



# Ukraine Economy of the Future (UEF)

## Labor Supply Dynamics

February 2026

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# Summary of the UEF Labor Supply Dynamics Work

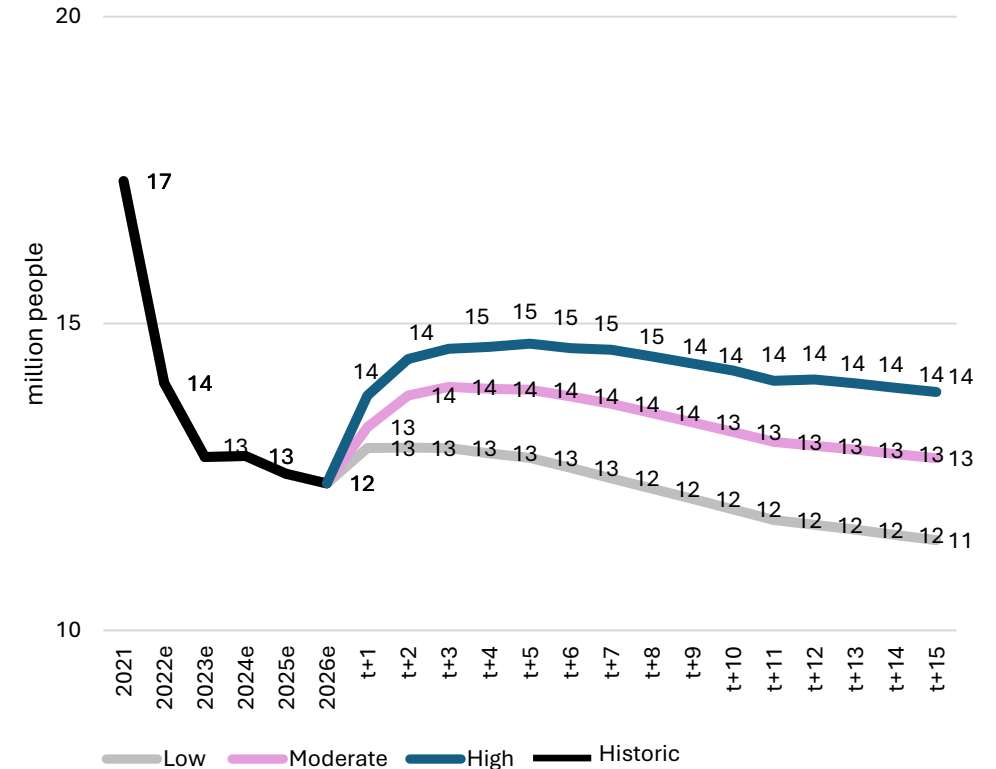
## 1. Ukraine faces a serious labor s challenge

- **Pre-war Ukraine faced a declining population**, driven by falling fertility rates, population aging, and outmigration, **low female labor force participation**, and **low labor productivity**.
- The war has exacerbated labor force challenges with **millions of refugees and internally-displaced persons (IDPs)**, **large mobilization**, **people living with disabilities**, and **skills and geographical mismatches** -> resulting in lower employment and higher inactive rates.
- **Labor shortages are now the primary production constraint faced by firms. At the same time, 13.1% of working-age adults reported job loss in 2025.**
- Going forward, Ukraine will face additional labor challenges: **refugee returns**, **risk of large outmigration post war**, **reintegration of veterans**, and **addressing the needs of vulnerable groups** (veterans, IDPs, people with disabilities) who face labor market entry barriers.
- But there are also **opportunities**: attracting skills through inwards **migration** or from utilizing Ukraine's **educated diaspora**. **AI and technology** has potential to reduce labor shortages.

## 2. The post-war labor supply dynamics would need to be positive to support higher growth and faster income convergence to the EU

- Converging to 25% of EU per capita GDP – the level of Poland when it joined the EU in 2004 – would take 34 years at pre-war growth rates. **Faster growth and income convergence towards EU levels is feasible with strong improvements in all growth drivers (productivity, labor and investment).** Simulations show convergence to 25% of EU levels in 20 years in a moderate-reform effort and 13 years in a high-reform effort growth scenario.
- **Positive labor supply dynamics for the moderate and high growth scenarios** would require a combination of **substantial (more than a third) refugees return**, **demographic stabilization** and **increase in labor force participation (especially female) and lower unemployment**.
- **Caveat:** Labor supply dynamics are subject to significant uncertainty as official population, and many labor statistics have not been available since February 2022 . In addition, labor supply dynamics will depend on many factors outside of domestic policy, including the security situation and the economic situation in countries hosting refugees. The labor supply dynamics in this presentation are scenarios rather than projections.

**Labor Supply in the Growth Model: The Civilian Working Age Population Employed, Historical and Growth Scenarios**



Source: Ukraine Economy of the Future

Note: UEF labor supply scenario modelling uses population data and demographic projections from Ukraine Statistics and the Population Survey by the Institute for Demography and Quality of Life Research, refugee returns projections from UNHCR, and assumptions on the impact of domestic factors and policies consistent with the UEF growth-reform scenarios (see Annex).

# Summary of the UEF Labor Supply Dynamics Work (Ongoing)

The **Ukraine Economy of the Future** aims to be a comprehensive strategy that supports a private sector-led economic recovery and job creation (labor demand) and addresses labor supply constraints. The policies for creating jobs/employment opportunities are discussed in more detail in the UEF summary ppt, while this ppt focuses on supply-side constraints.

### 3. Potential domestic policy levers: *What are the reforms, policies and interventions needed to support positive labor supply dynamics?*

- **Enabling entrepreneurship opportunities** to encourage refugees to return, Ukrainians to stay, and veterans to return to work.
- **Increase access to Housing** (develop the housing market (including the rental market) and accelerate the reconstruction of housing stock) **and to affordable Basic Services** (utilities and municipal services) to encourage refugee returns and address geographical mismatch-in addition to security assurances.
- **Reforms of the Pension System and Labor Income Tax and the Labor Code** to increase labor force participation and flexibility in the labor market.
- **Comprehensive reform of the Labor Code, increase access to quality childcare and elderly care services and social norms interventions to increase female labor force participation.**
- **Provide integrated and well-targeted social and employment services for vulnerable groups including veterans, IDPs, refugees, and people with disabilities** to increase their force participation.
- **Enhance the labor market relevance of Higher Education, Vocational Education and Training (VET) and Active Labor Market Programs (ALMPs) in partnership with the private sector** to address skills mismatch.
- **Improve quality, availability, and operationalization of labor market information** to reduce labor market frictions.

### 4. In addition to the above, the following policy questions/issues are also important, but **more work will be needed** to develop specific policy options:

- **How can Ukraine use AI and technology to alleviate labor shortages ?** Given Ukraine's strong IT talent base and rapid digital transformation, it is well positioned to experiment with AI solutions to offset demographic pressures and improve productivity. **See slide 20 on the potential use AI and technology to alleviate labor shortages**
- **How can Ukraine leverage its diaspora and migration?** Engaging and attracting the Ukrainian diaspora and skilled migrants through effective policies can help supply relevant skills to the market, train Ukrainians, and enable Ukraine to benefit from skills and capital acquired abroad. **See slide 20 on the potential role of migration**

#### Notes:

- **The fiscal costs of infrastructure, social and employment programs will be substantial** (even after potential efficiency savings are realized) so effective targeting of the programs to those in most need, mobilizing private sector participation, calibration of benefit levels aligned with the fiscal envelope, and a strong benefit graduation policy will be essential. In the longer-term, more people in good jobs would reduce the level of government support needed.
- These policy levers will also help **address social tensions and strengthen social cohesion** post war in addition to improving the labor supply.

# Outline

1. Labor supply challenges in Ukraine
2. Labor supply scenarios for the Ukraine Economy of the Future
3. Potential policy levers for the Ukraine Economy of the Future: What are the policies and interventions needed to support the positive labor supply dynamics in the moderate and high growth-reform scenarios?

**Annex: Labor supply scenario modelling assumptions used**

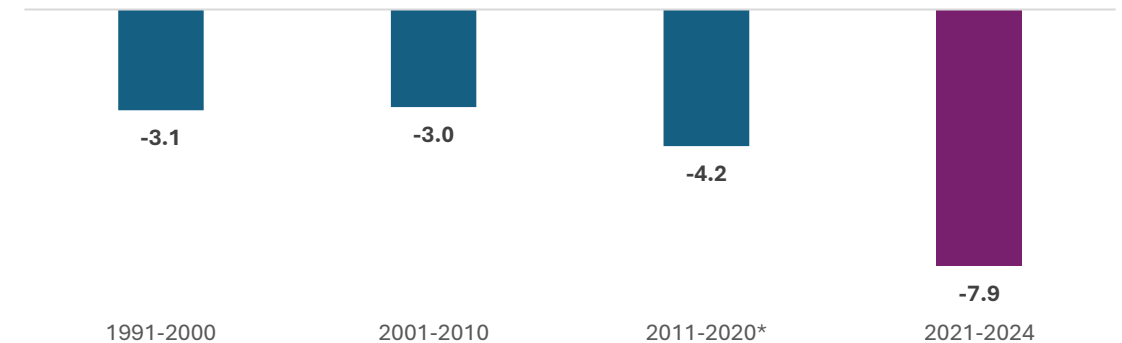


# Labor Supply Challenges (1/5): Pre-war Ukraine faced a declining population and low female labor force participation rates

Pre-war, Ukraine faced a declining population and low female labor force participation rates. Together with low labor productivity, this hindered Ukraine's growth.

