



The Labor Market in Ukraine: Rebuild Better*

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The full-scale invasion of Ukraine and the ongoing war have caused and continue causing damages of devastating proportions. We analyse the impact on the Ukrainian labor market and propose a framework for its rebuilding. The Ukrainian labour market needs not only to be rebuilt – it needs to be rebuilt better. The unprecedented challenges imposed by the reconstruction can be met by a labour market promoting labor market participation and easing the reallocation of workers across jobs. Reconstruction will require a mix of emergency measures dealing with the legacies of the war and structural reforms addressing pre-existing inefficiencies of the Ukrainian labour market. We illustrate the challenges in light of the experience of other European countries having gone through military conflicts in a recent past and propose strategies for action. The detailed proposals are consistent with a four-pronged strategy for reconstruction aimed at: investing in human capital for the future by offering remedial education to the pupils having lost years of education, and offering retraining to job losers still far from retirement; making a better use of existing human capital, increasing labour force participation of women and tackling youth unemployment among internally displaced workers; protecting the most vulnerable groups (job losers, veterans, fragile and older workers) in a sustainable fashion; promoting a return of ideas if not of people, involving in the reconstruction the human capital migrated abroad that will not return back home. These policies should be linked to the EU accession process: they will require technical assistance from European countries having longstanding experience with labour market policies at times of reallocation, and part of them could possibly be financed by instruments connected with EU accession.

Keywords: Ukraine, Labour Markets, Reconstruction, Armed Conflict, War
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Contents

1	Introduction	1
2	The Ukrainian Labour Market before the War	2
3	The Labour Market Consequences of the War	6
3.1	Relocation of people	6
3.2	Relocation of firms	10
3.3	Labour market tightness	11
4	What We Have Learned from Previous Conflicts in Eastern Europe	14
4.1	Lesson 1: displacement worsens labour market outcomes	14
4.2	Lesson 2: wars generate large losses of human capital	16
4.3	Lesson 3: conflict has long-lasting effects on both physical and mental health	17
4.4	Other lessons	18
5	Building a Better Labour Market	20
5.1	Investing in the future human capital	21
5.2	Increasing labour market participation of women and tackling youth unemployment	23
5.3	Helping the most vulnerable: job losers, veterans, fragile and older workers .	27
5.4	Promoting the return of ideas if not of people	31
6	Conclusions	32
A	Appendix	40

List of Figures

1	Labor force participation rate, % by sex and age group	3
2	Beveridge curve for Ukraine	5
3	Decision on whether and where to relocate	7
4	Geographical concentration of Ukrainian and Syrian refugees in Europe . . .	10
5	The stance of business in Ukraine compared to February 23, 2022	11

List of Tables

1	Occupational structure and employment by sector	2
2	Informal employment and shadow rate, aged 15-70	4
3	Unemployed population in 2020, aged 15-70, by sex and type of area	5
4	Refugees from Ukraine, recorded by country	8
5	Labor force participation rate, % by sex and age group	40
6	Relocation choices in EU, Ukrainian and Syrian refugees	41

1 Introduction

Ukraine is one of the first labour markets in history where labour services were offered in exchange for in-kind benefits. According to Herodotus, who is considered the first known historian of mankind, what is currently known as Ukraine was a conglomerate of ethnic groups interacting under a well-defined division of labour between the populations living along the coastal regions, the steppe and the forests. This labour market has been destroyed and rebuilt several times under the invasions characterizing the history of this nation located at the gates of Europe. The reconstruction of Ukraine after the bloody Russian invasion will be no less demanding than the previous ones. Fortunately, this time Ukraine can count on the solidarity as well as the financial and technical support of the other Europeans.

In this chapter we first take stock, in Section 2, of the labour market conditions before the war, and the way it had reacted to the COVID-19 pandemic. We then present evidence, in Section 3, on the way the labour market has been operating in a war economy and after the out-migration of almost one fifth of Ukraine's population. Next, in Section 4, we draw lessons from the experience of other countries having gone through military conflicts in a recent past. Finally, in Section 5, we try to identify reforms that could help rebuild a better functioning labour market than the one operating before the war. We conclude by assessing the scope for support that other European countries can provide to the institutions carrying out this very demanding task.

2 The Ukrainian Labour Market before the War

The Ukrainian labour market was fairly depressed before the full-scale Russian invasion, launched on February 24, 2022. The unemployment rate for the fourth quarter of 2021 was at two-digits levels. The jobless rate had never been below 7.5 percent in the previous 5 years, in spite of a relatively low and declining labour supply (Table 1).

Table 1: Occupational structure and employment by sector

	Year				
	2001	2013	2015	2019	2021
Total employed, mln	19.97	20.40	16.44	16.58	15.61
Employment Rate (aged 15-70)	55.4	60.2	56.7	58.2	55.7
Employment Rate (working age)	64.1	67.3	64.7	67.6	65.3
Unemployment Rate (aged 15-70)	10.9	7.3	9.1	8.2	9.9
Unemployment Rate (working age)	11.7	7.8	9.5	8.6	10.3
Employment by sector, % of total employment					
	2001	2013	2015	2019	2021
Agriculture, forestry and fishing	21	18	17	18	17
Industry	22	16	16	15	15
Wholesale and retail trade; vehicles repair	17	22	21	23	23
Public administration and defence, compulsory social security	6	5	6	5	6
Education	8	8	9	8	8
Other sectors	26	31	31	30	31

Note: the definition of working age in SSSU labor force surveys has changed during these years. Pre-2012: women aged 15-55, men aged 15-59. In 2013: women aged 15-56, men 15-59. In 2015: women aged 15-58, men 15-59. In 2019 & 2021: all people aged 15-59. For 2013: total employed includes Crimea, rates and sectoral statistics do not (data not available). Year 2001 is based on the previous classification of economic activities in the European Community (NACE).

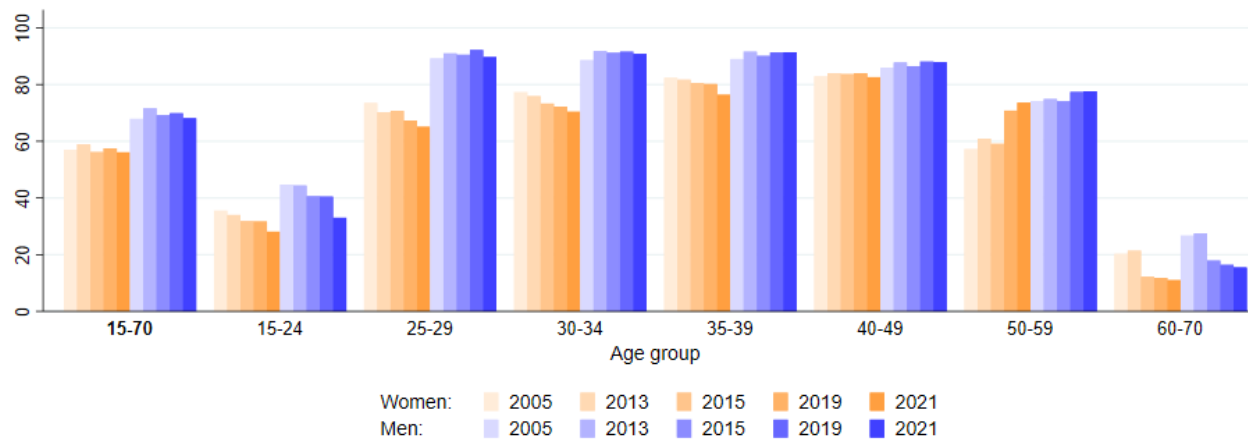
Labour force participation at 62% was below the OECD average (73%). Unlike other countries coming from central planning, participation rates of prime working age women were particularly low and declining over time (Figure 1).¹ The gender gap in participation was at 12 percentage points.

¹All tables in this section present key statistics that characterise the Ukrainian labour market in: 2001 or earliest internationally comparable data, as in 2001 Ukraine shifted to collecting data in line with international recommendations (ILO, OECD and SNA - System of National Accounts); 2013, the last year before the Russian invasion, which started in February 2014 (data include the occupied Crimea and parts of Donetsk and Luhansk oblasts); 2015, the first year when Ukraine lost control over the occupied Crimea and parts of Donetsk and Luhansk oblasts, but when the active large-scale military actions were paused and new demarcation lines were set, which had remained almost unchanged until February 24th, 2022; 2019, the last year before the COVID-19 pandemic, which had a notable impact on the labour market; and 2021 (or 2020), the most recent year for which annual data are available.

When not otherwise specified, the source for these data is the State Statistics Service of Ukraine (SSSU).

All this was registered in spite of an employment structure denoting a growing relevance of services, notably of retail trade where women are more represented. Employment was also still largely concentrated in agriculture (17%) by EU standards.

Figure 1: Labor force participation rate, % by sex and age group



Note: year 2005 is reported because it is the first one in which the present breakdown by age was used.

An ageing population and a very low fertility rate were inducing a fall in the working age population and putting under pressure the dominantly pay-as-you-go pension system. Immigration was not sufficient to compensate for the decline in the resident population. Since 2005, Ukraine was losing on average about 200,000 persons per year: like a middle-sized town disappearing from the landscape every twelve months. This is a considerable amount of people, if we consider that as of the end of 2021 the population of Ukraine was estimated at 41.2 mln persons.²

The COVID-19 pandemic exacerbated these structural problems. The restrictions imposed in 2020-2021 during the pandemic on trade, transport, and services, as well as the uncertainty about the spread of the contagion induced strong declines not only in the demand, but also in the supply of labour. The initial impact of the pandemic was more on participation than on unemployment. Among the factors inducing a decline in labour supply: individuals forced not to work did not return to their previous employment after the quarantine restrictions were lifted, and temporal limitations to public transportation made it almost impossible to search for another job at some distance from home.

²Note: these estimates are based on the latest available Census, which was conducted in December 2001, i.e., 20 years ago. Census data have been updated with administrative data on births, deaths and registered migration.

In this context, a further reduction of labour force participation of women was observed. Two key factors seem to be behind this development: (i) the concentration of employment losses in women-dominated occupations in services, and (ii) the fact that the burden of care for young children (most kindergartens and schools were closed) disproportionately fell on mothers. This would explain the dramatic fall of female participation in the 25-29, 30-34, and 35-39 age groups, while the rates of the similarly-aged men groups remained stable or even slightly increased (Figure 1).

The impact of the pandemic on employment was, as in most OECD countries, mitigated by the expansion of remote work. Short-time work schemes were also used, but much less than in OECD countries. At the same time, the informal sector failed to provide alternative employment opportunities to displaced workers, unlike in previous recessions where the shadow economy had operated as a sort of automatic stabilizer. Actually, the pandemic affected more the informal than the formal sector leading to a decline in the shadow employment rate, the share of informal employment in total employment (Table 2).

Table 2: Informal employment and shadow rate, aged 15-70

	Year			
	2013	2015	2019	2021
Informal employees, % of total employed (1)	8.1	12.6	9.6	8.3
Informal self-employed, % of total employed (2)	15.5	13.6	11.3	11.0
Shadow rate (1+2)	23.5	26.2	20.9	19.3

Note: shadow rate is defined as the ratio of informal over total employment.

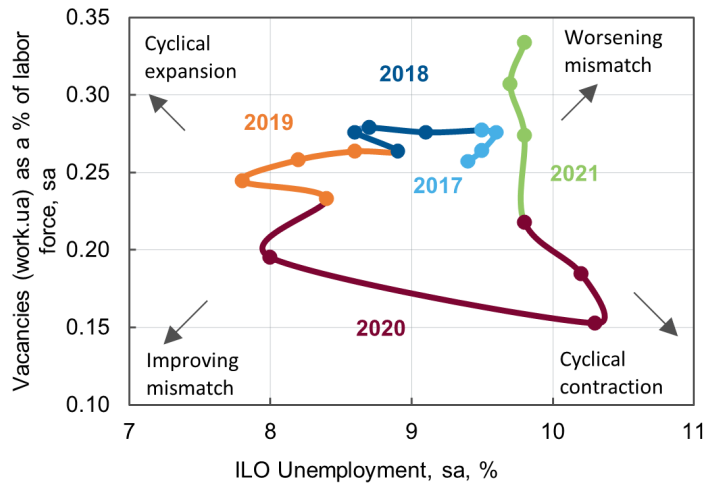
Incomes of displaced workers were supported by an increased coverage and duration of unemployment benefits, extended to workers who had not been paying social security contributions as they were previously working in the informal sector. New transfers to employers and to the self-employed were introduced to keep their business afloat. Pensions were increased, contributing to the further decline in labour force participation experienced by Ukraine since 2019. Effective labour supply was also reduced by a relatively long duration of unemployment, notably in urban areas (Table 3). This, together with the job reallocation caused by the recovery from the COVID-19 crisis, created serious bottlenecks in the labour market.

