

## 2.2 UKRAINIAN LABOR MARKET IN THE CONTEXT OF DIGITALIZATION, THE COVID-19 PANDEMIC AND MARTIAL LAW

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### ABSTRACT

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Many Ukrainians lost their jobs at the beginning of the Covid-19 pandemic and during the full-scale war. At the moment, some of them physically have no place to work due to the occupation of Ukrainian territories by the Russian Federation, and many simply fled their cities from the bombing, leaving their homes and places of work behind. And now the number of workers and entrepreneurs who are actually out of work is in the millions.

Obviously, some of the temporarily unemployed will find new jobs abroad or in Western Ukraine, and some businesses will adapt to the new conditions to some extent, thus providing employment. Without retraining, most unemployed people will not be able to maintain their social and income level.

In the 21<sup>st</sup> century, international socio-economic development has acquired new characteristics, including rapid development of technology, innovation and digitalization, the growing importance of the service sector, and accelerating globalization.

The transition to the information society in the context of changes in communication technologies and motivation of labor activity implies a serious change in labor relations, the emergence of "long-distance relations" between employees and employers and the intensification of remote work, i.e., it is possible to say that there is a process of decentralization of labor movement in time and place, namely, the process of a flexible labor market is being formed.

It can be assumed that the digital economy will eventually increase the share of intellectual labor compared to traditional physical labor, which will make it possible to make greater use of non-remote employment and atypical types of employment that are becoming increasingly in demand.

The most important factor in the development of the knowledge economy is human capital, in particular its creativity and talent, which is expressed in new creative ideas and perspectives.

Creative human capital, in turn, is the core of the creative class, a social stratum engaged in science, technology and the arts, whose work results in innovative products and services.

So, it is safe to say that the Ukrainian and global labor market will not remain unchanged, and while we used to depend directly on the external environment, today it is the war in Ukraine that is changing the old standards, principles and paradigms on which the economy and labor market functioned.

## KEYWORDS

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Unemployment, Covid-19 pandemic, war in Ukraine, retraining, socio-economic development, innovation, digitalization, digital economy, remote work, flexible labor market, human capital, creative class, labor market transformation.

The problems of labor market development in Ukraine, its system and reforms, aspects of employment and unemployment have been studied by many scholars, including: D. Bohynya, I. Bondar, V. Blyzniuk, M. Vedernikov, M. Voynarenko, V. Gelman, I. Dashko, I. Dekhtyarova, A. Kolot, E. Libanova, I. Petrov, V. Petiukh, O. Pishchulin, A. Cherep, O. Cherep and others, but the labor market in Ukraine requires further research into the conditions of the general economic situation, the annexation of part of the country's territory and military operations, which worsens the functioning of the country's labor market.

In modern conditions, the development of the national economy requires the availability of unused and untapped resources, including labor resources. Economic development can take place precisely in the presence of free labor resources, and if the market is underemployed, development may stop completely or have a slow pace of development.

The main categories that characterize the efficiency of the labor market include: economically active population and economically inactive population (**Fig. 2.1**).

The second group is distinguished from employment and unemployment in the national economy. The second group is the population involved in the labor market and determines its functioning.

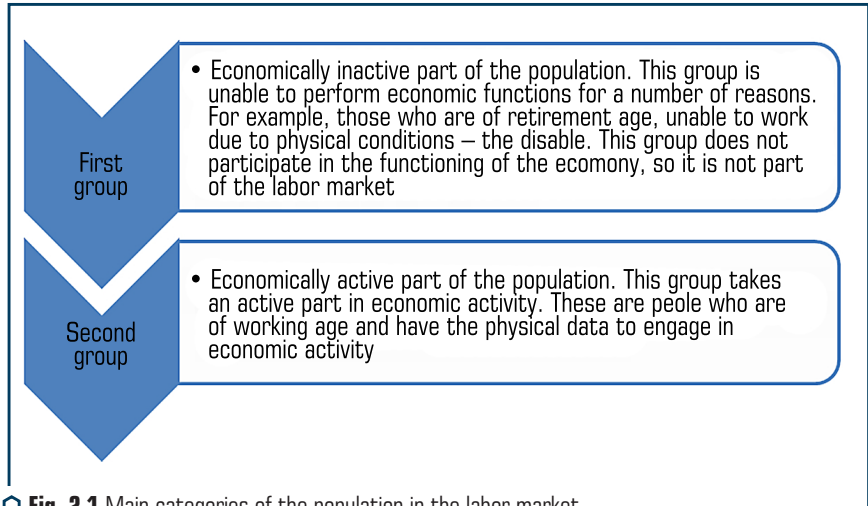
Let's name the factors that influence the functioning of the labor market (**Fig. 2.2**).

One of the main elements of the national economy is the labor market, which determines the functioning and development of the national economy. It should be noted that the labor market is subject to changes due to the influence of many different factors.

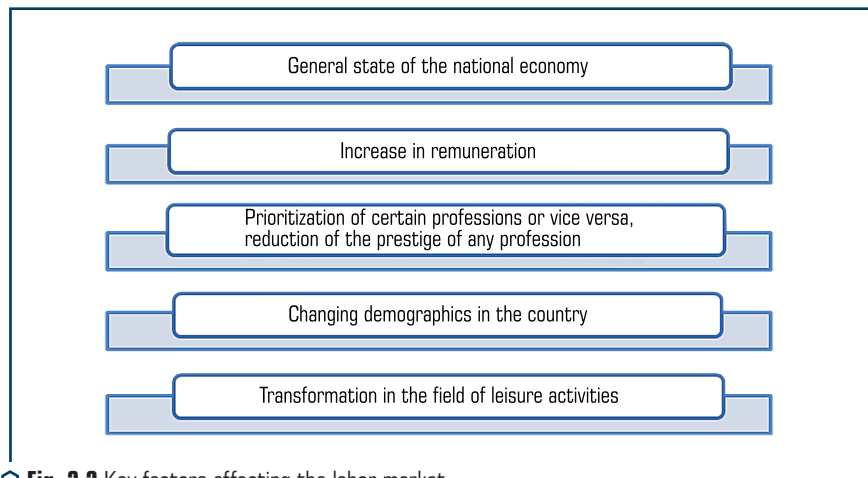
For their livelihoods, people are forced to sell their labor and receive remuneration in the form of wages, and this mechanism is the basis of the labor market. Labor is a special commodity that is a combination of spiritual, physical, and intellectual abilities of a person that make up the labor potential of an individual. The labor of employees is paid for by employers. At any price for labor resources, there is a demand for labor, as well as a supply in the labor market [3].

Analyzing the state of the labor market is extremely important at all levels of government – national, regional, and sectoral, including specific enterprises. A number of indicators, for example, reveal the real picture of hidden unemployment and determine the possibility of its transition to an open form through mass layoffs. Of particular

importance is the forecasting of "disaster zones", i.e., certain regions of the country where unemployment may become widespread in the near future.



**Fig. 2.1** Main categories of the population in the labor market  
*Source: Developed by the authors based on the source [1]*



**Fig. 2.2** Key factors affecting the labor market  
*Source: Developed by the authors based on the source [2]*

The study of the labor market also involves a systematic analysis of indicators characterizing the socio-professional and socio-demographic characteristics of the unemployed. Of great importance are the characteristics of the unemployed by the duration of their stay in this status.

Labor market studies to a certain extent answer the question of the need for and real possibilities of job creation, as well as prevent the closure of existing jobs, so the analysis of the labor market functioning is closely linked to the analysis of the financial condition of individual enterprises, with an energetic search for sources of additional production financing at the regional and federal levels.

Based on these prerequisites, a number of statistical indicators can be used to analyze the functioning of the Ukrainian labor market.

