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LABOUR MARKET OF UKRAINE AND MEETING POST-WAR WORKFORCE SUPPLY MARKET DEMANDS

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Introduction. Full-scale military actions in Ukraine increased the dynamics of changes in the labour market, caused significant uncertainty in influencing factors, and increased the imbalance of supply and demand in the labour market, which was characterised as a crisis even before the invasion. This strengthened the need for a relevant assessment of the needs of the Ukrainian labour market and the possibility of its personnel support and management of labour resources, taking into account the risks for the country's economy and post-war reconstruction.

Aim and tasks. The purpose of this article is to evaluate the labour market of Ukraine in the post-war period and substantiate ways of meeting the market's personnel needs using the example of the construction and IT industries. The tasks of this study are to identify the factors affecting the labour market in the post-war period, assess the dynamics of changes in the balance of demand and supply in the labour market in the post-war period, and develop a mathematically formalised approach to the adaptive assessment of the labour market.

Results. The developed mathematically formalised approach to assessing the imbalance of the labour market in individual areas allowed the stabilisation of the demand and supply of the IT labour market in 2026 at a level 1.496 times lower than the maximum in 2023. In the construction industry, differentiation in sectoral priorities of post-war reconstruction has been determined, as evidenced by the expected shortage of personnel in this industry, which is 2.15 times higher than the indicator for all industries. This is also indicated by the differentiation in the demand for qualified workers from 20% to 60% for large and small construction enterprises.

Conclusions. The identified reasons for the uncertainty of factors affecting the labour market (losses in the quality of labour resources and forced migration) proved that post-war reconstruction would require an adaptive approach to managing labour resources at all levels. The lack of personnel in the post-war period will require a change in the concept of ensuring the competitiveness of domestic enterprises by using cheap labour. It was determined that the demand for qualified personnel in the post-war period for all industries would grow, which is confirmed by the dynamics of the index of change of employees, which is 30% higher for qualified workers than unskilled workers. Significant differentiation by micro-specialty influences the gap between demand and supply, which does not consider the market's needs.

Keywords: labour market, workforce supply, demand imbalance, unemployment, labour resources.

1. Introduction.

Due to the complex dynamic changes in the country's economy in the war and post-war periods, the study of the labour market requires special attention. Before the full-scale war, Ukraine's labour market was already characterised by scientists as unbalanced and in crisis (Lehmann & Pignatti, 2018; Pham et al., 2023). The war in Ukraine caused significant problems in providing the economy with labour resources.

The long-term perspective of imbalanced supply and demand in the labour market will lead to excessive budget expenditures, which is unacceptable in the conditions of the state budget deficit and will cause increased social tension. This could complicate the process of post-war economic recovery and even stop it.

Therefore, anticipatory regulatory measures are essential and will help reduce the gap between demand and supply in the labour market. However, regulatory measures based on an irrelevant assessment of changes in the labour market will not improve the situation but rather complicate it. At the same time, due to the considerable dynamism of threats, multi-level and multi-vector influences, the uncertainty of the main parameters, in particular the time of the end of the war, the amount of destruction and losses that the country will suffer, the possibility of using standard approaches to assess the prospects of the labour market is limited, in particular, the methodology of the specialised ministry (Ministry of Economic of Development and Trade of Ukraine, 2013). This makes it relevant to study the Ukrainian labour market in the post-war period and to propose ways to meet the market's needs in terms of personnel.

2. Literature review.

The problems of forming forecasts of the labour market of Ukraine under significant challenges were studied by a wide range of scientists. Thus, Kovach (2019) proposed conceptual changes in institutional approaches to labour market management, particularly regarding the regulation of labour market disparities by regions of Ukraine. At the same time, Kovach (2019) does not consider the consequences of a large-scale war.

Therefore, for the perception of the main theses of the study, in particular regarding the management strategy and methodology, the proposed approaches to balancing supply and demand in the labour market need to be revised.

Patyka and Pasichnyk (2023) indicated that the depopulation of the population of Ukraine, differentiated by regions and localities, significantly intensified by military actions, creates significant differentiated risks for industry labour markets in the post-war period. The significance of the effects of the war on the labour market in the post-war period is confirmed by Bogush (2022), who proposed that separate categories for the proper management of human resources stratify the loss of labour potential.

Hudima et al. (2021) and Bazaluk et al. (2024) stated that the cause of this imbalance is the insufficient awareness of applicants and students about employment prospects in their chosen speciality.

Along with the study of how to provide the labour market with personnel in the post-war period, Lyubomudrova and Hoichuk (2022) also indicated the negative effects of this process.

