

Economic Council Paper #2

Stimulating Growth in Ukraine and Policies for Migrants' Return

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Executive Summary

As a protracted war of attrition seems increasingly likely, Ukraine's economic resilience becomes critical to sustaining its defensive capabilities and national endurance. To defeat Russian aggression, Ukraine must not only keep the economy running, but also raise its productive capacity to finance its army, boost military output, support the population, and encourage refugees to return.

We propose creating **fortified economic clusters** in the relatively safer regions of Western and Southwestern Ukraine, shielded by geographical distance and enhanced with modern air-defense systems. Investment in these clusters will be secured through comprehensive war insurance policies and bolstered by reliable supplies of energy and raw materials, ensuring uninterrupted production. To attract capital to these areas, Ukraine can rely on a combination of domestic private investment and foreign direct investment (FDI) that has the European Union and other external markets as destinations for output.

Key infrastructure improvements, such as the **extension of the standard European railroad gauge into Ukraine**, will integrate these clusters with European markets, maximizing export potential and attracting both domestic and foreign direct investments.

Outside the safety clusters, we advocate for a **decentralized production strategy**, focusing on adaptable sectors such as agriculture and information services. In regions closer to the frontline, solutions such as underground production and social facilities can be used.

In parallel, we propose **strategic human resource initiatives** to improve labor allocation. Workers will be directed towards the fortified economic clusters and supported with affordable housing options to facilitate their relocation. To address the skill mismatches and shortages, intensified collaborations between businesses, educational institutions, and job-placement services are recommended. The government shall play a crucial role in engaging marginally attached workforce segments by offering in-person schooling, re-training programs, and public works, thereby enhancing formal labor participation. Organizations of internally displaced people (IDPs) will be essential partners in these initiatives.

Addressing the unpredictability of military mobilization and its impact on the labor force, which poses a significant risk to economic stability and foreign investment, is critical. We recommend **establishing predictable mobilization timelines and procedures** that balance the immediate defense needs with long-term economic sustainability necessary to support the war effort.

In the short term, productivity can be significantly enhanced by advancing digitalization and deregulating the economic landscape. Building on the success of e-Government platforms like Diia and ProZorro, it is crucial to expand these tools at the community level to ensure efficient resource use, equitable opportunity distribution, and robust reconstruction efforts. A consistent and comprehensive data collection strategy will further inform and refine policy directions.

The long-term success of Ukraine hinges on the return of the refugees. Ukraine will need to work with its allies to win these people back by offering security, jobs, and housing, as well as an environment where corruption cannot impede human development and opportunity. Facing this monumental task, we must mobilize all resources and international support to ensure Ukraine not only survives but emerges stronger. As a transitional measure, we propose a policy whereby host countries support the war effort by **sharing with Ukraine some of the tax revenues generated by refugees.**

This comprehensive strategy not only aims to sustain Ukraine through the ongoing conflict but also prepares the groundwork for a robust post-war recovery. Mobilizing all resources and garnering international support are imperative as we tackle these monumental challenges to ensure Ukraine's resilience and prosperity.

1. Introduction

More than 830 days since Russia's full-scale invasion of Ukraine, the war shows no signs of abating. Millions of refugees have fled Ukraine for Europe and other regions, gradually integrating into the labor markets and societies of their host countries. Despite demonstrating remarkable resilience, Ukraine's economy faces severe challenges. The war effort exerts a significant toll on the country's public finances and growth prospects, raising critical questions about strategies to boost Ukrainian production and encourage the return of migrants during the ongoing conflict and within a relatively short time frame.

Extensive discussions have centered on Ukraine's post-war reconstruction.¹ It is generally agreed that achievement of EU membership and the credible institutional reform anchor that it provides, together with a broadly financed new 'Marshall plan' for the reconstruction of Ukraine, would put the country on the fast track to recovery and economic prosperity. Indeed, the transformation seen in Poland post-EU accession – once (in the early 1990s) on par with Ukraine economically, now significantly more prosperous – demonstrates the potential impact of this path.

Moreover, the World Bank and other international financial institutions have been actively engaged in monitoring the resilience of the Ukrainian private sector during the war with the aim of advising on how to allocate scarce public and donor resources to continue operations and increase resilience.² Despite substantial damage caused by the Russian invasion, Ukraine's private sector showed remarkable resilience, with many firms proactively adapting their business strategies, including seeking new customers, leveraging digital tools, and optimizing supply chains.

While planning for Ukraine's post-war reconstruction and fortifying the resilience of its private sector are undoubtedly crucial, these measures alone are unlikely to result in a significant boost in production or the swift return of refugees. As of today, the situation at the battlefield remains difficult, and the war is not likely to end soon. Thus, our focus is on whether significant growth in economic production can be achieved during the war and within a relatively short time frame of two to three years.

Our analysis and the ensuing recommendations are based on the presumption that a protracted war is increasingly likely. Should a ceasefire occur in the near future, these conditions might change. Nevertheless, it is strategically crucial to prepare a credible and actionable plan for a sustained war scenario. Currently, Western planning predominantly assumes a swift resolution to the war. This approach could lead Putin to perceive an advantage in Russia's greater economic and political resilience, potentially encouraging him to prolong the conflict in anticipation of outlasting Western resolve.

¹ See e.g. Becker et al. (2022a), World Bank (2022), Gorodnichenko, Sologoub, Weder di Mauro (2022), Bertelsmann Stiftung (2023), Economic Advisory Council (2023), Kosse (2023).

² See Avdeenko et al. (2023)

2. Achieving Growth in Ukrainian Production

War is devastating to the economy. General uncertainty, physical damage to productive assets, emigration, falling domestic demand, worker shortages, military service, casualties, and disruptions in power, supply chains, and logistics – these are just some of the challenges faced by Ukrainian firms since Russia's invasion. At first glance, contemplating growth in production during the war may seem fantastical. Yet, it is not without historical precedent.

Ukraine's economic resilience, much like its ability to withstand an invasion by vastly superior forces, proved greater than expected (but it is not infinite). Macroeconomic indicators have been stronger than forecasted, prompting the IMF (2023) to revise growth projections upwards. This improvement has been supported by the relocation of Ukrainian industrial assets and workers from war-afflicted eastern and southern regions to the west of Ukraine (Alderman and Solomon 2022). The government promoted this relocation by providing tax breaks and free transport of equipment on Ukrainian railways.