The most important ones include [4]:

- the number of labor resources;
- the number of persons of working age;
- the number of economically active population;
- the number of employed persons in the economy;
- the number of part-time workers on the initiative of the administration;
- the number of job seekers;
- the number of citizens registered with the State Register;
- the number of unemployment benefits issued, etc.

At the present stage, the state's policy in the labor market is carried out in two directions: stimulating demand and shaping labor supply. Both are realized by the state in different forms and ways of influencing the factors that determine the state of supply and demand in the labor market.

An analysis of government programs and legal documents shows that the following measures are taken by the state to strengthen the stimulation of labor demand:

- direct wage subsidies or tax cuts for firms that hire representatives of disadvantaged groups with particularly acute structural unemployment;
- stimulating the creation of new jobs in the non-state sector of the economy;
- organization of public works;
- development of small business.

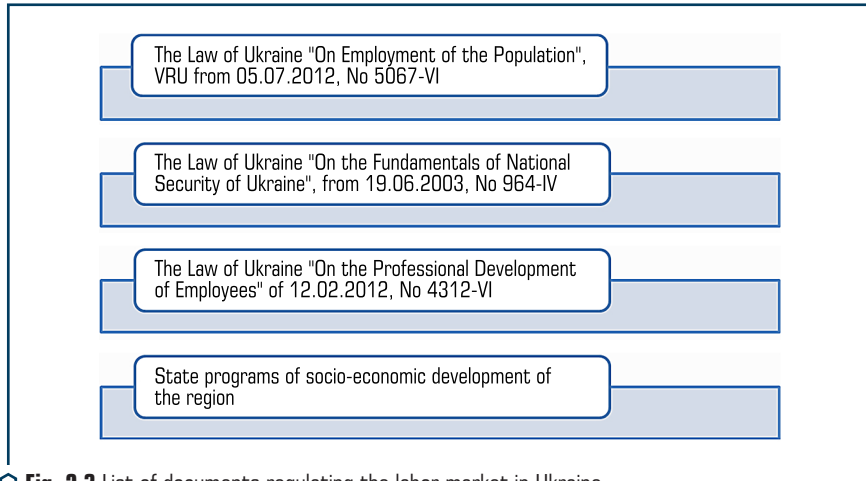
The importance of small business for our country is revealed through the main characteristics that allow it to develop dynamically.

These include:

- rapid response to economic conditions;
- solving social issues;
- creation of new jobs;
- counteracting monopoly in the economy; intensification of its structural re-organization.

In general, the policy of labor demand creation involves the modernization of the economy, i.e. the creation of new high-tech jobs in large-scale production and the elimination of inefficient ones.

The primary documents that regulate the labor market in Ukraine are shown in **Fig. 2.3**.



**Fig. 2.3** List of documents regulating the labor market in Ukraine  
*Source: Developed by the authors based on the source [5]*

In detailing these documents, it should be noted that in 2012 the Law of Ukraine "On the Law of Ukraine "On Employment" was adopted, which is amended annually to reflect changes in legislation and conditions of socio-economic transformations. The Law regulates certain relations in the field of employment and defines the powers of the authorized body of the region to implement the employment policy.

The law defines a number of measures to improve the competitiveness of persons under the working age in the labor market, establishes additional employment guarantees, and provides social support for unemployment of certain categories of citizens (orphans and children left without parental care). The law regulates the provision of public services and state functions to promote employment. The development and adoption of this Law should be attributed to the creation and improvement of the regulatory framework for employment regulation.

Ukraine has a number of government agencies responsible for supervising and enforcing labor laws, including the State Labor Service and the Ministry of Health. The State Employment Service is responsible for issuing work permits to foreign workers, and the State Migration Service is responsible for issuing temporary residence permits to foreign

workers. The Ombudsman of the Verkhovna Rada is the authorized state body in the field of personal data protection.

An important change was the adoption of Law No. 2058 "On Amendments to Certain Laws of Ukraine in order to Remove Obstacles to Attracting Foreign Investment" on May 23, 2017, which entered into force on September 27, 2017 [6].

Another important legislative innovation was the Procedure for State Control over Compliance with Ukrainian Employment Legislation, approved by the Resolution of the Cabinet of Ministers of Ukraine No. 295 dated April 26, 2017. Given the fact that Article 265 of the Labor Code establishes significant fines for violations (up to 320 thousand UAH), Ukrainian employers now pay increased attention to ensuring compliance of their activities with Ukrainian labor legislation.

The Resolution of the Judicial Chamber on Civil Cases of the Supreme Court of Ukraine dated August 9, 2017 [7] provided an important clarification on the issues of dismissal of employees during redundancy. According to the Resolution, if at the time of redundancy the employer does not have any vacant positions corresponding to the education and qualifications of the relevant employee, the employer is not obliged to offer the employee another position and may dismiss him/her.

Thus, based on the analyzed data, it is possible to confidently say that our country does not have an effective instrument for regulating employment, which in turn has a negative impact on the growth of the number of unemployed and the out-migration of part of the population abroad.

The war has changed the conditions and principles under which the labor market operated, moving it into a more uncertain and dangerous phase. In particular, according to a survey conducted by the European Business Association (EBA) among EBA member companies in March 2022, 43 % of companies had financial reserves for several months, 28 % – for 6 months, 17 % – for a year or more, 6 % reported that the company's financial reserves were exhausted. Thus, from the first days of the war, companies tried to optimize costs as much as possible by reducing staff, providing unpaid leave, suspending employment under contracts, reducing salaries, etc. According to a survey by the HR portal grc.ua, The number of people affected by the decline in business activity and unemployment in Ukraine reaches 52 %. Respondents claim that they are either paid the minimum wage or have had it reduced by 30 % or more.

The situation on the labor market will depend on the duration of hostilities and the return of Ukrainian migrants. In April 2022, labor activity began to gradually recover, and the number of vacancies stopped declining. Thus, on the 100th day of the war, almost 50 % of large EBA member companies resumed their operations; the rest operate with certain restrictions or partially. Businesses are optimizing their operations, with many employees working remotely, some at their workplaces, and some on vacation. The June results of the business activity survey show that the share of companies reporting

a decrease in production has decreased from 70.5 % to 44.9 %. However, compared to the pre-war period, 8 % of companies ceased operations and only 12 % of companies operated at full (or high) capacity utilization. According to a study conducted by Gradus Research, from the beginning of the military aggression until March 22, 2022, 86 % of the country's enterprises stopped, reduced or limited their activities, of which 48 % worked partially or almost did not work. Only 13 % of enterprises operated as before, and 6 % of enterprises operated at a higher volume than in pre-war times. During the war, there was a change in the sector as one of the ways to ensure economic stability, among other things: 16 % of the surveyed enterprises changed their sector completely or partially, 21 % are in the process of changing their sector, and 16 % have joined the process of change flow.

