Methodological recommendations for the analysis of the wage fund at the enterprise

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Abstract. All the results of the company's economic activity depend on the effective use and management of human resources. The exchanged benefit for the use of these resources is wages, so the analysis of the effectiveness of the wage fund is an urgent topic and is among the most important regular analytical tasks of the company's management. The lack of control over the effectiveness of payments to staff for remuneration leads to its misuse and can affect the efficiency and quality of staff work, ultimately worsening the economic condition of the organization. This study will allow us to analyze the procedure for calculating wages and related payments, which are regulated by the legislation of the RF; critically evaluate the accounting of payroll calculations in the context of synthetic and analytical accounting, and on the basis of the research done, identify ways to improve the accounting system that provides management personnel with the information necessary for making management decisions on which all the results of the company's economic activity depend.

The essence of wages as a specific element in the economy can be characterized as expressed in cash or in kind, the share of the personnel of organizations in that part of the national income allocated for personal consumption and distribution by quality and quantity of certain labor that was spent by an individual employee in the course of social production. In economics, there are two main approaches to determining wages [1]. According to the first approach, it can be considered as the price of labor – the size of wages and their changes are formed under the influence of market factors, the main of which are supply and demand in the labor market. The second approach to the definition of wages involves its consideration as a monetary expression of the value of such a commodity as labor, the value of wages is determined not only by market factors, but also by the conditions of production (performance of works and provision of services), depending on the influence of which the value of this indicator changes depending on the cost of labor.

Each of these definitions has a right to exist, since each of them complements the essential characteristic of wages. It should be borne in mind that the second definition takes into account the factors of production, which is especially important in the context of scientific and technological progress [2]. For example, as a result of the introduction of new technology, including the development of robotics, the cost of manual labor and human labor in principle changes, new professions appear, etc. This, in turn, affects the formation of the procedure for determining wages.

In the practice of enterprises and organizations, the value of the nominal salary, which is also called the average monthly salary of one employee, is regularly determined. The determination of real wages can be carried out by various methods, taking into account the dynamics of the cost of goods, works and...
services that are available at a certain time on the market, as well as by adjusting the nominal wage to the level of inflation in the country.

Wages play a crucial role in the development of the economy of any country, directly affecting the level of well-being of the population. Its significance in modern conditions can be characterized through the functions that it performs. The set of these functions is shown in figure 1.

One of the main functions of wages is the reproduction of the labor force, i.e. the value of the indicator under consideration should reflect the possibility of a normal recovery of worker's labor.

Figure 1. Functions of wages in modern conditions.

The continuation of the reproductive function of wages is social, which consists in the fact that wages should not only contribute to the reproduction of labor, but also provide an opportunity for the employee to take advantage of a certain set of social benefits, for example, quality recreation, raising children, including in preschool and school educational institutions, education, etc [3]. At the same time, the salary should also contribute to ensuring a comfortable existence of the employee at retirement age.
As part of the study of the social function of wages, picture 2 shows the average monthly nominal wages in Russia and the Irkutsk region, on average for all organizations.

![Diagram](image_url)

**Figure 2.** Dynamics of the average monthly nominal salary in Russia and the Irkutsk Region.

The increase in this indicator for 2007-2019 was a significant increase from 13,593 rub to 47,468 rub in Russia. At the same time, the average salary in the Irkutsk region began to deviate significantly more from the average in Russia during this period, which indicates a slowdown in the development of the level of remuneration in the region. It should also be noted that the indicator fell in 2020 compared to its value in 2019, both in Russia – from 47,468 rub to 47,257 rub, and in the Irkutsk Region-from 45,875 rub to 44,975 rub. This is not only due to the fact that in 2020 its value is used for the month, not for the year, but also for the coronavirus pandemic, which has a significant negative impact on socio-economic development.

As for the size of pensions in Russia, it should be noted that their value, according to Federal State Statistics Service, for the first quarter of 2020 is 14,924 rub. On a global scale, this size is low, since it is up to 30 thd. rub. In most of the developed and developing countries of the world, the pension level is much higher. For example, according to the Pension Fund of Russia, the average monthly pension amount, rered in rubles, is 179,232 rub in France, 173,160 rub in Spain, 163,460 rub in the USA, 140,957 rub in Israel, 139,835 rub in Canada, and 89,880 rub in Japan [4].

Based on the above statistics, it can be assumed that in Russia the social function of wages is rather poorly implemented due to the slowdown in the growth of the average monthly size of this indicator, as well as to a significant extent the low size of the pension, i.e. wages in Russia do not fully ensure the comfortable promotion of an employee at retirement age.