During World War II, the Soviet Union undertook a massive relocation of industry from front-line and near-front areas to locations deep in the Soviet rear – well out of the reach of enemy airpower. This relocation was successful not only in preserving industry but also in significantly ramping up military production to win the war (Lieberman 1983).

Thus, if significant growth in Ukrainian production during the war is to be achieved, the answer to "where to produce?" is obvious – further away from the frontlines, in the west of Ukraine, where economic growth was stronger even before the full-scale invasion (see Figure 1). In modern warfare, distance alone does not guarantee protection from missiles and long-range drones. Air defense systems are still necessary. However, distance may prove effective against lower-tech missiles and drones. Greater distances may also provide more time for detection and response. For example, a 1000-kilometer distance (e.g., between Lviv and Russia) is effective against shorter-range ballistic missiles and most aerial drones.

Distance from the battlefield is not the only factor that makes Ukraine's western regions a desirable location for a short-term boost in economic production. The western and southwestern regions also have a distinct advantage in terms of proximity to European export markets, reliable logistics, and availability of workforce.³

An immediate focus on the west doesn't mean, however, that the country should abandon northern, eastern, or southern regions. These more exposed parts of Ukraine face a constant need to innovate for survival. If they do not decentralize infrastructure, they risk losing power and water. If they do not design effective underground and distributed manufacturing facilities, their economies will be destroyed. If they do not demine and decontaminate land, they cannot grow

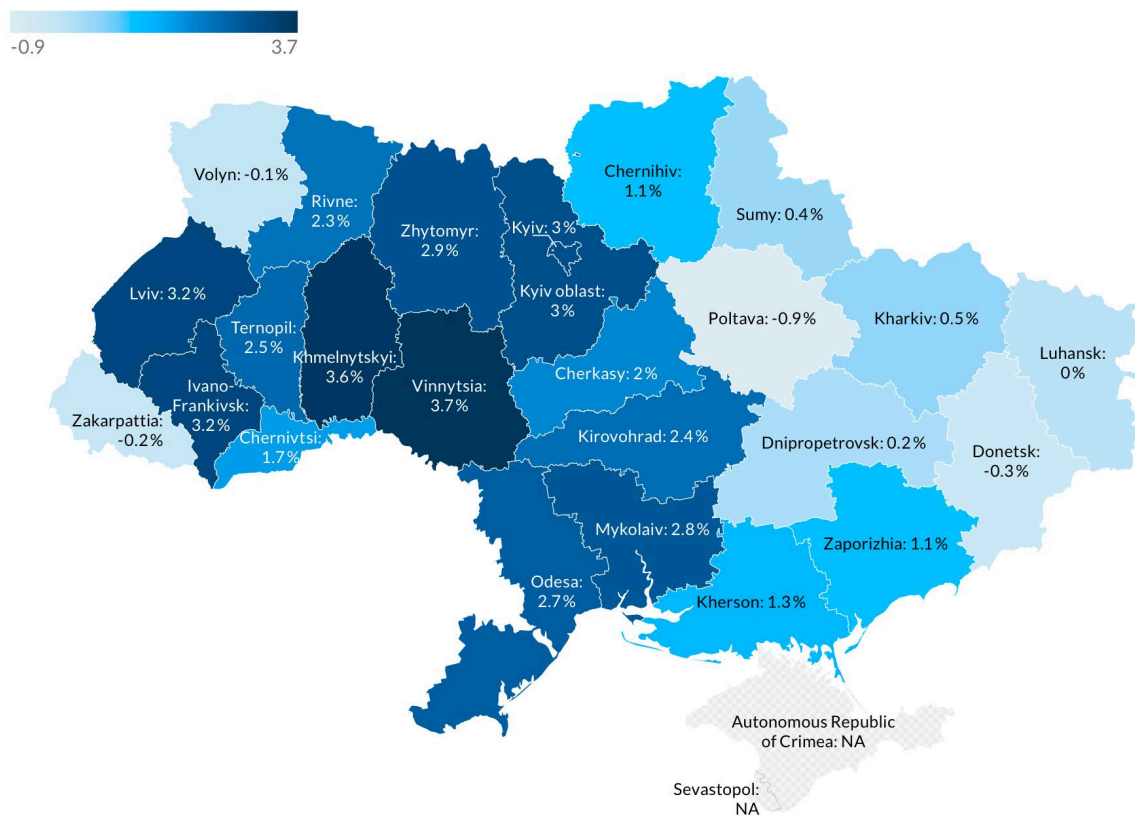
³ An additional factor in favor of developing western regions is that they lagged behind in terms of economic development. Before the war, the per capita gross regional product of Western regions (except Lviv) varied from 46% to 74% of Ukraine's total.

anything. The northern and eastern parts of Ukraine are going to become central to Europe's new security architecture, which means they will need to solve enormous challenges relating to

enabling life along a hostile border. The resulting technologies and products will have massive demand not just in Ukraine and Europe, but globally. Solutions must be found now, and it is worth noting that relatively small investments can have a game-changing impact when the drive to innovate exists, and the cost base is low. It is important to highlight that investing in these regions today is inexpensive, but the potential for solving significant problems is immense.

The production and population structure of these vulnerable regions will be different than before the war. For example, there may be less industrial enterprises but more agriculture and government services. Perhaps enterprises there will not be large and they may be hidden underground. ‘Re-invention’ of the cities closer to the borders with Russia and Belarus will require some creative thinking and public investment (see Gorodnichenko et al. (2022) for some ideas).

Chart 1: Gross Value Added average growth rates 2016 - 2019, constant prices



Note: Values for Donetsk and Luhansk regions reflect only the government-controlled territories at the time of data collection.

Source: Bertelsmann Stiftung (2023)

We reiterate that our focus on Ukraine’s western and southwestern regions is dictated by our objective to explore possibilities for achieving a substantial increase in Ukrainian production

during wartime. When postwar reconstruction begins, the government's attention should shift eastward to prevent widening spatial disparities in post-war development.

Attracting Investment. In agreement with earlier analyses (e.g., Grieveson et al. 2023), we believe that the most viable strategy to achieve growth for Ukraine during the war is to adopt the EU-Central and Eastern Europe model of attracting Western foreign direct investment (FDI). Today's nearshoring trends offer substantial opportunities for Ukraine to integrate into the Western supply chain in this sector.