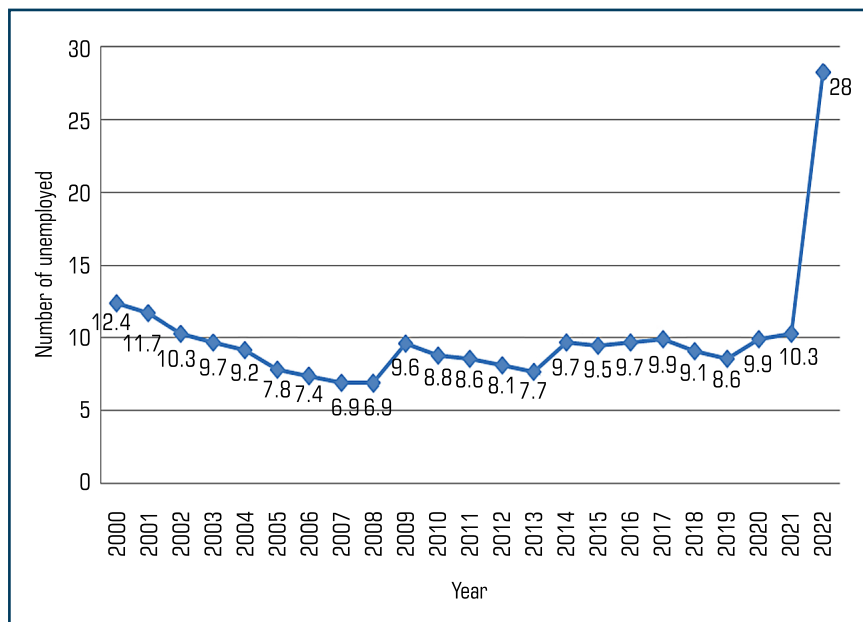
The full-scale invasion of Ukraine by the Russian Federation forced 27 % of the population to leave their homes, including 36 % of the population aged 18–24 and 34 % of those aged 25–34. Due to the limited employment opportunities and the change of place of residence, the employment and income situation of workers has deteriorated. In March of this year, 38 % of respondents were unemployed, 57 % were employed, 45 % had a job and were working, and the rest were not working and kept their jobs.

As of March 17, only 17 % of businesses reported 100 % or more employee engagement compared to the pre-war period, and 19 % of businesses engaged 10 % of their employees. The surveys yielded different results: as of March 19, 2022, more than half of Ukrainians who had a job before the war, 53 %, were not working, 22 % were working as usual, 21 % were working remotely or partially, and 2 % had found a new job. Given the problems that negatively affect the well-being of the working population and their families, the economic situation as a result of the war has not changed for only 18 % of the population, has deteriorated for 52 %, and has deteriorated sharply for 28 % [8].

Thus, an important characteristic of the recovery process and the operation of enterprises operating in war is also the social mood, both within the enterprise and in the region where they operate. Work is done by people, and the success of their activities depends on how well they maintain their morale, how united they are and how willing they are to take risks for a common goal, so it is necessary to analyze the Ukrainian labor market, its shortcomings and advantages in more detail.

Ukraine is currently experiencing a shortage of personnel, which was caused both by the development of globalization (massive out-migration of workers due to better opportunities abroad) and by the full-scale war with Russia (part of the population was forced to leave the country due to Russian military actions), so it is possible to suggest starting with an assessment of the overall unemployment rate in Ukraine, which is growing every year, and 2022 was a record year for the number of unemployed Ukrainians (**Fig. 2.4**).

Thus, it is safe to say that it is the war with Russia that has led to a record increase in unemployment in Ukraine, which has not been seen in any crisis period, and the main reason is the destruction of enterprises or bankruptcy, which directly affected the unemployment rate. For example, the Azovstal Iron and Steel Works, which employed about 4,000 people, has been reduced to ruins [9].

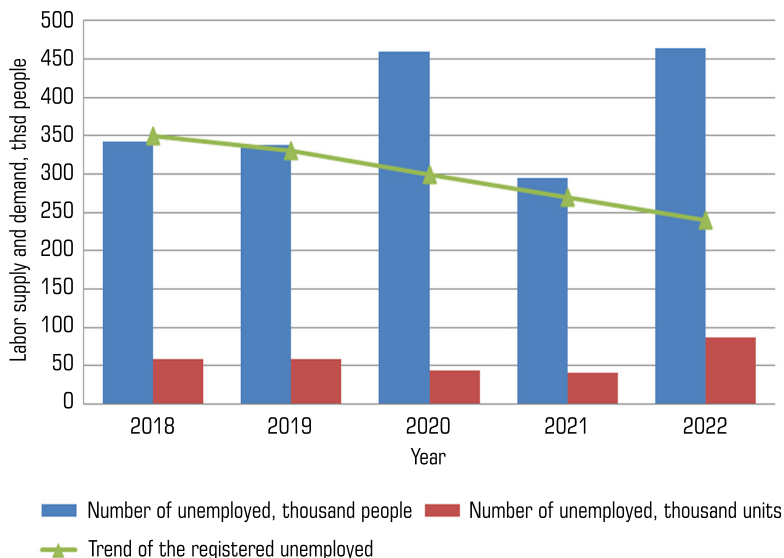


**Fig. 2.4** Dynamics of the unemployment rate in Ukraine in 2010–2022  
 Source: Developed by the authors based on the source [10]

When analyzing the situation on the labor market in Ukraine (**Fig. 2.5** and **2.6**), it should be borne in mind that the current realities of Ukraine's socio-economic development are represented by significant and insufficiently effective structural changes in the economy, the intensification of crisis phenomena and trends in it, which are caused by the military conflict and the displacement of people from the combat zone and the occupied territories.

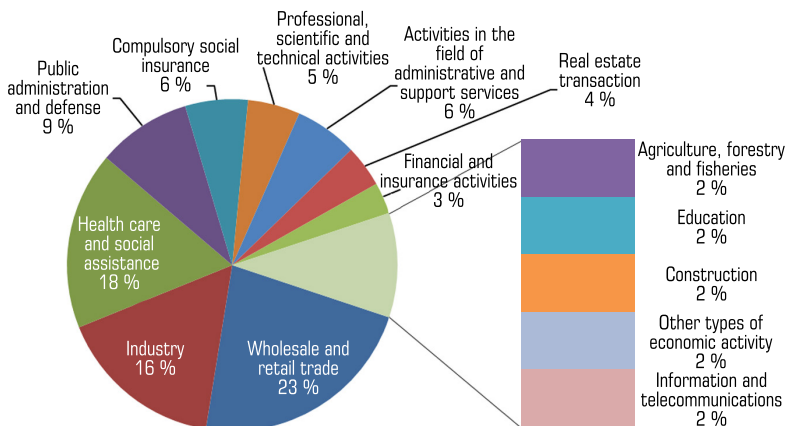
Labor replacement demand measures the extent to which labor needs to be replaced over a certain period of time. Labor force attrition occurs for various reasons, including retirement as the main reason, followed by a change of job due to a change of profession, temporary withdrawal from the labor market, etc.





**Fig. 2.5** Dynamics of labor supply and demand in Ukraine in 2018–2022

Source: Developed by the authors based on the source [10, 11]



**Fig. 2.6** Average number of employed population by type of economic activity in 2022

Source: Developed by the authors based on the source [10, 11]

The study of the structure of Ukraine's sectoral labor market in 2018–2022 found that in these years, the largest part of the population was employed in wholesale and retail trade; repair of cars and motorcycles (22 %), agriculture, forestry and fisheries (17 %), industry (16 %), and education (9 %). And such sectors as agriculture, industry, trade, education, and healthcare employ the largest share of the economy's workforce.

A significant contribution to the formation of the sectoral pay gap is made by industries that employ the smallest share of workers (financial and insurance activities, real estate operations).

In 2022, the largest number of unemployed people (by type of economic activity of the enterprises where they worked before) was registered in construction, wholesale and retail trade, repair of cars and motorcycles, professional, scientific and technical activities, financial and insurance activities, and education.

With high unemployment and a corresponding decrease in demand for labor, average wages of Ukrainians began to decline, as the supply on the labor market exceeded demand by several times in 2022. Another reason for the decline in wages was cost savings by the management of enterprises, which, in order to stay in the market, were forced to literally "gnaw" every order and offer the most competitive prices, which can only be obtained by reducing costs, and as it is known, wages account for about 25 % of the cost of a product or service. The dynamics of Ukrainian wages is shown in more detail in **Fig. 2.7**.