Table 3: Unemployed population in 2020, aged 15-70, by sex and type of area

	Total	Females	Males	Urban	Rural
Unemployed population, thsd.	1,674.2	763.2	911.0	1,101.0	573.2
By duration of job search, %					
Up to 1 month	12.6	11.2	13.7	11.5	14.6
From 1 to 3 months	22.0	21.3	22.5	19.5	26.8
From 3 to 6 months	27.3	27.4	27.3	27.1	27.8
From 6 to 9 months	10.6	11.8	9.5	10.9	9.9
From 9 to 12 months	6.3	6.8	6.0	6.8	5.5
12 months and more	21.2	21.5	21.0	24.2	15.4
Average duration of job search, months	6	7	6	7	6

In 2021 firms faced labour shortages. A shift out of the Beveridge curve (Figure 2) with more unfilled vacancies per any given level of unemployment was associated with an increase in wages, whose nominal (18.2% year on year in January 2022, the latest available data) and real (7,4% yoy) growth largely outpaced developments in the previous years.³

Figure 2: Beveridge curve for Ukraine



Source: Inflation Report of the National Bank of Ukraine, January 2022.

³Inflation Report of the National Bank of Ukraine, January 2022, page 24.

Note: the Beveridge curve provides a graphical representation of the relationship between the unemployment rate and the job vacancy rate (the number of unfilled jobs as a proportion of the labour force). If the curve moves outward, a higher level of unemployment corresponds to any given level of vacancies. This implies a decreasing efficiency of the labour market, likely caused by larger frictions in the matching of vacant posts and jobseekers.

3 The Labour Market Consequences of the War

Right after Russian missiles fell on Ukrainian cities and the invading armies crossed borders on the north, east and south, life for more than 40 millions Ukrainians changed drastically. Different surveys report that about one third of the population left their homes.⁴ Most of them, according to Gradus surveys, migrated within the country (56-65% in 1st-10th waves of survey), 18-22% within the oblast, and 16-26% went abroad.⁵ A large share of those who did not relocate lost their jobs. According to a poll by Advanter group conducted in early March, three out of four small businesses informed that they had completely halted their operations, and another ten percent were operating at 10-30% of the capacity.⁶ During the first weeks of the invasion, most of the local shops and markets in the endangered cities were closed. The situation with larger companies was slightly better, because they have larger financial cushion and greater diversification on both the input and output side. A survey of large enterprises by the American Chamber of Commerce in Ukraine showed that only 12% of them discontinued operations in Ukraine in March.⁷

At the macro level, the most important change was once more not the increase in the unemployment rate, but the dramatic fall in the labour force. With millions who left the country, labour supply declined in some cases even more than labour demand. Even those people who remained in their homes were often unable to get to work. Also, the majority of people who lost their jobs were probably unable or unwilling (e.g. due to safety concerns, or setting up in a new place for internal and external migrants) to search for a new job, thus temporarily leaving the labour force altogether. According to the July Rating Group survey, almost half of those who lost their jobs after the beginning of the full-scale war were not searching for a new one.⁸

3.1 Relocation of people

The full-scale invasion led to unprecedented levels of migration after the Second World War, both within Ukraine and abroad.

⁴Figures range from 19% (Rating Group, П'ятнадцяте загальнонаціональне опитування. Україна під час війни. Зайнятість і доходи - Fifteenth national survey. Ukraine during the war. Employment and incomes, slide 14) to 39% (Gradus, Social screening of Ukrainian society during the Russian invasion, tenth wave of the study).

⁵Oblasts are the first-level administrative divisions of Ukraine - the equivalent of regions (or provinces).

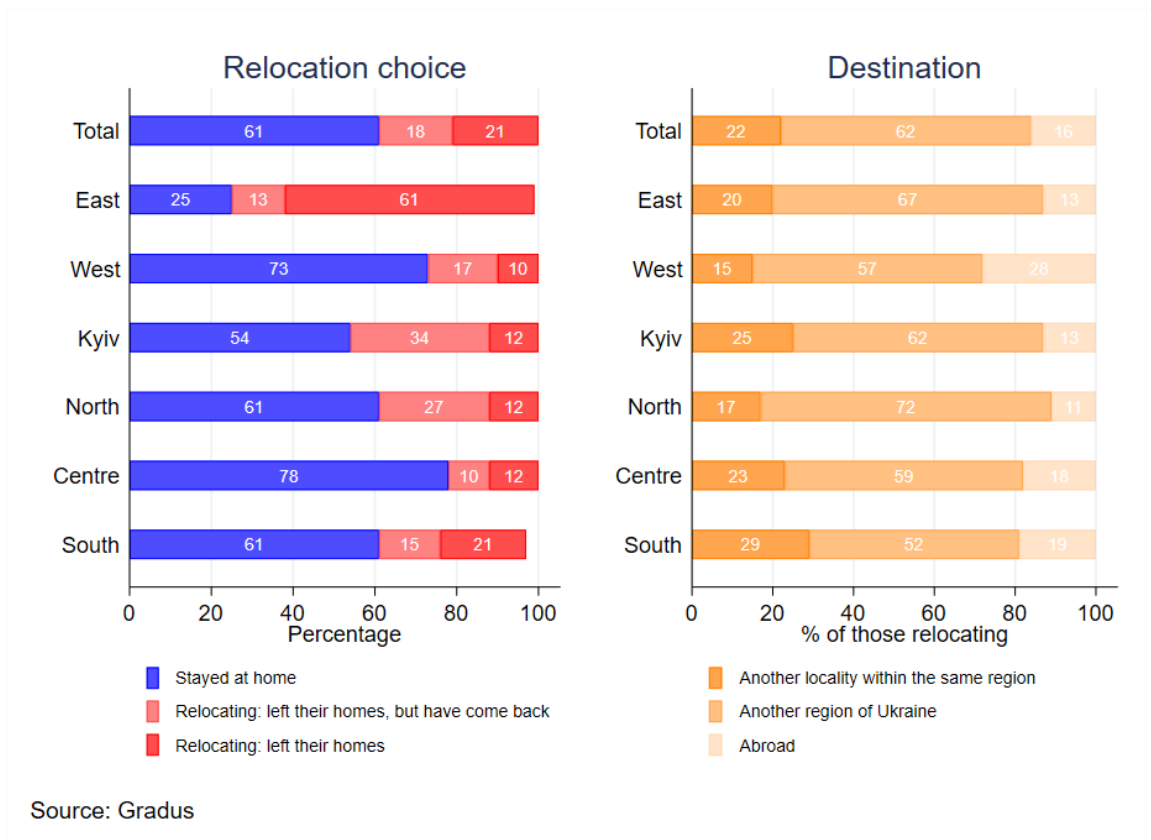
⁶Advanter, Дослідження стану МСБ - Study of the state of SMEs.

⁷AmCham Ukraine, Doing Business During War in Ukraine, week 4 - slide 3.

⁸Rating Group, П'ятнадцяте загальнонаціональне опитування. Україна під час війни. Зайнятість і доходи - Fifteenth national survey. Ukraine during the war. Employment and incomes - slide 27.

According to the tenth wave of survey performed by Gradus in September 2022, 39% of respondents changed their place of residence (Figure 3).⁹ Of them, the largest percentage (62%) moved to another oblast, while 22% moved within the same oblast (often from urban centers to nearby rural settlements in order to avoid air strikes on cities) and 16% to another country. If the results of the Gradus survey were representative of the entire population of Ukraine, then currently there would be around 13 million people living in Ukraine in a different place than before the full-scale invasion.¹⁰ Estimates by the United Nations High Commissioner for Refugees (UNHCR) for IDPs - internally displaced people - are lower, but still at substantial levels: around 7 million Ukrainians would be involved.¹¹

Figure 3: Decision on whether and where to relocate



⁹Gradus, Social screening of Ukrainian society during the Russian invasion, tenth wave of the study - slide 8.

¹⁰Answers are collected from towns with population 50 thousands or more via an app that works on a smartphone, therefore the respondents are not an exact snapshot of the population. The survey used only people aged 18+, but a lot of families migrated with children.

¹¹Source: <https://www.unhcr.org/ua/en/internally-displaced-persons>

The Russian invasion of Ukraine also caused the largest refugee crisis in Europe in more than seventy years. Since the end of February 2022, UNHCR reports 13.4 million border crossings from Ukraine and 6.3 million border crossings to Ukraine.¹²

Table 4: Refugees from Ukraine, recorded by country

Country	Refugees	Country	Refugees
Albania	2,780	Latvia	38,915
Armenia	489	Liechtenstein	306
Austria	82,446	Lithuania	66,368
Azerbaijan	4,218	Luxembourg	6,561
Belarus*	14,219	Malta	1,518
Belgium	56,464	Montenegro	26,745
Bosnia and Herzegovina	231	Netherlands	79,250
Bulgaria	56,734	North Macedonia	5,817
Croatia	18,328	Norway	27,845
Cyprus	13,852	Poland	1,409,139
Czech Republic	439,043	Portugal	52,819
Denmark	35,193	Republic of Moldova	92,443
Estonia	57,257	Romania	80,498
Finland	38,588	Russian Federation*	2,772,010
France	105,000	Serbia and Kosovo	19,722
Georgia	26,135	Slovakia	95,375
Germany	997,895	Slovenia	8,171
Greece	19,413	Spain	144,668
Hungary	30,000	Sweden	45,895
Iceland	1,640	Switzerland	65,098
Ireland	49,999	Türkiye	145,000
Italy	170,646	United Kingdom	131,700
Total	7,536,433		

Source: UNHCR, September 2022. European and bordering countries are reported.

Note: for statistical purposes, UNHCR uses the term refugees generically, referring to all refugees having left Ukraine due to the international armed conflict. However, we are aware that part of the refugees to Russia have been forcibly deported there.

Table 4 shows refugees from Ukraine recorded across Europe and bordering countries. Of them, more than 4 million (as of September 30, 2022) are currently registered for Temporary

¹²Source: <https://data.unhcr.org/en/situations/ukraine>. This figure reflects cross-border movements, not individuals.

Protection or similar national protection schemes in Europe.¹³ The status enables them to choose the country of destination within the EU and to work immediately without any waiting period, unlike other refugees. This allowed for further transnational mobility of Ukrainian refugees. Indeed, only about 6 refugees out of 10 were planning to remain in the EU country initially giving them asylum. About 10% of the refugees were planning to move to another host country - top choices were Germany and Canada - and another 15% were planning to return to Ukraine in the coming months, perhaps because of family reunification. Among those, around 90% planned to return to the same oblast.¹⁴

Women and children represent around 90% of refugees.¹⁵ Four refugees out of five had to separate from at least one or more immediate family members who stayed behind in Ukraine. A substantial amount of human capital was involved in the displacement. One refugee out of two had completed university studies and 25% had vocational or technical education. Three refugees out of four were working before leaving Ukraine.

As stated above, under the Temporary Protection granted by the EU, Ukrainian refugees were free to choose the country of destination within the European Union. This was not the case for Syrian refugees in 2015 and the following years, when relocations were only based on the political willingness to accept migrants in different countries.