We believe that attracting FDI to production (in the Western and Southwestern regions) is the most viable model to achieve substantial growth in production *during the war* and is also a promising strategy for post-war reconstruction. A particularly promising strategy would be forming partnerships with existing Ukrainian enterprises. Recently, Ukrainian firms have cultivated unique expertise and competitive advantages in key sectors such as military technology and distributed production. These capabilities position them well to provide valuable opportunities for Western investors looking for substantial returns on relatively low-cost investments, while also leveraging the local and specialized knowledge of Ukrainian partners. Furthermore, a partnership-based approach between Western and Ukrainian firms can reduce risk for Western investors by deepening their understanding of the local institutional environment and reducing issues like asymmetric information or adverse selection.

Ukraine already had a good track record in attracting FDI to manufacturing before the war. For example, it has attracted significant investment from major European, American, and Japanese companies specializing in car wiring systems. These operate primarily in Western regions and produce wiring for Audi, BMW, Mercedes and others. Part of the Ukrainian industry that was oriented toward the West continued operating without interruption also after the invasion and some companies even increased their revenues (World Bank 2023b).

There is a widely held view that the sectors of the Ukrainian economy with the best post-war growth potential include agriculture and food, information and communication technology (ICT), logistics, construction materials, light industry, renewable energy, critical minerals, automotive parts manufacturing, and the defense industry.⁴

Among other initiatives, the World Bank also advocates for critical interventions in the engineering and machine-building sector with the aim of achieving integration into EU value chains and obtaining "industrial visa-free" access to EU markets. It argues for the development of an auto parts cluster, as well as automotive software and electronics. Ukraine's experience with heavy trucks and drones could be leveraged into many commercial sector applications, especially in agriculture. A pivot to participating in the production of electric vehicles could also

⁴ Prior to Russia's invasion, the industrial sector in Ukraine was largely composed of Soviet legacy assets that remained integrated into post-Soviet value chains. In recent years, new industrial segments have emerged, including automotive manufacturing and IT, as well as defense and aerospace. In 2013, countries of the former USSR accounted for 76% of the engineering and machine-building sector's exports, but this share fell to 41% by 2022 (World Bank, 2023b). See also Grieveson et al. (2023).

be an interesting opportunity—especially given that Ukraine’s lithium deposits (used for lithium-ion batteries) are among the largest in Europe (World Bank 2023b, Ukrainian Geological Survey 2021).

In addition to industrial production, there are several other sectors in Ukraine that have substantial potential for rapid growth during and after the war. One such sector is agriculture. Prior to the full-scale invasion, the agriculture, food, and beverages industry accounted for almost a quarter of FDI, and agricultural products peaked at 49.1% of merchandise exports in 2020 (World Bank 2023b). While attracting new investment is difficult during the war, decentralized agriculture is less vulnerable to Russian missile attacks and thus can be more attractive relative to sectors where production is geographically concentrated.

Another sector with great promise is information technology (IT). Today, many of Ukraine’s IT skills are committed to the war effort. However, even in these difficult conditions, Ukraine’s IT industry exported \$6.8 billion in 2023. This is second only to agricultural exports (\$22 billion in 2023). After the war there is much potential for the innovations Ukraine has made militarily to spin off into commercial applications. (Recall that much of Israel’s dynamic IT sector originated in military applications and drew personnel from the military.) An effective system of Venture Capital (VC) financing is likely to be key to realizing Ukraine’s IT potential after the war. Ukraine already has some very successful IT startups, such as Grammarly, Ring or Reface, so its transition from IT “sweatshops” to the more creative segment of the industry is underway. Working for military needs may provide a boost to the industry, so it is a promising investment destination.

What could be the macroeconomic effects of attracting investment in general and FDI in particular? First, it could stimulate the return of migrants and set the economy on a sustainably stronger growth path. In the context of Ukraine’s post-war reconstruction and recovery, the IMF estimates that additional investment totaling around \$120 to \$360 billion for the 10-year period to 2033, could support long-run annual GDP growth of up to 4.5 to 6 percent in the upside scenarios compared to 4 percent in the baseline. The IMF’s upside scenario also predicts much smaller net outward migration with substantially higher investment inflows (table 1).

Table 1: Investment, GDP growth, Migration: results of IMF modeling

	Baseline	Downside	Upside range
GDP growth, end of projection period (2023)	4 percent	3.8 percent	4.5-6.5 percent
Investment to GDP (2023)	25 percent	20 percent	28-33 percent
Total investment 2024-2033 (relative to baseline)	US\$ 530 billion	US\$ 340 billion (-US\$190 billion)	US\$650-890 billion (+US\$ 120-360 billion)

Net migration relative to end-2021	-2.1 million persons	-3.2 million persons	-1.5 to 0 million persons
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Source: Reproduced from IMF (2023)

In its analysis the IMF assumes an elasticity of the investment level to GDP of 0.2. This estimate is similar to Jovanovic and Hanzl-Weiss (2022) who study the economic impact of FDI in 17 Central, Eastern, and Southeastern European (CESEE). However, they also find that for FDI from Germany and Austria, this effect is five times higher: FDI inflows of 1 pp of GDP are predicted to lead to 0.9 pp higher GDP growth. These results suggest that if Ukraine were to succeed in attracting FDI from countries in Western Europe, this investment inflow could help achieve even greater positive effects on economic growth.

Boosting economic growth by attracting investment could also create a virtuous circle where higher growth produces more fiscal revenue, which would allow the government to fight Russia more effectively and make the country safer, thereby stimulating more investment and encouraging more migrants to return. Thus, by successfully boosting growth in the short term, attracting FDI and domestic investment could have an outsized multiplier effect on the return of migrants. Ukrainian migrants can provide “quasi-FDI” to Ukraine. Many of them opened businesses in the country of their current residence and if they invest into Ukrainian enterprises, they can provide the path which citizens of those countries may follow.

Ukraine’s biggest trump card in attracting FDI is its inexpensive and well-educated labor force. However, potential FDI investors consider not only labor costs but also prioritize political stability, quality of institutions, and infrastructure (see Culafic et al. (2021)). The government has been working on streamlining of land allocation procedures and shortening lengthy procedures of connecting an enterprise to the electric grid. With Russians ruining a large part of generation facilities, the concept for the latter has changed: an emphasis on distributed generation may make it easier for companies to get electricity for their facilities. However, other issues such as permits, licenses and other bureaucracy still need to be addressed. That said, by far the biggest obstacle to any investment in Ukraine remains the ongoing war and the associated risks.