**Fig. 2.7** shows the critical situation on the labor market in Ukraine, but this is the least that Ukrainians can pay for the "right to life" in a free and independent country.

Negative trends in the labor market are also related to the dynamics of external migration with the opening of the visa-free regime in 2017 and reached catastrophic levels in 2022, which is what we propose to study in more detail.

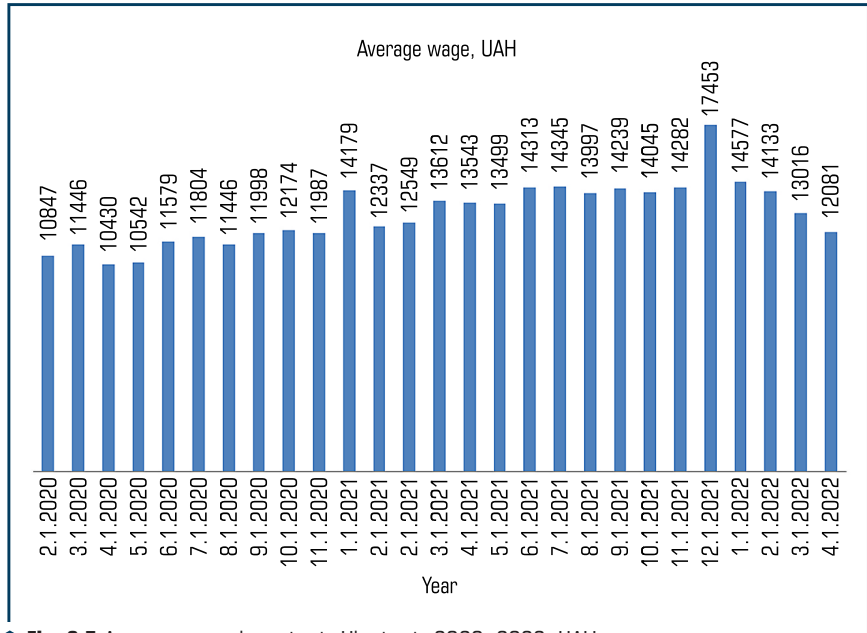
For many years, the issue of migration has been on the list of key political topics at both the national and international levels. The inflow or outflow of people into or out of a country is a subject of debate in almost every election campaign. Thus, there is a risk that the presence of war refugees in Poland could easily become the subject of intense political debate with all the negative consequences that this entails.

The situation with migration in Ukraine is complex and it is difficult to make a definite assessment of the situation at the moment, due to constant changes. Due to the large number of refugees and constant attacks on civilians, migration flows to neighboring countries are increasing.

The decision of Hungary, which stated that it and other Visegrad states – Poland, the Czech Republic and Slovakia – do not support the decision of Brussels, as there are already common rules for refugees, was negative in relation to Ukrainian refugees.

This was another act of demonstrative disagreement with Brussels' decisions, an attempt to show that the Eastern EU states have their own opinions and want to have

the same weight in their decisions and proposals as the Western EU states, but on the same day the conflict was resolved and Hungary changed its mind about refugees from Syria, Hungary, which even built a wall on the border with Serbia and Croatia, immediately expressed its readiness to accept Ukrainians and, according to statistics [8], Romania has accepted almost a million Ukrainians, Poland – more than 3.5 million and Hungary – almost 700 thousand.



**Fig. 2.7** Average wage dynamics in Ukraine in 2020–2022, UAH

Source: Developed by the authors based on the source [12]

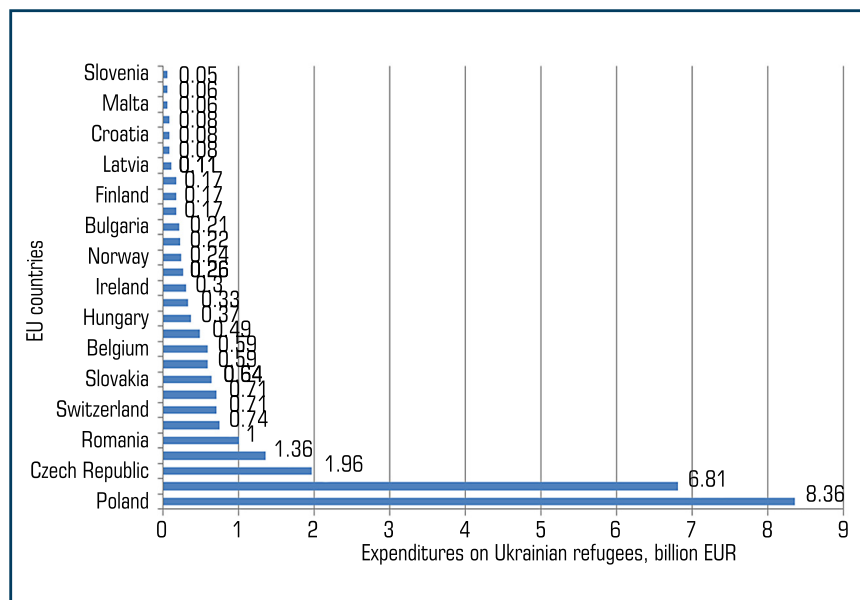
For more than 3 months of the war and the operation of the mechanism for granting temporary protection to Ukrainians in the EU, there have been no cases of denial of protection to people who really need it. Human rights organizations, including Amnesty International, have also not commented on improper procedures or discrimination in the granting of temporary protection status to Ukrainians.

Ukrainians receive cash benefits, housing assistance, and health insurance in EU countries. This assistance varies from country to country due to differences in the economic, health, and social systems of different EU countries; however, as described in the first section of this paper, the European Union has adopted several legal documents that set

minimum levels of such assistance and standards for its provision. This aid has a significant impact on the economic situation in the countries. In addition to significant expenditures from national budgets, the EU has used 3.5 billion EUR from the emergency reserve fund for EU countries bordering Ukraine to help reduce the burden on the economic system of the countries due to the costs associated with Ukrainian refugees (**Fig. 2.8**).

Analyzing the EU's assistance to Ukrainian refugees, it is clear that Poland and Germany provided the most funds, accounting for 56 % of all EU countries.

As noted above, millions of refugees have moved to neighboring countries. Despite signs of population mobility and significant movement to the west, a limited number of refugees are returning home. It is still likely that the crisis will drag on, and the UN predicts a steady increase in the number of refugees as long as the war in Ukraine continues. If, as a result of the escalation of hostilities, refugees remain in host countries longer than expected, they may begin to look for work in the labor markets of these countries.



**Fig. 2.8** Expenditures on Ukrainian refugees by EU countries as of 2022, billion EUR  
Source: Developed by the authors based on the source [13]

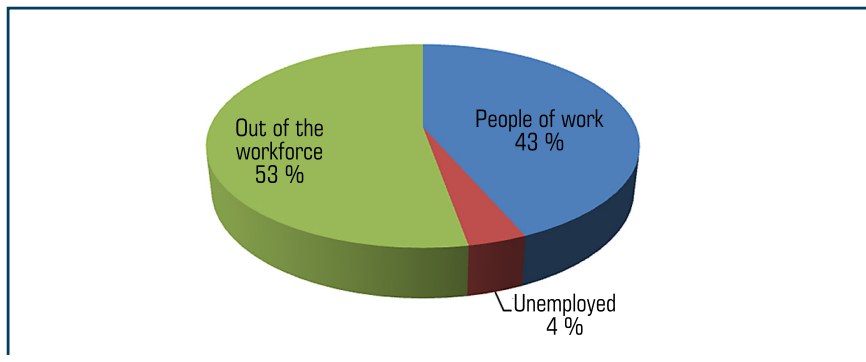
The majority of refugees are women, children and people over 60. The ILO estimates that approximately 2.75 million of the total number of refugees are of working age.