Figure 4 compares destinations of Ukrainian and Syrian refugees in Europe. Darker areas denote concentrations of refugees in specific countries. The maps point to a more balanced geographical allocation of Ukrainian refugees. In the Syrian case, 60% of refugees went to Germany, another 11% to Sweden, 6% to Austria and 4% in France, Greece and the Netherlands. Thus, almost 90% of Syrian refugees were concentrated in 6 countries. In the Ukrainian case, concentration is mainly driven by geographical proximity to the country of origin, and about one third of the refugees are evenly spread across 24 countries.¹⁶

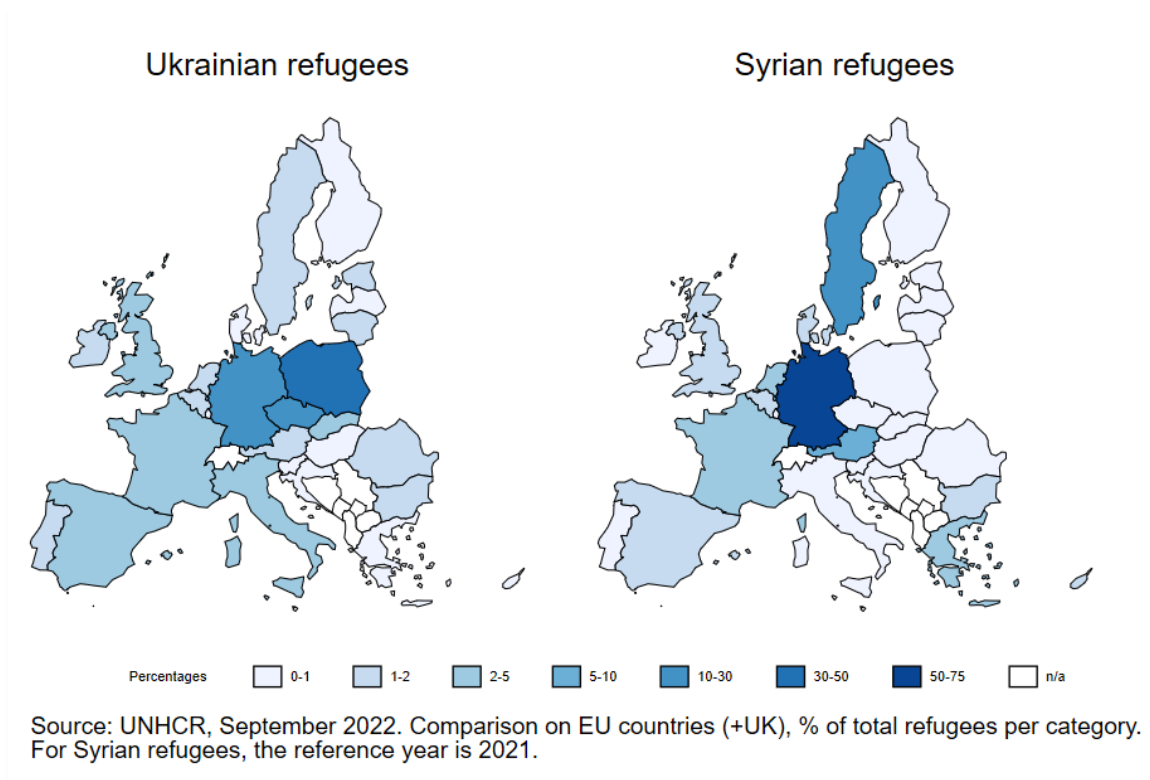
¹³Source: <https://data.unhcr.org/en/situations/ukraine>

¹⁴These intentions are confirmed also by more recent surveys such as Factsheet *Profiles, Needs & Intentions of Refugees from Ukraine*. Based on 23,054 interviews conducted between May and mid-August 2022 by UNHCR and its partners in Belarus, Bulgaria, Hungary, Republic of Moldova, Poland, Romania and Slovakia. This is a "Protection, Profiling and Monitoring" exercise to regularly collect and analyze data about the profiles, needs and intentions of refugees from Ukraine and monitor changes over time. Source: <https://data.unhcr.org/en/documents/details/95010>

¹⁵The data in this section are based on 4,900 interviews with refugees from Ukraine in the Czech Republic, Hungary, the Republic of Moldova, Poland, Romania and Slovakia between mid-May and mid-June 2022, complemented with seven focus group discussions conducted in Poland and Romania. Source: <https://data.unhcr.org/en/documents/details/94176>

¹⁶As per UNHCR data, the total number of refugees from Ukraine relocating in the EU (+UK) is 4,331,735 while from Syria is 1,031,904 (reference year: 2021). Thus, to grasp the magnitude of relocation, 1% of Ukrainian refugees is roughly equal to 4% of Syrian refugees in absolute figures.

Figure 4: Geographical concentration of Ukrainian and Syrian refugees in Europe



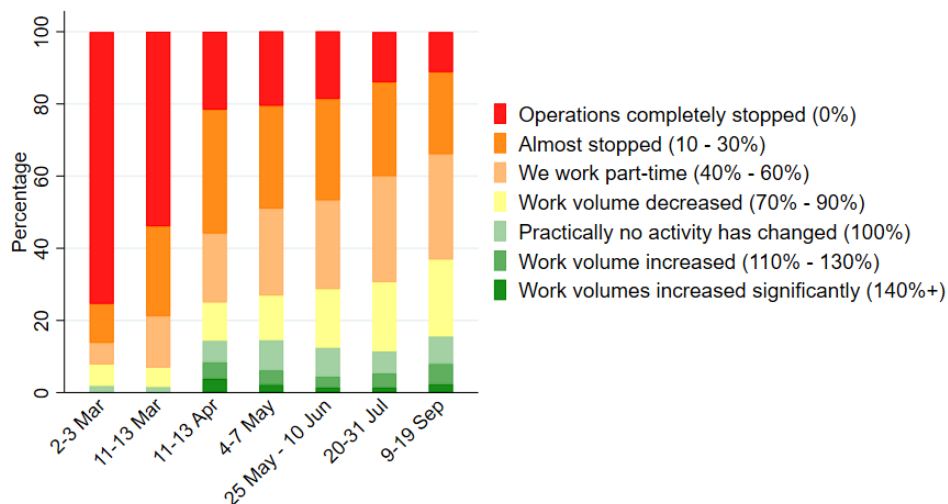
3.2 Relocation of firms

After the initial shock, the situation started to gradually improve, but the speed of the recovery in different spheres was markedly uneven. New waves of the small and medium enterprises (SMEs) polls, conducted by Advanter, suggest that already in mid-March (11-13) 2022 the share of completely stopped businesses dropped to 53% and in a month (April 11-13) to 21.6%. However, the recovery of employment has been far from full. By April over a third (34.3%) of firms worked at 10-30% of their capacity, another 19.1% at 40-60%. The share of SMEs that were producing at the same scale or even more than before the full-scale invasion was just 14.4% of the total. Moreover, after an initial rebound, the situation between mid-April and July remained almost unchanged.¹⁷ Similar results are reported by the survey made among SMEs by the European Business Association, according to which in March 42% of the respondents halted their work and this figure decreased to 17% in May and 16% in July.¹⁸

¹⁷Another survey of SMEs in March-May presents similar results: only 21% of firms operated at pre-war capacity, while 17% had completely interrupted their activities.

¹⁸МСБ в умовах війни - SMEs during the war.

Figure 5: The stance of business in Ukraine compared to February 23, 2022



Source: Advanter

Companies started to relocate their business. The firms' survey conducted at the beginning of July 2022 by Gradus showed that a third of all businesses are either fully (12%) or partially (20%) relocated or are about to relocate and another 18% envisage a relocation but have not started it yet.¹⁹

In most cases the relocation of a firm does not coincide with the relocation of the firm's workers. Most of the relocated businesses (72%) remained in Ukraine, the rest transferred their activity either fully or partially abroad, chiefly to Poland.²⁰

The nature of businesses is a key factor behind the choice of firms to relocate. Such businesses as IT and finance display a much higher fraction of relocations than retail, real estate or construction.²¹

3.3 Labour market tightness

The relocation of firms took place just while some waves of return migration were taking place. Thus, the short side of the market became the labour demand. As discussed in Section 1, before the full-scale invasion, the labour market was relatively tight due to the fall in participation and long-duration unemployment, and real wages had been growing significantly despite the global pandemic.

¹⁹Gradus, Ukrainian Business Survey.

²⁰Another survey that questioned SMEs, Дослідження стану МСБ - Study of the state of SMEs, showed that among them - as of early May - 71% of businesses remained in place, while the rest either had already relocated or were planning to.

²¹Релокація бізнесу по галузях - Relocation of business by sector.

Since April 2022, the number of workers searching for a new job has increased much faster than the number of new vacancies. According to the job-seeking site grc.ua (specializing in skilled/specialist labour), by June 2022, on average 12 people responded to each vacancy on the site, which is 4 times more than over the same period the year before. Increased search intensity also allowed for a faster filling of job openings. There is evidence that jobseekers have changed their attitude towards the job search process: fewer and fewer of them passively wait for an employer to pay attention to them and increasingly use all available channels to signal their availability to work.

Due to the fact that many more women migrated than men, to a large extent abroad, some professions, where jobs were traditionally chiefly held by women are in greater demand, especially in healthcare, retail and accounting. At the same time, there is a huge drop in demand for jobs in entertainment – concerts, cinema, travel and hotels, etc. There is no significant difference between genders in the share of people who lost their jobs (40% for men and 41% for women), but men are more actively searching for a new job, possibly because non-employed women often are more involved in childcare and the assistance to the elderly family members.

According to the survey made by Rating Group in July, among people who had a job before the full-scale invasion, 39% no longer work and another 19% work remotely or partially.²² This was the fifth wave of the survey, with earlier ones made in March, April (2 waves) and June. After the initial drop in "non-working" share from 53% in March to 39%, the share remained roughly the same since late April. Moreover, the share of people who lost their jobs is the highest among the low-wage (77%) and older (46% of 51+ year age group) workers, as well as among those who were forced to leave their homes (55%).

The geographical distribution of job-seekers shows that the most affected regions are located in the East and South of Ukraine, which is hardly surprising given that these regions are partially under Russian occupation or are the battlefield. However, even western regions of Ukraine, where no armed conflict took place except for air-strikes, has a sizable share of people who lost their jobs and this share increased during the last wave of the survey in July 2022. Indirect effects of the war, e.g., related to the breakdown of supply links and production chains as well as a sharp change in the profile and magnitude of product demand are likely to have played an important role in the country-wide growth of unemployment.

Unfortunately, wage data from the national statistical office are not available. However, we have information from recruiting agencies about proposed wages from the job offers and

²²Rating Group, П'ятнадцяте загальнонаціональне опитування. Україна під час війни. Зайнятість і доходи - Fifteenth national survey. Ukraine during the war. Employment and incomes - slide 27 and 28.

expectations of job-seekers.²³ According to the already mentioned job-searching website `grc.ua`, in July-August 2022 average nominal wages remained almost the same as in the previous month, and the same month of 2021.²⁴ However, the surge of inflation (in July it was 22.2% on a yearly basis) implies a dramatic drop in real wages.

There is also considerable mismatch in the regional allocation of labour supply and demand. Relocations of both labor and businesses between oblasts usually were from all directions to western Ukraine, being it the zone furthest away from the front lines. At the same time, according to the largest job-seeking site `work.ua`, most job-seekers are in the center of Ukraine, rather than in the west.²⁵ Similar distribution is reported by `grc.ua` - Lviv oblast (the most populous of the western oblasts) had the second largest share of new vacancies after Kyiv city in June (13.6%), with up to two persons applying per vacancy in all western oblasts, compared to six per vacancy in Kyiv and 13-14 per vacancy in Zaporizhzhya and Kharkiv oblasts.²⁶

²³We must underline that the coverage of vacancy data is limited and job acceptance rates are measured based on subjective statements rather than actual work contracts.

²⁴Sources: <https://grc.ua/article/30669>, <https://grc.ua/article/30602> and <https://grc.ua/article/30725>

²⁵Source: <https://www.work.ua/news/ukraine/2158/>

²⁶Source: <https://grc.ua/article/30545>

4 What We Have Learned from Previous Conflicts in Eastern Europe

There are three key lessons for the reconstruction of Ukraine that can be learned from the experience of other Eastern European countries recently involved in military conflicts.

