

The Regional Disproportions of Labour Market Risks in Ukraine

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Abstract

The article contains a regional analysis of the Ukrainian labour market risks and its minimisation recommendations in the war period. The war's consequences were the forced migration spread, the labour force reduction, the unemployment increase, and the decline in real incomes. The analysis of regional disproportions of labour market risks during the war showed that jobs declined, wages decreased, labour supply-demand imbalance and labour competition increased in the regions with the most consequences of military actions. The migration, unemployment, and wages trend became a base for developing the labour markets advantages matrix for Ukraine's regions.

Keywords

labour market, war in Ukraine, labour market risk's factors, migration, unemployment, wages

Introduction

Ukraine has been at war since February 24, 2022. The war forced businesses to optimise or reduce activities; some companies ceased existing altogether. A significant part of the Ukrainian labour force resigned from jobs due to the closure of enterprises and forced internal migration associated with the conduct of hostilities. As a result, the unemployment rate increased. Currently, there is considerable competition for jobs in the national labour market. According to various estimates, the number of vacancies in Ukraine decreased 20 times compared to pre-war time (Zhiryi, 2022). The labour market is gradually adapting to current conditions. According to the job site *Work.ua* (2022c), the number of vacancies only in July 2022 increased by 14% compared to June. And as of September 30, the number of actual vacancies already amounted to more than 55 thousand, among them 4.8 thousand vacancies for remote work, which is relevant in the conditions of war and a considerable number of displaced employees. The priority of Ukrainian companies is the preservation and support of existing employees. Typical reasons for creating vacancies are replacing

laid-off employees and closing vacancies at enterprises after relocation. However, there are times when companies expand to new job places.

Forced external and internal migration has become large-scale, and the number of IDPs has increased. If the migrants had merely stayed in Ukraine and actively sought work, the unemployment rate would rise more. And the mobilisation of the Ukrainian Armed Forces restrained the unemployment increase. The decrease in labour income due to the high inflation level, wage reduction, and payment arrears result in the situation in the labour market.

The positive dynamics of the labour market is insignificant since the current crisis in the labour market appeared to become the most powerful in the last decade. The war caused the emergence of novel labour market trends and changes in employers' and job seekers' behaviour. The war's challenges for the Ukrainian labour market exacerbated the previously present problems and risks. The issues of predicting and preventing the social risk of the labour market are associated with a reduction in the number of jobs, a decrease in the size and non-payment of wages, a high unemployment rate, a decrease in the labour force supply, and a change in its structure. Disparities in the labour market become apparent in a simultaneous manifestation of significant competition for labour and jobs, a senior level of unemployment with an unprecedented number of open vacancies. Therefore, the risks arising during the war in Ukraine affect all subjects of the labour market, which makes it necessary to identify and study the specifics of their manifestation.

The article's purpose was to define and assess the potential labour market risks and develop the principal recommendations for their prevention in Ukraine during the war and after. To achieve the research's goal is necessary to determine the potential risks for each labour market subject considering their factors. The points of attention of analysis should include external and internal migration, the official unemployment rate, and the wages level during the war in Ukraine. Challenges and potential risks of the Ukrainian labour market in the future should become the base of developing recommendations for the prevention of typical labour market risks.

Overview of the relevant literature

The considerable influence of the pandemic, digitisation and remote employment on the labour market has garnered increasing attention. The impact of digital technologies and artificial intelligence transforms the nature of labour demand in the gig economy (Graetz et al., 2022). Rembeza and Klonowska-Matynia (2017) confirmed the complex relationship between modern challenges and changes in the number of unemployed in European countries. Casarico and Lattanzio (2022) has estimated the short-term effects of COVID-19 on labour market supply and demand, and how they depend on labour market policies. They determined that lockdown lifting causes a gradual recovery of the labour movement in the labour market. Singh et al. (2022) sufficiently examined the impact of COVID-19 on labour market outcomes for women and find pandemic effects on women's local employment and potential earnings, exacerbating gender inequality.

The world security situation is deteriorating. Refugees extend from countries where military activities are continuing. Aksu et al. (2022) objectively assessed the impact of the continuous arrival of Syrian refugees in Turkey on the national labour market state and recognised the negative consequences for vulnerable populations. Helms and Leblan (2022) reasonably argue that effective domestic policy instruments confirmed the latter and generously empowered the temporary migrants to gain short-term access to the local labour markets of the host country; this policy allows migrants to receive higher wages and increases remittances to their home countries.

Berger et al. (2022) identified the labour market variables that are most informative for estimating and forecasting output using multivariate trend-cycle decomposition. Domash and Summers (2022) contributed to the probability assessment of the labour market predictability based on retrospective data. They proved the historical association of wage inflation with recession risk in the following one to two years.

Ukrainian scientists devoted many scientific works to the study and research of the labour market. Because the COVID-19 pandemic has led to differentiated requirements for HR managers in diverse economic sectors and the need for operative adaptation to new work conditions, Kolot et al. (2022) proposed a model of transferable competencies in the labour market. Lopushnyak et al.

(2020) identified and discussed the innovative employment forms widely implemented by the EU member states. Marshavin et al. (2022) represented the interpretation of the scientific category competitiveness of the national labour market, evaluated the labour market state in Ukraine, and determined the influence of factors on its situation. Directions for strengthening the Ukrainian labour market competitiveness in digital economy and the spread of the COVID-19 pandemic are determined. Kyzym et al. (2022) estimated the dynamics of aggravation of the humanitarian crisis due to COVID-19 in Ukraine, identified situations in regional labour markets based on indicators of economic activity and considered state regulations regarding compliance with state social guarantees in labour relations. Vodianka and Kharovska (2022) showed the substantial problem of the impact of digital economy on modern labour market development. Lyubomudrova and Hoichuk (2022) devoted scientific work to the labour market state analysis during the war period, considered the processes of adaptation to novel vital conditions, and highlighted changes in the priority of vacant positions on the market. The authors' previous works determine the impact of digitalisation on the labour market (Kravchuk et al., 2022).

However, not enough attention is paid to the complex analysis of the novel situation in the labour market during martial law in Ukraine. The study's relevance confirmed the growing possibilities of similar risks in countries by the Russian Federation occupation.

Methodology and conceptual framework

An empirical method helped determine the potential impact of the wartime labour market risks for all labour market subjects. The scientific works in the field of the labour market represent the basis of the theoretical research base. The scientific and applied analysis of labour market problems, which deepened under the lasting influence of the pandemic and martial law, was carried out using desk research methods. The research process of the effects of the risks on the labour market used observation, comparison, statistical, graphic, and sociological methods.

