

A WARTIME LABOR MARKET: THE CASE OF UKRAINE

BY

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Key Points

- ❑ Severe, unprecedented shock to the labor market
- ❑ Rich data and strong institutions enable high-quality analysis
- ❑ Unique opportunity to study labor-market adjustment during war

Why It Matters

- ❑ War will leave lasting economic and social scars
- ❑ Insights can guide policy during the conflict and in post-war recovery
- ❑ Changing narrative, resilience of Ukraine's labor market

Modern economics of war, what do we know? Selected papers

Who wins wars? Jonathan Federle, Dominic Rohner, Moritz Schularick - “deeper pockets” help win wars. Construct a fine-grained dataset covering more than 700 interstate disputes and rely on exogenous resource price shocks to estimate the causal effect of windfall gains on winning chances in interstate conflicts.

Federle, Jonathan, Andre Meier, Gernot J Muller, Willi Mutschler, and Moritz Schularick. 2024. “The Price of War.” CEPR Discussion Paper No. 18834, 1194–1225

Benmelech & Monteiro (2025), “The Lasting Economic Scars of War,” VoxEU column & NBER WP

Novta & Pugacheva (2020/2021), “The Macroeconomic Costs of Conflict,” IMF WP and Journal of Macroeconomics

Bozzoli et al. (2021), “The Global Economic Burden of Violent Conflict” (DSF project paper)

Broadberry, Stephen, and Mark Harrison. 2020. The Economics of the Second World War: Seventy Five Years On. Centre for Economic Policy Research.

Papers on what conditions drive countries towards wars, papers on international cooperation, economic history literature focused on specific wars.

War in a modern economy

- ❑ Unique multi-source data (Work.ua, SES/Helvetas)
- ❑ Descriptive, but also econometric analysis
- ❑ Analysis by region and industry
- ❑ Clear policy implications

Minor suggestions:

Data appendix

- How data from the job ads was collected and compiled
- I appreciated the details on the job posting mechanics (subscriptions), and possible resume posting biases
- How decision to break industry into military/non-military compare to similar papers?

Shock to the labor force

- Is there a bias of who tends to stay behind? Elderly? People less likely to be in the labor force?
- What is the effect of men hiding from mobilization? How does that affect the results?

Alarms might be capturing alert, but not the actual perceived threat or disruption

- Some regions are better/worse protected relative to targeting by Russia
- Alarms could overweight western regions
- Attempt other measures such as actual hits (with a lag?)
- Distance to active frontline
- VIINA intensity (as you have in the paper)

Minor suggestions: Policy recommendations and future work

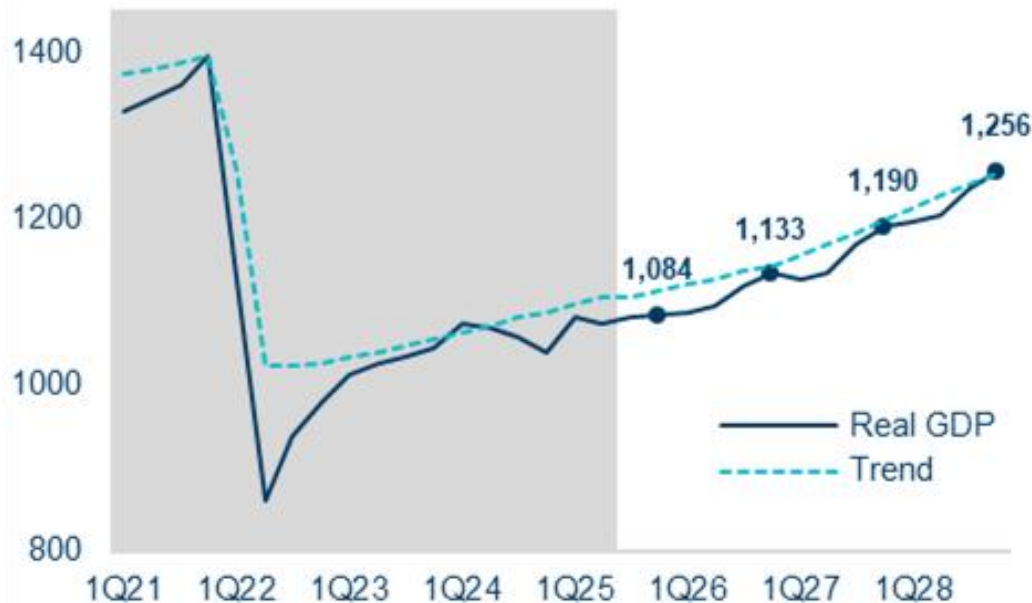
Policy recommendations and future work

- Labor shortages likely structural, what can be done?
- Which sectors and where university **education** is lacking now
- Consider **return-migration scenarios**, how would that change the outlook. What is the experience with past migrants from Ukraine to Europe?
- Policies targeted at **vulnerable groups**. Education of the broader society, not just the groups (women, veterans). Be mindful of policies that could put vulnerable groups in conflict with each other. Remote work could be beneficial not only for migrants, but also internally displaced persons, veterans, improve accessibility.
- Is **Russia targeting** areas to disrupt economic activity? For example, could attacks be at night not just for military reasons?
- Interaction between civilian and **defense sectors**.