4.1 Lesson 1: displacement worsens labour market outcomes

The war in Bosnia and Herzegovina has been one of the major conflicts in Eastern Europe in contemporary history. From 1992 to 1995, it displaced 1.3 million people, of which over 1.1 million resettled after the conflict. Kondylis (2010) analysed the labour market outcomes of displaced workers finding that they were less likely to be working relative to the people who stayed. While displaced men experienced higher unemployment levels, displaced women were more likely to drop out of the labour force. This result is somewhat surprising as it was mainly the most skilled workers and those in better health conditions who had left the country at the beginning of the war.

Research on the labour market consequences of the Kosovo war can shed light on the mechanism behind the observed detrimental effect of displacement on labour market outcomes when the war is over. Trako (2018) finds that displaced men coming back from the exile were less likely to be employed in the agricultural sector and to work on their own account, while displaced women were more likely to be inactive. Loss of assets (e.g. land, livestock) in an agrarian skill-based economy, and also loss of social networks in an informal labour market might have decreased the probability to find employment relative to stayers. However, shortly after the return home, displaced men and women moved off-farm, finding jobs primarily in the construction and public administration sectors.²⁷

Youth unemployment is a serious concern after a war. Fares and Tiongson (2007) examine early unemployment spells and their longer-term effects among the youth over the 2001 to 2004 period in Bosnia and Herzegovina. They find that youth unemployment was about twice the national average and that younger workers were more likely to go into inactivity or unemployment, and less likely to experience transitions out of inactivity, holding other things

²⁷Related to this, Sanch-Maritan and Vedrine (2019) show that in Bosnia and Herzegovina conflict-induced displacement of agricultural households dramatically affects the adoption of new technologies in agriculture: displaced workers are less likely than stayers to adopt fertilizers and pesticide. The authors speculate about two possible mechanisms which link forced displacement and technology adoption. The first is behavioural factors, such as risk aversion. The second was the effect of the war on land ownership regimes. Displaced people find themselves caught in an ‘institutional poverty trap’, because their return threatens the unity of the new territories built on ethnic affiliation. Their future is very uncertain because, on the one hand, they farm land without property rights, and, on the other hand, they cannot go back to their old property. This legal framework fosters legal insecurity and inhibits legitimate investment.

constant. Moreover, regardless of age, initial spells of unemployment or joblessness appear to have long-lasting adverse "scarring" effects on earnings and employment.²⁸ Although higher educational attainment is generally associated with more favorable labour market outcomes, the penalty from jobless spells is higher for more educated workers.

A cross-country analysis by Ivlevs and Veliziotis (2018), confirms a significant long-term labour market disadvantage of forced displacement: people who fled conflict 10–15 years ago are more likely to be long-term unemployed, experience a recent job loss and work informally.²⁹ People affected by conflict (both displaced and non-displaced) are more willing to acquire further education and training. These results are not uniform across demographic groups: displaced women consistently experience a greater labour market disadvantage than displaced men, and people affected by conflict in the younger age group (18–34) are particularly keen to acquire extra education and training. Overall, their results highlight a long-lasting vulnerability of the forcibly displaced.

Internally displaced people (IDPs) are a special case. Torosyan, Pignatti and Obrizan (2018) analyze the case of Georgia, which experienced a large flow of internal migrants from the early 1990s until now. Labour market outcomes for IDPs are much worse than those for local residents. IDPs are 3.9–11.2% less likely to be in the labour force, depending on the period and duration of IDP status. IDPs are also up to 11.6% more likely to be unemployed, even after 20 years of forced displacement. Those residing in a locality for more than five years (*protracted displacement*) receive persistently lower wages than local residents with similar characteristics, with the gap widening over time, reaching 11% in the last period under analysis. Thus, without active policies aimed at the improvement of IDPs labour market outcomes, there is no evidence of an improvement in those outcomes in the long run.

In the Ukrainian context, Vakhitova and Iavorskyi (2020), in a study of Luhansk and Donetsk oblasts after 2014, document that displacement has been associated with a large gap in terms of employment for both genders. After controlling for personal characteristics, the structure of the household, its location, non-labour incomes and endogeneity of displacement, they observe that the heads of displaced households are still 20% less likely to be employed two years after resettlement.

The literature review on job interventions for refugees and IDPs by Schuettler and Caron (2020) identifies as specific challenges: the loss of assets and separation from family members; the lack of skills required on the host labour market; the impact of forced displacement on their health and economic behavior (in terms of prospects and aspirations, risk-aversion and

²⁸See papers of the EXCEPT project on the impact of youth unemployment on subsequent lives: <https://www.except-project.eu/publications/>

²⁹Data are from a survey conducted in 2010.

time horizon); their legal situation; a lack of social networks and discrimination as well as a high likelihood of excess supply in the labour market at destination. They point to the importance of conducting thorough assessments of the demand and supply side of the labour market, including the legal situation of those forcibly displaced and their perceptions and aspirations, before designing interventions. Making up for lost assets through cash injections seems particularly important, together with other interventions that tackle specific challenges that refugees and IDPs face. Changing when and how the right to work, residency status and freedom of movement are granted has important impacts on labour market outcomes. Intensive coaching and individualized assistance seem to help with matching.

4.2 Lesson 2: wars generate large losses of human capital

War intensity has deep and long-lasting effects on educational attainments. Swee (2015) finds that in the context of the 1992–1995 civil war in Bosnia and Herzegovina cohorts that endured greater war intensity were less likely to complete secondary schooling (but not primary schooling). These effects are much stronger for males than for females. Drafted male cohorts experience deterioration in their physical and mental health relative to female and non-drafted cohorts, suggesting that the military draft may play an important role.

On the same conflict, Eder (2014) studies the effect of forced migration of parents on investment in their children’s education years later. In comparison with households who did not have to move because of the war, displaced parents spend between 20 and 30% less on the education of their children in primary and secondary school. The result also holds for one-time expenditures like textbooks, school materials and tuition in secondary schools. Differences in income and the stock of durable goods can at most explain one third of the finding. Potential explanations for the reduced spending of displaced parents on education include altered preferences through exposure to violence, increased uncertainty about the future, and financial constraints.

Similarly, Efendic, Kovac and Shapiro (2022) find that individuals with greater exposure to conflict had systematically worse educational performance and lower earnings two decades after the war. Their results also indicate that those who left the country and have since returned have significantly higher incomes and educational attainment, when compared with those who did not move. Instead, internal migrants did not have different educational or income outcomes than those who remained in place throughout the conflict. Those who moved abroad benefited from additional educational and work opportunities. However, when voluntary migrants and those who were forced to move are separated, the latter have lower levels of income and educational achievement. It appears that the additional educational

and labour market opportunities abroad could not fully make up for the disadvantages of forced displacement.

These detrimental effects of war on education have been documented also for other historical episodes. As Ichino and Winter-Ebmer (2004) point out, an important component of the long-run cost of a war is the loss of human capital suffered by children who receive less education. In the context of World War II, Austrian and German individuals who were 10 years old during the conflict, or were more directly involved through their parents, received less education than comparable individuals from non-war countries, such as Switzerland and Sweden. They also experienced a sizable earnings loss 40 years after the war, which can be attributed to the educational loss caused by the conflict and imply heavy consequences in terms of gross domestic product loss.³⁰

Gorodnichenko, Kudlyak and Sahin (2022) study the effect of war on a country's human capital and outline the key directions for rebuilding human capital in Ukraine: quantity and quality of schooling for children, quality of higher education, training and retraining programs for adults, assistance for people with disabilities, post-deployment re-integration into the civilian sector, population growth and fertility, and promotion of self-motivating mechanisms.

4.3 Lesson 3: conflict has long-lasting effects on both physical and mental health

Zilic (2018) analyses health consequences for females of forced civilian displacement that occurred during the Serbo-Croatian conflict in 1991–1995. During that period, a quarter of Croatian territory was ceded, 22000 people were killed and more than half a million individuals were displaced. Unsurprisingly, results indicate that various dimensions of measured and self-assessed health are adversely affected by displacement. In terms of latent health, there is a positive selection into displacement: faced with armed conflict, individuals with better latent health, conditional on age and education level, were more prone to move.

On the 1992-1995 Bosnia and Herzegovina conflict, Shemyakina and Plagnol (2013) find that individual war-related trauma has a negative, significant, and lasting impact on subjective well-being (the effect is stronger for those displaced during the war), while Bratti, Mendola and Miranda (2015) show that six years after the conflict war-traumatized individuals are 60% more likely to be at risk of depression and have worse labour-market outcomes.

In the Ukrainian context, Coupe and Obrizan (2016) study how war affects happiness and find that the average level of happiness declined substantially but only in areas that

³⁰On the consequences of shocks to human and physical capital on the creation of scientific knowledge, see Waldinger (2016).

experienced war directly, with the drop being roughly comparable to the loss of happiness a relatively well-off person would experience if he/she were to become a poor person. Osiichuk and Shepotylo (2020) investigate the contemporaneous effect of conflict on civilians living outside of the conflict zone and find that in Russia and Ukraine over 2012–2016 the conflict significantly worsened financial well-being, mostly operating by worsening expectations, and this is inversely related to the distance from the conflict zone. Their analysis also indicates an increase in chronic diseases in Ukraine over a longer period, while mental health is negatively impacted in both countries at the earlier stages of the war. However, in Russia this effect is significant only in the region bordering the conflict zone, while in Ukraine it is significant in regions farther away from the conflict zone.³¹

These findings are consistent with evidence on other major armed conflicts. Kesternich, Siflinger, Smith and Winter (2014) investigate long-run effects of World War II on socio-economic status and health of older individuals across Europe. Exposure to war and, more importantly, to individual-level shocks caused by the war significantly predicts economic and health outcomes at older ages: it increased the probability of suffering from diabetes, depression, and, with less certainty, heart disease, so that those experiencing war or combat have significantly lower self-rated health as adults. Experiencing war is also associated with less education and life satisfaction and decreases in the probability of ever being married for women.

4.4 Other lessons

Another fundamental channel through which conflicts impact labour market outcomes is via their longer-term impact on firms' performance and local economic development. Petracco and Schweiger (2012) explore the short-run impact of armed conflict on firms' performance and their perceptions of the business environment, focusing on the August 2008 conflict between Georgia and Russia. Despite its relatively short duration, this armed conflict had a significant and negative impact on exports, sales and employment for at least a subset of firms. Perceptions of a few business environment obstacles were also affected, but not necessarily negatively. Young firms experienced a scarring effect, which could lead them to close down prematurely. Small, young firms might find it more difficult to deal with the aftermath of an armed conflict than large, established firms: they are more likely to have fewer suppliers or customers and less experience in dealing with an adverse business climate, and may not be aware of remedial measures available from institutions. What happens to them can have important consequences: several studies - for example, Haltiwanger, Jarmin

³¹For the analysis of the effect of the Russian invasion from 2014 to February 2022, see also Aslund (2018), Melnyk, Pavlyuk, Petrov and Glushko (2019), Havlik, Kochnev and Pindyuk (2020), Kharitonov (2020).

and Miranda (2013) and Criscuolo, Gal and Menon (2014) - show that young firms contribute substantially to job creation.³²

On institutional trust, Alacevich and Zejcirovic (2020) investigate the effect of violence against civilians on voting, using data from elections in BiH between 1990 and 2014 and exploiting variation in war intensity. They estimate a negative impact on voter turnout, persistent for more than 20 years. Violence against civilians drives the negative effect: respondents in more affected municipalities report lower generalized trust, trust in institutions, and voting.

³²On the impact of war on later economic development, somehow optimistically, it is worth citing Miguel and Roland (2011). They investigate the impact of US bombing in Vietnam (the Vietnam War featured the most intense bombing campaign in military history and had massive humanitarian costs). Comparing the heavily bombed districts to other districts controlling for local demographic and geographic characteristics, and using an IV approach exploiting distance to the 17th parallel demilitarized zone, US bombing does not have negative impacts on local poverty rates, consumption levels, infrastructure, literacy or population density through 2002. This finding indicates that even the most intense bombing in human history did not generate local poverty traps in Vietnam - that is, situations in which people who are poor are unable to escape from poverty. However, as Dell and Querubin (2018) point out, bombing increased the military and political activities of the communist insurgency, weakened local governance, worsened attitudes toward the United States and South Vietnamese governments and reduced non-communist civic engagement.