The risk is an active or developing process factor producing a negative or uncertain effect on the process. Heyman (2009) provided definitions of risk and conceptual frameworks for related terms, including probability, danger, hazard, safety, and vulnerability; the risk is considered 'as the probability of an adverse event occurring within a stated time period is reframed to reveal implicit interpretive acts of categorising, valuing, expecting, and time-framing'. Risk is an activity related to overcoming uncertainty in a situation of inevitable choice. This activity creates a possibility to assess the probability of achieving the predicted result, failure, or deviation quantitatively and qualitatively from the goal. According to Luhmann (2017), 'assessment of risk and willingness to accept risk is psychological and primarily social problems; the concept of risk indicates a complex condition that, at least in modern society, is a regular aspect of life'. Risk represents an objective-subjective category. The risk objectivity proves the fact of reflection by this concept of real-life phenomena and processes. Risk exists regardless of whether its presence is recognised. Risk subjectivity consists of the fact that risk is associated with the alternative's choice, the outcome probabilities calculation, and the differential evaluation of similar events by subjects. Bodnar et al. (2020) systemised the existing approaches to the essence and content of such a phenomenon as a risk: 'risk is interpreted as uncertainty, indeterminacy, and attribute of decision-making in a situation of uncertainty; the risk is defined as the probability of deviation of the actual result from the expected; the risk arises as an activity; the risk is treated as the threat (danger) of deviation of the results of specific decisions or actions from the expected; risk is interpreted as a system (complex) of individual components and elements (integrated approach)'.

The labour market risks model should consider uncertain labour market outcomes. Then, the risk can potentially change the situation in the labour market for the worse. The labour market needs to delineate the concepts of risk and problems. Among the most serious risks complicating the prospects for the realisation of innovative development opportunities, as Chuvardynskyi (2017) notes, are risks associated with the influence of demographic and economic factors and risks arising because of the impact of precarisation and denormalisation of employment. Labour market risk is something possible to happen; that is possible in the process of finding a job and filling vacancies. A labour market problem is something already happening and hurts the employer

or employee, a risk already taking place. Thus, the primary task regarding labour market risks is to identify them in time, predict them, and take measures to minimise their occurrence, i.e. to perform everything so that the theoretical risk does not become an actual problem.

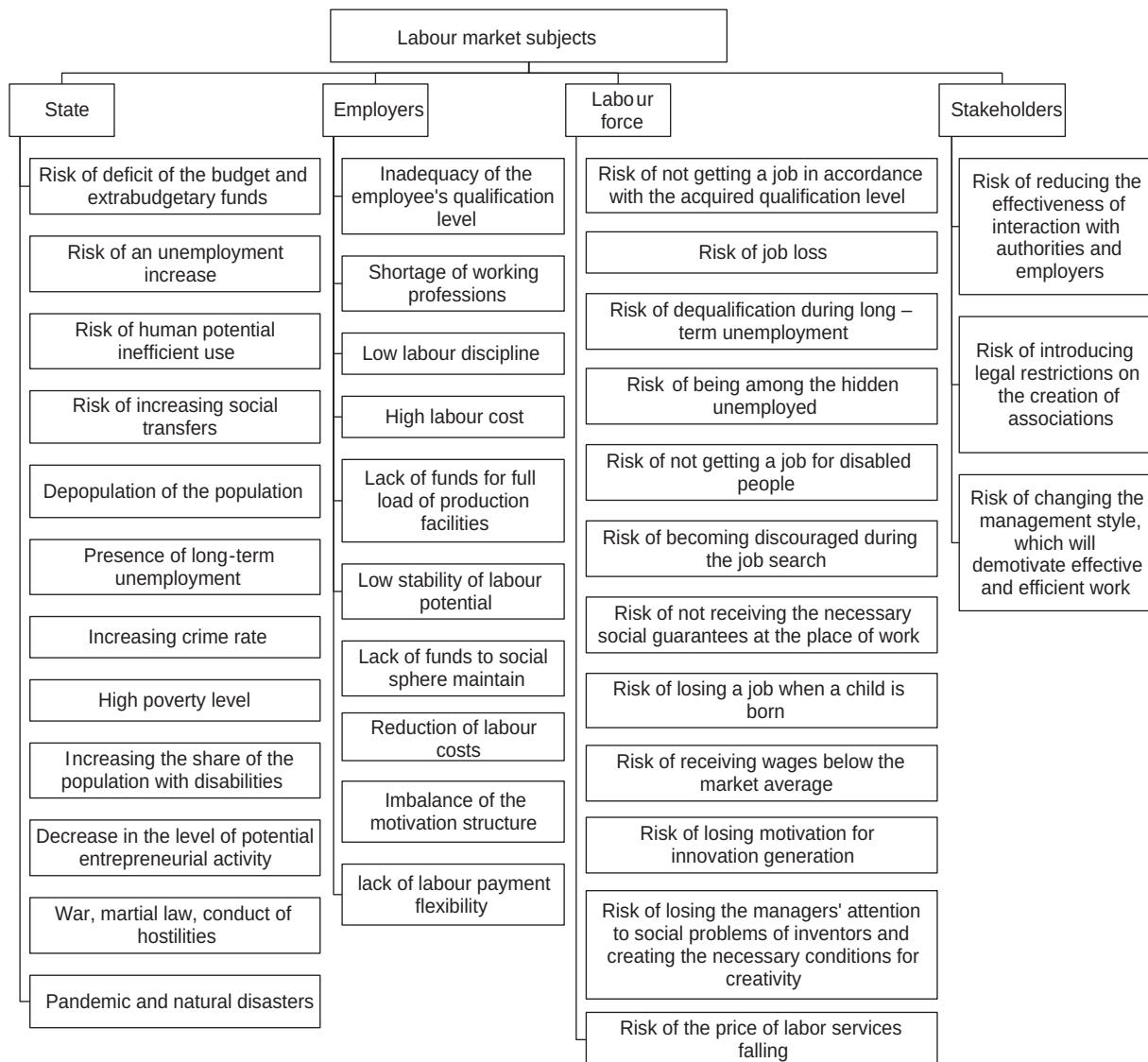


Figure 1. The risks of labour market subjects

Source: Own elaboration based on (Petrova 2018).