Kruhlov et al. (2023) stated that in order to solve the problem of providing personnel for the reconstruction of the economy in the post-war period, it is necessary to restructure the approaches of state policy regarding the reproduction of human capital and the specified tasks that need to be solved on this path. In order to forecast the need for labour resources, the influencing factors are stratified and a method of pairwise combination of various factors with the determination of the vectors of their change is proposed.

Trach (2023) proposed the concept of intellectualization of the economy when their quality and modern technological support compensate for the shortage of workers. This, accordingly, forms the requirements for the modernization of education.

Zayed et al. (2022) indicated the need to comprehensively ensure the appropriate level of quality of life for employees, including stimulating them to increase their professional and qualification level, acquiring appropriate education, as an unconditional direction for the introduction of new approaches in personnel policy.

Skoryk and Stanko (2023) pointed to the low efficiency of state management in ensuring the needs of the labour market in terms of personnel due to the fact that measures are planned and implemented without a relevant assessment of the needs of the labour market and a corresponding adjustment of the amount of training of specialists in certain areas.

Serohina (2023) stated that the success of management measures to ensure market needs in personnel will be achieved if they are combined with market mechanisms, which will be accompanied by forecasts of the needs of employees of subjects of economic activity and institutions in the field of educational services according to their qualifications, and increasing the responsibility of the employees themselves for their qualification trajectory.

Abliazova (2020), in addition to determining the discrepancy between the scope and directions of the training of specialists by higher education institutions of Ukraine to the needs of the labour market, proposed methods of reconciliation of the specified mismatch (Beveridge, evaluation of the performance of the labour function, and comparison of the number of unemployed and employed). All these methods, owing to the significant difference in the time lags of training highly qualified specialists and changes in market requirements, are not sufficiently relevant, especially in conditions of significant uncertainty, rapid updating of technologies, in particular IT technologies, and dynamic changes in the needs of the labour market. This also indicates the reasons for the inconsistency of most labour market forecasts made before the start of a full-scale war, which significantly increased the level of uncertainty of the main influencing factors (The Employers of Ukraine, 2023).

A review of research on the specified topic indicated the need to develop directions and tools for managing enterprises in post-war conditions.

3. Methodology.

The application of the comparison method made it possible to establish the significant effects of the war on the labour market, which determined the conditions and directions for the provision of personnel for the process of economic recovery in the post-war period.

The application of the method of analysis and synthesis made it possible to assess the trends of changes in the labour market in the post-war period, to propose ways to meet the needs of the market in personnel, and to identify the factors influencing the labour market in the post-war period, their signs and trends of change, and the influence of the war on the specified factors.

The use of the comparative analysis method made it possible to establish the inconsistency of mathematical methods for evaluating the labour market in the case of significant amplitude of dynamic changes in the main parameters of influence and their uncertainty, which required the development of a methodology adapted to such changes.

Using mathematical methods, an adaptive approach to predicting changes in demand and supply in certain areas where a significant number of microspecializations are observed in conditions of dynamic changes, which consists of the following.

The market state of demand and supply of the labour force of a group of specializations in quantity with demand (z_i) and supply (x_i) in one field of activity can be considered as a nonlinear interaction of oscillatory processes with a frequency of ω_i with a weak interconnection (ε), which are known to be described by the equation:

$$\frac{d^2(x_i-z_i)}{d\tau}+\omega_i^2(x_i-z_i)=\varepsilon f[(x_1-z_1),(x_2-z_2),(x_3-z_3)...] \quad (1)$$

where τ is time, f is a dynamic adaptive function that describes the interaction (labor movement) between specializations, *i=1, 2, 3* ... is the specialization index.

In this case f is represented as a series with a quadratic term that takes into account the pairwise interaction of the k-th and l-th specializations:

$$f = \sum_{k,l} \vec{\alpha}_{k,l} (x_k - z_k)(x_l - z_l) \quad (2)$$

where $\vec{\alpha}_{k,l}$ is a vector (matrix) of the effects of measures contributing to the adaptive compensation of challenges in approaching the demand and supply of labour for a group of related specializations by basic education. The component matrices in the calculations were accepted in an expert manner.

The dynamics of the amplitude of fluctuations (A) of the difference between demand and supply by specialization can be calculated using the equation:

$$\frac{dA_k}{d\tau} = \varepsilon\sigma A_1 \vec{A}^* \quad (3)$$

where σ is the standard deviation of the general set of amplitudes, and the value of the undefined amplitudes of the specializations of the matrix $\vec{A}^*$ is found using the complex conjugation method.

The introduction of the indicated matrix of measures enables the operative adjustment of attractors ($\frac{dA_k}{d\tau}$) in the space of labor market states.

The specified measures should direct all $\frac{dA_k}{d\tau}$ to the plateau of stabilization of labor supply and demand in the given field of activity.