Localizing War Risk Insurance. Currently, there is almost no commercial insurance in Ukraine due to ongoing military risk (Snape 2024). Since the Ukraine Recovery Conference a year ago, considerable effort has been devoted to creating a functioning system of war insurance. However, this task has proven difficult, as the private insurance industry has never covered war risks on the scale required in Ukraine.⁵

Notable progress has been made in specific niches. Lloyd’s of London insurers, in collaboration with Ukrainian state banks, launched insurance for sea vessels transporting grain through the Black Sea corridor (Cohn and Saul 2023). Several countries introduced their own war insurance schemes for home companies investing or doing business with Ukraine. For example, the Export and Investment Fund of Denmark (EIFO) offers 100% risk coverage for Danish exporters when

⁵ Generally, the risk of war is excluded from the available political violence insurance. Spanish and Israeli war insurance pools offer approximations to war insurance but these are nowhere near the scale that is required in Ukraine. See Mahl (2023).

investing in Ukraine and 100% risk mitigation during the construction or production period of export contracts (Kuleba and Rasmussen 2024). Similarly, a French government insurance company started offering investment insurance to French companies investing in Ukraine (Ministry of Economy 2023).

One proposal has been to create a war risk pool for Ukraine, similar to the government-backed schemes that cover systemic risks such as terrorism in several countries, but with the support of multiple governments (Kubrakov 2024). However, even with governmental assistance, private insurers need to be able to properly assess the risk of investments and operations in a war zone. To facilitate this, Ukraine has launched a comprehensive data platform that provides information on the frequency and nature of attacks based on location and time, as well as the types of assets targeted and the levels of damage sustained. This transparency about the ongoing conflict's impact is envisioned to help the global insurance and investment community, as well as governments, evaluate risks more accurately and boost confidence for investment (Araullo 2023).

Creating a war insurance system that would cover investments anywhere in Ukraine will certainly take time. In our view, the key to solving the war risk insurance problem for investment in industrial production lies in localization. For instance, insuring investment in a specific location with known air-defense capabilities should be quantifiable and technically feasible. It should also be relatively inexpensive if this location has minimal risk of strikes due to distance and air-defense measures. Given that modern air-defense systems are very expensive (the cost of a Patriot missile system is \$1.1 billion with a range of about 40 kilometers), these fortified economic clusters should be in relatively large population centers in Western and Southwestern Ukraine.

Ensure connectivity with European export markets. At least during the war, it is likely that the civilian investment would mostly be oriented toward producing for the export market, primarily in Europe. Thus, ensuring safe and affordable export routes is important. Before the invasion, a significant share of goods was exported via ports on the Black Sea, with about 86 percent of agricultural products shipping seaborne. Following Russia's full-scale invasion, logistical and transport challenges increased export costs by an estimated 400-500 percent (World Bank 2023). The Ukrainian army managed to reopen the sea routes (currently the volume of commodities exports via the Black Sea is approaching 2021 level). Nevertheless, Ukraine will need to significantly develop railroads and roads linking it to the EU, as they will represent the most efficient way to export high value added products, production of which is supposed to rise as a result of increased investment. This infrastructure investment can also be profitable. For example, Romania is constructing a highway to the Ukrainian border to increase exports of Ukrainian grain via its ports. Thus, not only the road itself will provide revenues but also revenues of sea ports will increase. Developing infrastructure such as railroads, roads, or logistical hubs near the Ukraine-EU border will likely generate additional employment and business in the adjacent regions on both sides of the border.

Unfortunately, overburdened rail networks limit access to European markets. The need to switch between different gauges and a long border control have been the key bottleneck for integrating

Ukraine's railway sector into the EU (Kosse 2023, World Bank 2023b). Establishing connectivity with EU supply chains, including through gradual development of the standard European gauge infrastructure, will be critical to Ukraine's economic realignment. Specifically, Ukraine needs to be linked to the main logistics nodes in the EU to ensure its fast and reliable connectivity with the principal European transportation hubs. In terms of connectivity to Ukraine, the main container hubs in North Europe are Rotterdam, Hamburg, Bremerhaven, Gdansk, Gdynia, Szczecin, and Klaipeda, which should be connected to Ukraine's hinterland with 1435mm rail gauge, via Poland.

In a recent study, the European Commission (2023) analyzed the barriers to cross-border connectivity in Ukraine, including the difference of rail gauge used in most of the EU versus the one used in Eastern Europe. A principal conclusion and recommendation of the study is to develop a new backbone 1435mm gauge network, to be operated in conjunction with the existing 1520mm network, on the following basis: The 1435mm gauge system would focus on higher speed transportation (international passenger, IC, and container/platform wagon freight), with the 1520mm system catering for lower-speed transport (local and regional passenger traffic and heavy bulk).

The study also suggests that the first step should be to deploy the European track gauge on the line between Lviv and Krakow. The cost of this project is estimated at 434 million euros, making its implementation in the near future realistic, since 1 billion euros have already been mobilized for the EU-Ukraine's Solidarity Lanes.

The Lviv-Krakow European gauge connection would provide a major transport corridor that would facilitate manufacturing production activities. Freight can then be consolidated within a 150-300km radius by trucks in intermodal facilities, which would significantly enlarge the coverage of the 1435mm rail network. Implementation of this project will position Lviv as a main transshipment hub for Ukraine.

Changes in the physical infrastructure should be complemented by the political and legal infrastructure. Specifically, fast cross-border transportation is impossible without efficient mechanisms to clear goods in customs, share information, and verify documentation. A permanent EU-Ukraine working group focused on these issues should be established to provide timely resolutions to potential frictions as well as to lay foundations for broader integration of Ukraine into the EU.

Building fortified economic clusters. Attracting FDI in production is made easier by certain infrastructure, such as production sites, logistics, and office solutions to potential investors. In wartime Ukraine the standard set of "industrial park" services needs to be complemented by air-defense capabilities and war insurance for investors.

A good example of such a project is the M10 Lviv Industrial Park (m10.com.ua), which just became operational thanks to investment by the European Bank for Reconstruction and Development (EBRD) and war insurance by World Bank Group's Multilateral Investment

Guarantee's Agency (MIGA). The guarantee for investments covers the risks of physical destruction of the industrial park because of missile attacks and/or loss of control over the facility.

Also, a somewhat out-of-the-box option for war-resilient locations for production in case air-defense capabilities are too expensive or otherwise unavailable is to build underground production facilities or to use abandoned coal or salt mines (there are many of them in all regions of Ukraine). For example, construction of an underground school that can host 450 children at a time costs \$1.5 million (Kryzhanisvskiy 2024). Many cities also have previously-built underground networks. Some of these networks could be used as production sites.