- **Between 2000 and 2021, total population declined by about 7 million**, continuing the trend since the 1990s, driven by falling fertility rates, population aging, growing outmigration (see next slide for further details), and compounded by the conflicts in Crimea, Donetsk and Luhansk regions.
- **Labor force participation rate (LFP)** after reaching 65% (of population aged 15-70) in 2013 declined to **61.8% in 2021**.
- **Female LFP** was consistently lower, with an **average of 57%** vs. 70% for men, with especially low rates among women of childrearing age. Strong gender segregation by occupations and sectors contribute to a gender pay gap.
- **Unemployment rate** (ILO definition) **fluctuated around 9% after 2014** - reaching 9.9% in 2021. On average, the unemployment rate was historically higher for men.

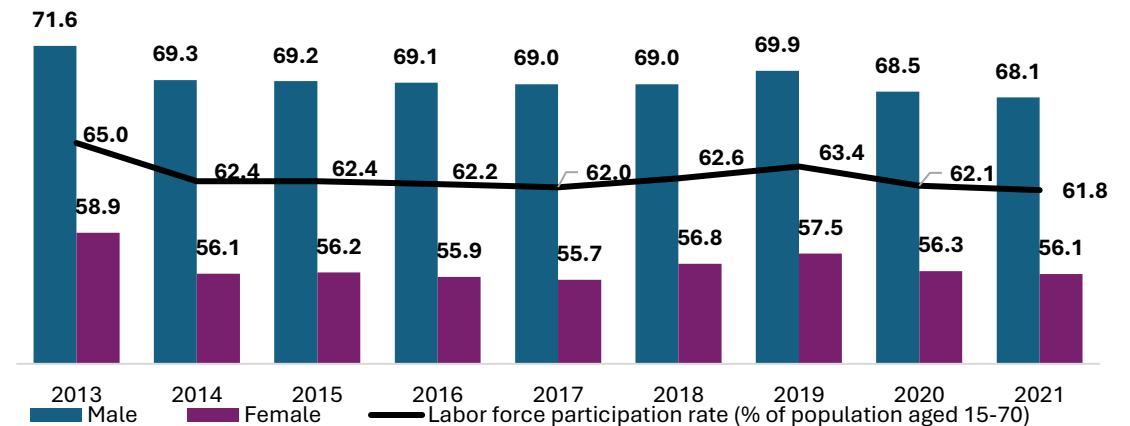
Population changes, millions



\* In 2014 population fell by 2.4 million people to reflect the conflicts in Crimea, Donetsk and Luhansk regions.

Source: Ukrstat, Institute for Demography and Quality of Life Research

Labor Force Participation Rates (% of population aged 15-70)



Source: Ukrstat

# Labor Supply Challenges (2/5): Underlying demographic trends have not been favorable

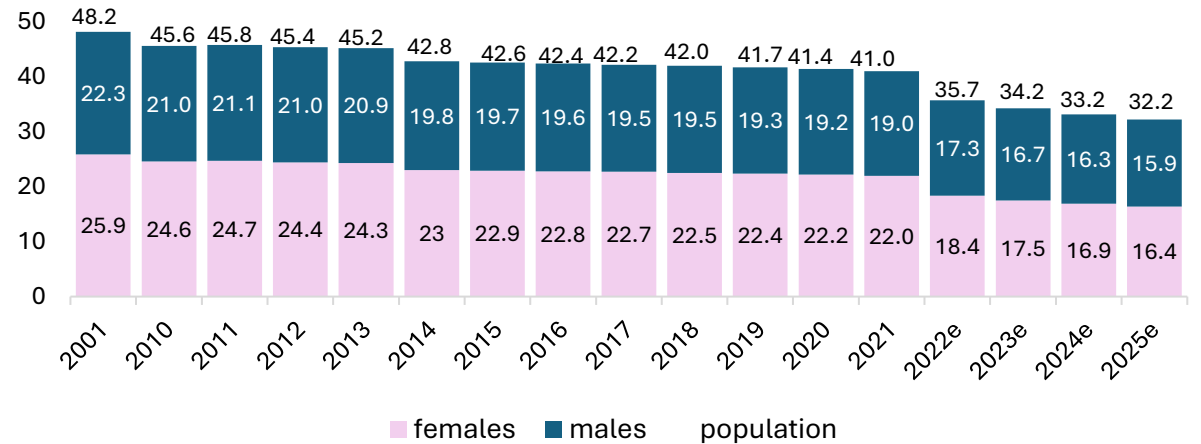
## Ukraine's population has been declining consistently over the last three decades:

- Between 2000 and 2021, demographic changes resulted in a population decline of about **7 million people**, driven by falling fertility rates, population aging, growing outmigration, and compounded by the conflicts in Crimea, Donetsk and Luhansk regions.
- While no official statistics are available, survey\* estimates suggest that the population declined by another **5.3 million people in 2022**, and then another **3.5 million** between 2022 and the **end of 2025**, due to refugee outflows, higher mortality, and falling fertility rates.

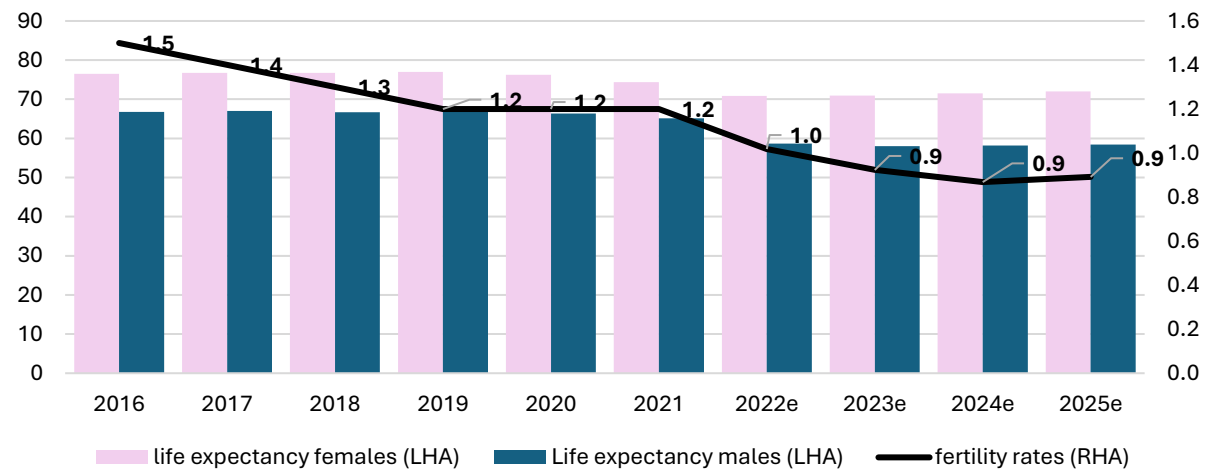
## The war has exacerbated negative demographic trends:

- The **fertility rate** was already low and declining before the war but is estimated to have fallen to 0.9 in 2024, the lowest in Ukraine's history.
- Male life expectancy** was already one of the lowest in Europe (65 years in 2021) and is estimated to have dropped to 58 years by 2025.