5 Building a Better Labour Market

In this section, we discuss policy options for a recovery of the Ukrainian labour market. Consistently with the other chapters of this book, the underlying assumptions are that the war is over, security issues have been sorted out, a long-lasting peace is on the forefront, and Ukraine is a candidate for the EU. In our scenario, the Western part of Ukraine - notably its rural areas - are largely spared from the war destruction. Clearly, these policies will have to be enforced by a sufficiently efficient state machinery. This is why the prospect of EU entry is very important. It can be a powerful tool to set up systematic technical assistance, and also indirectly induce an improvement in the quality of Ukrainian institutions. This is essential for the success of the strategy outlined below also from the standpoint of the societal involvement in the reconstruction. As argued by Justino (2022) based on evidence from other wars, the economic, social, and political recovery of Ukraine will be dependent not only on reconstructing markets and infrastructure, but also on ensuring that social cohesion and trust in institutions is rebuilt so that any Ukraine post-war government is able to succeed in maintaining a united population.

A rebound in economic activity should be expected at the end of the war. As reported by Hoeffler (2012), there is strong evidence that countries experience higher than average growth rates once the war is over (the *peace dividend*). According to the author, the economies of countries involved in conflicts grow on average by about 1.6% less than peaceful states per year, but once the war ends their economy rebounds. Yet, it takes generally more than 20 years on average for these economies to recover, i.e., to revert back to pre-war trend levels. Labour markets in this context need to be sufficiently flexible to reduce potential bottlenecks in the recovery and, at the same time, offer incomes to groups that presumably for quite a long time will find it hard to have stable employment. This means having a better labour market than before the war and an encompassing safety net.

There are four main set of policies to be pursued in the years to come to rebuild a better labour market, and they are:

1. Investing in human capital for the future (remedying to educational attainments in schools and offering retraining to job losers);
2. Making a better use of existing human capital, increasing labour force participation of women and tackling youth unemployment among internally displaced workers;
3. Protecting the most vulnerable groups in a sustainable fashion;
4. Promoting a return of ideas if not of persons: involving Ukrainian refugees in job creation.

5.1 Investing in the future human capital

The pandemic and the war have created huge **gaps in educational attainments**. Schools have been closed during the lockdown resorting at best to distance learning. Right after the Russian invasion, most schools were closed nationwide. On February 25, the Ministry of Education recommended to all educational facilities to go on a at least two-week break.³³ Then the Ministry recommended to either shift to online/remote teaching or continue the break. Reopenings were mainly in terms of distance learning. The majority of schools and universities chose remote teaching if they were relatively safe (missile strikes were in all regions, so in-person studies were discouraged even far from front-lines). Most schools and universities finished the academic year 2021-22 online, while those in the newly occupied territories were still on a break.

The situation is only partly improving in 2022-23. The external final exam (similar to the US SAT) guiding enrolment to tertiary education was carried out later than usual. Since many potential new students are IDPs or refugees abroad, several waves of the test were organized, shifting by one month the beginning of the 2022-23 Academic Year for the first year students. The situation is more serious in schools. Schools that have shelters and far from frontlines started to work in-person at the beginning of September 2022 and parents were allowed to choose if their kid would go to school or study remotely. In the occupied territories Russia actively promoted shifts to Russian curricula, including importing both textbooks and teachers, but no school has successfully re-opened on September 1st, 2022.³⁴

Thus, for some students gaps in educational attainments can extend well beyond the loss of one year of teaching. Remediating to these gaps in education accumulated in the last three years should be a priority matter for the reconstruction of Ukraine. It is also of foremost importance to improve not only the quantity but also the quality of education (Heckman (1998), Heckman (2006), Hanushek and Woessmann (2016)).

There are a variety of methods to provide **remedial education** to students left behind by the two shocks that have dramatically hit the school system in Ukraine. Angrist, Djankov, Goldberg and Patrinos (2022) list some of those: (i) opening classes for Ukrainian refugees in selected schools in neighbouring countries, as well as expanding schools in parts of Ukraine where many internally displaced families have moved; (ii) provide online, by-phone, or in-person tutoring possibly drawing also on the experience of the Ukrainians teachers who left the country during the war; (iii) adapt curricula – including providing tablets and online or

³³See: <https://mon.gov.ua/ua/news/sergij-shkarlet-vsiv-zakladam-osviti-rekomendovano-pripiniti-osvitnij-proces-ta-ogolositikanikuli-na-dva-tizhni>

³⁴See: <https://sprotyv.mod.gov.ua/2022/09/02/shkoly-bez-ditej-okupanty-provalyly-pershe-veresnya/>

printed textbooks in Ukrainian – in countries receiving refugees so that a large number of refugee children can regain access to standard schooling.

Online remedial education can be a key driver of students' learning engagement. As suggested by Werner and Woessmann (2021), for this to be possible it is fundamental that all children have access to adequate digital devices and good internet connections at home. The same is true for teachers, who may require some training. While online teaching is unlikely to fully substitute for in-person teaching, the daily interaction can better protect children's cognitive and socio-emotional development than pure self-studying. In addition to remedial education in schools, two further measures that have been shown to be quite effective in reducing gaps in educational attainments are tutoring and mentoring. Tutoring works better when carried out by educators or other professionals, and at early ages (Nickow, Oreopoulos and Quan (2020)). Ukrainian refugees abroad, including a large share of teachers, can greatly contribute to this mission.

Retraining of job losers is also a very important component of investments in human capital. The large-scale displacement suffered by the Ukrainian population destroyed millions of jobs. In the post-war economy, some jobs will come back but a significant fraction of them will disappear and be replaced by new jobs. Construction, civil engineering, health, information technology are the industries that will likely be the key industries offering jobs in the post-war economy. Major investments will be required in physical capital, residential building and infrastructure (Blinov and Djankov (2022), KSE (2022)). The decline in agricultural employment will likely continue creating hardship for those who moved to rural areas during the war and resorted to subsistence agriculture to cope with the crisis. The only exception in this mass job destruction is agricultural export industries.

Making the best use of human resources in this context implies retraining job losers. The Ukrainian Government has set aside a budget and put in place a framework for the training for blue-collar jobs, but implementation will be difficult and with growing demand for skilled professionals much more should be done.³⁵

Investment in human capital beyond the school system can also be encouraged with fiscal as well as non-fiscal incentives (see, for example, Heckman (1998)).³⁶ Self-incentives could be amplified by easier access to retraining, improved working conditions and other mechanisms that enhance quality of work.

³⁵See: ЗАКОН УКРАЇНИ Про внесення змін до Закону України "Про професійну (професійно-технічну) освіту" щодо окремих аспектів підготовки кваліфікованих робітників в умовах воєнного стану та відновлення економіки.

³⁶Becker, Grosfeld, Grosjean, Voigtlae and Zhuravskaya (2020) study the long-run effects of forced migration of Poles after World War II on investment in education and find that Poles with a family history of forced migration are significantly more educated today than other Poles. The authors argue that these results are driven by a shift in preferences away from material possessions toward investment in human capital.

5.2 Increasing labour market participation of women and tackling youth unemployment

One of the ways to compensate for the loss of displaced workers and the loss of human capital involved by the refugee crisis is to increase labour market participation. In particular, women participation should be encouraged by adopting employment friendly family reconciliation policies. These policies were undersized in Ukraine before the war and were largely oriented towards informal childcare, allowing women to take up to 3 years of maternity leave.³⁷

To encourage **women's participation** in the labour force and at the same time to support childbearing, the priority should be shifted from direct payments to parents providing informal care to creating a government-sponsored childcare infrastructure. Currently, there is a substantial deficit of childcare facilities in the main urban centers and satellite towns because in the last 30 years a lot of residential housing was built, but much less of related social infrastructure. The reconstruction of the estate should involve the creation of kindergartens and maternity schools.

This emphasis on formal childcare is a major turning point with respect to policies implemented in the past. For instance, Victor Yushchenko's presidential campaign of 2004 among many promises had the idea to significantly increase transfers to families having a child. These policies seem to have had some effect on fertility, but, as we have seen, have not increased labour force participation of women; if anything, they contributed to its decrease. The trend in OECD countries is towards having a positive correlation between fertility rates and women labour force participation. It is important that Ukraine reconstruction moves in this direction exploiting the experiments carried out in Europe with work and family reconciliation policies.

The experience of other countries involved in conflicts also suggests that **youth unemployment** may be a serious concern in the reconstruction of the Ukrainian labour market. Here, the main challenges are related to the obsolescence of skills learnt during formal education and matching frictions in a poor working labour market. A careful exam of school curricula, notably in vocational education, is warranted to improve the marketability of skills acquired in schools. Providing tertiary education opportunities involving training both in formal education structures and in firms, along the German fachschule tradition, is another route to be explored. As to matching frictions, policies should be tailored to internally displaced people. Indeed, mounting youth unemployment has been a key issue in many countries in the aftermath of wars also because of their difficult labour market integration.

³⁷Source: Закон України Про відпустки - art. 18.

Coping with **internally displaced people (IDPs)** will be one of the major challenges for post-war Ukraine. International experience offers important insights regarding measures that could reduce unemployment among them. We draw here on the comprehensive review of the existing literature on jobs interventions for refugees and IDPs by Schuettler and Caron (2020). To overcome liquidity constraints and the loss of assets linked to forced displacement, interventions that provide displaced people with financial capital may help.³⁸ These might be of two types: repeated (conditional or unconditional) transfers or one-shot grants or credits. The evidence on transfer programs suggests that they reduce poverty and increase spending on basic needs. The impact seems similar for cash, voucher or in-kind food transfers, but cash gives more flexibility. It allows displaced people to save or to invest in education, which improves future job prospects. Repeated transfer programs do not seem to have a positive impact on adult employment, while they might give displaced people some stability to search for better jobs.³⁹ One-off grants or asset transfers have a partially different goal: to help refugees and IDPs in overcoming the loss of assets, easing the access to credit and supporting them in starting their own business or becoming self-employed. This plays a role especially when local labour markets are not able to absorb the labour supply shock linked to the arrival of forced migrants. These measures can have positive effects on income, but legal uncertainty and unclear future prospects might lower the impacts. To fight poverty, a combined approach that includes grants, entrepreneurship training, financial inclusion for the extreme poor etc. seems to work best.

Regarding human capital, training programs can address the skills mismatch IDPs might face in the hosting labour market, even if the evidence on programs focusing only on skills is not very positive. In addition, displacement status bears other challenges that, along with the lack of demanded skills, should be taken into account: legal framework for displaced, constraints to participation, possible need to change occupation or location shortly after. Even if rigorous evaluations are still missing, investing in IT and coding skills seems to have positive effects in the context of IDPs: they are portable skills that offer a competitive salary, allow individuals to work remotely with the need of a computer and internet connection only and there is high demand for these services in high income countries, with the possibility of telemigrating. To improve the matching between demand and supply of jobs, job search assistance can help forced migrants to overcome informational asymmetries and the loss

³⁸Currently, the government pays UAH 2000 per adult IDP and UAH 3000 per child per month. It is the equivalent of USD 69 and USD 103 at the exchange rate before the full-scale invasion of February 24, 2022 (the exchange rate UAH/USD was at 29.15 on February 23, 2022). These transfers are extremely low: pre-invasion monthly subsistence minimum per working-age adult was UAH 6032 in January 2022.

³⁹Evidence, especially on Syrian refugees, points to an increase in reservation wages and higher minimum quality of jobs that displaced worker are willing to take.

of social networks linked to displacement. Evidence on refugees in high-income countries suggests that matching programs have positive effects on employment when job opportunities exist. However, these services cannot replace private networks: they should rather support their reconstruction. The more intensive and individualized the better, but of course in turn these tend to be more costly.