The stimulating function of wages is that it acts as an element of the system of material motivation of employee's work. In modern conditions, in the composition of wages, this role is assigned to the bonus part of the salary, i.e. the bonus, which is paid depending on the results of the employee's work. For this purpose, various methods of measuring these results are used, for example, over-fulfillment of the plan, quality indicators of staff performance, sales volume, etc. By using this wage function, the employer can influence the productivity of employees to a certain extent.

The status function of wages assumes that it largely acts as a status characteristic of the employee's position among other categories of personnel (both vertically and horizontally in the organizational structure of the enterprise management), as well as in society as a whole [5]. The comparison of wages with the labor efforts of an employee acts as a parameter of the fairness of payment for his work.

The function of wages for regulation is related to both the labor market and the profitability of the economic entity. In the labor market, vacancies with a high level of wages are most in demand, and for an enterprise it is an integral part of expenses, so it affects the level of profit and profitability. Therefore,
employees are interested in increasing their wages, and the employer is interested in ensuring a balance between their level and labor productivity.

Since wages are the main source of income for the majority of the country's population, they directly form the level of effective demand of the population for goods, works and services. This demand, in turn, determines the level of national production and the development of all sectors of the economy.

The production-share function of wages is that it, acting as an element of costs, forms the final price of products, works and services due to the contribution of the cost of living labor [6]. This contribution allows you to set the level of competitiveness of wages in the labor market, so this function embodies the implementation of all previous functions.

So, the salary acts as the equivalent of the payment for the performance of labor functions by employees. It can be considered as the price of labor and the monetary expression of the cost of labor, which is formed under the influence of production conditions and market factors. The role of wages is characterized by a number of its functions related to the reproduction of the labor force, material support of personnel, the formation of effective demand, the regulation of the labor market and the profitability of the enterprise, etc.

The study of the phenomena of economic processes is impossible without their detailed analysis, which is the division of the studied object into its component parts and the study not only of them separately, but also of their interaction, connection and dependence [7]. This principle is a fundamental pillar of any type of economic analysis. Economic analysis is a way of knowing the essence of economic processes and phenomena, based on their division into separate objects of research and the characteristic of their influence on each other.

One of the most important components of the analysis of the economic activity of the organization is the analysis of the use of the wage fund in the enterprise. In the process of analyzing the wage fund, periodic monitoring of the use of the wage fund should be carried out, and opportunities for saving money should be identified by raising labor productivity and reducing the labor intensity of products.

The importance of the analysis of the wage fund is that it can be used to optimize the planning of the wage fund in the enterprise, as well as to strengthen control over the expenditure of funds on wages.

The purpose of the analysis of the wage fund is to assess the efficiency of the use of labor resources, to determine the feasibility of using wages and optimizing the level of the wage fund, as well as to identify reserves for increasing the productivity of employees and reducing the labor intensity of products, works and services.

The tasks of the payroll analysis include:

1) evaluation of the effectiveness of the use of funds for the payment of wages to employees of the organization;
2) identification of factors affecting the overall level of remuneration, as well as in the context of different groups of personnel and types of wages;
3) evaluation of the effectiveness of the forms and types of remuneration used in the organization and the incentive system for employees;
4) determining the reserves for improving the efficiency of the use of funds for wages and ensuring faster growth in labor productivity compared to an increase in the cost of paying for it [8].

The following principles of the analysis of the wage fund can be distinguished:

1) The principle of objectivity, accuracy and specificity. To formulate correct conclusions and develop sound recommendations, the initial data on the level of wages must be reliable and documented, reflecting the objective reality of the current situation in the organization.
2) Easy verifiability of the information used. Data on the level of wages should be available for verification in the information accounting system of the organization on the accruals and payments made in favor of employees [9].
3) A combination of quantitative and qualitative assessments. In the course of the analysis of the wage fund, both quantitative indicators (the level of remuneration for its various types and categories of employees, the constant and variable part of the wage fund, etc.) and qualitative
indicators (labor productivity, the ratio of the rate of growth of output and wages, employee satisfaction with the applied system of remuneration and bonuses, etc.) should be analyzed.

4) The scientific nature of the analysis of the wage fund assumes its implementation on the basis of the dialectical method of cognition with the use of modern automation tools and research methods.

5) Complexity. The analysis of the salary fund should be carried out taking into account the coverage of all links, divisions, parties and areas of activity of the organization.

6) A systematic approach. In the course of its analysis, the wage fund is considered as a complex system that includes a number of well-known elements related to each other and to the external environment.

7) The effectiveness of the payroll analysis assumes that its conclusions, results and recommendations can be applied in the practical activities of the organization to inform management in a timely manner and make informed management decisions.