Population dynamics by gender, million people



Life expectancy and fertility rates



Source: Ukrstat for data until 2021, WB Staff estimates for 2022-2025, using data from \*Institute for Demography and Quality of Life Research's Survey

# Labor Supply Challenges (3/5): The war has exacerbated Ukraine's labor force challenges, which we see in lower employment rates and higher inactive rates

## The war has exacerbated Ukraine's labor force challenges...

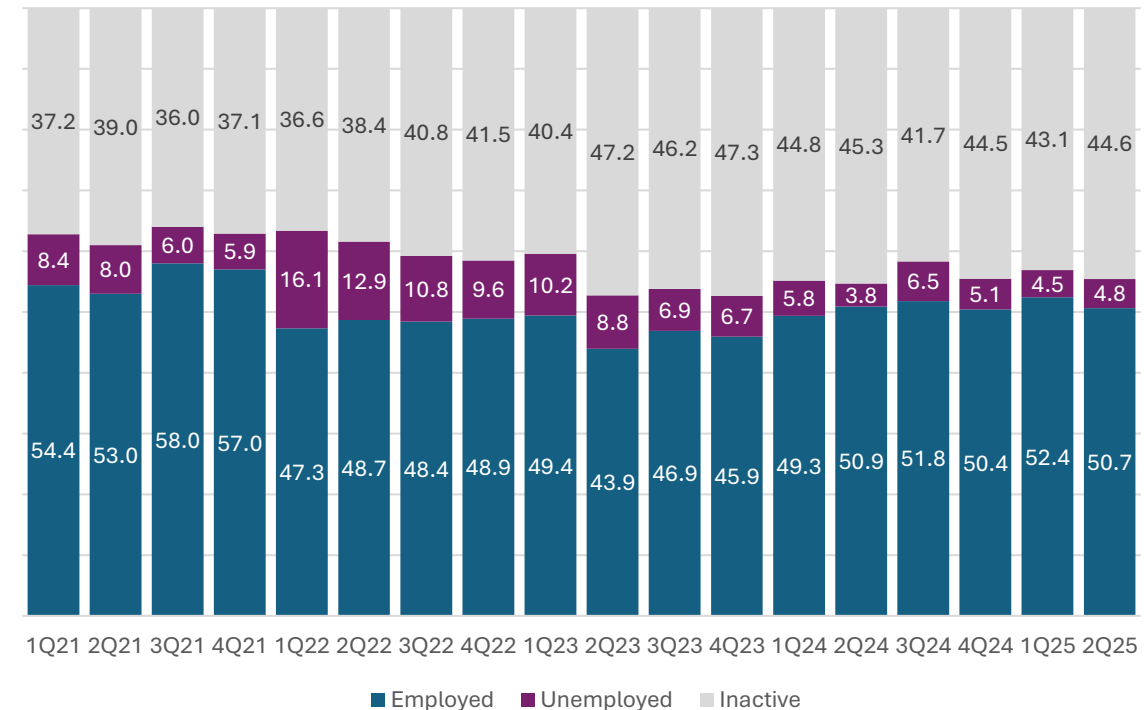
- **Mobilization:** 1.4 million of working-age population in military, of which 800-900,000 are in active fighting (out of the civilian workforce).
- **Veterans:** 1.3 million, of which 817,000 are from the current war, and 130,000 are disabled.
- **Large outmigration:** estimated ~ 6.9 million refugees.
- **Large internal displacement:** estimated ~ 4.6 million IDPs.
- **Disability:** 3 million people with disability certificate in 2024.
- **Skills and geographical mismatches** between labor demand and supply (new jobs vs. existing skills and where jobs are vs. where people are).

## ...which we see in lower employment rates and higher inactive rates

- The **employment rate** has only decreased slightly from 54.4% to 50.7% since Russia's invasion.
- While the unemployment rate has fallen from 8.4% to 4.8%.<sup>‡</sup>
- However, **the share of the inactive** – those not seeking work – in the working age population has increased by nearly 8 percentage points.
- **There is a risk that unemployment due to war-time related disruptions could lead to longer-term inactivity.**

*During the war most of the statistical data collection on population and labor has been suspended. Surveys have become the key data source.*

**Labor Force Participation and Employment Trends, 2021-2025**  
Labor Force Participation Survey\*



\*Note: The fall in unemployment rate suggests that employment includes also military employment, which is excluded from the labor supply in the UEF modeling

Source: National Bank of Ukraine, WB staff

# Labor Supply Challenges (4/5): Ukraine has a growing number of vulnerable groups which face barriers to labor market entry

Results from the Listening to Ukraine (L2UKR) phone surveys that the World Bank has carried out since April 2023 to monitor living conditions and social impacts of the war

## Increasing number of vulnerable groups

- In Q3-2025, **24.3 percent** of households had **at least one vulnerable** household member
- **9.4 percent** of L2UKR respondents report having **at least one war veteran** in their households.
- **9.2 percent** of households have **at least one disabled household member** due to injuries related to the war.
- **10.6 percent** of households report having **at least one internally displaced member**.

## Evidence of barriers to labor market entry among vulnerable population groups

- 30.7 percent of **households with at least one member disabled** by the war report labor income, compared to 45.0 percent of households without a disabled member.
- **Caregiving responsibilities as the main reason for women to not look for a job**, compared to negligible share among men.

## Gaps in access to basic services among vulnerable groups could further add to these barriers in the long run

- **Active Labor Market Programs (ALMPs)** are poorly tailored and targeted. *Out of 160,000 beneficiaries of State Employment Services ALMP: 2% are veterans, 6% are people with disabilities, and 15% are IDPs.*
- More likely to use **healthcare services** and more likely to pay out of pocket when they use them.
- More likely to report **disruptions in their water supply** (20.3 versus 16.1 percent in Q3-2025).

Source: World Bank Listening to Ukraine (L2UKR) Phone Surveys, 2023-2025. World Bank assessment of ALMPs, 2025.

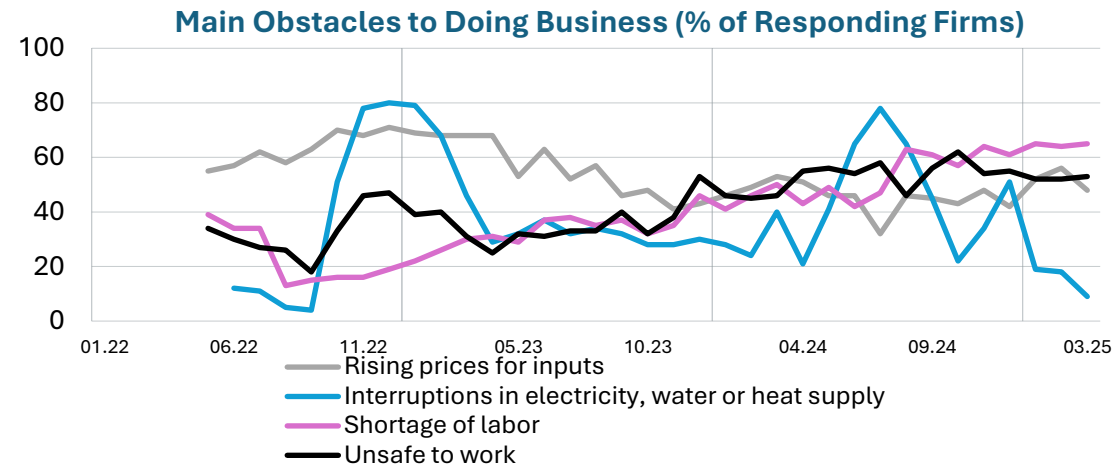
# Labor Supply Challenges (5/5): Labor shortages are now the primary production constraint . Going forward, Ukraine will face multi-faceted challenges

**Labor shortages are now the primary production constraint, surpassing even security risks in some surveys:**

- **Half of companies report that labor shortages constrain their growth in 2025** (significant increase from 19.4% percent of companies in Jan 2023). On the other side, 13.1% of L2UKR respondents reported job losses, and war-related vulnerabilities are barriers to employment.
- **Macro-poverty impacts:** Lower growth; Real wages have gone up, contributing to inflation; Declining labor income among the most vulnerable groups has been the major driver of increased poverty and inequality in 2023-2025. Growing mismatches between skills demand and supply undermines recovery prospects.

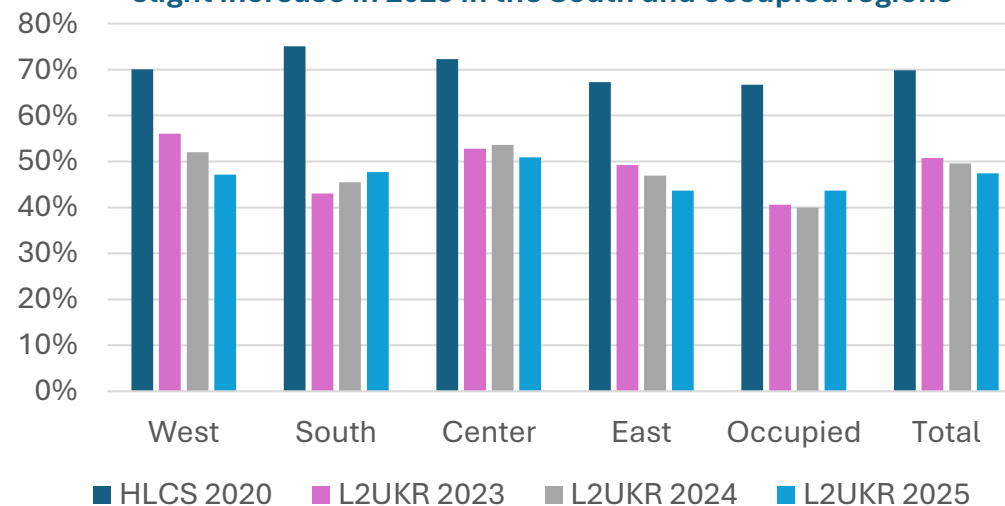
**Going forward, Ukraine faces further multi-faceted challenges:**

- **How to encourage refugees to return:** *How many? Who will return?*
- **How to encourage Ukrainians to stay** once restrictions are lifted.
- **How to reintegrate veterans into the workforce.** *What specific challenges (with disabilities, PTSD) and needs would they have? (According to a small-scale 2023 veteran survey: More than half of veterans expressed interest in starting a business).*
- **How to support IDPs:** *Will they return to where they were displaced from or resettle to new places where the jobs and services are?*
- **How to address skills and geographical mismatches and other causes of labor market friction.**



Source: State Statistics Service, WB Staff.