Concerning subsidized employment in the private sector, offering wage subsidies for IDPs and refugees seems to increase short-term employment, but longer-term impacts are less clear. With regards to public sector employment, labour-intensive public work programs have been frequently used - especially in low and middle-income countries - to combine the urgent need of workforce in the aftermath of a shock (e.g., natural disaster) and the need to provide income and employment to displaced people. They can potentially have important positive short-term effects on income, assets and consumption, while over the longer term they may distort the labour market, crowd-out regular employment and reduce subsequent likelihood of employment. With the massive destruction of cities and infrastructures caused by the Russian invasion, and the consequent need of reconstruction workforce, public work programs can play an important role to sustain the participation of IDPs in the labour market. However, they should be tailored very carefully, given also the demographic profile of those forcibly displaced.⁴⁰

On the side of interventions indirectly linked to improving the jobs prospects of displaced people, psychological support will be crucial to prevent mental health issues due to displacement impairing the possibility for forced migrants to participate in the labour market. Together with this, a legislative effort should be made to assure that the legal framework - both national and local - will not be an obstacle for the integration of IDPs and returning refugees.

Policymakers should also be aware of the other side of the coin: receiving communities. The existing evidence on the impact of refugees in destination countries does not apply to intra-Ukraine displacement: reinforced national identity, no language barriers and widespread solidarity should mitigate many of the problems that emerged elsewhere. However, it is still important to note that there will be some repercussions also on that front. The analysis made by Morales (2018) on the Colombian civil war suggests that a conflict-induced increase in labour supply decreases wages in the short-run, but subsequent out-migration of

⁴⁰In June, the government adopted changes to legislation that simplify hiring official unemployed for temporary public works, which mainly consist of removing rubble on sites that were bombed, construction of protective structures, and similar activities. This temporary work is paid at the minimum wage rate (UAH 6500 per month) and the refusal to take this work leads to cancellation of unemployment benefits. Bearing in mind that such a job often requires physical fitness and the payment is rather low, such practices are not well thought out.

local workers helps to mitigate these effects. The wage effect persists only for low-skilled women, suggesting the vulnerability of this group to the arrival of forced displaced people. On the same conflict, Calderón-Mejía and Ibáñez (2016) show that internal migrations substantially reduce wages for urban unskilled workers who compete for jobs with forced migrants. Thus, emphasis on job creation will be fundamental for a positive integration of IDPs and local communities.

In order to face potential labour shortages, notably in the construction sector, Ukraine might also want to attract **migrants from abroad**. Before the full-scale invasion there was a net inflow of migrants to Ukraine averaging 17.5 thousand per year since 2005. This was not sufficient to offset the fall in the resident population, averaging 237.5 thousand over the same period. Ukraine was not a very appealing place to migrate because on its Eastern and Western borders there were more interesting alternatives in terms of incomes per capita or social protection (in the case of European welfare states). While the EU candidate status should boost Ukraine's attractiveness, low incomes may continue to be a significant deterrent to immigration.

Ukraine's status as a EU candidate and its defense of democratic values may also encourage immigration from those opposing the current regimes in Belarus and Russia. Before the 2014 invasion, attitudes toward Russians were very positive in Ukraine: according to a KIIS regular survey in November 2013 82% of respondents described their attitude toward Russia as rather positive or very positive and only 10% as negative.⁴¹ However, the full-scale invasion of 2022 naturally led to notable worsening of attitudes. Now the absolute majority of the population supports closing the borders and the minimization of contacts with Russians and Belarussians.⁴² Currently, there is a very strong negative sentiment toward residents of these two countries.⁴³ In this context the Ukrainian government may wish to look to other countries as potential sources of migration. It is important to note that recent popularity of Ukraine in western media may lead to an increase in the number of western activists that visit the country. While in absolute value their number will be small, their expertise and fresh views on many substantial issues can be a great boost to Ukrainians who will work and study with them.

⁴¹It is interesting to note that a similar survey in Russia made by Levada Centre between 2008 and 2019 constantly showed less favorable attitudes of Russian respondents with respect to Ukraine than of Ukrainians with respect to Russia - https://www.kiis.com.ua/materials/pr/20211217_stav/01.JPG

⁴²Since July 1, 2022, Ukraine has a visa regime with Russia. So far the visa-free regime is preserved with Belarus to help Ukrainians who are fleeing occupied territories via Russia and Belarus, but essentially movement across the border with Belarus is closed.

⁴³In the case of Russia amplified by the fact that even anti-Putin Russians are often unconsciously imperialistically minded, following the narrative of "Brotherly nations" developed in the 19th century Russian Empire and later adopted and promoted by the USSR. Ukrainians since the start questioned this concept, but in Russia it is still a part of historical narrative, so the majority of Russians never question it.

5.3 Helping the most vulnerable: job losers, veterans, fragile and older workers

Bertheau, Acabbi, Barcelo, Gulyas, Lombardi and Saggio (2022), comparing the cost of **job loss** over three decades in Austria, Denmark, France, Italy, Portugal, Spain, and Sweden suggest that the labour market consequences of losing a job are vastly different across Europe. Scandinavian countries experience by far the lowest earnings losses: five years after job displacement, earnings of workers in Nordic countries are about 10% lower than pre-displacement levels. On the opposite side, those performing worse are workers from Southern European countries, whose earnings are around 30% lower. The large part of these differences is driven by dynamics at the extensive margin: around 20% of displaced workers from Spain, Portugal, and Italy are unable to find employment five years after job displacement (only 5% in Sweden and Denmark). Interestingly, observed characteristics of workers and employers are not the source of differences in the costs of job loss. What seems crucial are labour market institutions: from the analysis made by the authors, "a country's overall spending on active labour market policies is a key factor in predicting earnings losses from job displacement" while "other institutional factors, such as union coverage and employment protection legislation, have very limited explanatory power". The findings of this study point to the serious consequences Ukrainian workers might face after the war. Many workers have lost their jobs, and are thus at risk of facing permanent earning losses: indeed, Ukrainian labour market structure resembles more the one of Southern Europe than the one of Scandinavian countries. To contrast this, the emphasis should then be put on increasing the coverage of unemployment benefits and combine this with active labour market policies (public employment service, training, employment incentives operating in conjunction with unemployment benefits, etc.).

The full-scale invasion led to a surge in demand for **unemployment benefits** and placement services offered by the Public Employment Service. Expenditure for unemployment benefits contributed to widen the fiscal deficit to the extent that the government decided to set a cap on the level of benefits at 1.5 times the minimum wage.⁴⁴

Cutting benefits may move many potential workers from unemployment benefits to social assistance of the last resort, reducing their attachment to the labour force. A better strategy may be to reform unemployment benefits in such a way as to expand the scope of partial

⁴⁴According to the Law "On changes to some legislative acts of Ukraine regarding some issues of the functioning of employment spheres and mandatory state social insurance in case of unemployment", a person can start receiving unemployment benefits after submitting (physically or online) requested documents (the number of which was reduced). While internally displaced people (IDPs) are eligible for benefits and in case when they cannot supply some documents, there are alternative sources allowed (chiefly registers, e.g., in the Tax service), people who have migrated outside and haven't returned within 30 days are not eligible.

unemployment insurance, that is, measures enabling unemployment benefit recipients to combine benefits with low income jobs, and wage insurance (offering a temporary wage subsidy to workers changing jobs).⁴⁵ Clearly, setting up such schemes requires institutional capacity and resources. This is an area where technical assistance from the EU - and perhaps also temporary transnational funding - can be particularly important.

Properly designed partial unemployment insurance could also help in tackling **informal sector** employment. The informal sector tends to grow during periods of economic crises, including wars (Looney (2006)): in fragile and conflict situations, for a large part of the population there is no other alternative to working in the informal economy to secure livelihoods. There are at least three reasons why Ukraine will probably follow this trend: (i) increase in poverty and economic hardships will increment the incentive to evade reporting incomes; (ii) the scale of internal forced migration may be associated with a rising shadow employment rate, as there is evidence that shows how immigration is positively correlated with the size of the informal labour market (Bosch and Farré (2010)); (iii) the weakening of institutions in charge of contrasting the phenomenon and the shifts in priorities after conflict may provide a more favourable environment for the black (or gray) economy.

Even if, in the short-term, informal employment is not a first-order concern, we believe that, given also the prospect of entry in the EU, effort should be put in preventing informality from becoming widespread in the country. This also improves the efficiency of the allocation of resources targeted to workers. Not to encourage flows of jobs to the informal sector, the administrative and tax burden on employment should be kept as low as possible. The links between contributions and coverage of social insurance (pensions and unemployment benefits in particular) should also be made explicit in order to reduce the perceived tax burden on formal sector employment.

Regarding **labour taxation**, the total tax burden on labour is roughly in line with other European countries.⁴⁶ Currently in Ukraine, employees (except for several special categories) should pay from their gross wage 18% of personal income taxes, 1.5% of war tax and another 22% of social security contributions (SSC). SSC finance a large number of social programs and in particular state pensions. As of Q4'2021 there were 15.6 million working people in the country (ILO methodology) and 10.841 million pensioners. Moreover, about one fifth of the employees are in the informal sector and hence do not pay SSC, and another 1.4 million are self-employed paying lower SSC (usually, 22% of minimum wage). All this makes it difficult to reduce taxes without reducing social protection. Progress in reducing the informal sector

⁴⁵See Boeri and Cahuc (2022).

⁴⁶See: <https://taxfoundation.org/publications/comparison-tax-burden-labor-oecd/>

- via tighter controls and a closer perceived link between contributions and social insurance
- could however be explicitly allotted to reducing the tax burden on labour.

The number of **people physically injured during the war** continues to grow. Disability-inclusive infrastructure and workplace policies can empower and make it easier for people with disabilities to be part of rebuilding and development. See, for example, ICED (2019) for an outline of key challenges and opportunities in legislating for, designing and financing disability-inclusive infrastructure.

While the statistics on the emotional and mental impact of the war are scarce, a negative impact of war on overall health conditions spans well beyond physical injuries. Murthy and Lakshminarayana (2006), reviewing research findings on mental health consequences of war, find that - among the consequences of war - the impact on the mental health of the civilian population is one of the most significant. Evidence points to a large increase in the incidence and prevalence of mental disorders.

Particular attention should also be devoted to the re-integration of the individuals serving in the Armed Forces of Ukraine, or in other units involved in combat, into civilian life after deployment or for those who choose to return to civilian life. The **re-integration of veterans** requires tailoring occupational training and health programs to the specific needs of the individuals who participated in the combat activities (Angrist (1990)).⁴⁷ Ukraine already has the Ministry of Veterans, similar to the Croatian one, and even before the full-scale invasion it worked with over 400 thousand of war veterans.⁴⁸ On July 29, 2022 the Parliament adopted the Law that should help former military to adapt to civil life.⁴⁹ The main idea is that the right to social and professional adaptation is now available to persons who are discharged from military service, as well as family members of such persons, including family members of deceased war veterans.

Evidence mainly from the US on the long-term consequences of war on **veterans' labour market outcomes** points to significant and persistent earning losses in the years that follow military service.⁵⁰ Many veterans also have problems in returning to civil life.⁵¹ As pointed

⁴⁷See, for example, Dunigan, Gore, Kidder, Schuille, Cherney and Sladden (2020) for a review and analysis of practices across U.S. federal agencies.

⁴⁸Ministry of Croatian Veterans (Croatian: Ministarstvo hrvatskih branitelja, MHB, <https://branitelji.gov.hr/>).

⁴⁹ЗАКОН УКРАЇНИ Про внесення зміни до пункту 5 статті 8 Закону України "Про соціальний і правовий захист військовослужбовців та членів їх сімей" щодо системи переходу від військової кар'єри до цивільного життя

⁵⁰See, among others: Angrist (1990); on the cost of conscription in the Netherlands: Imbens and Klaauw (1995)). Even when, like in the case of WW2, on average veterans seem to earn more, this is due to nonrandom selection into the military, as shown by Angrist and Krueger (1994).

⁵¹For example, 44% of post-9/11 veterans say their readjustment to civilian life was difficult, according to a survey made by the Pew Research Centre - <https://www.pewresearch.org/social-trends/2011/10/05/war-and-sacrifice-in-the-post-911-era/>

out by Coupe and Obrizan (2016), the large number of suicides among Ukrainian soldiers suggests this is and will be an issue in Ukraine.⁵² Already in 2019, Ukraine was listed as the 19th country in the world for suicide rate, with 17.7 suicides per 100,000 people, age-standardized according to WHO data: this problem can only get worse after the war.⁵³ As suggested by Demers (2011), communities play a fundamental role in the reintegration of veterans. She suggests three policy options that might benefit veterans: (i) support groups, so that veterans can share their stories and find psychological relief; (ii) transition groups for families and friends of veterans; (iii) military cultural competence training for mental health practitioners (such as therapists, social workers and counselors). The last two suggestions are motivated by the need to inform about the unique needs of veterans, and the best practices to cope with them. The experience of US veterans associations can provide guidance in this sense.