Petrova (2018) has identified several risks to the development of the domestic labour market, which makes it possible to highlight the labour market of Ukraine as a component of social security. The elements of the risk concept, the interrelationship of which constitutes its essence, include the implemented possibility of divagation from the intended goal with a chosen alternative and the probability of achieving the desired result; lack of confidence in achieving the set goal. The goal and objectives of the central labour market stakeholders define as follows: filling vacancies for the employer; employment for suitable work for job seekers; preservation of the workplace for an employed employee; creation of jobs and reduction of unemployment for the state. The object of labour market risk is the labour market ecosystem with precisely unknown efficiency and conditions. The subject of the labour market risk is persons, or a group of persons interested in the risk object management results, who have the authority to make decisions regarding the risk object. The key features of the labour market risk are uncertainty, contradiction (the collision of objectively existing risky actions with their subjective assessment), and alternativeness. Uncertainty drivers in the labour market can be digital transformation, digital technologies, global competition, rapid

change of organisational systems, unlimited space for the development of an organisation, constantly growing consumers demands, dynamic changes in the business and institutional environment (state and regional levels), the openness of the organisation to external influences, etc. So, in present-day special conditions, labour market risks influence the state, employers, the labour force (potential or actual), and other stakeholders. Therefore, the risks can be singled out separately per the labour market subject (Fig. 1).

All labour market subjects are closely interconnected. Therefore, negative processes affect the labour force at the production and state levels. The action of various factors causes these effects (Fig. 2).

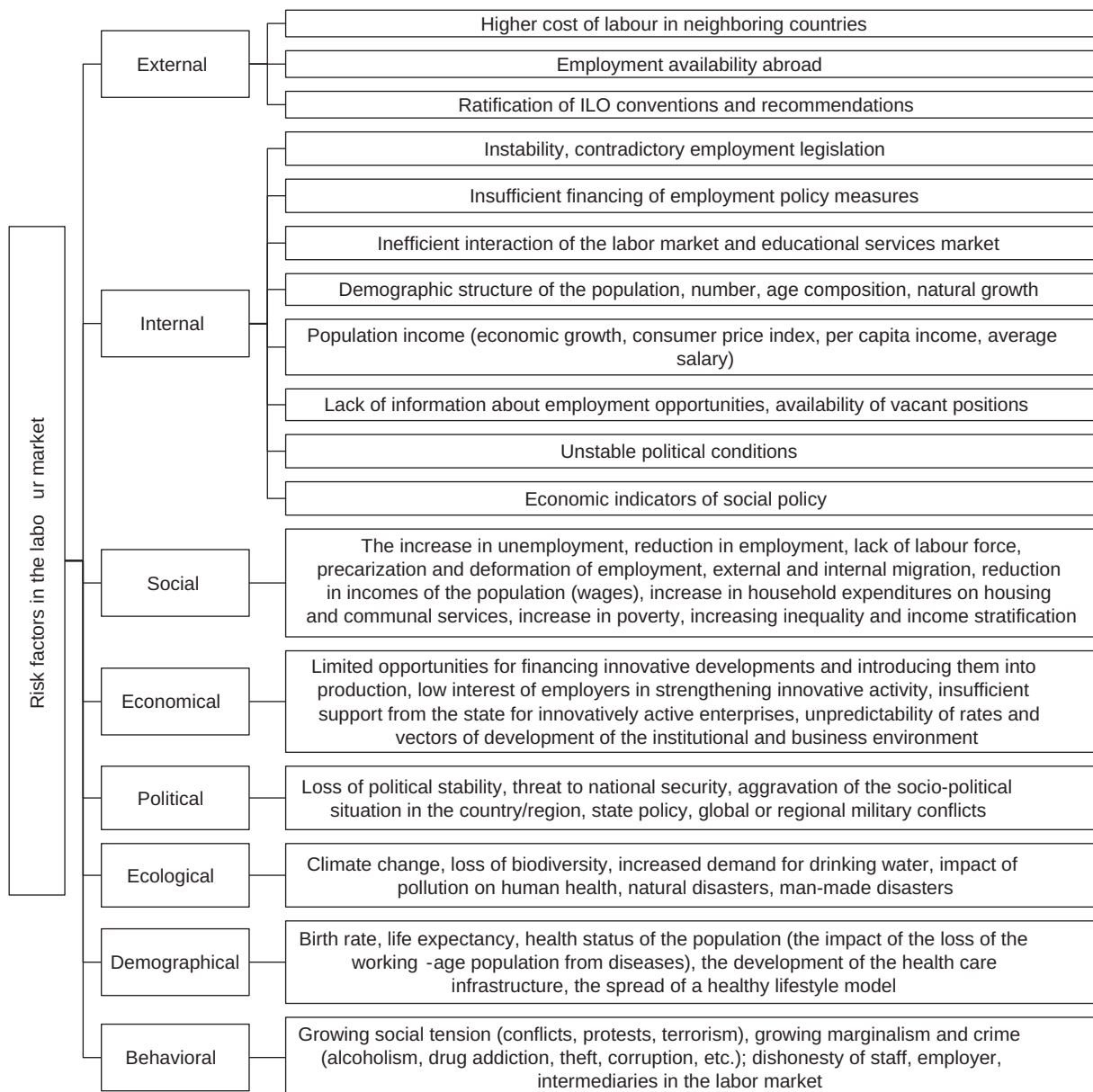


Figure 2. The labour market risk factors

Source: Improved and refined by the authors based on (Petrova 2009).

The impact of the risks shown in Figure 2 reduces the quality of life and exacerbates the problem of ensuring the country’s social security in novel conditions. Rational social policy, employment policy, and social management should represent the principal tools for achieving social security and preventing labour market risks. The prospective social environment condition is uncertain, and the subject of the labour market inevitably accepts risks.

Results

The pandemical, global, and geopolitical challenges influenced the employment sphere of Ukraine in the pre-war period. At that time, the labour market risks were aggravated by the growth of inflation, the limitation of sales markets, the spread of remote employment, the shutdown of enterprises, and the expectation of layoffs. In Ukraine, in the conditions of pre-war economic development, the problem of balancing the demand and supply of highly-qualified labour in the labour market is becoming more acute.

During the exacerbation of the COVID-19 pandemic, most of the Ukrainian labour market problems appeared due to threatened economic development and long-term macroeconomic stability. According to research by the National Bank of Ukraine, the systemic labour market problems in Ukraine during this period were as follows (NBU, 2020):

1) The job seekers' skills gap to the requirements set by employers riced up. According to the results of business surveys at the end of 2019, a third of Ukrainian enterprises indicated a lack of labour among the key factors limiting production. That partly becomes the reason for the high unemployment rate despite significant business labour demand (NBU, 2020). The Ukrainian education system does not keep up with changes in the modern labour market, which are taking place due to globalisation and technological progress, and it performs a significant role in this. However, about a third of Ukrainian employees with a higher education work in a profession that does not require it. This indicator is one of the highest in Europe.