**Share of HHs with wage income has dropped throughout the country with a slight increase in 2025 in the South and occupied regions**



Source: 2020 HLCS, 2024/25 L2UKR

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# EU convergence within 15 years is possible if Ukraine accelerates its fundamental growth drivers

## Ukraine's previous growth is insufficient for rapid EU convergence:

- Ukraine's GDP p.c. growth (2016-2021, constant USD): **2.5% p.a.**
- EU's GDP p.c. growth (2016-2021, constant USD): **1.5% p.a.**
- Ukraine's GDP p.c. in 2024: **12.5% of EU average**
- **Reaching 25% of EU average (Poland in 2004) would take 30 years**

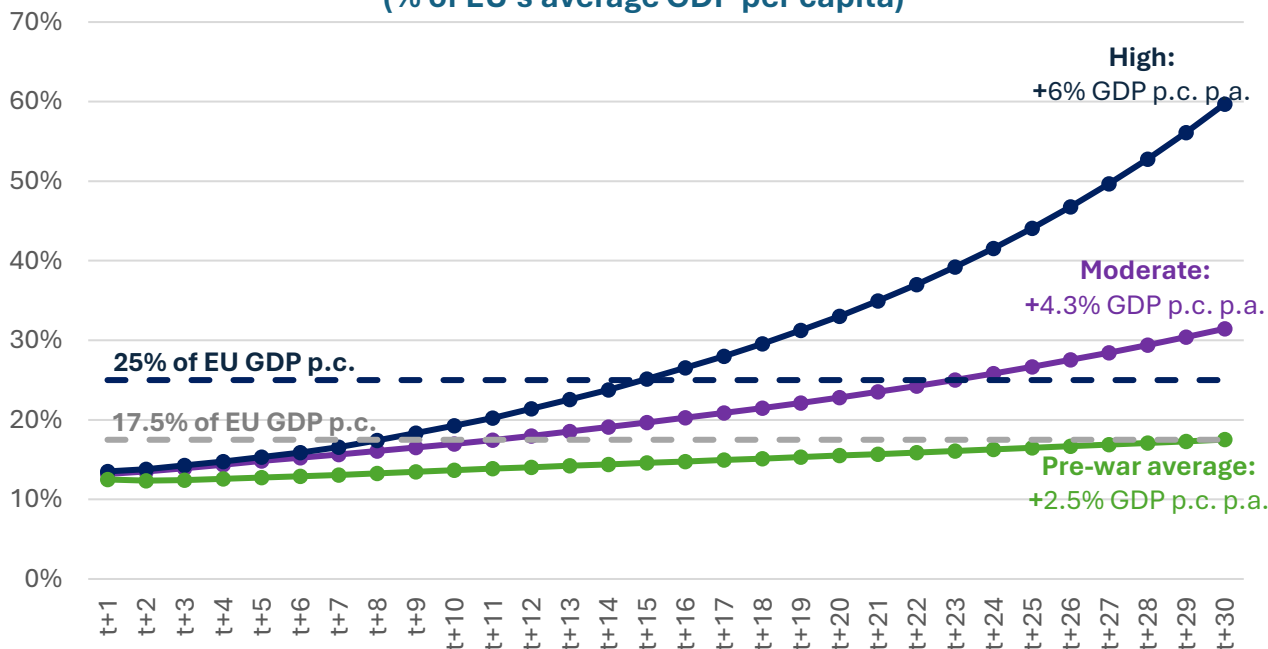
## Faster convergence (23 years with moderate and 15 years with high reform effort) requires a *strong* improvement in growth drivers

1. **Significantly faster annual productivity (TFP) growth:** Gradual convergence from 1.3% pre-war average to 3.3% (more than 2x) in the moderate-reform scenario and 5% (more than 3x) in the high-reform scenario.
2. **Conducive labor dynamics: Positive net migration** (1.9 million in the moderate-reform, 3.1 million in the high-reform scenario), **lower unemployment, increased labor force participation, and improved demographic dynamics.**
3. **Significant increase in annual investment (particularly private)** from 16% of GDP (pre-war average) to just below 30% during reconstruction, converging to a steady state of 19% in the moderate-reform scenario and 24% in the high-reform scenario.

## Average growth rates from t+1 to t+15 in constant USD:

- **Moderate:** GDP grows **3.8% p.a.**, GDP per capita grows **4.3% p.a.**
- **High:** GDP grows **5.9% p.a.**, GDP per capita grows **6.0% p.a.**
- **Pre-war:** GDP grows **1.9% p.a.**, GDP per capita grows **2.5% p.a.**

Ukraine's GDP per capita under different reform scenarios  
(% of EU's average GDP per capita)



Note: The growth figures are in constant USD and assume 5% deflator growth and 5% depreciation per year.

# Modelling (2/3): Conceptual Framework: Labor supply dynamics post-war will be affected by a large number of external and domestic factors and policies

Labor Supply in the Growth Model = Civilian working age population that is looking for work and employed

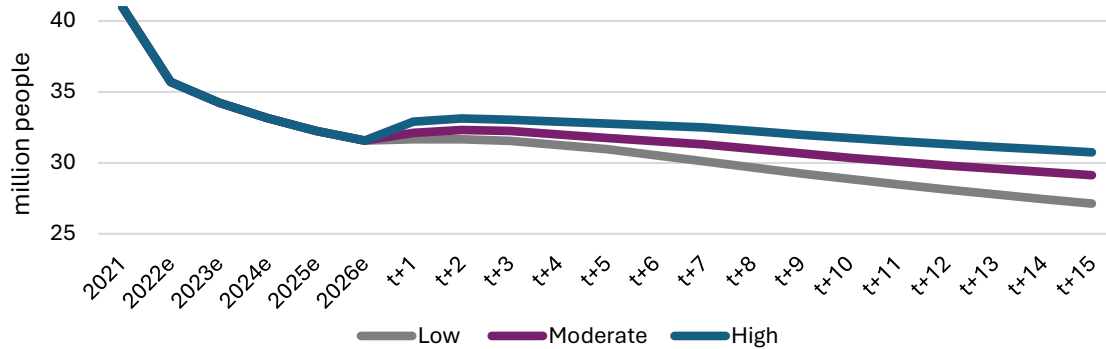
| Population and the Civilian Working Age Population   | Labor Force Participation  | Employment Rate  |
|--|--|--|
| <p><b>Demographics   Population Growth Rate:</b></p> <ul style="list-style-type: none"> <li>• <b>Fertility rate</b> (economic opportunities for women)</li> <li>• <b>Life expectancy</b> (healthcare services and outcomes)</li> </ul> <p><b>Refugee returnees post war (numbers &amp; profile):</b></p> <ul style="list-style-type: none"> <li>• Security and safety</li> <li>• Legal framework for refugees</li> <li>• Jobs and entrepreneurship opportunities (in Ukraine relative to other countries)</li> <li>• Housing and affordable basic services</li> </ul> <p><b>Size of military:</b> Demobilization rate</p> <p><b>Outmigration post war (numbers &amp; profile)</b></p> <ul style="list-style-type: none"> <li>• Martial law</li> <li>• Jobs and entrepreneurship opportunities (in Ukraine relative to other countries)</li> <li>• Family factors (e.g., family is outside of Ukraine)</li> </ul> | <p><b>All labor force:</b></p> <ul style="list-style-type: none"> <li>• How the <b>social benefit system</b> and <b>labor income taxation</b> create (dis)incentives for work.</li> <li>• <b>Labor regulation.</b> <i>e.g., Current Labor Code does not include provisions for flexible work arrangements</i></li> </ul> <p><b>Female LFP:</b></p> <ul style="list-style-type: none"> <li>• <b>Availability and quality of childcare</b> for mothers, <b>elderly and disabled care services;</b> <b>social norms interventions.</b></li> <li>• <b>Labor market regulations</b> <i>e.g., the current labor code prohibits women to work in some occupations and enables women to stay on maternity leave for 6 years which discourages employers to employ women.</i></li> </ul> <p><b>For Veterans and People with Disabilities:</b><br/>Whether there is a system to assess partial work-abilities (<i>currently none</i>) and availability of integrated social, psychological and employment support.</p> | <p><b>Skills mismatch:</b> the level of access to and the labor market relevance (new skills demanded by employers) of higher education, technical and vocational education and training (VET) and active labor market programs (ALMPs); whether there are incentives for employer-driven upskilling and reskilling</p> <p><b>Geographical mismatch:</b> Housing and other factors affecting geographical mobility of workers.</p> <p><b>Labor market frictions:</b> Availability of an integrated system providing information on labor demand and supply to students, jobseekers, employers and policymakers (<i>currently lacking</i>).</p> |

