on research and development reached 1,200,000 billion rubles, which amounts to \$ 40.5 billion (based on purchasing power parity). In terms of this indicator, Russia ranks 9th in the world, behind the United States, China, Japan, Germany, the Republic of Korea, France, India and the United Kingdom.

III. PRACTICAL IMPORTANCE

In developed countries, the problem of labor productivity was solved and solved with the active participation of the state, with the help of targeted programs and teams of specially trained experts. The experience of implementing state programs to increase labor productivity in different countries of the world and at the international level demonstrates the effectiveness of applying such methods. Consider some of them:

1. National Center for improving productivity in Germany. The Center is a non-profit organization engaged in research and development of methods for improving the competitiveness of small and medium-sized businesses in Germany, both nationally and internationally. The focus is on the construction, services and manufacturing sectors, as these industries are essential for the German economy. Practical recommendations of the center are distributed free of charge. The RKW Center provides much training and consultations for small and medium-sized businesses on how to attract and retain highly skilled personnel, increase productivity and create attractive working conditions. RKW also deals with innovation management for small and medium-sized businesses, supporting the development of new business ideas and developing start-ups.

2. National Center for Improving Labor Productivity in Singapore. The goal of the Council is to achieve Singapore's GDP growth by 30% from 2009 to 2019 due to an increase in labor productivity in small and medium businesses. The work of the Council is focused on the 16 sectors of the economy that make the best contribution to the country's GDP. The Council organizes research and development in the field of labor productivity, develops various programs to improve operational efficiency and participates in the implementation of government business support programs.

3. European Association for Improving Labor Productivity. The purpose of the association is to promote the exchange of experience and information, as well as the organization of joint projects among its members. The members of the association are national productivity centers or productivity institutes.

4. Russian history of centers of increasing productivity. The first Russian (still Soviet) center for increasing productivity acted from 1927 to 1937 as a joint-stock company - the Trust "Installation" at the Central Labor Institute. The goal of "Installation" was to act as an intermediary between the Institute and enterprises in the preparation of labor and the introduction of advanced labor management methods. In the 1990s, the All-Russian Center for Labor Protection and Labor Productivity acted under the Ministry of Labor of the Russian Federation; however, in 1996 it was renamed the All-Russian Center for Labor Protection, with a corresponding change in the lines of business. The regional divisions of the center still exist today, being engaged in occupational safety training and various working specialties. Today there are a number of public initiatives to create national centers of labor productivity in Russia [8]. At a meeting of the Presidential

Council for the Strategic Development of the country on March 21, 2017, it was proposed to create, together with the development institutions, a center of competence, the main goal of which should be “spreading the best international experience, best Russian practices in productivity and work organization”. It was approved by the Presidium of the Council under the President of the Russian Federation on strategic development and priority projects on productivity and employment support”, in August 30, 2017 covering the period from September 2017 on December 2025. Its main objective is the implementation of regional programs to increase productivity and employment support, which will improve the performance of organizations participating for at least 30%.

Increasing labor productivity is relevant for all, without exception, the spheres of the functioning of the state and society. Therefore, it should be the object of attention of government. On the example of the countries reviewed above, it is possible to identify similar development trends in the field of labor productivity. The Government of the Russian Federation has developed an action plan to ensure the growth of labor productivity, the creation and modernization of high-performance jobs, which provides for the creation of a favorable investment climate and conditions conducive to technological renewal and modernization of production, the creation of new high-performance jobs, as well as measures to develop vocational education, improve flexibility and mobility of the labor market and other activities. Moreover, the implementation of large interstate projects, including within the framework of the EAEU, could contribute to solving these

tasks. These could be megaprojects for the creation of international transport corridors and the conquest of outer space.

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