8) Efficiency of the analysis—the costs incurred for the analysis of the wage fund should be justified by the results obtained—an objective assessment of the effectiveness of the use of funds for remuneration and specific recommendations.

The most suitable types for the analysis of the wage fund are:

1) by the time of the analysis—the final (retrospective) and long-term, because it allows you to evaluate the results of the use of funds for labor remuneration in dynamics over a number of previous years and identify reserves for improving the efficiency of the use of labor resources, which determines the achievement of the goals and objectives of the analysis;

2) data study period—several reporting periods, represented by years (from 3 to 5 years), if it is necessary to detail the data monthly, since such an analysis period will cover the largest period of the organization's activity and objectively assess the use of the payroll fund [10];

3) the frequency of the analysis—monthly, quarterly and annually, will ensure that management is promptly informed about the effectiveness of the use of funds for remuneration and the adoption of appropriate tactical and strategic decisions;

4) the scope of the analyzed objects is a thematic (partial) type of analysis, since the analysis of the wage fund as a separate element of the organization's costs is carried out, taking into account the complexity of the analysis—the relationship of the indicators of the effectiveness of the use of the wage fund with the results of the organization's activities;

5) the number and interconnectedness of indicators in the analysis program—a quantitative, factor analysis of the wage fund, involving the measurement, evaluation, comparison of quantitative data and the study of the degree of influence of various factors on the resulting indicators;

6) presentation of the results of the analysis—in the form of an explanatory note, including analytical tables, graphs, an assessment of the impact of factors, conclusions and suggestions for improving the use of funds for employee remuneration [11];

7) the degree of automation of analytical work—with the use of computer technology that allows you to quickly make error-free calculations, automatically build graphs and summarize data on the results of the analysis of the payroll (using office and/or specialized software products, for example, MS Word, MS Excel, “FinEkAnaliz”, “INEK-Analyst”, etc.).

Methods of data processing in the analysis of the level, dynamics and structure of the wage fund: calculation of relative and average values, grouping, index method, method of absolute differences, method of chain substitutions, ranking, decomposition, mathematical and graphical methods.

The main source of information is the statistical reporting form № P-4 “Information on the number, salary and movement of employees”, which consists of three sections:

- number and accrued wages of employees;
- use of working hours;
- movement of employees and expected release.

Thus, the results of economic analysis, including those based on the assessment of the wage fund, are the basis for making informed, rational and effective management decisions [12]. The purpose of
the analysis of the wage fund is to assess the efficiency of the use of labor resources, to determine the feasibility of using wages and optimizing the level of the wage fund, as well as to identify reserves for increasing the productivity of employees and reducing the labor intensity of products, works and services. For the objectivity of the results of the analysis, its conduct should be based on a scientific methodology.

The method of economic analysis is a way of knowing the economic phenomenon and the nature of its relationship with other processes. The main method of analyzing economic activity is the dialectical method of cognition, which involves the consideration of all phenomena and processes in constant movement, change and development. Thus, economic analysis focuses mainly on changing the elements of the object of research. In addition, when conducting the analysis, it is necessary to take into account the internal and external relationships of the research subjects and the ways in which they interact.

The method of analysis determines a certain method of its implementation, which is a set of analytical methods for studying economic phenomena. The methodology of economic analysis is divided into general and private. The general methodology is the most common and is usually focused on conducting a universal analysis. The private methodology is aimed at analyzing individual industries, types of activities, etc.

The main traditional methods of analyzing the wage fund include:

- horizontal analysis, which consists in constructing one or more tables in which absolute indicators are supplemented by relative growth rates (declines);
- vertical analysis - presentation of the financial report in the form of relative indicators. This view allows you to see the specific weight of each article in the final indicators. A mandatory element of the analysis is the dynamic series of these values, through which you can track and predict structural changes.

Two main features of vertical analysis can be distinguished:

- the transition to relative indicators allows for a comparative analysis of enterprises, taking into account industry specifics and other characteristics;
- relative indicators smooth out the negative impact of inflationary processes, which significantly distort the absolute indicators of financial statements and thus make it difficult to compare them in dynamics.

Horizontal and vertical analyses complement each other. Therefore, in practice, you can build analytical tables that characterize both the structure and dynamics of individual indicators.

- trend analysis is a part of perspective analysis. It is necessary in management for financial forecasting. A trend is a path of development. It is determined based on the analysis of time series. A graph of the possible development of the main indicators of the organization (for example, the wage fund) and a time series are constructed with the construction of a mathematical model of the trend and with the prediction of the future values of the series on this basis.
- analysis of relative indicators (coefficients) - calculation of the ratios between individual positions, determination of the relationships of indicators (for example, average salary, labor productivity, and others).