# Modelling (3/3): Ukraine Economy of the Future Labor supply dynamics modelling results by the growth-reform scenarios

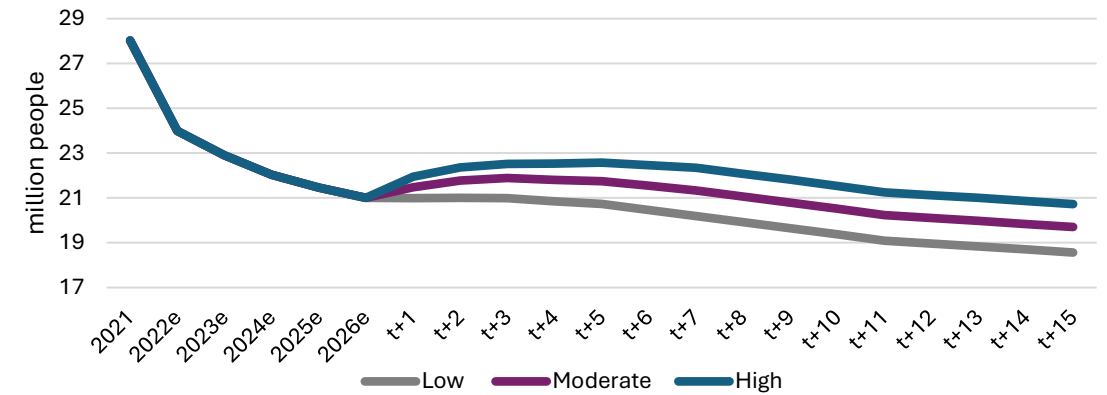
**Labor supply scenario modelling** uses population data and projections from Ukraine Statistics and the Population Survey by the Institute for Demography and Quality of Life Research, refugee returns projections from UNHCR, and assumptions on the impacts of domestic factors and policies consistent with the UEF growth-reform scenarios (see Annex): **The moderate and high growth-reform scenarios have significantly higher total and civilian working age populations, higher labor force participation (especially female) and lower unemployment rates to support a positive contribution of labor to growth.**

**Caveat:** Labor supply dynamics are subject to significant uncertainty as official population, and many labor market statistics have not been available since February 2022. In addition, labor dynamics depend on many factors outside of domestic policy, including the security situation. The labor supply dynamics in this presentation are scenarios rather than projections.

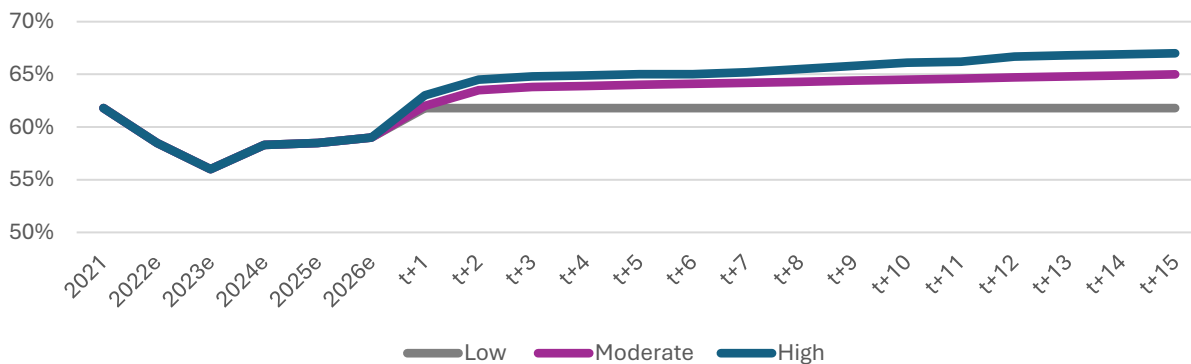
**Population, Historical and in Growth Scenarios**



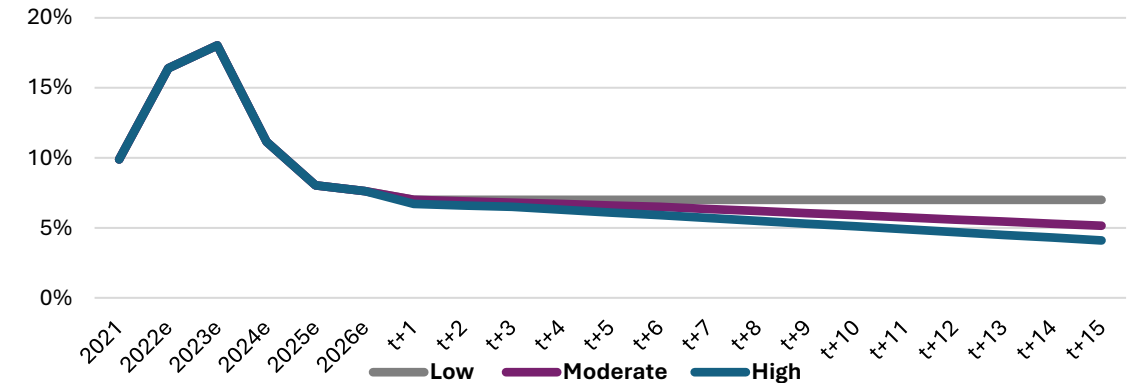
**Civilian Working Age Population, Historical and in Growth Scenarios**



**Civilian Total Labor Force Participation Rate, Historical and in Growth Scenarios**



**Unemployment Rate, Historical and in Growth Scenarios**



# Potential Policy Levers (1/5): Entrepreneurship opportunities (Finance, Business deregulation and Firm support) to encourage refugee returns, Ukrainians to stay and veterans to return to work

Labor can work as employees or as entrepreneurs. Policy levers to enhance entrepreneurship opportunities can act as a strong pull-factor for labor supply.

| POLICY LEVER  | KEY INTERVENTIONS STARTING NOW (BEFORE THE WAR ENDS)   | KEY INTERVENTIONS IN YEAR 1 POST WAR  | KEY INTERVENTIONS IN YEARS 2-5 POST WAR   |
|---|--|---|---|
| <p><b>Business Deregulation</b><br/><i>Accelerate EU-aligned business environment &amp; regulatory reforms to spur firm entry, exit and dynamism and increase ease of doing business.</i></p> | <ul style="list-style-type: none"> <li>Expand <b>functionalities of the e-Permit system</b> to digitalize more business licensing and permitting processes.</li> <li>Continue implementing the <b>Action Plan for the Deregulation of Economic Activities</b> and Improvement of the Business Climate.</li> </ul>  | <ul style="list-style-type: none"> <li>Adopt a <b>deregulation law</b> that introduces electronic permits and risk-based controls in place of traditional business inspections.</li> </ul>  |   |
| <p><b>Promote entrepreneurship and Support MSMEs</b></p>  | <ul style="list-style-type: none"> <li><b>Improve the targeting, efficiency and impact of existing government firm support programs to MSMEs and start-ups</b> by focusing on high-growth potential firms and productive entrepreneurial ventures. This includes reforms to the <b>5-7-9 subsidized finance program</b> and the <b>eWork business grants program</b> to better respond to skills and labor demand and increase uptake and to <b>active labor market programs</b> for veterans and persons with disabilities to enable a transition into entrepreneurship.</li> </ul> | <ul style="list-style-type: none"> <li>Develop alternative financing instruments targeted at MSMEs, such as leasing and factoring (i.e., the sale of unpaid invoices to financial institutions) by enacting secondary legislation to implement the <b>Factoring Law</b>.</li> <li>Support start-ups by scaling-up <b>Diia Business Programs</b> and the Innovation Startup Fund.</li> </ul> | <ul style="list-style-type: none"> <li><b>Rollout of alternative financing instruments</b> targeted at MSMEs, such as leasing and factoring.</li> </ul> |

# In Ukraine, executing a successful jobs agenda requires both stimulating private sector-led job creation and increasing skilled labor supply

**The Ukraine Economy of the Future** aims to be a comprehensive strategy that supports a private sector-led economic recovery and job creation (labor demand) *and* addresses labor supply constraints.