The Ukrainian government is already offering foreign investors specific incentives such as tax benefits and support for projects with significant investments.⁶ In addition, the Ukraine Investment Framework (UIF), a component of the European Union's Ukraine Facility, will help support the work of international financial institutions in Ukraine by providing access to additional financing for businesses and risk-sharing mechanisms. The UIF's funding is €9.3 billion.

Resilient energy supply is also an indispensable component to the infrastructure of industrial parks. Russia deliberately targets energy infrastructure with missile and air drone strikes. Clearly, energy supply should also be protected by air-defense capabilities. Another option is to aim at decentralized generation and small networks instead of constructing large-scale generation facilities, such as nuclear reactors (modular nuclear reactors can be an option). Since Ukraine has a lot of agricultural production and respective waste, power generation capacities that use bio-materials will be both green and decentralized solutions.

Labor. The labor shortages have become an increasingly limiting factor for businesses. According to the National Bank of Ukraine (2024), the share of businesses reporting shortages of workers as a limiting factor increased from 26% in 2022Q1 to 38% in 2024Q1. Furthermore, 16% of businesses report that job applicants' skills do not match needed qualifications. For some occupations (logistics and other blue collar workers), the ratio of applicants to job postings has declined to less than one. The challenges are more acute for male-dominated occupations (e.g., welders) and industries (e.g., construction). Furthermore, the Bank estimates that the workforce declined by roughly 25% since the end of 2021. At the same time, the estimated rate of unemployment stands at roughly 15%. These basic statistics suggest that the war greatly exacerbated problems with skill mismatch and shortage of qualified workforce in Ukraine's labor market. The main reasons for this deterioration are mobilization and migration.

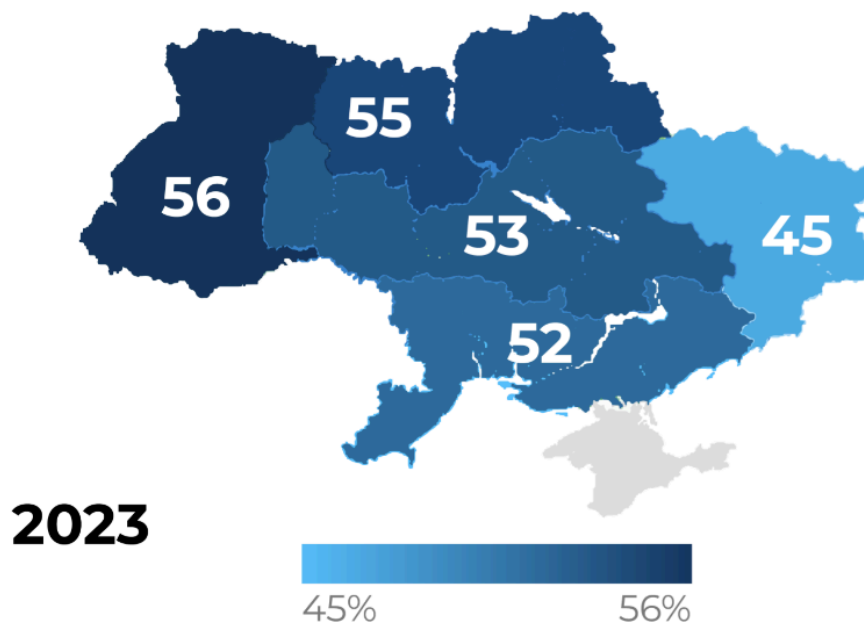
Wage increases have been a natural response for businesses (nominal wages increased by 17% on average in 2023, while inflation was 5.1%), but addressing labor shortages would require more effort, support, and coordination from the government. For example, 60% of internally displaced persons (IDPs) are of working age. Yet, employment rates for IDPs are roughly at

⁶ Investments of more than €12 million can receive compensations of up to 30% of the investment amount (Ukrinvest 2024).

30%. What is more, less than 15% of firms reported in 2023 that they increased their employment of IDPs. This strikes us as a much underutilized resource. Stronger incentives to seek employment and opportunities to obtain required training and to hire IDPs are some of the first steps needed to engage this group in economic activity.

We also observe significant regional variation in employment rates. Safer Western regions have higher employment rates than regions close to the frontlines (Figure 2). The government should facilitate reallocation of the workforce towards areas that are relatively abundant with jobs during the war. For example, Ukraine has ~4 million IDPs, but relatively few are in Western regions (e.g., Lvivska oblast has 173,000). IDPs should be directed to areas where they are more likely to find jobs. To help this process, Becker et al. (2022b) suggest developing a matching system (perhaps using the e-governance software Diia ('Дія')) to utilize vacant housing to help IDPs find a shelter.

Chart 2: *Employment rates (ages 15 and above) by macro regions*



Source: National Bank of Ukraine (2024)

More labor can be released with additional measures. For example, various estimates suggest that 40% of Ukrainian children (1.7 million) have limited access to in-person instruction. Apart from creating enormous losses in education and human capital, this staggering number indicates that many potentially employable adults are not in the workforce because they have to look for their children. In many cases, the lack of bomb shelters in schools is a key reason why schools

cannot offer in-person instruction.⁷ One may expect a similar situation for childcare centers. Thus, investment in bomb shelters and other elements of safe instruction can not only help fill the education gap but also release parents and other caretakers to gainful employment.

As we mentioned above, shortages of blue collar workers are particularly acute. For example, the mayor of Dnipro complained that he will not have enough municipal workers to collect garbage and provide other public services because these (mostly male) workers are mobilized into the army. Media reports suggest that businesses increasingly try to attract women and more generally groups who are marginally attached to the labor market (Financial Times 2024). However, the skill mismatch is stronger for these groups and significant (re-)training is required to make these candidates employable in the necessary occupations. Previous analyses (Kahanec et al. 2023, Gorodnichenko and Stepanchuk 2023) highlighted the need to energize VET (vocational education and training) institutions to provide the training in close cooperation with the corporate sector.