2) Low labour productivity, the level of which, despite growth over the past 15 years, remains low at \$15.8. Ukraine is in the second hundred among the countries in the world for this indicator. In 2021, labour productivity in Ukraine was lower compared to EU countries (ILO, 2021).

3) The reduction and ageing of the population – according to the World Bank, Ukraine ranks 12th in the world (World Bank, 2021a). There are 11 pensioners for ten employed individuals in Ukraine. So, the state pension fund needs constantly increased payments from the state budget. The load on the state pension fund diverts public funds from investment in education and leads to lower potential GDP growth rates. The high load on the employed further exacerbates the high level of informal employment. Every fifth employee worked informally in Ukraine in 2019. The segment of shadow employment has stayed significant. The burden on the employed from the side of dependents will increase by 6% in 2024 compared with 2019 (NBU, 2020).

4) It is difficult to estimate the dimensions of labour migration in Ukraine since there is no accurate data on the number of Ukrainians working abroad. According to NBU estimates, it is about 3 million people. In 2019, about 2.5 million Ukrainians were abroad (NBU 2020). Labour migration affects the quantity and quality of labour resources and labour productivity within the country, but it also makes the economy significantly dependent on the volume of remittances. On the total incoming remittances, Ukraine ranks 12th in the world and is in the top 15 on its ratio to GDP (NBU 2020). In 2021, the personal remittances received in Ukraine overcame 18 milliard USD (World Bank, 2021b).

5) The level of participation of women in the labour force in Ukraine was low, and the involvement of women in the labour force was insufficient compared to Europe. If the level of participation of men in the labour force among the population aged 15 and older is 65%, then that of women is 49% in 2019 (NBU, 2020). The situation is related to difficult access to childcare services and the low prevalence of part-time and remote forms of employment.

Therefore, the main risks in the labour market of Ukraine were in the pre-war period: the decrease in the competitiveness of the national labour market; a low qualification level of the unemployed and employed population; the disproportions between the supply and demand for labour; the increase in illegal external labour migration; and the shadow labour market.

During the war, three economic risks of the labour market became actualised: migration of Ukrainians, low average and minimum wages, and unemployment. This situation relates to the problems of the Ukrainian economy, which worsened after the war had began. The following data confirms the negative dynamics of the Ukrainian labour market in connection with the war.

According to the International Organization for Migration survey, more than 6.6 million Ukrainians are internally displaced (DTM, 2022a). People continue to leave the east, south, and north of

Ukraine. The unemployment rate reached 35% (Gorbacheva, 2022). According to the forecasts of the World Bank (2022b), the poverty and social consequences of the war will be massive. The share of the population with incomes below the actual living wage (the national poverty line) could reach 70% in 2022, up from 18% in 2021. And without massive post-war aid, the figure would still be higher than 60% by 2025. Based on the international poverty line with an upper-middle income level (€5.5 per day), the poverty rate would rise to 19.8 % in 2022, up from 1.8% in 2021, with a further 59% of people vulnerable to poverty (World Bank, 2022b).

Internal migration during the war caused a significant displacement of the labour force. Regionally, the situation is uneven and requires analysis. According to IOM (2022), the number of IDPs was the largest in the Kyiv, Dnipropetrovsk, Poltava, Vinnytsia, and Zakarpattia regions (Fig. 3).

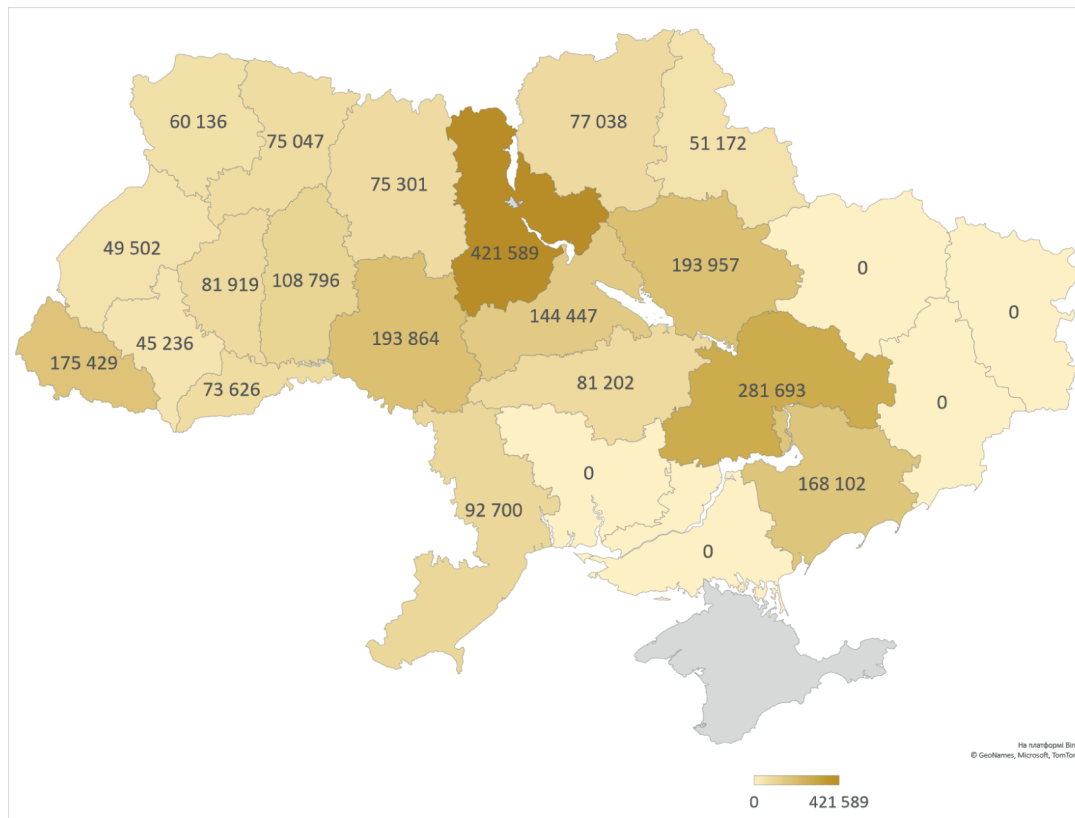


Figure 3. Registered arrivals of IDPs in the regions of Ukraine, individuals

Source: Data obtained of the International Organization for Migration (DTM 2022b).