This makes it possible, given the unchanging trends of the main parameters of influence on the labour market in the field of IT and the application of state funding and legal support for the proposed additional short-term courses of narrowly professional education no later than in the fourth quarter of 2024, to describe the dynamics of changes in the demand and supply of labour force in the time interval 01.01.2022-01.12.2024 by polynomial:

$$\frac{\partial x_i}{\partial z_i} = -0{,}0006\,\tau_*^6 + 0{,}0284\tau_*^5 - 0{,}4761\tau_*^4 + 3{,}7671\tau_*^3 - 14{,}176\tau_*^2 + 23{,}975\tau_* - 11{,}506 \quad (4)$$

where, τ_* is discrete time (three months).

This makes it possible to predict the stabilization of the demand and supply of labour in the field of IT at the beginning of 2026 at a level 1,496 times lower than the maximum of 01.12.2023.

4. Aim and tasks.

The purpose of this article is to evaluate the labour market of Ukraine in the post-war period and to substantiate ways of meeting the market's personnel needs using the example of the construction and IT industries.

This determines the formulation and solution of the following tasks: identification of factors affecting the post-war labour market, assessment of the dynamics of changes in the balance of supply and demand in the labour market in the post-war period, and development of a mathematically formalised approach to adaptive assessment of the labour market.

5. Results.

Due to the significant difference in the amount of destruction, the number of lost population, and migration flows, the labour market in the post-war period will be differentiated by region and industry needs for specialists with differences in their quality.

This not only causes a discrepancy in the priorities of managing regional labour markets but also determines the need to distribute these needs in time. Thus, to restore destroyed enterprises, it is first necessary to restore the infrastructure of the regions and rebuild housing for qualified specialists needed in the following stages of restoration. The priority of providing specialists with housing is not only a necessity in their accommodation of people in destroyed locations but also the formation of an appropriate quality of life, which, in particular, becomes an incentive for the return of migrants and mobile relocation of labour resources. The need to ensure the mobility of labour resources of the required specialisation, noted by a number of scientists (Huk and Bilichenko, 2022), is thus simplified by the motivation of labour resources to relocate.

This is an additional factor that determines the dynamic nature of the labour market in the post-war period and, accordingly, changes the requirements for the operational training of such personnel with the provision of their employment in the following periods.

Existing forecasts of institutional structures using the methodology of the Ministry of Economic Development and Trade of Ukraine (2013) are not sufficiently relevant. This is evidenced by the predicted rapid growth in the need for managerial personnel (10% of the total labour market demand by 2027), although today, the direction "Administration, middle management" is one of the leaders in the number of job seekers - 3.8 people per one vacancy. At the same time, according to the same methodology, the forecasted need for qualified agricultural workers is only 0.27% of the total number of specialists and workers in labour professions.

This forecast determines the state order for the training of specialists.

This even forced employers to turn to the Economic Development and Trade of Ukraine, which required the provision of the required number of qualified personnel (The Employers of Ukraine, 2023). The above shows that not only the forecasts of scientists (Ladonko et al., 2023; Shapovalova & Ihnatenko, 2023) but also the forecasts of institutional structures for a drastic change in conditions and an increase in the number of uncertain factors affecting the labour market do not meet the requirements of relevance.

A sign of drastic changes in the labour market in the following periods are the trends noted by the European Business Association (2024) at the stage of recovery of economic activity after the shock of 2022. Thus, 55% of the interviewed employers pointed to the lack of personnel as the main reason for the slowdown in the development of companies/enterprises, and 33% determined that they still feel the lack of personnel partially.

Therefore, already in 2024, 39% of surveyed employers are planning measures to promote personnel training, and 93% are planning to increase staff wages to stimulate proper staffing (European Business Association, 2024).

By reducing the risks of war, restoring the level of consumption of products and services by the population, and, most importantly, the need to rebuild what is destroyed, but business activity will grow even faster.

In particular, in the event of the end of hostilities, the number of mobilized people, which is now more than 1 million people, will be reduced to the pre-war level, the return of forcibly displaced persons, whose number at the end of 2023 was 6.3 million people (Malynovska & Yatsenko, 2023; Marshavin et al., 2023) to their homeland will be stimulated by the termination of their financial support by the governments of the host countries. But this could lead to a rapid rise in unemployment.. This can lead to chronic unemployment and, accordingly, long-term stagnation of the economy.

At the same time, the return of migrants will not lead to an increase in the qualification level of the total volume of job seekers, firstly, due to the disqualification of a significant part of migrants because of long-term unemployment (Fig. 1) and secondly, because the most active and qualified displaced people are already employed abroad. The wage difference between the host countries and Ukraine will reduce motivation to return.