Although Ukraine has public institutions and other legal infrastructure created to facilitate allocation of labor, many institutions turned out to be ineffective. For example, Public Employment Service (PES) of Ukraine is a government body established to help unemployed workers to find jobs and (if needed) new training. There are few (if any) reports that PES is effective in resolving challenges in the labor market. Relatedly, we are not aware of data measuring how many unemployed were engaged in public works. There is a clear need to re-think the role of PES and similar organizations and develop closer collaboration between businesses, VETs and PES-like bodies. More generally, although the Ukrainian labor market is quite dynamic (e.g., job finding rates exceed those in the EU countries), labor relations are regulated by the labor code adopted in 1971. The obsolete and rigid requirements of the code encourage businesses and workers to find arrangements that bypass the code and thus push them into the shadow labor market. There is an urgent need for a wholesale legislative reform aiming to deregulate the market and move from protecting jobs to providing insurance to workers.

Given the deficiencies of the PES, an alternative, bottom-up approach could be encouraged (Huss and Kuedel 2023). Firstly, Ukrainian municipalities could serve as the primary government point of contact for labor allocation since they have strong incentives to attract relocated businesses: their share of personal income tax is based on a business's registration, not the employee's registration. Many actively seek businesses to relocate; for example, the municipality of Kopychyntsi in the Ternopil region welcomed a furniture producer from Kharkiv.

Second, recognizing the agency of IDPs in labor allocation would open new opportunities. Instead of relying solely on the PES for job matching, businesses in search of employees could be encouraged to reach out directly to IDP NGOs and IDP Councils. These councils, numbering in the hundreds across local councils in Ukraine, can help share information on job opportunities and coordinate retraining programs as needed. This coordination could be efficiently managed by business associations leveraging Diia-connected tools such as MySyla.org, empowering

⁷ Another reason is that IDPs continue to be attached to their original communities and their children study online to keep in touch with their social circles. Local education department should identify IDP children studying online and offer transition to a local school with in-person instruction.

communities to allocate resources and opportunities more effectively, building training programmes and supporting bottom-up economic growth.

Finally, the issue of scarce and expensive housing in western Ukraine, which deters many IDPs, must be addressed. Municipal buildings, including unused schools and dormitories, can be converted into employee housing for local enterprises, thus facilitating the relocation of IDPs to where jobs are available.

Perhaps the most challenging part is how to balance the mobilization needs of the country and the stability of employer-worker relationships. While the war needs are clear, one should also appreciate that firms and workers are unlikely to make relationship-specific investments if workers can be drafted at any moment. This uncertainty reduces efficiency and hence output. Reports and surveys also suggest that male workers are more likely to engage in informal employment to avoid the draft, which leads to further inefficiencies. There is no simple solution to ensure fairness *and* efficiency. The historical experience ranges from nearly total mobilization and compulsory work (for example, the UK in WW2, although some occupations were exempt) to lotteries (for example, the U.S. during the Vietnam war). We believe that, via public consultations and the political process, the government will need to develop a procedure to “recuse” some workers at least temporarily from military service so that the draft does not undermine the economic capacity of Ukraine to support the war effort.

Finally, a key impediment for addressing labor shortages is the lack of information available to policymakers. Since the beginning of the Russian invasion, the State Statistics Service of Ukraine suspended ILO-style surveys of the labor market. As a result, we have to rely on indirect indicators and various proxies (e.g., job openings posted on online platforms such as work.ua). This significantly curtails Ukraine’s ability to identify problems and opportunities in the labor market. Ukraine needs to resume collecting these important data to ensure evidence-based policies.

Productivity. Economists have long emphasized that sustainable economic growth can only be supported by a steady stream of productivity gains. In other words, we should be able to squeeze more output from available resources. This is a particularly high priority in current conditions where Ukraine faces significant shortages of capital and labor. We see several elements that can help make tangible progress in this arena.

First, deregulation of economic activity is likely to free up resources and to direct them to more efficient uses. As we mentioned above, the labor code in Ukraine is outdated and thus is an obstacle for economic development. Cumbersome tax administration is a perennial complaint of the business sector and a source of corruption. Simplifying the tax system should reduce compliance costs and the size of the shadow economy.⁸ Although Ukraine made dramatic progress in cutting red tape (Ukraine ranked 152nd in the 2012 Ease of Doing Business Index),

⁸ According to the World Bank’s Ease of Doing Business 2020, documentary compliance for cross-border trade takes 66 hours in Ukraine and 2 hours in Latvia. In a similar spirit, filing taxes takes 328 hours per year in Ukraine and 169 in Latvia.

Ukraine still has a lot of space for improvement (Ukraine ranks 64th in the 2023 Ease of Doing Business Index, while Poland is 40th).

Second, Ukraine has been a pioneer in digitalization of government services. We anticipate that further investment in digitalization will not only make the country more resilient but also reduce opportunities for corruption and improve the allocation of resources. For example, consolidation of public assistance can improve access, fairness, and cost-effectiveness of various programs aiming to support vulnerable groups. This is especially important now, when government resources are so strained and the number of those who need help is so high.

3. Prospects of Migrants' Return

The short- and long-term success of Ukraine depends on the return of Ukrainian refugees. Ukraine will need to work with its allies to win these people back by offering security, jobs, and housing, as well as an environment where corruption cannot impede human development and opportunity. This is a monumental task, but we should not lose sight of its highest priority. In what follows we describe the scale of the problem and offer a transition measure that would allow Ukrainian refugees to systematically contribute to Ukraine's war effort.

Ukraine's population stood at nearly 44 million at the end of 2021, just before Russia's invasion the following year. The population has been trending downward for about three decades, reflecting a net outward migration as well as a fertility rate that has been below 2 since the late 1980s. With the outbreak of the war, however, Ukraine's population plunged by more than 4 million between 2021 and 2022 and by nearly another 3 million between 2022 and 2023. Most of these emigrants became refugees in Europe and North America.