An increase in the population in these regions is unlikely to stimulate rising labour income and consumer demand. According to IOM (2022), 60% of IDPs have lost their jobs. Also, in 35% of cases, the monthly income of an IDP family does not exceed 5,000 UAH (nearly €120). Accordingly, the basic needs of this category of citizens include housing and money, food, personal hygiene products, clothing, shoes, medicine, and other products. Thus, there will be an increase in demand for essential goods.

At least 6.3 million Ukrainians remain in European countries. The refugee status registered about 3.7 million individuals. More than ten million people had evacuated from Ukraine during the war. Refugees from Ukraine were registered throughout Europe by UNHCR: The UN Refugee Agency, 7 million individuals as of August 30, 2022, and almost four million registered people for temporary protection or similar national protection schemes (Operational Data Portal, 2022). More than 5 million people migrated to Poland, one million to Hungary, and approximately one million to Romania and Germany, 471 thousand Ukrainian refugees left for Slovakia, and 557 thousand to Moldova. Since the end of February, more than 10.3 million Ukrainians, or about a quarter of the country's population, have remained in their homes (Fig. 4).

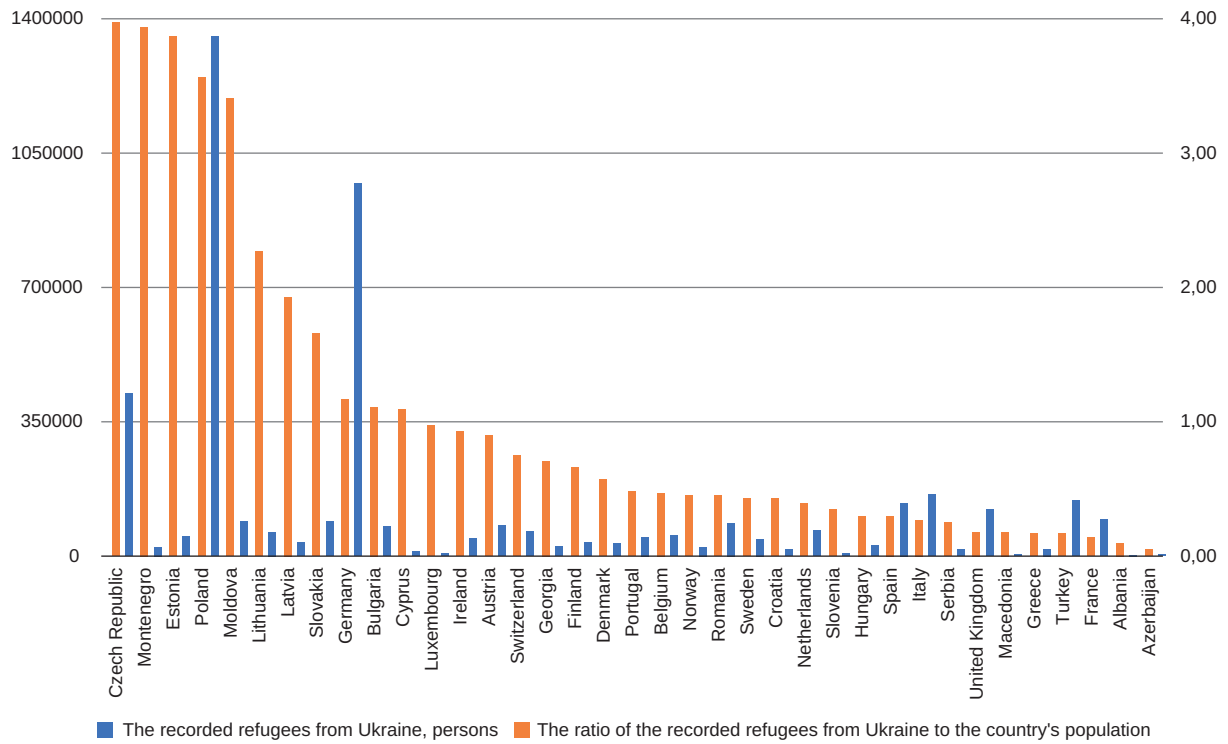


Figure 4. The ratio of the recorded refugees from Ukraine to the country's population

Source: Own elaboration based on (Operational Data Portal, 2022).