Of these, 43.5 %, or 1.2 million, were employed at the start of the conflict but quit or lost their jobs during the conflict (**Fig. 2.9**).

Over 87 % of previously employed refugees worked full-time. The overwhelming majority (88 %) were employees of enterprises, while the remaining 12 % were self-employed. Two-thirds had the highest (higher) level of education. Almost half (49 %) were employed in highly skilled positions and only 15 % in low-skilled positions.

Most of the refugees who left Ukraine are retired and unable to work in the EU, so only half of them are competitive on the EU labor market.

The Strategy of the State Migration Policy of Ukraine for the period up to 2025 states the need to direct the efforts of the state and society to the formation and implementation of the state migration policy, which would have a positive impact on the consolidation of the Ukrainian nation and the security of the state, accelerate socio-economic development, slow down the rate of depopulation, stabilize the quantitative and qualitative composition of the population, meet the needs of the economy in labor, and meet international standards and international obligations of Ukraine [15].

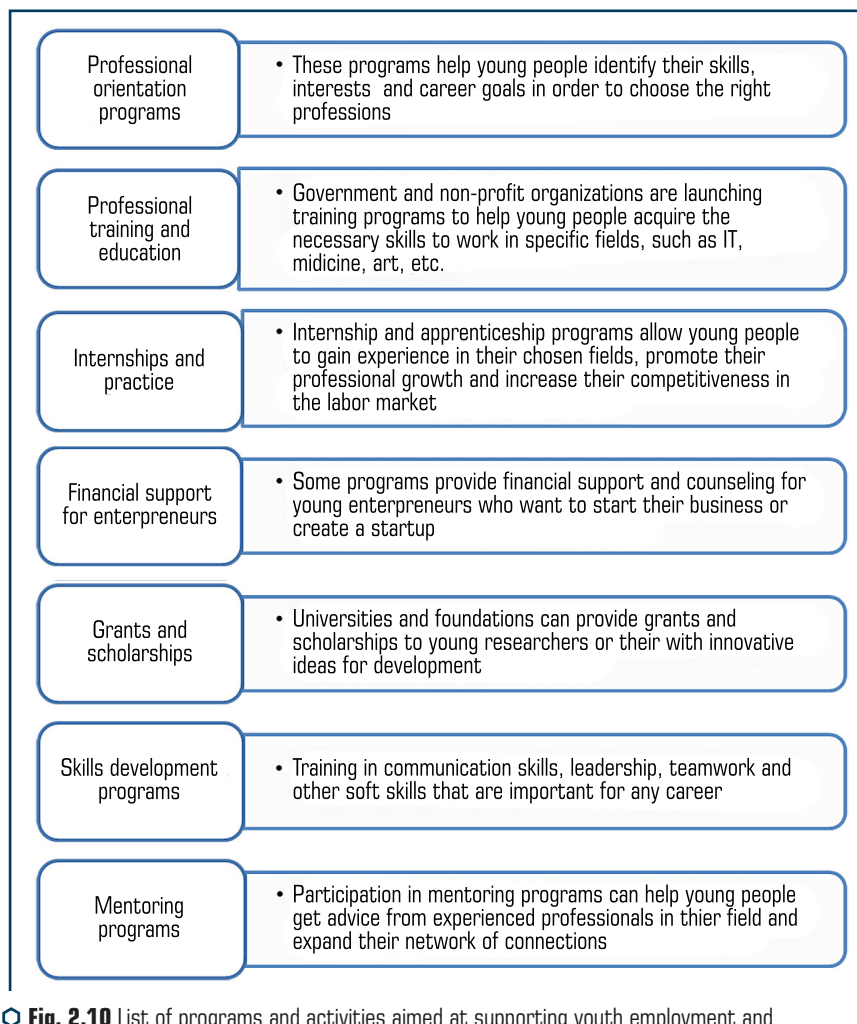


**Fig. 2.9** Structure of employment of Ukrainian refugees in the EU  
Source: Developed by the authors based on the source [14]

One of the directions of the strategy's implementation (on migration and mobility of the population of Ukraine) singled out goal 2: to reduce the negative effects of emigration from Ukraine and increase its positive impact on the development of the state. In this regard, it is envisaged to "develop opportunities for temporary legal employment abroad".

Addressing and implementing these issues is very important, as the difficult situation on the domestic labor market, high unemployment, and a significant gap in wages in Ukraine and abroad push Ukrainians to seek better conditions for earning money and self-realization in foreign countries.

The main problem of labor resources is the inability of young people to find a job after graduation. In the area of youth employment, there are a number of programs and measures aimed at supporting their employment and development. Some of them are shown in **Fig. 2.10**.



**Fig. 2.10** List of programs and activities aimed at supporting youth employment and development in Ukraine  
Source: Developed by the authors

These programs and activities are aimed at providing young people with opportunities for self-realization in choosing a profession, developing skills and gaining practical experience, which in turn helps to improve their employment and career growth.

As an example, one of these programs is the existing USAID program "Dreaming and Acting", which is a long-term initiative aimed at supporting and developing the potential of young people in Ukraine.

The main goal is to create an enabling environment where young people will have the opportunity to realize their dreams and ideas and contribute to the development of the country.

This program seeks to promote the active involvement of young people in various projects and initiatives. By focusing on working with young people, not just for young people, it promotes innovative approaches, entrepreneurship, and active participation in decision-making at both the community and national levels [16].

In addition, the program actively engages young people in the development and implementation of projects, conducts research that helps shape and improve youth policy and promotes sustainable change.

The "Dreaming and Acting" initiative is the result of joint efforts of IREX, Building Ukraine Together (BUR), Center for Corporate Social Responsibility Development (CSR Ukraine), Making Cents International (MCI), International Republican Institute (IRI) and Zinc Network.

The main beneficiaries of the program are Ukrainian youth aged 10 to 35, communities, organizations, as well as the public and private sectors.

The goals of the program are to:

- expanding economic opportunities by supporting youth innovation, entrepreneurship and career readiness;
- engaging young people in active participation in decision-making and problem-solving at both national and local levels;
- strengthening the potential of Ukrainian youth as active agents of pluralism and respect for diversity;
- conducting research and analysis to inform youth policy and program initiatives aimed at achieving effective and sustainable change.

During the first two years of the program, more than 70,000 young people participated in events and projects, and more than 760,000 young Ukrainians used educational material and online tools.

During this period, 59 % of participants stated that they had improved 10 key competencies through participation in the program and the use of its resources. These competencies include entrepreneurial thinking, lifelong learning, collaboration, leadership and social impact, emotional intelligence, adaptability, civic engagement and awareness, inclusiveness, communication, and information and media literacy.

The program operates at both the national and regional levels, offering flexible and adaptive initiatives that respond to current challenges and aim to develop strategic solutions for the future.

Under the umbrella of this program, many projects are implemented together with young people or aimed at supporting and educating them, contributing to the development of competencies and skills. It also provides resources for educators and professionals working with children and youth.

To achieve its first objective, which is to empower young people through innovation, entrepreneurship and career preparation, the program actively collaborates with the private and public sectors. It creates activities and resources aimed at enhancing the ability of young people to start their own businesses, build professional careers and adapt to the demands of the labor market, allowing them to realize their potential.

For example, the program focuses on career guidance. In cooperation with the Career Hub of the Center for Corporate Social Responsibility Development, it implements various career counseling projects, helping young people choose professional paths and preparing them for job search (teaching them self-presentation, resume preparation, interviewing, effective use of experience and acquired skills). In 2023, it is planned to modernize the career counseling system in various types of educational institutions and introduce the concept of a career-oriented school.