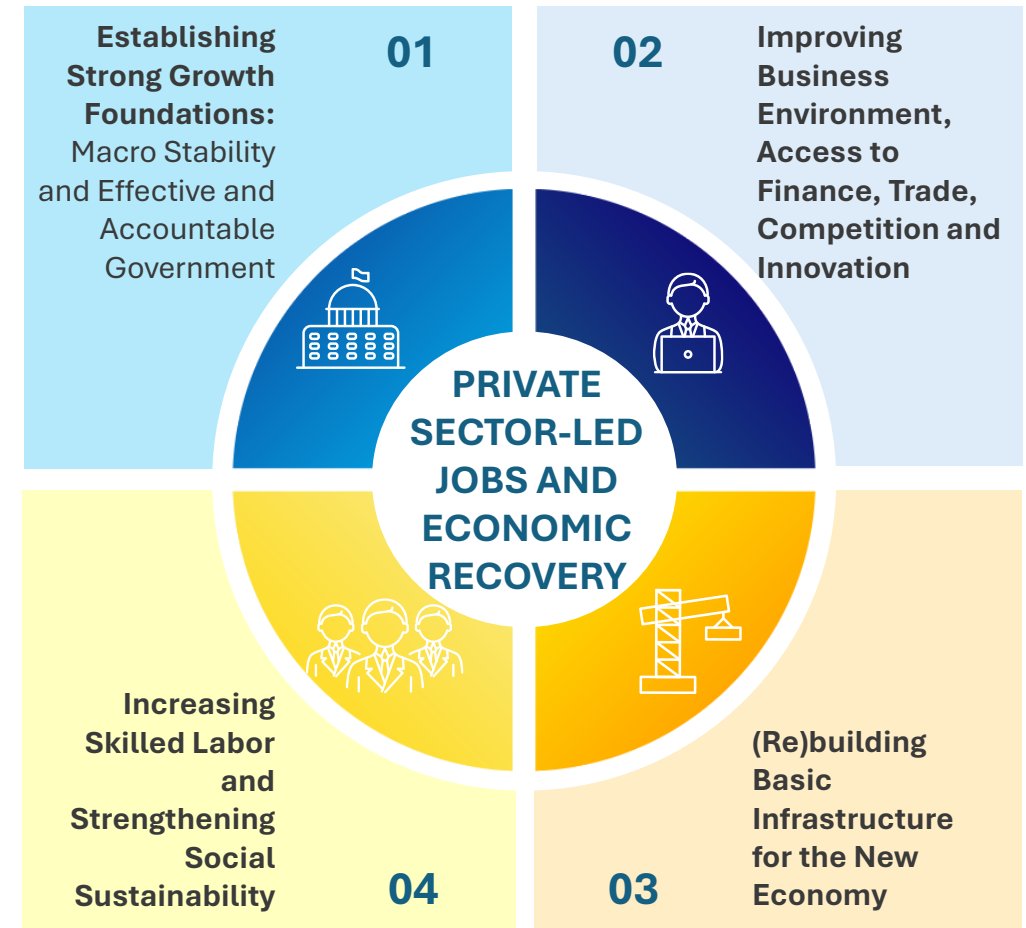
- On the **labor demand side**, critical policy interventions include ensuring **macro stability** and **effective governance**, improving the business **regulatory framework**, increasing **access to capital**, and rebuilding **basic infrastructure**.

→ These are covered in Policy areas 1 to 3 of the UEF. Details on these areas are contained in the UEF summary slide deck.

- On the **labor supply side**, critical policy interventions include strengthening **entrepreneurship opportunities**, ensuring **housing** and affordable **basic services**, reforms to pensions, labor income tax, **labor code**, increasing access to high quality **childcare and care services**, provision of **integrated and well targeted services** for vulnerable groups, effective **skills development** and **active labor market programs**.

→ **These policy levers** are covered in Policy areas 2 and 4 of the UEF and **presented in detail in the next set of slides**.

## UEF Policy Areas



# Potential Policy Levers (2/5): Housing and affordable Basic Services to encourage refugee returns and address geographical mismatch

| POLICY LEVER  | KEY INTERVENTIONS STARTING NOW (BEFORE THE WAR ENDS)   | KEY INTERVENTIONS IN YEAR 1 POST WAR   | KEY INTERVENTIONS IN YEARS 2-5 POST WAR   |
|---|--|--|---|
| <p><b>Housing</b></p> <p><i>Develop the housing market and accelerate the reconstruction of and access to housing</i></p>   | <ul style="list-style-type: none"> <li>• Adopt the <b>Fundamental Housing Law</b>, followed by approval of the <b>Housing Sector Strategy</b>.</li> <li>• Mobilize private capital through banks for mortgage lending by <b>reforming eOselia</b> (the government mortgage financing program), enacting the <b>Securitization law</b>, and implementing the <b>NBU mortgage market lending strategy</b>.</li> </ul>  | <ul style="list-style-type: none"> <li>• Establish a <b>regulatory framework for a formal rental market</b>.</li> <li>• Strengthen <b>housing management</b> practices to improve the operational use of the housing stock, including enhanced energy efficiency.</li> </ul>   | <ul style="list-style-type: none"> <li>• <b>Scale up well-targeted programs</b> for permanent housing solutions and their management for all, including for IDPs and underprivileged groups.</li> <li>• Strengthen the <b>construction finance legal framework</b>.</li> <li>• Establish an EU-aligned policy and regulatory framework for investment in more <b>efficient and green construction</b>.</li> </ul>   |
| <p><b>Basic Services</b></p> <p><i>Strengthen sustainable and affordable access to utilities and municipal services</i></p> | <ul style="list-style-type: none"> <li>• <b>Repairs of critical infrastructure and systems to enable service delivery</b>, including restoring basic municipal services in conflict-affected areas. Incorporate build-back-better (BBB) principles into infrastructure investment design packages, where possible.</li> <li>• Adopt a methodology for <b>prioritizing, sequencing and targeting financial support at the hromada level</b> and reform as required <b>fiscal transfer mechanisms</b> to most effectively channel and accelerate local investments.</li> </ul> | <ul style="list-style-type: none"> <li>• Formulate and adopt <b>strategic investment plans for restoration and recovery of prioritized hromadas</b> – focusing on larger cities – based on updated demographic and economic data and infrastructure and service delivery gaps.</li> <li>• Strengthen <b>targeted subsidies and cross-subsidization mechanisms</b> to protect low-income groups from rising service costs. Assess current subsidies and non-payments to rationalize.</li> </ul> | <ul style="list-style-type: none"> <li>• <b>Update key regulations</b> that underpin urban and local recovery through a BBB approach and aligned with EU requirements (<b>Urban Code, Housing Code, Building Code and Land Management policies</b>).</li> <li>• Continue <b>implementing prioritized municipal investments</b> following the BBB approach.</li> <li>• <b>Revise tariff structures</b> to enable cost recovery while protecting vulnerable consumers.</li> </ul> |

# Potential Policy Levers (3/5): Pension system, Labor income taxation, Labor code, Access to childcare and care services to increase labor force participation

| POLICY LEVER  | KEY INTERVENTIONS STARTING NOW (BEFORE THE WAR ENDS)   | KEY INTERVENTIONS IN YEAR 1 POST WAR   | KEY INTERVENTIONS IN YEARS 2-5 POST WAR   |
|---|--|--|---|
| <p><b>Pensions</b></p> <p>Pension system overhaul to strengthen work incentives, improve fairness, and achieve fiscal sustainability</p>  | <ul style="list-style-type: none"> <li>The Government is looking at overhauling the pension system to improve fairness, adequacy and fiscal sustainability. The design of the reformed system and the pillars (State-funded basic pensions, earnings-related/contribution-based component designed to promote formal work participation and Occupational pensions for military and other hazardous professions to replace the current system of special pensions) is under consideration. <b>The pension reform should strengthen the incentives for formal work participation.</b></li> </ul> |  |   |
| <p><b>Labor regulations and Labor Income Taxation</b></p> <p>Comprehensive labor market regulation and labor income taxation reforms to increase labor participation and reduce labor informality</p> | <ul style="list-style-type: none"> <li><b>Enact (now) and implement (year 1 onwards a comprehensive reform of the Soviet-era labor code.</b> The modern labor code should encourage more flexible work arrangements, re-define employer-employee relationships, address specific barriers to female employment, e.g., lift prohibitions on women working in some occupations, improve social dialogue, define the minimum wage floor and process to set up the minimum wage, and reduce administrative burdens for firms to formally employ and dismiss workers.</li> </ul>                    | <ul style="list-style-type: none"> <li><b>Implement the minimum wage system and formula</b> in accordance to the revised Labor Code .</li> </ul> | <ul style="list-style-type: none"> <li><b>Introduce a progressive personal income tax</b>, including a tax-free allowance and lower marginal rates at the bottom of the income distribution to promote strong formal work participation.</li> </ul> |
| <p><b>Child, elderly and disabled care services</b></p> <p>Increase access and quality of child, elderly and disabled care to support FLFP</p>  | <ul style="list-style-type: none"> <li><b>Increase access to high quality childcare:</b> (i) Implement the new preschool law and new strategic framework for Early Childhood and Preschool Education (ECPE); (ii) Implement the eNursery and eKindergarten voucher awarded to working mothers to increase childcare hours and incentivize FLFP; and (iii) Implement new childcare schemes in accordance to the revised Labor Code.</li> <li>Increase the provision and quality of <b>community-based social and care services</b> as well as social norms interventions.</li> </ul>            |  |   |