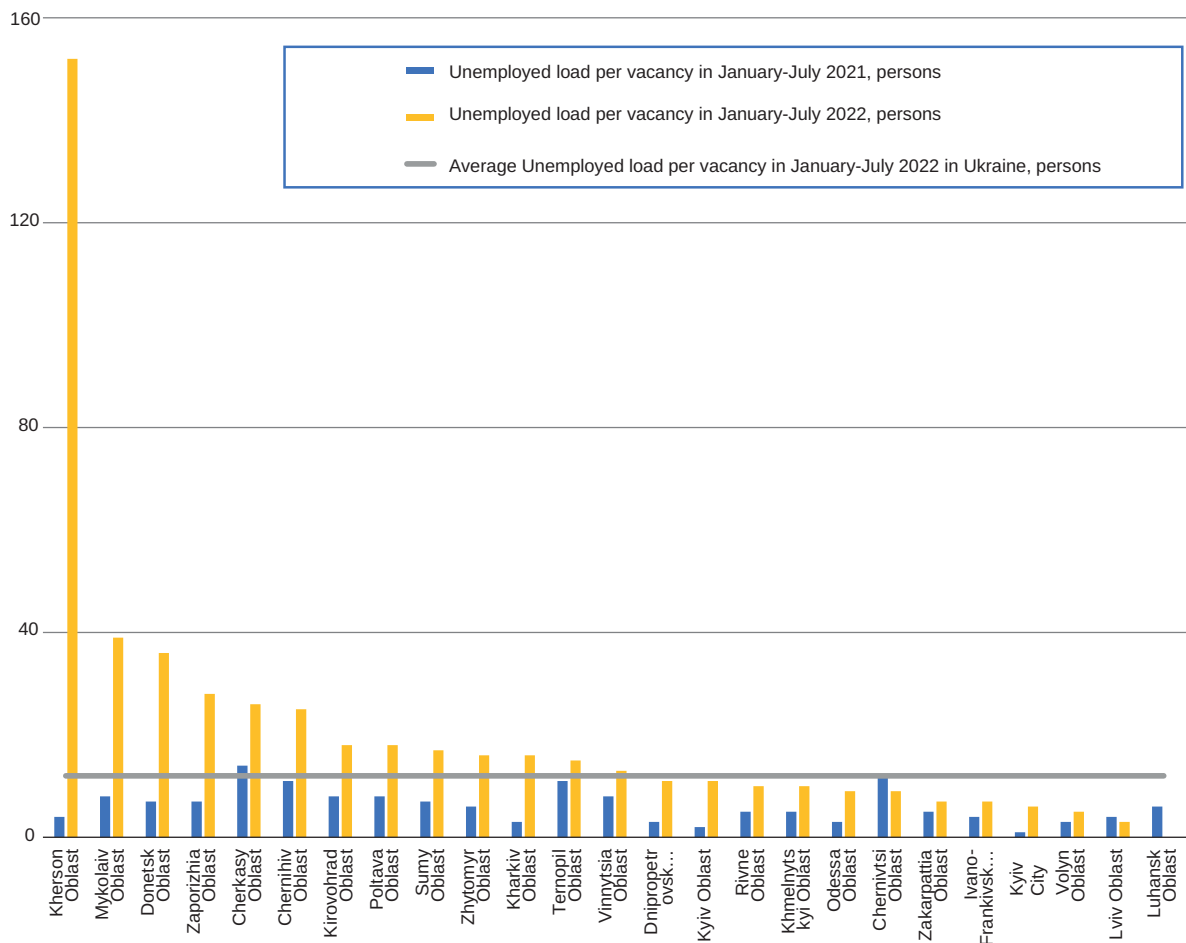


Figure 5. Comparison of the unemployed load per vacancy in Ukraine in the pre-war and wartime periods

Source: Own elaboration based on data State Employment Centre (2022).

The countries such as Poland, Germany, the Czech Republic, Italy, Turkey, Spain, and the United Kingdom have the total refugees from Ukraine more than 100 thousand people. However, the refugees' reception scale and the burden on the labour market of the receiving countries can be estimated through the ratio of the refugees to the country's population. A significant registered refugees' ratio from Ukraine to the host country's population (more than 1%) was observed in the Czech Republic (4%), Montenegro (3.9%), Estonia (3.9%), Poland (3.6%), Moldova (3.4%), Lithuania (2.3%), Latvia (1.9%), Slovakia (1.7%), Germany (1.2%), Bulgaria (1.1%), and Cyprus (1.1%).

Analysis of the number of unemployed makes it possible to assess the possible involvement of IDPs in the local labour market. According to the State Employment Centre (2022), eight individuals applied for one job on average throughout Ukraine in January–July 2022. The close to the war zone Kherson, Mykolaiv, Donetsk, Zaporizhia, and Cherkasy oblasts had a significant job shortage. There are almost no problems with providing jobs in Zakarpattia, Ivano-Frankivsk, Volyn, and Lviv oblasts and the city of Kyiv, which indicates the development prospects of these regions (Fig. 5).

Table 1. Comparison of the average monthly salary offered in vacancies in pre-war and post-war periods by region of Ukraine

Region's Rank by the average salary in vacancies	Administrative region of the Ukraine	Average salary in vacancies, euros		
		The first half of 2021	The first half of 2022	The rate of growth
1.	Kherson Oblast	209	383	183.8
2.	Donetsk Oblast	238	318	133.8
3.	Kyiv City	274	279	101.8
4.	Kyiv Oblast	265	274	103.4
5.	Odessa Oblast	215	271	125.9
6.	Lviv Oblast	229	262	114.3
7.	Kirovohrad Oblast	223	258	115.5
8.	Dnipropetrovsk Oblast	233	254	109
	Ukraine	234	253	107.9
9.	Mykolaiv Oblast	215	250	116.4
10.	Cherkasy Oblast	224	248	111
11.	Chernihiv Oblast	218	248	113.6
12.	Volyn Oblast	231	247	107.1
13.	Zaporizhia Oblast	218	245	112.4
14.	Kharkiv Oblast	221	244	110.6
15.	Ternopil Oblast	215	243	112.9
16.	Zakarpattia Oblast	221	242	109.6
17.	Khmelnyskyi Oblast	221	241	109.1
18.	Poltava Oblast	230	239	103.5
19.	Chernivtsi Oblast	221	237	107.3
20.	Rivne Oblast	208	237	113.7
21.	Sumy Oblast	223	234	104.9
22.	Zhytomyr Oblast	222	233	104.7
23.	Ivano-Frankivsk Oblast	208	227	109.2
24.	Vinnysia Oblast	212	227	107.1
25.	Luhansk Oblast	199	N/A	-

Source: Own elaboration based on State Employment Centre (2022).

The analysis of trends of wages and labour income during the war by Ukraine's regions identifies the problems and risks of local labour markets. The indicators demonstrate the social labour market risks due to the low wages. However, a comparison of the average monthly salary offered in regional vacancies in the pre-war and post-war periods in Ukraine shows the growth of wage rates throughout the country (Table 1).

The analysis of wages in the labour market during the war shows that eight regions of Ukraine had indicators above the national average. They include Kherson, Donetsk, Kyiv, Odesa, Lviv, Kirovohrad, Dnipropetrovsk oblasts, and the Kyiv City. The highest regional wages were in areas close to the front line or those with the highest level of internal migration. The wage growth rates comparison in the pre-war and wartime periods showed that proximity to the war zone also influenced this change – Kherson, Donetsk Odesa, and Mykolaiv regions. The situation is related to the lack of labour in the regions with hostilities and the high competition among employers.

The full-scale war led to a humanitarian crisis and active displacement of the population, including abroad, which will determine the demographic development and the labour market situation for many years. The deep economic recession led to a sharp labour income reduction and an unemployment rate increase. Despite the economic recovery and increased labour demand, unemployment will remain above its natural level for a long time due to the long-term war effects. Real wages will gradually recover, but the excess of labour supply over demand will hold back the pace of recovery. Therefore, the factors listed below will determine future labour market risks. The analysed risk indicators are not final, especially regarding the regional distribution of IDPs. The forced deportation of the Ukrainian population from the occupied territories to Russia included more than 1.2 million people since the beginning of the war (Goncharova and Majumdar, 2022). It is difficult for many refugees to name the exact return plans, and most associate the possibility of return with the level of danger to life and health. According to the UNHCR: UN Refugee Agency (2022), most Ukrainians voice their plans to return to Ukraine when such an opportunity arises. The key motivator for the return will be a decrease in the intensity of hostility. The plans to return differ significantly depending on the region of residence. Citizens of Kyiv and the western areas are much more willing to return if compared with citizens of the east and north of Ukraine.