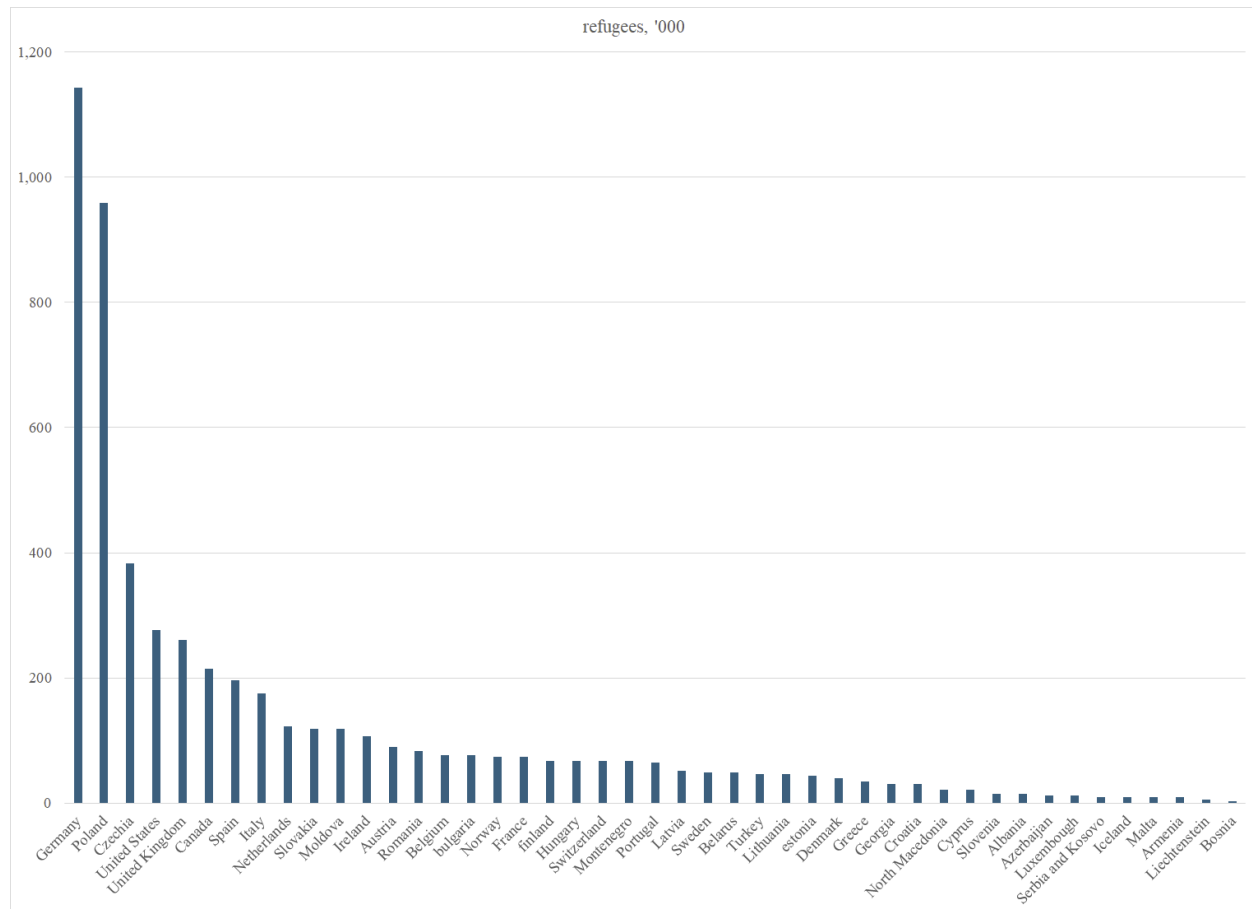
The United Nations High Commission on Refugees (2024) estimates that as of March 14, 2024, approximately 6 million refugees had been recorded in Europe and as of February 27, 2024, half a million in other parts of the world – for a total of nearly 6.5 million, which is likely an underestimate of the total number of emigrants following the invasion (United Nations High Commission on Refugees 2024). In addition, more than 3.7 million Ukrainians were estimated to be internally displaced within Ukraine as of December 2023 (Migration Data Portal, 2024).

According to one set of estimates (Sologoub 2024), 17 million people have fled Ukraine since February 2022, when Russia invaded, but more than 60 percent of them have returned home. Inducing refugees to return home and moving more returnees and IDPs into productive employment is essential to supporting Ukrainian economic growth and financing the government. In the short run, this is especially the case for persons who would provide positive net revenues for the government.

To assess the prospects of bringing back Ukrainian refugees and engaging them in productive activities in Ukraine, we examine the geographical and socioeconomic distribution of refugees. Figure 3 shows the geographical distribution of Ukrainian refugees in Europe (including Turkey

and the Caucasus), the United States, and Canada as of late 2023 or early 2024. Leaving aside Ukrainians who have relocated or have been deported to Russia (over 1.2 million) or Belarus (to be clear, data on these countries may be notably distorted), the total is just over 5.2 million.

Chart 3: *Current Geographical distribution of Ukrainian refugees in Europe, the United States, and Canada*



Sources: European data from United Nations High Commission on Refugees (2024). Canadian data from Singer (2024). U.S. data as of February 2023 from Ainsley (2023). U.S. numbers are from early 2023

Germany and Poland host the largest refugee populations, followed by Czechia, the United States, the United Kingdom, Canada, Spain, and Italy. All other European countries host populations below 150,000. Data from the UNHCR indicate that the vast majority of Ukrainian refugees in Europe (over 60%) are prime-age workers (adults between 18 and 64 years old, mostly women), who can have a large effect on Ukraine's productivity in the short term. Most of the remainder (over 30%) are children, who will play an important role for Ukraine's long-term future. Thus, attracting these individuals back to Ukraine is a critical factor for development.

Host countries generally offer legal status and financial support to Ukrainian refugees. The European Council on March 4, 2022 made temporary protection status available for two years

for people fleeing from war conditions in Ukraine, and in September 2023 extended the temporary protection provisions for another year, to March 4, 2025. The United States also designated Ukrainian refugees for temporary protected status and in August 2023 extended that designation for a period of 18 months ending April 19, 2025. Ukrainian refugees were able to enter Canada as temporary residents and work there under the Canada-Ukraine Authorization for Emergency Travel. The Canadian government has offered free resettlement services. Thus, Ukrainian refugees generally do not have pressure to return to Ukraine.

Surveys and anecdotal evidence (e.g., Gindis 2024) indicate that most Ukrainian refugees in Europe wish to return, though their share is declining as war goes on (and that most former refugees who have returned to Ukraine wish to stay). For example, a survey by the United Nations High Commission on Refugees (2023) of 3,850 refugee households between April and May 2023 found that 14 percent had plans to return permanently in the next three months, whereas 62 percent hoped to return in the future and only 6 percent had no intention to return. A survey of a different refugee sample carried out by the Factum Group between July and August 2023, analyzed by Sologoub (2024), also found a large majority hoping to return home, with 64 percent expressing that desire. Yet another survey, by Info Sapiens, similarly found that 63 percent of respondents planned to return home (Mykhailyshyna et al. 2023).