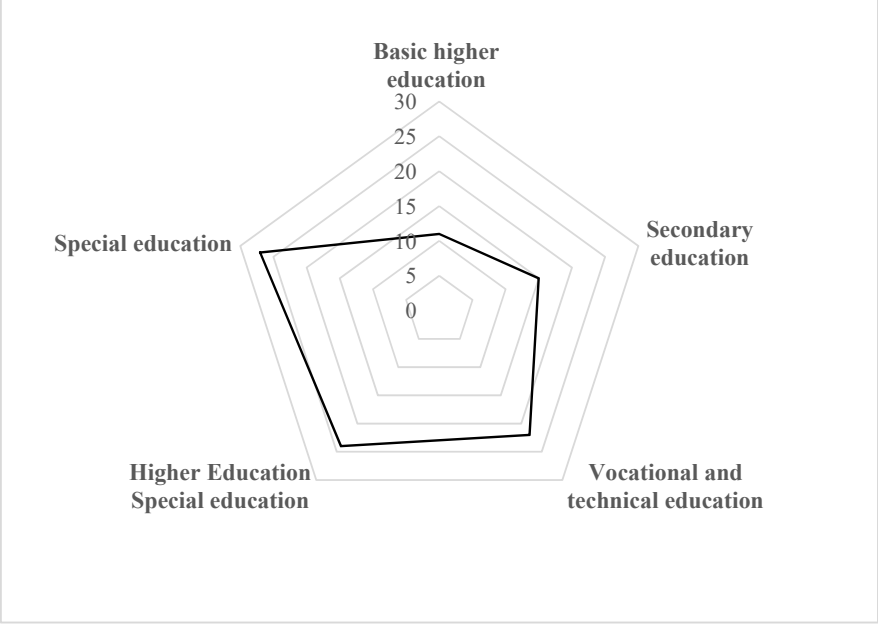

Fig. 1. Risks of loss of educational potential due to external population migration, %.
Source: based on data Petrova (2023).

Since 89.9% of workers abroad have a high level of education (Fig. 2), this will lead to a decrease in the quality and qualification level of labour resources returning to Ukraine. Indicators of the irreversible loss of qualified part of migrants in Ukraine will increase as measures to promote the integration of displaced people are being introduced in host countries, particularly EU countries (Novikova, 2024). The education of Ukrainian youth abroad will also increase the outflow of qualified labour resources. This will be a factor in accelerating the ageing of the labour force in Ukraine.

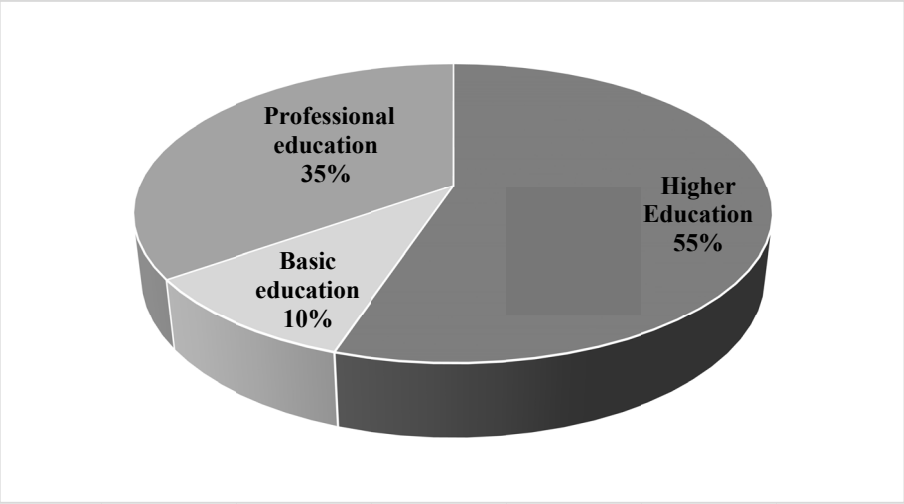

Fig. 2. Official employment of Ukrainian citizens outside the country, % of the total number of working migrants, (persons).

Source: based on data Institute of Professional Qualifications (2024).

This also creates significant uncertainty about the main factors affecting the level of demand and supply in the labour market in the post-war period. The uncertainty of the labour market is also determined by the dynamics of the population, particularly the working population, which are not clearly expressed under wartime conditions. At the end of 2023, the permanent population of Ukraine amounted to 29,000 thousand people, of which, excluding government employees, approximately 6-7 million people worked.

With a sharp drop in the birth rate, the number of people of retirement age for the number of working people is predicted to more than double. This requires attracting pensioners to work, which, in turn, requires the organization of their professional retraining.