# Potential Policy Levers (4/5): Integrated social and employment services for vulnerable groups to facilitate their entry into the labor market

| POLICY LEVER   | KEY INTERVENTIONS STARTING NOW (BEFORE THE WAR ENDS)  | KEY INTERVENTIONS IN YEAR 1 POST WAR  | KEY INTERVENTIONS IN YEARS 2-5 POST WAR  |
|--|---|---|--|
| <p><b>Integrated Services for Veterans and Persons with Disability</b></p> <p>Provide integrated social and employment services for vulnerable groups including veterans and persons with disability to integrate them into the civilian workforce</p> | <ul style="list-style-type: none"> <li>• Adopt <b>legislation on state veteran policy to facilitate the transition of veterans from military service to civilian life</b>, by increasing support and incentives for veterans to move into work, better addressing physical and mental health issues among demobilized personnel. New initiatives must ensure integration with existing systems and programs.</li> </ul> | <ul style="list-style-type: none"> <li>• Introduce the regulatory basis for the delivery of a <b>modern system of employment services, benefits, and social services for persons with disabilities</b>.</li> <li>• Approve regulations to enable coordinated delivery of <b>economic and social reintegration support for veterans</b>.</li> <li>• Reform <b>active labor market programs</b> by State Employment Service targeted at veterans and persons with disability.</li> <li>• Adopt amendments to improve <b>access to rehabilitation services</b>.</li> </ul> | <ul style="list-style-type: none"> <li>• Deployment of <b>modern case-management system that integrates different ministries</b> and invests in physical, digital, and human infrastructure to implement the new disability, social services, social assistance, and veterans support system.</li> </ul> |

# Potential Policy Levers (5/5): Skills development and Active labor market programs to address skills mismatch and labor market frictions

| POLICY LEVER  | KEY INTERVENTIONS STARTING NOW (BEFORE THE WAR ENDS)   | KEY INTERVENTIONS IN YEAR 1 POST WAR   | KEY INTERVENTIONS IN YEARS 2-5 POST WAR   |
|---|--|--|---|
| <p><b>Skills development</b></p> <p>Strengthen training and skills programs to reskill and address skills mismatches</p>      | <ul style="list-style-type: none"> <li>• <b>Implement and scale up all the key provisions of the new law on vocational education</b>, including qualification assessment, institutional audit, ownership transfer, supervisory board, and dual training financing, to improve the quality, relevance, and governance of vocational education</li> <li>• Pilot a <b>labor market intelligence and information system (Obrii)</b> to inform and guide training providers.</li> </ul> | <ul style="list-style-type: none"> <li>• <b>Establish the regulatory framework and incentives</b> to expand high-quality, job-relevant <b>skilling and re-skilling programs</b> in partnership with the private and education sectors, including <b>PPP models</b>.</li> <li>• Strengthen <b>the quality of programs and flexible learning pathways at higher education institutions</b>, including support for veterans and micro-credential short-programs.</li> </ul> | <ul style="list-style-type: none"> <li>• Establish a <b>Labor Market Observatory</b> to regularly generate and disseminate skills and labor market information.</li> <li>• Expand high-quality, job-relevant <b>skilling and re-skilling programs for recovery and reconstruction</b> in partnership with the private and education sectors, including <b>PPP models</b>.</li> <li>• <b>Streamline TVET and higher education networks</b> and align with European Standards.</li> </ul> |
| <p><b>Active labor market programs</b></p> <p>Improve programs to address labor market rigidities and increase employment</p> | <ul style="list-style-type: none"> <li>• Develop and approve regulations to overhaul the <b>State Employment Service (SES)</b>.</li> </ul>   | <ul style="list-style-type: none"> <li>• Reform the <b>SES training vouchers, short term skills training for the unemployed</b> to better respond to skills and labor demand.</li> <li>• Implement the new regulations of the <b>State Employment Service</b>.</li> </ul>  | <ul style="list-style-type: none"> <li>• Implement the <b>EU’s “Youth Guarantee” initiative</b> to expand youth internship programs.</li> </ul>   |

# Potential use AI and technology to alleviate labor shortages

**Given Ukraine's strong IT talent base and rapid digital transformation**, it is well positioned to experiment with AI solutions to offset demographic pressures and improve productivity.

- Active deployment of AI is helping Ukraine address workforce gaps caused by mobilization and emigration by automating routine tasks and enhancing analytical and service capabilities.
- Adoption spans hospitality, retail, healthcare, government, and enterprise sectors, maintaining operational efficiency.

## Selected Examples

- Diia & Ministry of Digital Transformation – AI pilots improve public service delivery and reduce administrative workload.
- Epicentr – Automates product descriptions, customer inquiries, and website management in retail operations.
- DIM Group & Perfect Group – AI supports marketing, planning, and data analysis, enabling staff to focus on high-value tasks.
- SoftServe & N-iX – IT firms provide AI and ML solutions to automate processes across industries.

## Key policy interventions

- **Regulatory & Legal Framework**, including National AI strategy & ethical guidelines, secure, GDPR-aligned data access & sharing, strengthened intellectual property protections
- **Talent Development & Education**, including public-private AI partnerships, reskilling & upskilling initiatives for workforce
- **Digital Infrastructure & Data Ecosystem**: cloud platforms & AI-ready public datasets, AI-enabled e-government services
- **International Collaboration**: Alignment with EU and OECD AI standards

# Potential Role of Labor Migration in Post-War Recovery

Ukraine could partially offset labor shortages by attracting workers from countries with more favorable demographic trends—if economic conditions allow leveraging wage differentials and if proactive policies support social and economic inclusion.

Long-term labor inflows might have been needed regardless, given demographic decline and potential outmigration linked to EU accession.

## Potential Benefits

- **Low fiscal cost:** Higher Ukrainian wages relative to sending countries may make incentives unnecessary.
- **Flexible/time-bound:** Policies can be adjusted in response to refugee returns or shifts in labor demand.
- **Regional partnerships:** Cooperation with Central Asian countries may ease cultural adaptation.

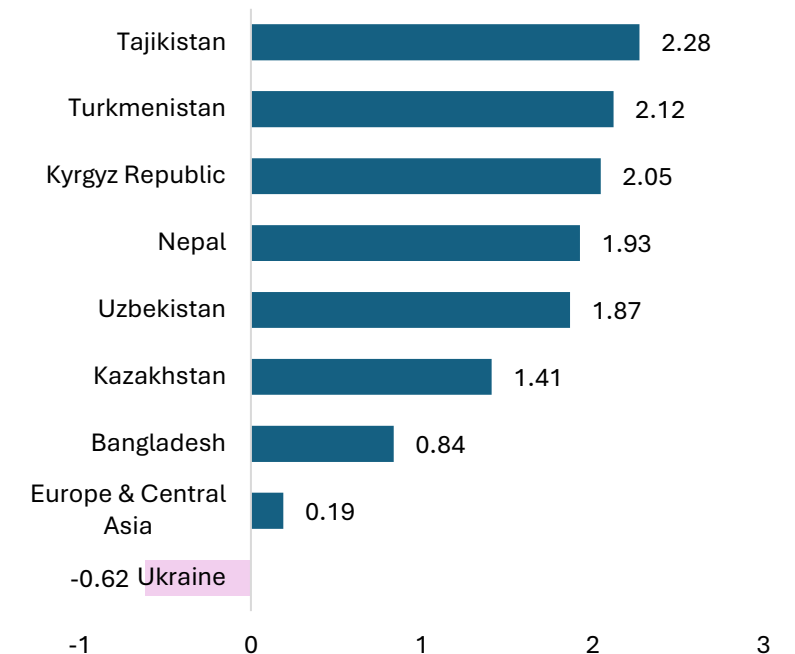
## Limitations / Risks

- Dependent on ceasefire and security scenarios.
- Integration barriers (language, culture—especially for more culturally distant groups).
- Difficulty in recognition of skills leading to occupational downgrading
- Risks of irregular/unsafe migration if not planned; requires systems for regular entry, documentation, integration, and access to basic services.

## Key policy interventions

- Mapping of skill needs in Ukraine vs. skill supply in potential sending countries – **during the war**
- Review of effective migrant integration models applicable to Ukraine – **during the war**
- Prepare legislation enabling managed migration – **in year 1 post war**
- Provide integration support for migrants, including information about employment opportunities and access to public services – **in year 1-5 post war**

Annual population growth rate, % in 2020 Ukraine vs Other countries



Source: World Development Indicators, 2025

# Annex: Labor supply scenario modelling assumptions used



# UEF Labor supply modelling (1/3): Demographic data and assumptions used

- **The latest official data (Ukraine Statistics) on population is available only to end-2021.** Since 2022, under martial law, the official statistical survey have been suspended.
- **UEF labor supply modelling uses the official population statistic for 2021 and apply annual projected changes in population from the Population Survey by the Institute for Demography and Quality of Life Research** (also used by the Ministry of Economy) to project the population\* from 2022 onwards.
  - Due to some differences in methodology between official data and the Institute's data regarding the total population at the starting point (beginning of 2022), UEF uses the projected annual changes in population from 2022 onwards from the Population Survey applied to the official data for 2021, rather than the projected population size from the Survey.
- **Key demographic trends and projections from 2022 to 2051 in the Population Survey by Institute of Demography :**
  - Negative **net migration until the end of 2026** (war is assumed to continue through 2026), turning slightly positive from 2027 onwards. *The survey does not appear to assume significant refugee returns after 2026.*
  - Total **fertility rates** are falling below 1 during the war and recover to 1.2 starting from 2027.
  - **Female life expectancy rate** gradually increases from 71 years in 2022 to 79 years in 2050.
  - **Male life expectancy rate** gradually increases from 59 years in 2022 to 69 years in 2050.
- **\*The UEF uses the annual projected changes in population from the Population Survey for the demographic dynamics for all growth scenarios, with the following adjustments:**
  - Add the estimated refugee post war returns from the UNHCR refugee return modelling (next slide).
  - Assume a positive reform impact and higher fertility rates for the high growth-reform scenario in the steady state (after t+7).