In general, the Ukrainian labour force will shrink through the refugees who left, significant people losses at the front, and among the civilian during the war. Expectedly, many people will go abroad to reunite with their families or earn money after martial law or the men's travel ban lifting. The Kyiv City and the Kyiv, Kharkiv, Odesa, and Chernihiv regions are the main areas where the population were returning; 5.5 million previously displaced people returned home until August 2022, with 16% returning from abroad (Ukrinform, 2022). NBU (2022) predicts a reduction of the unemployment rate from peak values at the end of 2022 due to the theoretical recovery of the economy and increased labour demand. However, this will happen slowly – unemployment rates will remain higher than pre-war rates for a long time.

Table 2. The matrix of regional labour market advantages

Administrative region of the Ukraine	Rank of registered arrival of IDPs	Rank of load of unemployed for 1 vacancy	Rank of the average wage in the vacancies	Average value of the indicators	Rank of regional advantages
Lviv Oblast	3	1	6	3.3	1
Zakarpattia Oblast	1	3	16	6.7	2
Volyn Oblast	7	2	12	7.0	3
Khmelnyskyi Oblast	2	6	17	8.3	4
Ternopil Oblast	4	8	15	9.0	5
Chernivtsi Oblast	6	5	19	10.0	6
Rivne Oblast	5	6	20	10.3	7
Ivano-Frankivsk Oblast	8	3	23	11.3	8

Source: Own elaboration.

With sufficient prospects for socio-economic development, we can expect a decrease in labour market risks in the Kyiv region and the Western macro-region of Ukraine in connection with the local population increase due to internal migration, the providing jobs, and the existing population savings. Factors such as significant distance from hostilities, lower security risks, and proximity to Western borders play an enormous role, too. The Western region includes the Volyn, Zakarpattia, Ivano-Frankivsk, Lviv, Rivne, Ternopil, Khmelnytskyi, and Chernivtsi regions. The socio-economic situation of heterogeneity in these regions should become a centre of analysis of the possible level of labour market problems and risks. Analysing and ranging the regional advantages became a base for the regional labour market advantages' matrix development (Table 2).

Accordingly, the Lviv, Volyn, and Zakarpattia oblasts are the leaders of the Western macro-region in terms of labour and job availability in the labour market and the number of wages.

Discussion

The demographic changes caused by the war will limit the development of the labour market for many years. The war caused a humanitarian crisis in Ukraine and significantly transformed its demographic landscape. Military and civilian losses, physical and psychological injuries, forced migration, and loss of housing, work, and property affect the lives of most Ukrainian citizens. The complicated educative process, problems with access to medicine, and even basic human needs (water, food, etc.), especially in the occupied territories, will harm the demographic indicators and labour supply in the following years. The war's long-term consequence would be a sharp birth rate decrease, which was comparatively low even before the war. The active population migration affects the demographic and labour market indicators. According to UN data, as of June, the refugees' number from Ukraine exceeded 8 million (Operational Data Portal, 2022). However, most of the labour force plans to return to Ukraine, and about 3 million citizens have already returned (NAS of Ukraine, 2022; Gradus, 2022). Mass migration will have a significant negative impact on Ukrainian demography and economic development. The migrants' return flow would be intensive after the security situation stabilisation. By evaluating the NBU (2022), in 2022, the negative balance of migrants will number approximately 3.2 million; in 2023, it will decrease to 2.5 million people and stabilise slightly below this level in 2024. At the same time, the continuation of hostilities and security risks may prevent migrants' return and encourage their stay in the country of temporary residence (Razumkov Centre, 2022). With that in mind, 59% of Ukrainian refugees seek jobs in the areas of temporary accommodation; 28% continue working remotely for Ukrainian enterprises (World Bank 2022b). Remote work maintains ties with Ukraine for refugees, but the longer the war lasts, the less likely it is that they will return. Mass migration will lead to a reduction of domestic consumption and a labour supply decrease, including in the long term, which will put pressure on the labour market, potential GDP, and the pension system of Ukraine. The regional labour market pressure would increase due to the different professional structures of IDPs, because the employment structure shifted towards the industrial sector in the eastern region, compared to the western. Professional and employment gaps are likely to increase the existing disparities between labour supply and demand, despite the relocation of enterprises.

With the beginning of the war, activity in the labour market practically stopped in Ukraine. The labour market has gradually recovered in August 2022, but labour supply significantly exceeds demand. In the first weeks of full-scale war, both the number of vacancies and job applications dropped sharply. However, since April, the number of job seekers began to grow fast due to the migrants' return and the relatively limited financial strength of households after the economic crisis (MinFin, 2022). Instead, the number of vacancies is increasing very slowly, because of a deep decline in economic activity, uncertainty, and a reduction in the financial resources of enterprises. At the beginning of the war, most enterprises retained the number of personnel and the wage fund practically unchanged (NBU, 2022). However, with the realisation that the war would not end soon, and with the deterioration of the financial and economic situation, enterprises began optimising costs. In the future, the recovery of economic activity would contribute to the revival of labour demand, but its structure would likely change significantly. The labour demand in infrastructure restoration, production facilities, and logistics should grow but remain relatively weak in industrial

activities, as restoration of the destroyed production facility will take a long time. The labour force reduction leads to an acute shortage of workers in some industries. All this will deepen the existing disparities in the labour market. In addition, underinvestment in the economy in the current post-war years and the weak financial condition of businesses will hold back the general recovery in labour demand.

After record growth, the unemployment rate gradually declines. Despite the efforts of enterprises to retain employees, the war caused an unprecedented jump in the level of unemployment. Due to a deep decline in economic activity and migration because of security risks in the frontline regions, a significant part of the population lost their jobs (NBU, 2022). Ukrainians gradually returned to work in their workplaces in the usual mode, worked remotely, and found a new place of work (Rating Lab, 2022). A small financial safety margin forced the workforce to activate job sourcing. Unemployment has increased significantly, and part of the population dropped out of the labour market, primarily because migrants often did not have job search as their main priority. However, if migrants remained in Ukraine and actively sought work, the unemployment rate would increase even more. Mobilisation to the ranks of defenders of Ukraine also restrained the increase in unemployment. The unemployment rate will decrease from its peak values owing to economic recovery and labour demand growth (NBU, 2022). However, as in similar situations (for example, in former Yugoslavia), unemployment will decline slowly and remain at higher levels than before due to the long-term effects of the war even after the active hostilities ended.