Based on the findings of the Future of Work 2023 study, two large interactive exhibitions "Future of Work 2030" were implemented and held, aimed at young people and dedicated to forecasting the future of work by 2030 in Ukraine. The Center has developed a number of analytical materials that help to understand future trends in the labor market: the study "Future of Work 2030: Preparing for Changes in Ukraine", "Future of Work: Impact of War and Professions for the Recovery of Ukraine", and an analysis of trends and recommendations for the future of work in Ukraine until 2025, taking into account the consequences of a full-scale war [17].

In addition, an interactive manual "How to Create a Career Center?" was developed for the community of educators, specialists of youth centers, NGOs and employment centers, which provides practical advice for the effective implementation of career services for young people.

A third of the youth who used the program's career counseling service found a job.

In addition, there is a government program, the EU4Youth program, which is an initiative aimed at supporting youth employment and development. This program promotes cooperation between the public employment services of the Eastern Partnership countries and the European Union. It aims to support young people in building their professional potential and securing employment opportunities.

The EU4Youth program creates conditions for cooperation and exchange of experience between different countries, promoting the development of programs and initiatives



aimed at supporting young people in acquiring work skills, finding a job and developing their careers. The program aims to improve young people's access to the labor market and increase their competitiveness by providing support for the training and practical experience needed to successfully enter the work environment.

On October 10, the first EU4YOUTH DAYS event of the Eastern Partnership Public Employment Service Network took place, where representatives of the Eastern Partnership countries and public employment services of the European Union member states gathered to discuss cooperation.

The main goal of the event was to bring together the State Employment Services (SES) of the Eastern Partnership and discuss the benefits of cooperation between them and the SES of the EU countries.

State Employment Services are tasked with cooperating with the business sector and other organizations, providing career counseling and providing retraining for young people, including those with disabilities.

These challenges are typical for European countries as well. Although the unemployment rate, especially among young people, is higher in the EaP countries than in other European countries, the experience of the EU's State Employment Services can be useful for the development of the EaP countries [18].

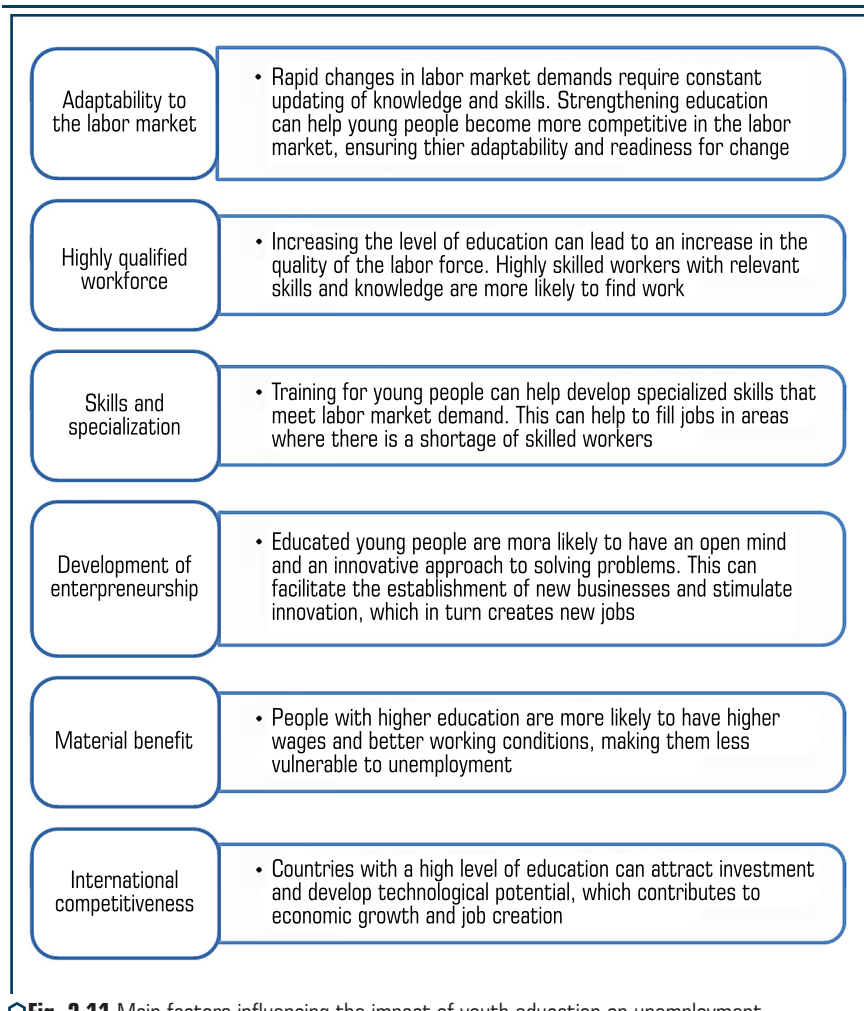
The EU4Youth Phase III program, aimed at youth employment and entrepreneurship, receives funding from both the European Union and the Ministry of Foreign Affairs of Lithuania. This initiative is being implemented through the Central Project Management Agency (CPMA) in the Eastern Partnership countries (Armenia, Azerbaijan, Belarus, Georgia, Moldova, and Ukraine) until the end of 2024 [19]. The program includes a number of technical assistance activities aimed at supporting organizational structures and institutions, both governmental and non-governmental, in the area of youth employment and employability.

The development of youth learning is not only an investment in their future, but also a key factor for the development of society, its sustainability and prosperity.

The development of youth learning can have a significant impact on unemployment and employment through several key factors (**Fig. 2.11**).

Thus, the development of youth learning has a great potential to reduce unemployment and improve employment opportunities by increasing competitiveness, developing skills, stimulating entrepreneurship, and creating a favorable environment for economic development.

Any combination of systems and technologies used to engage workers on the one hand and to find employment opportunities on the other in a digital environment can be considered a digital labor market ecosystem. A digital labor market ecosystem should be open and create a digital environment for bringing together its participants: job seekers, employers, employment intermediaries, and government agencies.



**Fig. 2.11** Main factors influencing the impact of youth education on unemployment

Source: Developed by the authors

Digital tools for interacting with job sites are implemented through job board software (JBS), which are search engines that collect job listings from employers and other sources and organize them into an easy-to-use database. Their search features allow users to post and filter jobs based on keywords related to location, job title, industry, and salary. Some PJSs are general in nature, while others specialize in specific economic

activities such as finance, information technology, or agriculture. Job posting software is multifunctional and serves job seekers, employers (looking to fill their vacancies) and companies (looking to create job sites and job boards).

In Ukraine, the use of JBS has intensified during the COVID-19 pandemic and over the past few months, as Russia's military invasion of Ukraine has become widespread. In such circumstances, many businesses in Ukraine have been forced to switch to remote work, while others will have to adapt, as this situation is likely to last for many months.

For employers who have open positions, job posting software connects them with potential candidates by providing an easy-to-use database where they can post jobs, thereby digitizing the hiring process. Employers can post jobs and track all the activity on their job listings. Some job boards also allow employers to search for resumes and then contact potential employees registered on the platform. Businesses that create a job board need the right tools. Some of them use unbranded job board software (so-called "white label software") to publish and monetize job ads on websites, while others use these solutions to develop new job boards. These solutions allow businesses to create engaging content that provides job seekers with easy-to-use search capabilities and recruiters and other HR professionals with the ability to attract talent. They can also provide automated job advertising, user profile analysis, and more.

For job seekers looking for new career opportunities, job boards provide a variety of search options, including location filters, job description keywords, and salary levels. Once they find the right listing, job seekers can get more information about each position and find links to submit resumes, portfolios, or ask additional questions. Standalone job portals allow job seekers to upload resumes or integrate LinkedIn profiles so they can easily apply to all jobs.