# UEF Labor force modelling (2/3): UNHCR refugee modelling results used

UNHCR is currently undertaking refugee modeling using a micro-level agent behavior model developed specifically for Ukraine and building on UNHCR refugee intention surveys.

- *Model parameters:* security and safety situation, legal framework and socio-economic factors to predict refugee returns (number, age/gender/education profile and geography).
- *Preliminary results are based only on security and safety factors:* 2.1 million additional people are expected to return in the first two years (by end of t+2) of a “fragile peace with concessions” scenario.

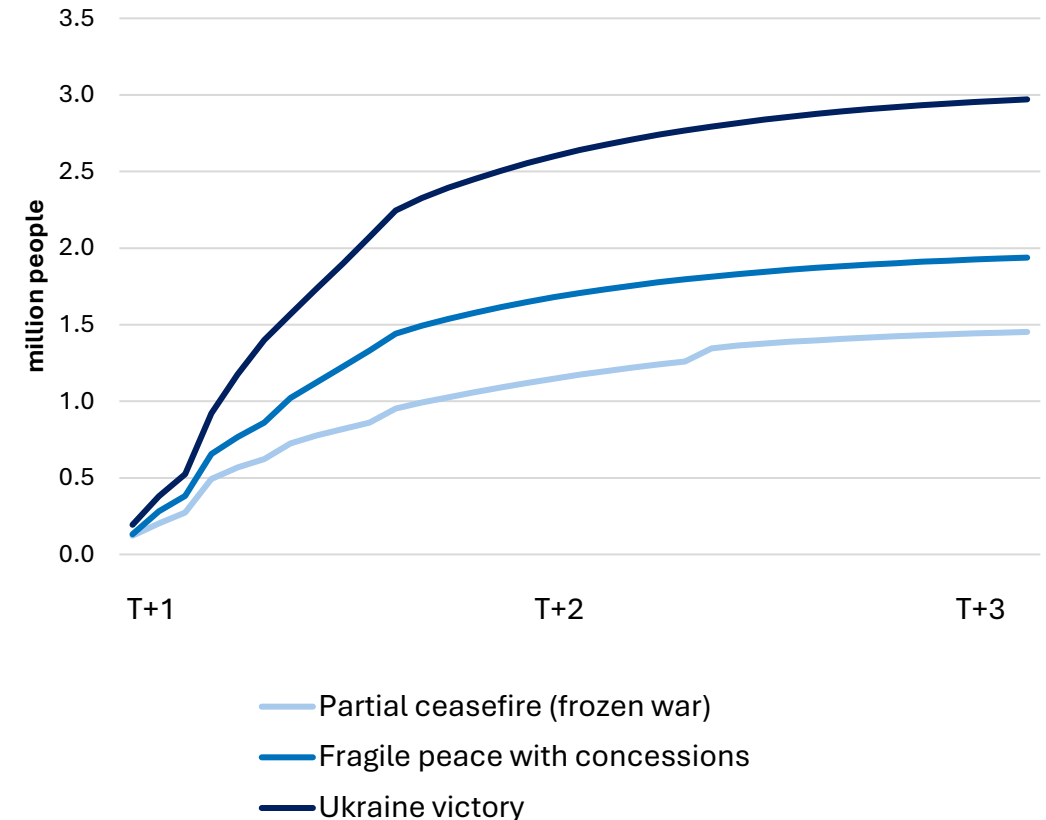
The UEF will use the number and the gender and age profile of refugees from the UNHCR model for the refugee part of the population modelling.

- The returns under the “fragile peace with concessions” is used in the **high growth-reform scenario i.e. assume a return of 2.1 million by end of t+2.**
- 25% and 60% of these numbers are used for the **low and moderate growth-reform scenarios**, i.e., assume a **return of 0.5 and 1.3 million people by end of t+2**, respectively.

**Timeline for the UNHCR modelling is an update in mid-November and final results end-January 2026:**

- The WB will provide macroeconomic parameters from the UEF to UNHCR so that there is alignment on the macroeconomic assumptions.
- The UEF will use updated model results as they become available.

Cumulative returns per scenario



Source: UNHCR, December 2025

# UEF Labor force modelling (3/3): Summary of assumptions used in each scenario

| Growth-Reform Scenarios | Population and Civilian Working Age Population Parameters   | (Civilian) Labor Force Participation Parameters  | Employment Rate Parameters  |
|-------------------------|---|--|---|
| All Scenarios           | <ul style="list-style-type: none"> <li>• <b>Gradual and partial demobilization due to high defense needs:</b> only 50,000 in the first year, 100,000 in the second year, rising to 150,000 per year until t+5, so that total amount of demobilized people reaches 600,000 over the first five years, with regular army stays at around 800,000 at a steady state (aligned with NATO's assessment).</li> <li>• <b>New outwards migration is limited in the first years assuming war-time restrictions will not be completely lifted</b> even after the end of Martial law. Currently assume 100,000 people per year during the first two years. Only in case of low reform scenario outwards migrations continues after t+2.</li> <li>• The <b>working age population</b> is growing gradually growing to about <b>68%</b> of total pop due to some refugee return and demobilization</li> </ul> |  |   |
| Low Growth-Reform       | <ul style="list-style-type: none"> <li>• Total <b>refugee return</b> is limited to <b>0.6m</b>.</li> <li>• Total <b>population</b> will continue to decline after t+2, based on pre-war fertility and mortality rates.</li> </ul>   | <ul style="list-style-type: none"> <li>• <b>LFP rate</b> stays at pre-war level of <b>61.8%</b>. <b>Female LFP</b> remains at the estimated current level of <b>53%</b>.</li> <li>• <b>50% of veterans</b> return to the civilian labor force.</li> </ul>  | <ul style="list-style-type: none"> <li>• <b>Employment rate</b> stays constant at <b>57%</b> (slightly higher than pre-war level).</li> <li>• <b>Unemployment rates</b> of <b>7%</b></li> </ul>   |
| Moderate Growth-Reform  | <ul style="list-style-type: none"> <li>• Total <b>refugee return</b> of <b>1.9m</b>, of which 1.5m in the first two years.</li> <li>• Total <b>population</b> will continue to decline after t+2, based on pre-war fertility and mortality rates.</li> </ul>  | <ul style="list-style-type: none"> <li>• <b>LFP rate</b> recovering to <b>64%</b> on average (slightly above pre-war level). <b>Female LFP</b> is improving slightly to <b>57%</b> on average (vs 56% pre-war.)</li> <li>• <b>70% of veterans</b> return to the civilian labor force.</li> </ul> | <ul style="list-style-type: none"> <li>• <b>Employment rate</b> improves gradually to <b>60%</b> on average.</li> <li>• <b>Unemployment rate</b> is reduced to 7% in t+1; then decreases by 0.1 p.p. until t+6 and by 0.15 p.p. thereafter (<b>6.2%</b> on average).</li> </ul>   |
| High Growth-Reform      | <ul style="list-style-type: none"> <li>• Total <b>refugee return</b> of <b>3.1m</b>, of which 2.3m in the first two years (in line with UNHCR model)</li> <li>• Total <b>population</b> will stabilize and then remain above <b>30 million</b>. Fertility rates are assumed to increase in the steady state (after t+7) on the back of reforms</li> </ul>   | <ul style="list-style-type: none"> <li>• <b>LFP rate</b> improves to <b>66%</b> on average driven by a gradual increase in <b>Female LFP</b> rate to <b>64%</b> in t+15 (vs 56% pre-war)</li> <li>• <b>90% of veterans</b> return to civilian labor force</li> </ul>                             | <ul style="list-style-type: none"> <li>• Higher growth and demand for labor improve <b>employment rate</b> to <b>62%</b> on average to 65% in t+15.</li> <li>• <b>Unemployment rate</b> is reduced to 6.7% in t+1; then decreases by 0.1 p.p. until t+3 and by 0.2 p.p. thereafter (<b>5.5%</b> on average).</li> </ul> |