Factor analysis is a method of complex and systematic study and measurement of the impact of factors on the value of performance indicators. Systematization of factors is achieved by constructing structural and logical models in which factors are placed in a certain order, taking into account their relationship and subordination. One of the tasks of factor analysis is to model the relationships between performance indicators and the factors that determine their impact [13]. Deterministic factor system-to represent the phenomenon under study as an algebraic sum, quotient, or product of several factors that determine its magnitude and are functionally dependent on it.

In deterministic analysis, the following methods are used:

- chain substitution, it is used to calculate the influence of factors in all types of deterministic factor models. This method allows you to determine the influence of individual factors on the
change in the value of the effective indicator by gradually replacing the base value of each factor indicator in the volume of the effective indicator with the actual one;

- absolute differences, used to calculate the influence of factors on the growth of the effective indicator in deterministic analysis, but only in multiplicative models;
- the integral method is used to measure the influence of factors in multiplicative, multiple, and multiple-additive models. Using this method allows you to get more accurate results of calculating the influence of factors in comparison with the methods of chain substitution, absolute differences, since the additional increase in the effective indicator from the interaction of factors is not attached to the last factor, but is divided equally between them.

In the course of the analysis, the relative and absolute deviations of the actual wage fund from the accepted base of comparison are determined, followed by the calculation of the impact of various factors on its change.

To find the value of the relative savings (overruns) of the wage fund when calculating the relative deviation from the value of the actual wage fund, you need to subtract the planned (basic) wage fund, which is adjusted for the percentage of growth in the actual volume of production in the reporting period.

The analysis of the wage fund can be carried out by a general method, which includes the following methods:

1) Logical methods of information processing: comparison, graphical, tabular and balance method of data representation, average and relative values, analytical groupings, heuristic methods of solving problems based on intuition, past experience, expert assessments, etc.

2) Methods of deterministic and stochastic factor analysis, optimization solutions of economic problems: the method of chain substitution, absolute and relative differences, integral correlation and component methods, queuing theory, game theory, etc.

The use of specific techniques depends on the purpose and the required depth of the study. The comparison method is used for any type of analysis, including the analysis of calculations with personnel on remuneration: the dynamics of indicators for several considered periods are compared. The method of relative values is mainly used in assessing the structure of the salary fund, which allows determining the change in individual types of payments, taking into account the overall dynamics of the salary fund, as well as in determining the relative deviation of the specified fund. To calculate the indicator, use the formula (1):

\[
\Delta \Phi_{\text{rel}} = \Phi_{\text{rel0}} \times I_{\text{out}} + \Phi_{\text{rel0}},
\]

where \( \Delta \Phi_{\text{rel}} \) — savings or overruns on wages, monetary unit;
\( \Phi_{\text{rel0}} \) and \( \Phi_{\text{rel1}} \) — the wage fund, respectively, in the base and reporting periods, monetary unit;
\( I_{\text{out}} \) — output index, unit shares;
\( \Phi_{\text{rel0}} \) and \( \Phi_{\text{rel0}} \) — accordingly, the variable and constant part of the wage fund in the base period, monetary unit.

Factor analysis is of significant interest among these methods, which allows us to determine not only the factors that influenced a particular economic indicator, but also to measure the level of their influence [14].

Factor analysis is a method of complex and systematic study and measurement of factors that affect the value of the resulting indicators. The tasks of factor analysis are:

1) Determination of the measured factors affecting the indicator under study.
2) Classification and systematization of the determined factors.
3) Modeling the information used, determining the nature of the relationships of indicators.
4) Selection of the type of factor analysis technique that is suitable for a specific measurement of the influence of factors.
5) Calculation of the influence of factors.
6) Drawing conclusions and using the factor model for current analytical purposes.

These tasks of factor analysis indicate, of course, its high efficiency and the need for economic analysis.
The factor analysis of calculations with personnel on remuneration is presented by an assessment of the influence of several important factors on the resulting indicators, which are the wage fund and production of products per ruble of salary. The influence of factors on the resulting indicator is calculated by the method of absolute differences, the essence of which is to multiply the absolute increase in the value of the studied indicator by the base value of the factors that are to the right of it, and by the actual value of the factors located to the left of it in the factor model.

Thus, the methods of analyzing the wage fund at the enterprise include the use of traditional approaches based on the analysis of absolute and relative indicators, horizontal and vertical analysis, trend approach, as well as deterministic factor analysis. The most optimal combination of these methods is to obtain the most complete information about the effectiveness of the use of funds for staff remuneration.

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