Job and search sites, portals, and social networks such as LinkedIn, CareerBuilder, and Monster have already become one of the global job intermediaries in the international employment intermediary market [9]. Job boards are the largest in terms of the number of people they reach, with LinkedIn's audience of over 400 million users representing 150 businesses from 200 countries.

Having studied the most popular Ukrainian job search and posting portals, such as: Work.ua, Rabota.ua, Jobs.ua, Eurabota, and Grc.ua [13], it is possible to say that the war affected all spheres of life, including the labor market, tens of thousands of people lost their jobs, and organizations and enterprises lost their staff. The digital ecosystem of labor market elements relevant during the war is presented in **Table 2.8**.

With the development of Internet technologies, job search has become much easier for both HR managers and candidates. The Internet makes it possible to work remotely at home or on the other side of the world. The most popular job search sites in Ukraine are Work.ua and Rabota.ua, which have been the most popular in terms of the number of vacancies posted and employees hired since the pandemic and up to now.

◆ **Table 2.8** Elements of the digital labor market ecosystem relevant during the war in Ukraine

| An element of the digital labor market ecosystem | Characteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Job search sites                                 | <i>Work.ua</i> . One of the most popular job search sites<br><i>grc.ua</i> . It is a well-known resource that publishes hundreds of vacancies daily.<br><i>Robota.ua</i> . Added a section "Jobs for winning"                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Job search platforms                             | <i>Jooble</i> . Work on different schedules and directions, about 80 thousand vacancies.<br><i>Jobs.Dou</i> . Jobs for IT companies.<br><i>Jobs for Ukraine</i> . Academic, scientific, creative, professional and other vacancies.<br><i>Upwork</i> . Jobs for freelancers.<br><i>Work in the rear</i> . Here you can also offer your help.<br><i>Hire for Ukraine</i> . Posting resumes of HR managers, IT specialists, creative workers, builders, architects, and service providers.<br><i>UA Talents</i> . Non-profit job search platform.<br><i>Interact</i> . A set of job search sites. Here you can search for jobs in different countries and specializations |
| Telegram channels for job search                 | <i>RobotaNow</i> . Work in all specializations and areas.<br><i>Goodjob</i> . Jobs in Ukraine and abroad, language courses, tips on how to write a resume.<br><i>Resume of vacancies</i> . Creative jobs, volunteer offers.<br><i>Zaychenko's team</i> . Jobs for journalists, designers, marketers, IT specialists.<br><i>UaJobNow</i> . Employment in Ukraine, Europe and remote work.<br><i>Remote Job</i> . An English-language channel with vacancies in design, sales, and other fields.<br><i>Lobby X</i> . Work and volunteering opportunities in Ukraine                                                                                                       |

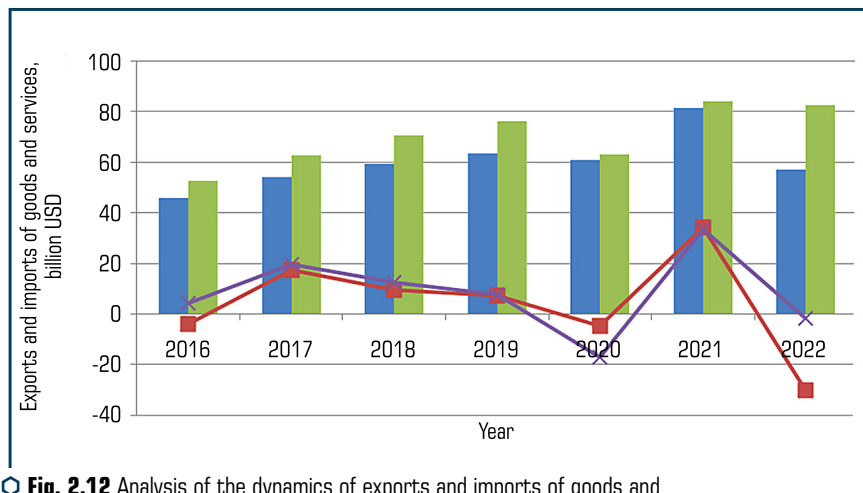
Source: Developed by the authors

An important indicator of economic development is the level of exports in Ukraine, which we propose to analyze (**Fig. 2.12**).

This market shows how Russian aggression has affected Ukraine's international activities. In 2014–2015, due to the unstable situation in eastern Ukraine, exports and imports decreased. In 2022, due to the declaration of war and Russia's attack on Ukraine, exports decreased by 30.06 % and imports by 1.79 %. It was 2022 that became a turning point both in the history of our country and in the structure of trade partners. Starting in 2022, Ukraine finally took a pro-European direction and focused on strengthening trade relations with the EU and Western partners.

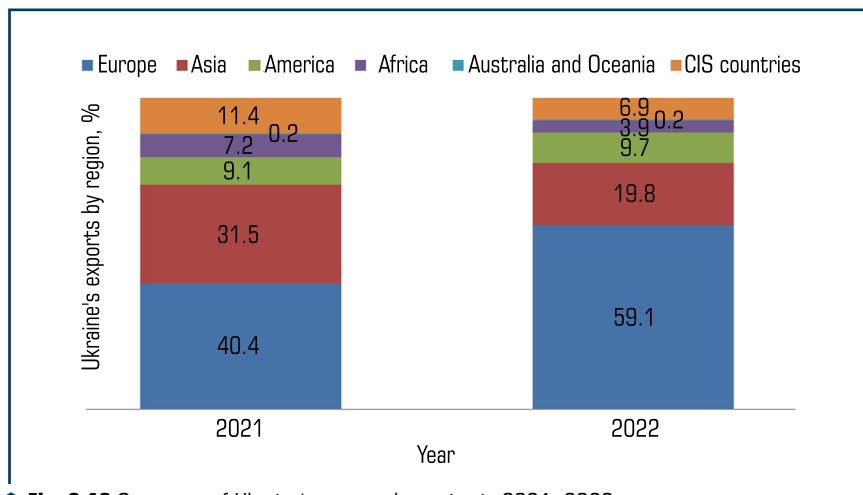
Thus, as can be seen from **Fig. 2.13**, the share of the CIS countries (primarily Russia, as it was one of Ukraine's largest trading partners among the CIS countries) decreased by 4.48 % in 2022, while the share of European countries increased by 18.75 %. It is also possible to see a decrease in the share of Asian countries by 11.63 % due to Russia's

blockade of the port of Odesa and restrictions on ship traffic. The year 2022 was the year of a complete change in Ukraine's trade partners and final orientation towards the EU.



**Fig. 2.12** Analysis of the dynamics of exports and imports of goods and services of Ukraine in 2016–2022, billion USD

Source: Developed by the authors based on the source [18]



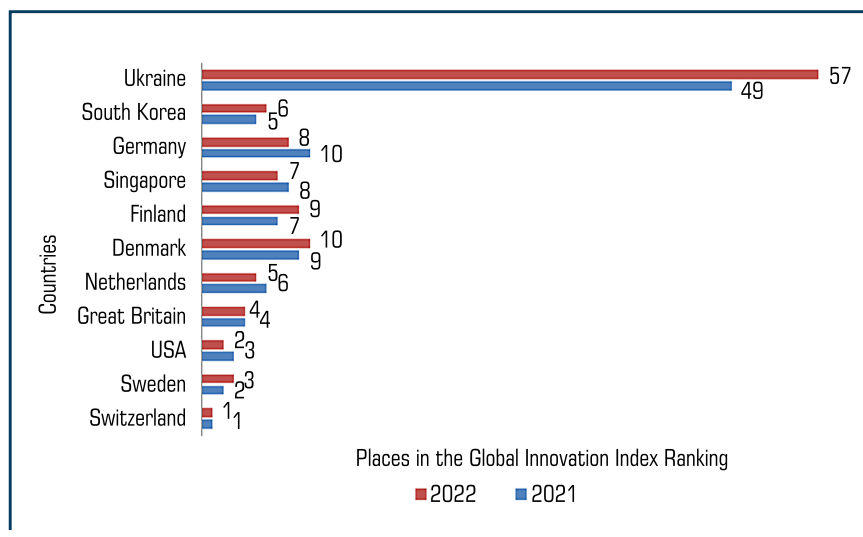
**Fig. 2.13** Structure of Ukraine's exports by region in 2021–2022

Source: Developed by the authors based on the source [18]

Let's analyze the structure of Ukraine's main trading partners in 2021–2022 (**Fig. 2.13**).