Incomes of the population decrease sharply, and the expected recovery of real wages is to be moderate. The enterprises paid wages and partly made additional payments or provided material assistance, even with stopped activities during the war period in Ukraine. As hostilities continued, companies often would lay off staff and cut pre-war wages; big companies, especially international ones, have paid their wages in full; but even these companies optimise personnel expenses. There is less sustainability among SMEs, so there are more layoffs and salary cuts (NBU, 2022; EBA, 2022). A significant excess of supply over demand in the labour market causes a decrease in expected wages, despite the acceleration of inflation. The average offered salaries in April and June were lower than in early March (Work.ua, 2022a). Although the average decrease in nominal wages is not very significant, it was 10% for certain professions, such as the hotel and restaurant business, tourism, and real estate. The drop in wages in the private sector in May was 25%–50% compared to the pre-war period (NBU, 2022). The situation is somewhat better, according to estimates based on budget expenditures, in the budget sector. In addition, social benefits, pensions growth and a significant addition in army payments partially compensated for the loss of the population's labour income. In general, nominal wages will decrease by 12% and 27% in real terms in 2022. In the future, with the economic recovery and the labour demand resumption, nominal wages will show rapid growth and exceed the pre-war level in 2023. However, real wages will be lower than before the war due to inflationary processes up to the end of 2024 (NBU, 2022).

Based on the analysis, it is possible to predict future trends, challenges, and potential labour market risks in Ukraine: long-term effects of war-induced demographic changes and constraints on labour market development; the gradual restoration of the labour market after the practical cessation of its activity at the beginning of the war; decrease in labour supply; reducing the number of vacancies; supply will greatly exceed demand; the unemployment rate will gradually decrease but will remain above its natural level; incomes of the population – recovery of real wages is expected to be moderate.

Recommendation

The economic recession associated with the war significantly aggravates the contradictions in the employment sphere. The predicted development of the situation requires urgent influence and support from all stakeholders of the labour market and the introduction of adequate measures to minimise risks, among which the primary ones are the following.

Further development of the mechanism of labour relations legal regulation of the present conditions of the state development should be implemented in the improvement and adoption of the Labour Code of Ukraine. The issue of harmonising the norms of numerous legislative acts in this

area and delivering them to the requirements of the socially-oriented market economy's function could be solved. In times of crisis, the issue of defending employees' rights and strengthening state control over compliance by employers with labour legislation is of particular importance. In addition, the issue of employee protection in case of insolvency or suspension of the economic activity of the enterprise needs to be settled at the legislative level.

The successful implementation of state employment policy requires long-term programme development that aims to build a new socially-oriented model of labour market regulation based on overcoming the war consequences in Ukraine. Such a programme should reduce tension in the labour market by creating legal, economic, and institutional foundations for employment efficiency increase.

A quick and transparent procedure for creating jobs in small and medium-sized businesses is necessary to reduce the level and duration of unemployment. The reforms course should aim to support enterprises and create new ones, mainly small and medium-sized enterprises. For this, the reduction of tax pressure on business entities and the use of financial and economic mechanisms to promote entrepreneurship development, such as preferential lending and taxation, will be necessary. The system of subsidies for the creation of new jobs and subventions, including regional ones, for the creation of new enterprises and jobs, for the employment of the unemployed, primarily from among the socially-vulnerable segments of the population, will become critically important.

To overcome the structural demand-supply imbalance in the labour market, the long-term forecasting of the country's economy's need for workers in terms of professional and qualification groups is vital. They should be a basis for the state order for educational institutions. For this, it is necessary to develop a modern concept of the interaction of the labour market and the market of educational services. Negative labour market processes counteraction requires effective professional orientation system formation oriented to professions with increased labour supply.

Accelerating the reforming of the income sector process is actual. A significant step should remain to update the methodology for determining social standards and bringing the subsistence minimum into line with the consumer needs of the population. The creation of regional social standards systems should perform the social development function of regions (considering the negative consequences of conducting armed operations). The improvement of establishing the minimum wage should aim at introducing its sectoral and sectoral differentiation.

Measures to promote the employment of the rural population should aim to expand opportunities for creating additional jobs in rural areas through state incentives and support for the development of the agricultural sector and the promoting the spread of the use of flexible new forms of labour relations, which include remote, mobile, partial employment, combining professions and positions, etc.

The concentration of efforts of all branches of government on the comprehensive implementation of radical economic, administrative, managerial, and organisational measures to overcome shadow employment, the significant spread of which is accompanied by adverse impacts for both the state and employees.

The activities of the Public Employment Service should prevent labour market risks. The direction of Public Employment Service activity's improvements should include increased flexibility and mobility in the provision of professional employment services, the extension of vocational training of the population of working age, the confirmation of the informal vocational training results, the forecasting of the labour market situation, and the providing of social protection in case of unemployment.

The economy now is in stagnation. People will go abroad if jobs do not recover. But when the economy grows, there will be a demand for new labour resources. The development of a balanced migration policy should aim to encourage the labour force to return to Ukraine from abroad.

Conclusion

The dynamic and regularities of labour supply and demand during the war, the employment opportunities decrease for the unemployed, the labour mobility increase, and migration processes exacerbated social risks in the Ukrainian labour market. The Ukrainian labour force has been high

skill for a long time, but since the Russian invasion, many workers have been displaced, and the education system has moved to the remote mode. Therefore, the total scale estimates of migration and education sector destruction have yet to be confirmed and accounted for in scientific research. In the regions that felt the war consequences the most, the number of jobs decreased, labour market competition increased, the labour demand-supply imbalance became significant, and the level of wages decreased. Migration, unemployment, and wages in the Ukraine regional study results became the basis for assessing the challenges and potential risks of the labour market. They have a high level of differentiation. Therefore, the proposed methodological approach for regional ranking accounts for local labour market advantages for the definition of risks level. The developed regional labour market advantages matrix shows that the Lviv, Zakarpattia, Volyn, Khmelnytskyi, and Ternopil regions have the lowest labour market risks.

Further research directions should concern the development of recommendations for minimising social risks in the entire country's territory in the post-war period, carrying out expert risk analysis, and studying threats related to labour market regulation in Ukraine. For Ukraine's economic recovery after the war, it will be necessary to use the human factor of productive forces in the transformational processes of social development.

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