Forecasts for the post-war period, the total number of the permanent population, including the elderly and working people, largely depend on when the war will end, further creating uncertainty in the long-term assessment of the labour market.

In the post-war period, the share of women in the total working population will increase. Therefore, there will be a need not only to automate work, especially in those production areas that require significant physical effort, but also to abandon the assessment of workers based on gender. This will lead to a dynamic change in the supply and demand ratio in the labour market as a whole and, in particular, for workers of certain micro-qualifications with a change in the direction of the vector of the specified ratio at certain time intervals. This will also lead to a radical change in labour relations; in particular, it will require an orientation of legislative acts in the field of labour to ensure employees' rights and not employers' needs.

Therefore, the forecast formation requires a dynamic adjustment to reduce the uncertainty of the main influencing factors. Undoubtedly, the first stage should be establishing the extent of the destruction, irreversible loss of labour resources, the need for workplaces for inclusive population categories, and reasonable, realistic recovery goals.

The second stage should be assessing one's financial resources, the amount of external financial aid, and the periods of receipt to establish the time intervals of the need for employees of certain qualifications.

The reconstruction of destroyed cities and villages will require specialists in the construction industry in all specializations. This will also lead to increased demand for labour in all related industries. The predicted increase in vacancies in the higher and higher professional fields will not occur due to the increase in the volume of specialist training but because of the digitization of the field. At the same time, the growth in demand for qualified personnel in the industry in the first stages of reconstruction will be insignificant due to the significant scale of the destruction of industrial enterprises.

It will increase only in the following stages of economic recovery.

A study of changes over time in the needs of employers for workers revealed an increase in the demand for labour at the level of 6% per quarter.

The specified estimate is a base level for comparing the dynamics of individual areas and specializations. This indicator is averaged across all specialties, which, to a certain extent, hides disparities in demand for micro-specialties.

IT specialists, according to the majority of scientists, will be needed for the country's post-war recovery. Nowadays, there is a trend of a rapidly growing gap between the needs of specialists in the mentioned field and job seekers (Fig. 3). The indicated gap for the period from 01.04.2022 to 1.12.2023 increased by 35.5%.

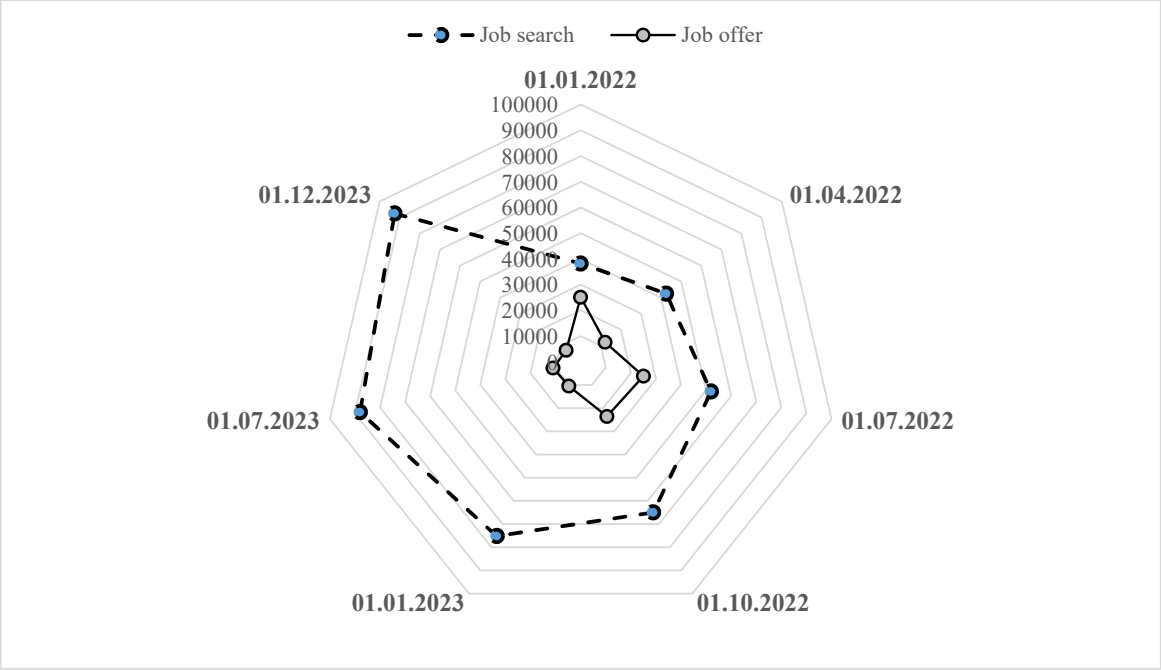

Fig. 3. Dynamics of the number of offers and vacancies in the IT labour market, unit.
Source: based on data Djinni (2024), Zolotukha & Hlazunova (2024).