Ukraine's position in the Global Competitiveness Index has been declining since 2014. An important indicator of the growth of the Ukrainian economy is the Innovative Development ranking, and let's determine its place in the innovation ranking for 2021–2022 (**Fig. 2.14**).

Analyzing the data in **Fig. 2.14**, it is clear that Ukraine is far behind economically developed countries. The war between Russia and Ukraine had a particularly negative impact on the innovative development of our country, as in 2022 Ukraine fell to 57<sup>th</sup> place, which is an extremely negative consequence of the war [21].



**Fig. 2.14** Ukraine's place in the Global Innovation Index Ranking for 2021–2022

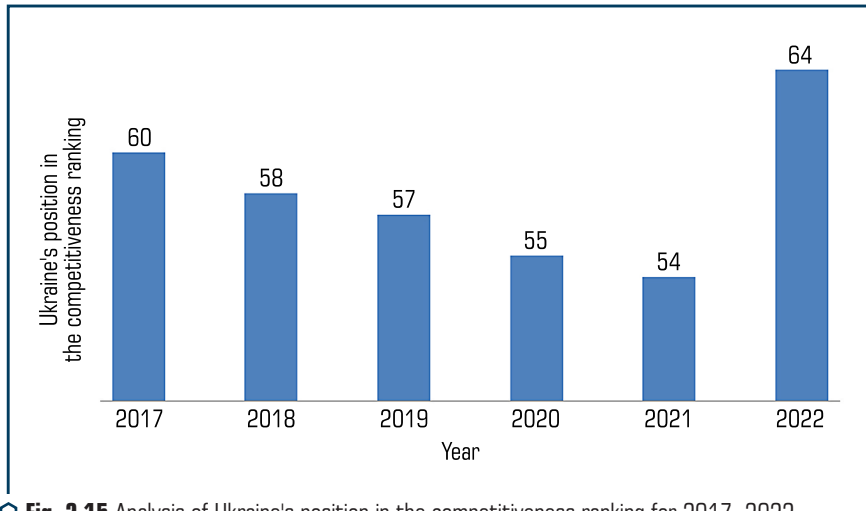
Source: Developed by the authors based on the source [20, 21]

Let's determine the place in the ranking of Ukraine's competitiveness in the dynamics over the past ten years (**Fig. 2.15**).

As can be seen from **Fig. 2.15**, Ukraine lags far behind the rest of the world in terms of its place in the competitiveness ranking by almost three times. This significant gap has led to a huge difference in the economies of both countries and has affected business development in Ukraine.

Since the beginning of the Russian Federation's full-scale invasion of Ukraine, more than 12 million Ukrainians have been temporarily displaced, including about 5.2 million abroad.

As a result of the war, about 22,000 teachers have gone abroad, almost 40 % of Ukrainians lost their jobs during the war, 24 % work part-time or online, and 32 % continue to work as usual.



**Fig. 2.15** Analysis of Ukraine's position in the competitiveness ranking for 2017–2022  
*Source: Developed by the authors based on the source [22–24]*

In Ukraine, the labor market is in crisis due to the war. Currently, the number of vacancies has significantly decreased, and the average salary dropped from 15,035 to 13,736 UAH in the first month of Russia's full-scale war against Ukraine alone. Many Ukrainians have already lost their jobs due to the fighting and it is becoming increasingly difficult to find a new job. Indeed: 34 % of Ukrainians surveyed claim that it is difficult to find a job in their area, and 21 % of respondents claim that the jobs they can find do not meet their expectations [25].

Therefore, based on the above, let's provide the following measures that can contribute to the recovery of the labor market, as well as create conditions for improving the quality of the labor market in Ukraine, which is necessary for the post-war economic recovery:

- due to the difficult situation in the labor sphere in Ukraine and the significant outflow of the able-bodied population from the labor market, especially to the Armed Forces of Ukraine, territorial defense forces and NGOs, there is a growing demand for the most efficient use of labor and ensuring a sufficient level of adaptation of competent people to changes in the labor market, which requires balanced government decisions;

– the strategic direction of the state policy of the IT sector development should be: creation of a favorable investment environment; formation of an effective policy of system development and legal support, adequate to the requirements of the time and increased competition in the industry; adaptation of the personnel training sphere to the final demand, taking into account the requirements of soft skills, among which the most important are critical thinking, self-organization, teamwork, customer-oriented methods of work, communication skills, flexibility and adaptability, creativity;

– to improve the level of labor during the war and in the period of economic recovery, it is very important to ensure labor mobility, which will contribute to increased adaptation, increased competition, and consumption efficiency. Labor mobility, which determines the qualitative characteristics of the workforce, its ability to change the production activities of tangible and intangible goods, preparation for professional development and qualification, management of new skills, adaptation to situations of active production, must be ensured for the successful operation of enterprises that will be located outside the combat zone, as well as those that have been relocated from dangerous areas;

– to overcome the negative trends in the labor market, a comprehensive program for its recovery should be developed, which would include measures aimed at creating jobs in industries that ensure the country's defense capability, as well as in industries that will be prioritized in the postwar period. Obviously, these industries will require, first and foremost, specialists in blue-collar occupations, the shortage of which was observed even before the outbreak of hostilities. Therefore, it is important to create conditions for retraining the unemployed in order to overcome structural imbalances in the labor market. To this end, special attention should be paid to the development of the vocational education system, which has lost a third of its educational institutions and 40 % of its students over the past ten years [26];

– reform of higher education is also inevitable, as it is currently poorly oriented to the needs of the labor market. The labor market recovery program should provide incentives for emigrants to return to the country, as the professional experience they gained during their forced emigration will be useful in the economic recovery process. In addition, the lack of labor resources can be a significant obstacle to economic growth, as it will not allow for an increase in the production of goods and services, nor will it generate effective demand for them, nor will it ensure the receipt of the necessary amount of financial resources to the budget and social insurance funds. An important incentive could be the restoration of damaged and construction of new housing. However, the settlements where such construction should be stimulated should be chosen taking into account both the security component and the prospects for creating research and production clusters that could become the engines of the post-war economy;



– the problem of returning able-bodied emigrants cannot be solved without a reform of wages. Full de-shadowing of labor income is required, and for this purpose, incentives for concealing it must be eliminated.

This can be done by combining the PIT, unified social tax, and military fee into one tax, the amount of which should be added to the gross salary, and the obligation to pay this tax should be transferred from the employer to the employee. When paying such tax annually, the taxpayer should be entitled to a broad tax credit for the amount of expenses for educational and medical services, mortgage, etc.

Thus, given the importance of improving conditions for the realization of entrepreneurial potential in the post-pandemic and post-war economic crisis, it is necessary to continue to study the existing obstacles to the development of entrepreneurship in Ukraine in order to identify priorities for overcoming them to stimulate sustainable economic development.

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