Concerning labour market policies, ad hoc measures that target veterans can help ease their reintegration. Again, most evidence is based on the US. For example, Heaton (2012) finds that tax credits for disabled veterans have a significant effect in reducing their unemployment. Angrist (1993) shows how subsidized education and training can increase schooling and in turn earnings, with an effect concentrated on those who attended college or graduate school.

Regarding the current situation in Ukraine, some caveats apply: (i) exact numbers on combatants are secret, but the estimate of soldiers currently fighting for Ukraine is about 700 thousands to 1 million, among which 30-40 thousands wounded and 9 thousands deaths; (ii) the combatants are a combination of conscripts and volunteers; (iii) the status of military veteran might be tricky to define in some cases; (iv) compared to other historical episodes, veterans will not "come back home" into a "normal" situation, but will have to bear also the difficulties linked to the reconstruction.⁵⁴ The fact that the army involves many voluntary soldiers makes the reintegration easier as suggested by international evidence. Angrist (1998), in particular, finds that volunteer soldiers who served in the early 1980s were paid considerably more than comparable civilians while in the military, and had higher employment rates after service. The problems in defining the status of veterans and the level of destruction of real estate in Ukraine make the issue more difficult to tackle.

Finally, the problems with the sustainability of the Ukrainian pension system suggests that the **early retirement** route is not an option to be used on a large scale to deal with

⁵²On this, see also: <https://www.bbc.com/news/world-europe-60318298>, https://en.wikipedia.org/wiki/Suicide_in_Ukraine

⁵³Male: 32.7, Female: 4.7. Source: https://en.wikipedia.org/wiki/List_of_countries_by_suicide_rate

⁵⁴See: <https://www.bbc.com/ukrainian/features-62635359>

job loss. Yet, for those workers who are close to the retirement age and whose skills are not required in the new labour market landscape, an extended duration of unemployment benefits could provide a sort of bridging scheme to retirement.

5.4 Promoting the return of ideas if not of people

Ukraine suffered a major outflow of individuals during the war, and this loss may not be temporary as a large share of the persons involved do not seem to plan to return home in the short-run. The longer the active military confrontation continues, the larger will be the share of migrants getting acclimatized in the host country, and hence the greater is the risk that they remain there even after the peace is established. A survey of migrants to Germany suggests that 90% of the Ukrainian refugees want to get a job in Germany and 22% percent are already working or planning to start work in the near future. Even taking a longer time horizon such as a two years span, the majority of refugees are not planning to come back. As we have documented, Ukrainian **refugees** are young and relatively well educated. Shortages of workers are likely to arise, especially in healthcare and in schools.

It is important to avoid double income taxation of refugees. In the EU, there is generally a 183-day threshold (half a year) of residency beyond which someone residing in another state can be recognized as a resident there and taxed. Ukrainian refugees are now exposed to this risk.⁵⁵ In order not to further burden refugees, already in a precarious situation, EU states should waive double taxation for the period of the war. This would prevent some refugees finding it convenient to move tax residence to another country. The issue of double taxation is particularly relevant for those who work remotely. However, the EU Commission has not much power in this regard, other than moral suasion over individual countries decisions.

Even if many of the refugees will not come back after the war is over, there can be relevant interactions between Ukrainians abroad and domestic labour force. Internet connections and geographical proximity with the country of destination reduce significantly the extent of brain drain associated with the migration of skilled workers. The experience of refugees to Germany from former Yugoslavia is revealing in this respect. The largest increase in exports from former Yugoslavia were registered in those sectors with the highest share of refugees who had left the country to go to Germany - see Bahar, Hauptmann, Özgüzel and Rapoport (2019).

One of a few positive effects of the COVID-19 pandemics was a notable increase in a number of people working remotely. According to the job-searching website `work.ua` the share of vacancies which allowed remote work increased from 3.4% of all vacancies in Q2'19

⁵⁵Source: <https://www.dlapiper.com/fr/france/insights/publications/2022/09/tax-considerations-for-ukrainian-refugees-and-their-employers/>

to 6.4% in Q2'20, and to 6.5% in Q2'21.⁵⁶ With the start of the full-scale invasion, the share surged again - to 13.9% in Q2'22 (albeit with a much lower absolute number of vacancies). The low absolute number of vacancies for remote work led to three-fold increase in the number of replies on them - from 31 per vacancy in Q2'21 to 104 in Q2'22.

Remote working can be a powerful tool to bring back to Ukraine part of the human capital lost during the conflict. Also remedial education coping with the gaps in educational attainments generated by the war can be organized by drawing on the contribution of refugees, as a significant component of them is represented by former teachers. Online tutoring program where voluntary university students operated as individual tutors for disadvantaged middle-school students during the pandemic in Italy effectively raised participants cognitive achievement, socio-emotional skills (SES), and psychological wellbeing, with effects being particularly strong for low-SES children.⁵⁷ Also, a low-tech intervention that sent to parents SMS messages with basic problem sets supplemented by live phone calls from instructors would seem to have improved children's cognitive outcomes (Angrist, Bergman and Matsheng (2020)). These examples demonstrate that help provided through remote tools can effectively mitigate some of the legacy of school closures on children's development.

6 Conclusions

The Ukrainian labour market needs not only to be rebuilt. It needs to be rebuilt better. The unprecedented challenges imposed by the reconstruction can only be faced by a better-functioning labour market. Millions of workers will need to change jobs. The matching of vacancies and jobseekers will involve in many cases repeated changes of residence due to the destruction of the housing stock, and the mismatch between the regional profile of workers displacement and of firms relocation inherited from the war. Former refugees, internally displaced people, war veterans, often injured and carrying with them the mental scar of the war, will have to be reintegrated in the labour market. A fraction of the working age population significantly larger than before the war will have to be mobilized to avoid bottlenecks in the reconstruction of the country. Immigrants from other countries will have to be integrated and involved in the reconstruction of Ukraine.

In this chapter we offered an account of developments since the beginning of the full-scale war, drawing on all data sources that we were able to assemble. We also reviewed the literature assessing the labour market experience of other European countries having gone through military conflicts in a recent past. Based on these facts and findings, we

⁵⁶See: <https://www.work.ua/news/ukraine/2172/>

⁵⁷See Carlana and La Ferrara (2021).

proposed a set of policies that could be implemented, possibly with the technical support of EU countries having a longstanding experience with these measures. These policies aim at facing pre-existing structural problems as well as the new challenges imposed by the war. There is not a single priority: it is fundamental for Ukraine to invest in future human capital, to increase labour force participation, to help the most vulnerable people and to somehow involve in its reconstruction the human capital migrated abroad.

These policies will require large budgetary outlays especially for a country coming out of a war. Who should pay for these policies is a matter that European policymakers will have to address. One option is to reorient towards the reconstruction of Ukraine the windfall gains of countries like Norway and the Netherlands after the surge of oil and gas prices.

Concerning specifically labour market policies, a couple of remarks are in order. A crucial distinction among the policies proposed is the one between structural and once for all interventions.

On the one hand, we devised measures concerning the architecture of the future Ukrainian labour market institutions and welfare state, such as the ones concerning partial unemployment insurance, employment conditional incentives and active labour market policies. These policies should be designed to be permanent, thus financed over the long run by Ukrainian taxpayers in a sustainable way.

On the other hand, some measures proposed in this chapter will have to cover the period shortly after the end of the war, and are thought to tackle the immediate issues arising in the labour market. Among these, public work programs, and the creation of an infrastructure allowing for a significant scaling up of remote working and distance learning. Actually, some of these measures need to be taken even before the war is over. Among those remedial education coping with the huge educational attainment losses experienced by many Ukrainian students first with COVID-19 and subsequently with the war. Programs tailored to the specific needs of IDPs are also badly needed today and not only tomorrow.

These emergency programs should be financed largely by instruments connected with EU accession, possibly providing grants rather than loans. Apart from EU Structural Funds, SURE, the temporary support scheme put in place to mitigate Unemployment Risks in an Emergency, can be mobilized. Currently SURE is available for Member States that need to mobilise significant financial means to fight the negative economic and social consequences of the pandemic. It provides financial assistance up to €100 billion in the form of loans from the EU to address sudden increases in public expenditure for the preservation of employment.⁵⁸ In the context of the accession process, the scope of SURE can be enhanced in order to support the effort made in rebuilding better the Ukrainian labour market.

⁵⁸See: https://economy-finance.ec.europa.eu/eu-financial-assistance/sure_en

Progress made in implementing these policies will have to be constantly monitored and subject to rigorous evaluation. Thus, substantial effort should be made to ensure that Ukraine has a modern statistical monitoring system of the labour market (existing data are not sufficiently detailed and harmonized). This would promote a more tailored and rigorous allocation of welfare transfers.

Ukraine has been for centuries the gate of Europe. The human capital that it gathers is an asset for the entire continent. The preservation and enhancement of this human capital is a matter of priority and concern for the European Union as a whole.

References

- Alacevich, Caterina and Dijana Zejcirovic, “Does violence against civilians depress voter turnout? Evidence from Bosnia and Herzegovina,” *Journal of Comparative Economics*, 2020, 48 (4), 841–865.
- Angrist, Joshua and Alan B. Krueger, “Why Do World War II Veterans Earn More Than Non-veterans?,” *Journal of Labor Economics*, 1994, 12 (1), 74–97.
- Angrist, Joshua D., “Lifetime Earnings and the Vietnam Era Draft Lottery: Evidence from Social Security Administrative Records,” *The American Economic Review*, 1990, 80 (3).
- , “The Effect of Veterans Benefits on Education and Earnings,” *ILR Review*, 1993, 46 (4), 637–652.
- , “Estimating the Labor Market Impact of Voluntary Military Service Using Social Security Data on Military Applicants,” *Econometrica*, 1998, 66 (2), 249–288.
- Angrist, Noam, Peter Bergman, and Moitshepi Matsheng, “School’s Out: Experimental Evidence on Limiting Learning Loss Using “Low-Tech” in a Pandemic,” Working Paper 28205, National Bureau of Economic Research 2020.
- , Simeon Djankov, Pinelopi Goldberg, and Harry Patrinos, “The Loss of Human Capital in Ukraine,” *Vox EU*, 2022, 27 April.
- Aslund, Anders, “Kremlin Aggression in Ukraine: the Price Tag,” Report March 19, 2018, wiiw 2018. <https://www.atlanticcouncil.org/in-depth-research-reports/report/kremlin-aggression-in-ukraine-the-price-tag/>.
- Bahar, Dany, Andreas Hauptmann, Cem Özgüzel, and Hillel Rapoport, “Migration and Knowledge Diffusion: The Effect of Returning Refugees on Export Performance in the Former Yugoslavia,” *The Review of Economics and Statistics*, 2019, pp. 1–50.
- Becker, Sascha O., Irena Grosfeld, Pauline Grosjean, Nico Voigtlae, and Ekaterina Zhuravskaya, “Forced Migration and Human Capital: Evidence from Post-WWII Population Transfers,” *American Economic Review*, 2020, 110 (5), 1430–63.
- Bertheau, Antoine, Edoardo Maria Acabbi, Cristina Barcelo, Andreas Gulyas, Stefano Lombardi, and Raffaele Saggio, “The Unequal Cost of Job Loss across Countries,” 2022.
- Blinov, Oleksiy and Simeon Djankov, “Ukraine’s Recovery Challenge,” *Vox EU*, 2022, 31 May.