However, the integral indicators of changes in demand and supply in the labour market in the IT field need to fully explain the significance of the gap between the volume of personnel training in specific areas of IT activity and the needs of the market.

Thus, in the direction of "customer/technical support", 2,226 candidates were looking for work, and were 239 jobs in 2023 (Djinni, 2024). More than 12 people applied for one vacancy in the "Project Management" direction.

At the same time, fewer than two candidates applied for one vacancy in the "ERP systems". The difference in the level of payment also indicates the difference in the market demand. C++ developers are offered a salary of 2,750 dollars per month, Net programmers are offered 2,250 dollars per month, and Web programmers are offered 890 dollars per month (Djinni, 2024). This is, firstly, a sign of significant differentiation of the labour market in IT according to individual areas of work. Secondly, the dynamism of the labour market is due to the rapid updating of technologies. Thirdly, higher professional education needs to be more flexible to market requirements.

In order to reduce the gap between the demand and supply of the IT market, it is necessary to move to the provision of broad education in this field with a shortened period of study and the opening of additional short-term courses of narrowly professional education in various areas. This will ensure not only the dynamism of training and retraining of specialists and the possibility of a dynamic response to the market's needs but also allow job seekers to determine their qualification trajectory and make efforts to modernize it (Barvinok et al., 2023).

Regulatory and legal support is required to recognise diplomas to obtain the appropriate qualification level in the chosen specialization at additional short-term courses of narrow professional education (Shvets et al., 2024). This will require the higher school to revise its guidelines, notably the transition from forming the qualification level of the education seeker to his compliance with professional standards based on competence. A dynamic change in market demands for employee competence will require restructuring the higher education system, particularly in the acquisition by students of additional micro-qualifications for working in a specific position. The proposed approach will form a market mechanism of self-regulation of the gap between demand and supply in the labour market under dynamic changes in market needs.

Currently, the dynamism of the labour market is determined not only by the dynamism of technological renewal in ultra-modern industries but also by market expectations of the need for qualified workers. Thus, if at the end of 2023, the percentage of vacancies in the construction sector to the total number of vacancies was 4.7%, then by the end of 1 quarter of 2024, this indicator was 5.0% (National Agency of Qualifications, 2024).

Also, the rate of this growth (~ 6%) corresponds to the general growth rate of demand in the labour market.

The above indicates significant uncertainty in the levels of demand and supply for certain specialities in the conditions of modern challenges, in particular, for the return of 400 thousand migrants to the homeland in the second half of 2023 (Oleynik and Zhurakovskaya, 2024). In view of the above assessment by the instructional structures of the level of unemployment, its reduction in 2025 to 14.7%, i.e. 1.25 times relative to the indicator of 2023, is not relevant since, firstly, official statistics show underestimated unemployment data because it relies on the official registration of the unemployed and, secondly, due to the significant uncertainty of this labour market indicator.

Fig. 4 shows that the Change Index of skilled workers in recent years is greater than the specified index for unskilled workers by at least 6-10%.

This, in particular, indicates a greater demand for qualified employees, which ensures their success in finding new jobs that better meet their requirements, and, at the same time, the inadequacy of a certain number of employers to the growing needs of this category of personnel and, accordingly, the need to change approaches of the specified category of employers to personnel policy. The indicated gap in the demand for labour force by the level of qualification will grow in the post-war period.