Among the “pull” factors, which seem to be more important than “push” factors in the Factum Group survey, are surviving family, homes, and jobs in Ukraine (a small fraction continue remotely at their previous jobs), a desire to see children educated in Ukrainian schools, and a desire to participate in rebuilding the country. Safety, naturally, is a major concern, as is the availability of housing, jobs, and schools. Sologoub (2024) strikingly observes that “the fear of corruption derailing the reconstruction of Ukraine is greater than the fear that Russia will continue with their missile attacks on Ukraine.” This observation points to the importance of clear, thorough, and credible plans for rebuilding the economy as vital to inducing refugees to return. Despite the dominance of the pull factors attracting refugees to return, many have lost most of their incomes and rely on public support or other non-job resources.

In short, although the overwhelming majority of refugees express their willingness to return to Ukraine, this willingness should not be taken for granted or as remaining robust over time. Some surveys (AI for Good Foundation 2024) suggest that the number of refugees wanting to return might decline the longer they stay in their host countries. This highlights the urgent need for effective policies aimed at facilitating the return of migrants, in order to prevent a future demographic crisis and long-term growth constraints.

In the meantime, Ukraine can rely on its diaspora to support the war effort and to nudge return. While Ukraine faces shortages of labor and as a result lower fiscal revenues, a large share of refugees is employed in host countries (Table 2). We propose that governments of host countries share *some* of the tax revenue they receive from employed Ukrainian migrants in their countries. To be clear, we do not mean introducing new or higher taxes on migrants. Instead, we propose

sharing some of the current revenue stream. For example, consider Latvia. Within standard employment taxes, the social payroll tax is 34.1% of gross wages, and some 20% goes towards pensions. Because the refugees are expected to return to Ukraine, one can argue that the

“pension” part of their taxes should be sent over to Ukraine. Social payroll taxes in other European countries are similar, though the percentage that goes to pensions can vary. For example, 18.6% of employment income in Germany is earmarked for pension insurance.

Table 2: Percentage of refugees employed in selected OECD countries

	Employment rate, %
Poland	65
Great Britain	61
Sweden	56
Netherlands	55
Lithuania	53
Czechia	51
Latvia	43
Ireland	28
Italy	19
Switzerland	19
Germany	18

Source: Zyzik et al. (2023)

This program could create a substantial increase in revenue for Ukraine, while creating an incentive for host governments to send the migrants back to Ukraine (since they don’t pay full taxes). In addition, Ukraine can create a positive incentive for Ukrainian refugees’ return by creating a credit for pension taxes paid from abroad, analogous to the pension credits for in-country employment.

Some simple estimates can illuminate the potential benefits of such a tax-sharing arrangement for Ukraine. For instance, as of December 2023, 43% of all working-age Ukrainian refugees in Latvia were employed, earning an average gross wage of €1,213 per month—79% of the national average wage. If the Latvian government were to allocate the pension component of the

social payroll tax to Ukraine, this would amount to at least €25.3 million annually. While this may seem modest, it is important to remember that Latvia hosts only 1% of all Ukrainian refugees in Europe and has one of the lowest wage levels in the region. A sensible approach to implementing this strategy could start with countries that have shown strong support for Ukraine,

such as Latvia, Lithuania, and Estonia, and then gradually extend the initiative to other European nations. If Latvia achieved Polish (65%) levels of Ukrainian refugees employment, tax-sharing revenues to Ukraine would increase to €38.9 million per annum. To give a point of reference, we note that, according to the Kiel's [Ukraine Support Tracker](#), Latvia has committed €425 million (1.1% of Latvia's GDP) in aid to Ukraine since February 24, 2022. Our estimate of the tax-sharing mechanism corresponds to roughly 10% of the cumulative aid, a significant amount.

To summarize, this transition measure aims to achieve several objectives: 1) raise more revenues for Ukraine; 2) make this revenue an automatic (rather than discretionary) payment; 3) create an incentive for the host countries to stimulate Ukrainian refugees to return to Ukraine; 4) the pension contributions of Ukrainian refugees should at least partially go to their pension accounts in Ukraine.

4. Concluding Remarks

The logic of the war calls for mobilization of Ukraine's economic potential. The current conditions are extremely difficult, but Ukraine must generate more output to prevail in the conflict. With this objective in mind, we propose how Ukraine can achieve tangible results in boosting production and facilitating the return of migrants during the war, targeting a short time frame of two to three years.

We argue that while the war continues, the best prospects for a substantial short-run increase in Ukrainian production lies in increasing exports and meeting demands of defense production. In practice, this means integrating Ukraine into Western supply chains and scaling up the defense industry. Foreign direct investment (FDI) is a natural source of capital, but domestic savings should be mobilized too. The western and southwestern regions of Ukraine, offering relative safety due to their distance from the front lines and proximity to European markets, present the most favorable opportunities for such investments in the nearest future. Additionally, localized war insurance solutions are expected to be most affordable in these regions. We believe that building fortified economic clusters of production is a solution to security risks.

These investments should be supported by greater utilization of available human resources and productivity gains. For the latter, deregulation and digitalization offer the best opportunities. For the former, we argue that better matching and (re-)training of internally displaced persons (IDPs) and population groups that are traditionally not heavily represented in the labor force is the best course to increase labor input. Furthermore, the government must use the strength of democratic processes to develop policies to balance the need of army mobilization and the needs of predictable employer-worker relationships. To the same end, it is essential to ensure safety and create well-paying jobs to motivate Ukrainian refugees to return. During the war, western and

southwestern regions of Ukraine are best positioned to attract refugees, IDPs, and FDI due to their security and market-access advantages. As a transition measure, we also advocate for a tax-sharing mechanism between Ukraine and countries hosting Ukrainian refugees.

We recognize that implementing our recommendations will be challenging, requiring buy-in from allies, substantial resources, and incentives for foreign businesses to invest in Ukraine. Additionally, the return of internally displaced persons and migrants, alongside significant progress in combating corruption, are essential. Most critically, successful implementation demands high state capacity and coherence, as well as a whole-of-government commitment to this initiative. Therefore, mobilizing all necessary resources and securing international support are imperative as we confront these significant challenges to ensure Ukraine's resilience, victory, and prosperity.

While we emphasize that short-term gains in production are likely to happen in western and southwestern regions of Ukraine, the post-war focus should shift to Ukraine's eastern regions to prevent them from falling into a poverty trap and to address spatial disparities in development. Kharkiv, Dnipro, Mariupol, and other urban centers will be an economic backbone for any post-war security architecture. We strongly urge the government, Ukraine's allies, and other stakeholders to develop plans for the recovery of the regions heavily affected by the war.

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