- Boeri, Tito and Pierre Cahuc, “Labor Market Insurance Policies in the XXI Century,” *Annual Review of Economics*, forthcoming, 2022.
- Bosch, Mariano and Lidia Farré, “Immigration and the Informal Labor Market,” Available at SSRN 2374624, 2010.
- Bratti, Massimiliano, Mariapia Mendola, and Alfonso Miranda, “Hard to Forget: The Long-Lasting Impact of War on Mental Health,” *Centro Studi Luca d’Agliano Development Studies Working Paper*, 2015, (388).
- Calderón-Mejía, Valentina and Ana María Ibáñez, “Labour Market Effects of Migration-Related Supply Shocks: Evidence from Internal Refugees in Colombia,” *Journal of Economic Geography*, 2016, 16 (3), 695–713.
- Carlana, Michela and Eliana La Ferrara, “Apart but Connected: Online Tutoring and Student Outcomes during the COVID-19 Pandemic,” Discussion Paper DP15761 2021.
- Coupe, Tom and Maksym Obrizan, “The Impact of War on Happiness: The Case of Ukraine,” *Journal of Economic Behavior & Organization*, 2016, 132, 228–242.
- Criscuolo, Chiara, Peter N Gal, and Carlo Menon, “The dynamics of employment growth: New evidence from 18 countries,” 2014.
- Dell, Melissa and Pablo Querubin, “Nation building through foreign intervention: Evidence from discontinuities in military strategies,” *The Quarterly Journal of Economics*, 2018, 133 (2), 701–764.
- Demers, Anne, “When Veterans Return: The Role of Community in Reintegration,” *Journal of Loss and Trauma*, 2011, 16 (2), 160–179.
- Dunigan, Molly, Kristie L. Gore, Katherine L. Kidder, Michael Schville, Samantha Cherney, and James Sladden, “Civilian Post-Deployment Reintegration: A Review and Analysis of Practices Across U.S. Federal Agencies,” Technical Report, Santa Monica, CA: RAND Corporation 2020.
- Eder, Christoph, “Displacement and Education of the Next Generation: Evidence from Bosnia and Herzegovina,” *IZA Journal of Labor & Development*, 2014, 3 (1), 1–24.
- Efendic, Adnan, Dejan Kovac, and Jacob N Shapiro, “Exposure to Conflict, Migrations and Long-Run Education and Income Inequality: Evidence from Bosnia and Herzegovina,” *Defence and Peace Economics*, 2022, pp. 1–15.

- Fares, Jean and Erwin Tiongson, *Youth Unemployment, Labor Market Transitions, and Scarring: Evidence from Bosnia and Herzegovina, 2001-04*, Vol. 4183, World Bank Publications, 2007.
- Gorodnichenko, Yuriy, Marianna Kudlyak, and Aysegül Sahin, “The Effect of the War on Human Capital in Ukraine and the Path for Rebuilding,” Technical Report, Institute of Labor Economics (IZA) 2022.
- Haltiwanger, John, Ron S Jarmin, and Javier Miranda, “Who creates jobs? Small versus large versus young,” *Review of Economics and Statistics*, 2013, *95* (2), 347–361.
- Hanushek, Eric A. and Ludger Woessmann, “Knowledge Capital, Growth, and the East Asian Miracle,” *Science*, 2016, *351* (6271), 344–345.
- Havlik, Peter, Artem Kochnev, and Olga Pindyuk, “Economic Challenges and Costs of Reintegrating the Donbas Region in Ukraine,” Research Report 447, wiiw 2020.
- Heaton, Paul, “The Effects of Hiring Tax Credits on Employment of Disabled Veterans,” Technical Report, RAND National Defense Research Institute 2012.
- Heckman, James, “What Should Be Our Human Capital Investment Policy?,” *Fiscal Studies*, 1998, *19* (6271), 103–119.
- , “Skill Formation and the Economics of Investing in Disadvantaged Children,” *Science*, 2006, *312* (5782), 1900–2.
- Hoeffler, Anke, “Growth, Aid and Policies in Countries Recovering from War,” 2012.
- ICED, “Delivering Disability Inclusive Infrastructure in Low Income Countries,” Technical Report 2019. http://icedfacility.org/wp-content/uploads/2019/07/ICED_DII_LICs.pdf.
- Ichino, Andrea and Rudolf Winter-Ebmer, “The Long-Run Educational Cost of World War II,” *Journal of Labor Economics*, 2004, *22* (1), 57–87.
- Imbens, Guido and Wilbert Van Der Klaauw, “Evaluating the Cost of Conscription in the Netherlands,” *Journal of Business & Economic Statistics*, 1995, *13* (2), 207–215.
- Ivlevs, Artjoms and Michail Veliziotis, “Beyond Conflict: Long-Term Labour Market Integration of Internally Displaced Persons in Post-Socialist Countries,” *Journal of Vocational Behavior*, 2018, *105*, 131–146.
- Justino, Patricia, “The War in Ukraine: Civilian Vulnerability, Resilience, and Resistance,” *Vox EU*, 2022, *14 April*.

- Kesternich, Iris, Bettina Siflinger, James P Smith, and Joachim K Winter, “The Effects of World War II on Economic and Health Outcomes across Europe,” *Review of Economics and Statistics*, 2014, 96 (1), 103–118.
- Kharitonov, Konstantin, “System of Estimation of Losses of the National Economy during the Armed Conflict (War),” *Journal of Scientific Papers “Social Development and Security”*, 2020, 10 (6).
- Kondylis, Florence, “Conflict Displacement and Labor Market Outcomes in Post-War Bosnia and Herzegovina,” *Journal of Development Economics*, 2010, 93 (2), 235–248.
- KSE, “Direct Damage Caused to Ukraine’s Infrastructure during the War Has Reached over USD105.5 billion,” Technical Report, Kyiv School of Economics 2022.
- Looney, Robert, “Economic Consequences of Conflict: The Rise of Iraq’s Informal Economy,” *Journal of Economic Issues*, 2006, 40 (4), 991–1007.
- Melnyk, Nataliia, Alina Pavlyuk, Maksim Petrov, and Olena Glushko, “Armed conflict in the East of Ukraine: the damage caused to the housing of the civilian population,” Report, Kharkiv: llb “Human Rights Publisher” 2019. https://www.undp.org/sites/g/files/zskgke326/files/migration/ua/02-3_d-sos_Armed-conflict-in-eastern-Ukraine_eng_light.pdf.
- Miguel, Edward and Gerard Roland, “The Long-Run Impact of Bombing Vietnam,” *Journal of development Economics*, 2011, 96 (1), 1–15.
- Morales, Juan S, “The Impact of Internal Displacement on Destination Communities: Evidence from the Colombian Conflict,” *Journal of Development Economics*, 2018, 131, 132–150.
- Murthy, R. Srinivasa and Rashmi Lakshminarayana, “Mental Health Consequences of War: a Brief Review of Research Findings,” *World Psychiatry*, 2006, 5 (1), 25–30.
- Nickow, Andre, Philip Oreopoulos, and Vincent Quan, “The Impressive Effects of Tutoring on Pre k-12 Learning: A Systematic Review and Meta-Analysis of the Experimental Evidence,” 2020.
- Osiichuk, Maryna and Oleksandr Shepotylo, “Conflict and Well-Being of Civilians: The Case of the Russian-Ukrainian Hybrid War,” *Economic Systems*, 2020, 44 (1), 100736.
- Petracco, Carly and Helena Schweiger, “The Impact of Armed Conflict on Firms’ Performance and Perceptions,” *European Bank for Reconstruction and Development Working Paper*, 2012, 152.

- Sanch-Maritan, Mathieu and Lionel Vedrine, “Forced Displacement and Technology Adoption: an Empirical Analysis Based on Agricultural Households in Bosnia and Herzegovina,” *The Journal of Development Studies*, 2019, 55 (6), 1325–1343.
- Schuettler, Kirsten and Laura Caron, “Jobs interventions for refugees and internally displaced persons,” *World Bank - Jobs working papers*, 2020, Issue No. 47.
- Shemyakina, Olga N. and Anke C. Plagnol, “Subjective well-being and armed conflict: Evidence from Bosnia-Herzegovina,” *Social Indicators Research*, 2013, 113 (3), 1129–1152.
- Swee, Eik Leong, “On War Intensity and Schooling Attainment: The Case of Bosnia and Herzegovina,” *European Journal of Political Economy*, 2015, 40, 158–172.
- Torosyan, Karine, Norberto Pignatti, and Maksym Obrizan, “Job Market Outcomes for IDPs: The Case of Georgia,” *Journal of Comparative Economics*, 2018, 46 (3), 800–820.
- Trako, Iva, “Returning Home After Conflict Displacement: Labor Supply and Schooling Outcomes Among Kosovar Households,” *Available at SSRN 2838200*, 2018.
- Vakhitova, Hanna and Pavlo Iavorskyi, “Employment of Displaced and Non-Displaced Households in Luhansk and Donetsk Oblasti,” *Europe-Asia Studies*, 2020, 72 (3), 383–403.
- Waldinger, Fabian, “Bombs, Brains, and Science: The Role of Human and Physical Capital for the Creation of Scientific Knowledge,” *Review of Economics and Statistics*, 2016, 98 (5), 811–831.
- Werner, Katharina and Ludger Woessmann, “The Legacy of Covid-19 in Education,” 2021.
- Zilic, Ivan, “Effect of Forced Displacement on Health,” *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 2018, 181 (3), 889–906.

A Appendix

Table 5: Labor force participation rate, % by sex and age group

	Year				
	2005	2013	2015	2019	2021
Total					
15-70	62.2	65	62.4	63.4	61.8
15-24	40.2	39.3	36.3	36.2	30.6
25-29	81.4	80.8	80.8	80	77.7
30-34	82.9	83.9	82.3	82	80.8
35-39	85.6	86.6	85.2	85.8	83.9
40-49	84.3	85.8	85	86	85.2
50-59	64.8	67.1	65.9	73.8	75.4
60-70	22.9	23.8	14.5	13.7	12.8
Females					
15-70	57	58.9	56.2	57.5	56.1
15-24	35.5	34	31.8	31.7	28.1
25-29	73.5	70.2	70.7	67.3	65.1
30-34	77.3	75.9	73.3	72.2	70.4
35-39	82.4	81.7	80.5	80.2	76.4
40-49	82.9	84	83.7	84	82.6
50-59	57.2	60.9	59.1	70.8	73.6
60-70	20.3	21.4	12.2	11.8	11
Males					
15-70	67.9	71.6	69.2	69.9	68.1
15-24	44.7	44.4	40.6	40.5	33
25-29	89.2	91	90.5	92.2	89.7
30-34	88.6	91.8	91.2	91.6	90.8
35-39	89	91.6	90.1	91.3	91.4
40-49	85.9	87.8	86.5	88.1	87.9
50-59	74.2	74.9	74.1	77.4	77.6
60-70	26.7	27.5	17.9	16.4	15.5

Note: year 2005 is reported because it is the first one in which the present breakdown by age was used.

Table 6: Relocation choices in EU, Ukrainian and Syrian refugees

Country	Refugees from Ukr	%	Refugees from Syria	%
Austria	82,446	2%	62,408	6%
Belgium	56,464	1%	19,188	2%
Bulgaria	56,734	1%	20,067	2%
Croatia	18,328	0%	548	0%
Cyprus	13,852	0%	10,735	1%
Czech Republic	439,043	10%	358	0%
Denmark	35,193	1%	19,706	2%
Estonia	57,257	1%	105	0%
Finland	38,588	1%	2,660	0%
France	105,000	2%	37,375	4%
Germany	997,895	23%	621,740	60%
Greece	19,413	0%	39,372	4%
Hungary	30,000	1%	869	0%
Ireland	49,999	1%	2,832	0%
Italy	170,646	4%	3,527	0%
Latvia	38,915	1%	312	0%
Lithuania	66,368	2%	463	0%
Luxembourg	6,561	0%	2,409	0%
Malta	1,518	0%	1,918	0%
Netherlands	79,250	2%	39,388	4%
Poland	1,409,139	33%	254	0%
Portugal	52,819	1%	861	0%
Romania	80,498	2%	2,258	0%
Slovakia	95,375	2%	25	0%
Slovenia	8,171	0%	326	0%
Spain	144,668	3%	14,987	1%
Sweden	45,895	1%	115,233	11%
United Kingdom	131,700	3%	11,980	1%
Total	4,331,735		1,031,904	

Source: UNHCR, September 2022.

Note: comparison on EU countries (+UK). For Syrian refugees, 2021 is the reference year.