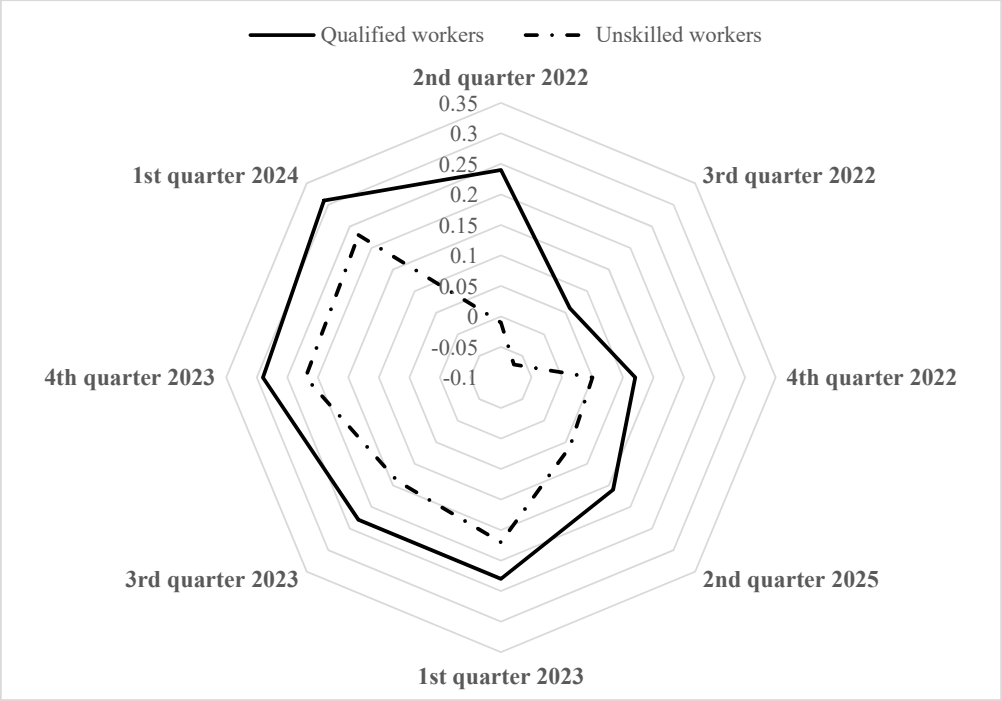

Fig. 4. Index of change of employees in the national economy, unit.

Source: based on data Institute of Economic Research and Policy Consultations (2024), World Bank (2023).

In conditions of considerable uncertainty, labour force demand forecasts for the short- and even medium-term perspective should be made based on the expectations of the narrow-industry labour market, with the demand for small, medium and large enterprises being distinguished, which will provide the forecasts with a greater level of relevance. An example would be a study of business expectations of a shortage of skilled personnel in the construction industry. These expectations for this industry are 2.15 times higher than the average for all industries. There is also a significant differentiation of demand by the size of construction enterprises – the more significant the enterprise, the greater the expected shortage of personnel. This, in particular, allows us to forecast not only the demand for builders, but also for architects and designers, that is, for the qualifications necessary for the implementation of large projects. The breakdown of the functional dependence of the expectations of the shortage of qualified personnel in general for the industry in the 2nd quarter of 2023 is also characteristic, as well as the absence of such a breakthrough for the construction industry, which confirms the thesis about the difference in priorities in personnel provision of reconstruction at its various stages. The most significant factor in forecasting labour market demand in the post-war period is uncertainty regarding the end of the war and its consequences. In the conditions of war, the number of dead and wounded is increasing daily, the amount of destruction is increasing, the birth rate is shrinking, and the loss of territory with its inhabitants and subjects of economic activity is probable. The lack of labour in general and the growth of disproportions in the demand for qualified and unqualified workers will lead to a reduction in the opportunities for the formation of competitive advantages of Ukrainian industries at the expense of cheap labour.

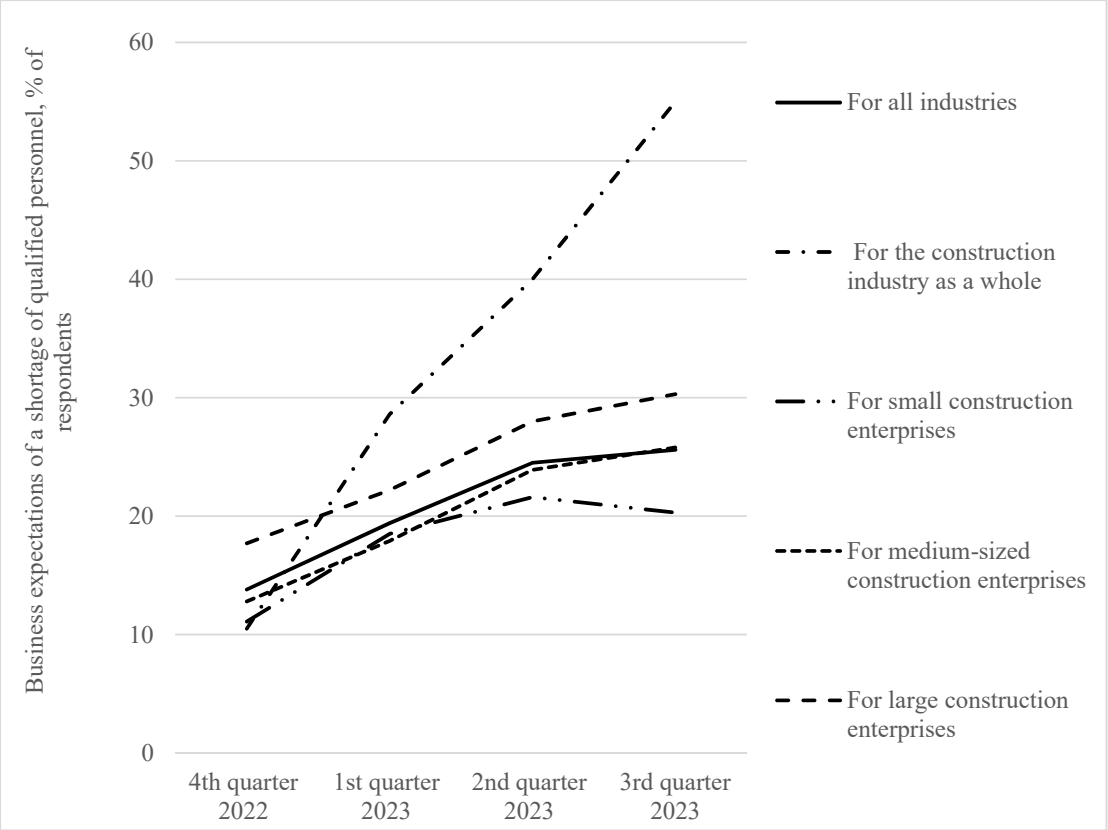

Fig. 5. Dynamics of business expectations of a shortage of qualified personnel, % of respondents.

Source: based on data Novikova et al. (2024).

This will lead to the need for technological modernisation, which, in turn, will require specialists with appropriate microspecialization.

This will lead to the fact that, to rebuild and modernise the economy, more than 50% of qualified workers will need to update the qualification level of their special knowledge, and the need for low-skilled workers will significantly decrease.

First, it will become a factor of dynamic changes in the set of required market specialisations; second, it will accelerate the growth of the personnel deficit; and third, it will require a system of higher education that will ensure fast and high-quality retraining of specialists.

However, this will also create a new reason for unemployment – a decrease in demand for outdated specialisations and the formation of a new type of chronic unemployment–for those who are incapable of quickly updating specialised knowledge.

6. Conclusions.

It is noted that the labour market in the post-war period will be differentiated by region and sectoral needs for specialists with differences in their quality, which causes a discrepancy in the priorities of managing regional labour markets and determines the need to distribute these needs over time. This indicates that the shortage of personnel in the post-war period created the need to motivate them to mobility and led to the ranking of priorities at each stage of economic reconstruction.

It should be noted that experts in the construction and related industries will be needed in the first stage of reconstruction. Then, in the following stages, experts in the educational field and, later, qualified industry personnel will be required. It was established that even today, employers' expectations of a shortage of qualified personnel in the construction industry is 2.15 times higher than the indicator for all branches of industry.

Examining the rate of alteration of the Index of change of employees demonstrated that the quantity of skilled labourers was nearly one-third greater than the number of unskilled workers. This allowed us to substantiate changes in demand in the labour market by the level of qualification in post-war times. This is because of the more significant employment opportunities for qualified workers due to the need for a workforce of appropriate quality. It was also revealed that the number of Ukrainian citizens with higher and higher professional education who are officially employed outside the country today exceeded that of citizens with secondary education by 89.9%.

This will lead to a decrease in the share of qualified workers among those who will return to Ukraine, which will, accordingly, reduce the indicators of the quality of the workforce in post-war times. The possibility of employment abroad, the introduction of programs to promote the integration of immigrants in a number of host countries, the education of Ukrainian youth abroad, and other factors also formed a significant level of uncertainty in the personnel supply of the Ukrainian economy in the post-war period. The extent of population loss and destruction of industrial facilities and infrastructure depends greatly on when the war ends, which further increases the uncertainty of the long-term labour market assessment. The specified social changes in the post-war period, demobilisation, and return of migrants will create a significant level of pressure on the labour market.

The market will not be able to satisfy such a supply level, which will appear in a short period. This can cause chronic unemployment, which, in turn, leads to economic stagnation.

This also created a significant level of uncertainty in the post-war labour market. Currently, the average demand in the labour market for all specialities is growing at approximately 6% every three months. This is the basis for comparing the dynamics of individual areas and speciation. Using this approach, the state of the labour market in the IT sphere, where there is a rapid growth in the gap between the needs of specialists and job seekers.

This gap is formed by a significant disparity in the training of personnel in certain specialties and the failure of higher and higher professional education institutions to consider the market's needs. The developed adaptive method of forecasting changes in demand and supply in certain areas where a significant number of microspecializations are observed in the conditions of dynamic changes, making it possible to establish the stabilisation of supply and demand in the IT labour market at the beginning of 2026 at a level 1,496 times lower than the maximum of 01.12.2023.

In general, the need for specialists in the required specialisation in the post-war period will lead to the need to abandon the concept of ensuring the competitiveness of domestic enterprises using cheap labour.

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