SUBDUED ECONOMIC ACTIVITY DUE TO ENERGY DESTRUCTION, WITH PROSPECTS OF POST-WAR RECOVERY

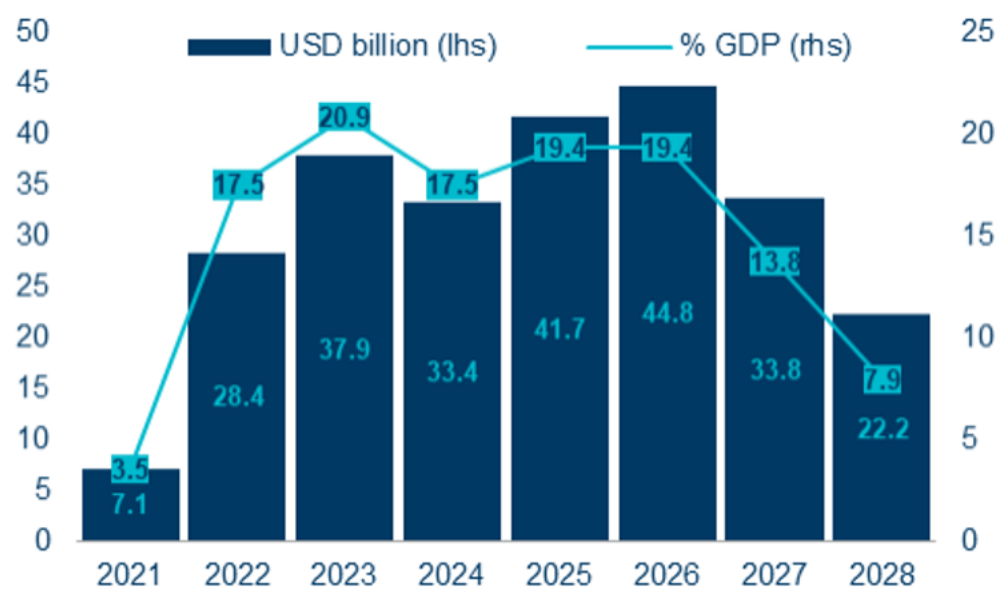
- The economy remains resilient despite renewed Russian attacks on energy infrastructure; GDP growth is revised down to 2.0% in 2025 and 2.6% in 2026 due to energy disruptions and weak early-year performance.
- Growth will transition from consumption-driven during the war to investment-led after 2026, supported by reconstruction, infrastructure rebuilding, and industrial modernization.
- By 2027–28, investment and trade recovery will drive GDP growth to 4–6%, as Ukraine re-integrates into regional and global supply chains and government spending shifts from defense to reconstruction.

Real GDP and trend, 2021 UAH billion



Source: Ukrstat, KSE Institute

Budget deficit

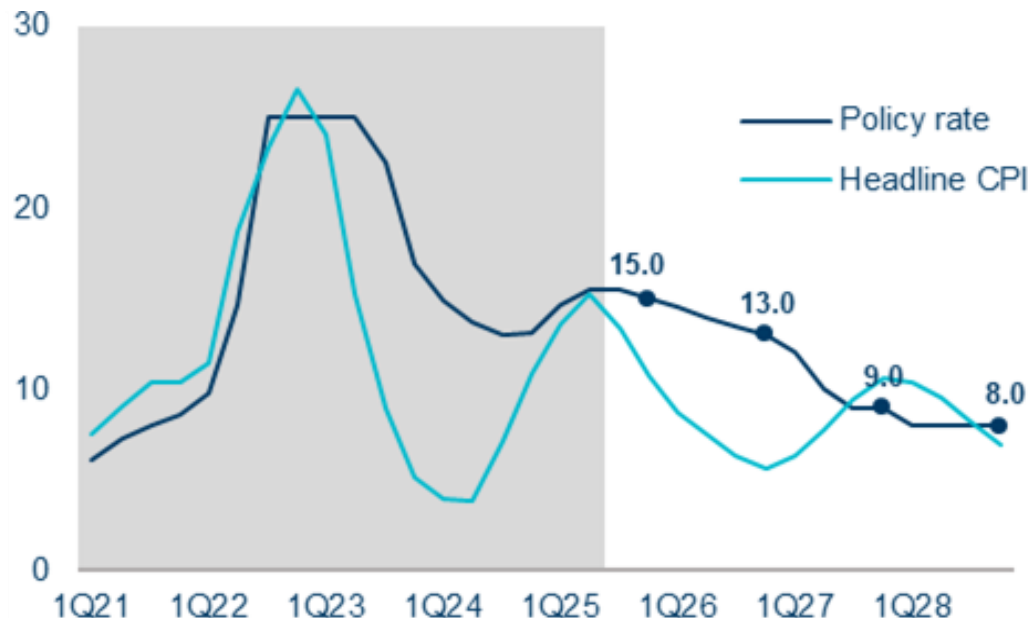


Source: Ministry of Finance, KSE Institute

MONETARY POLICY REMAINS TIGHT TO ANCHOR EXPECTATIONS

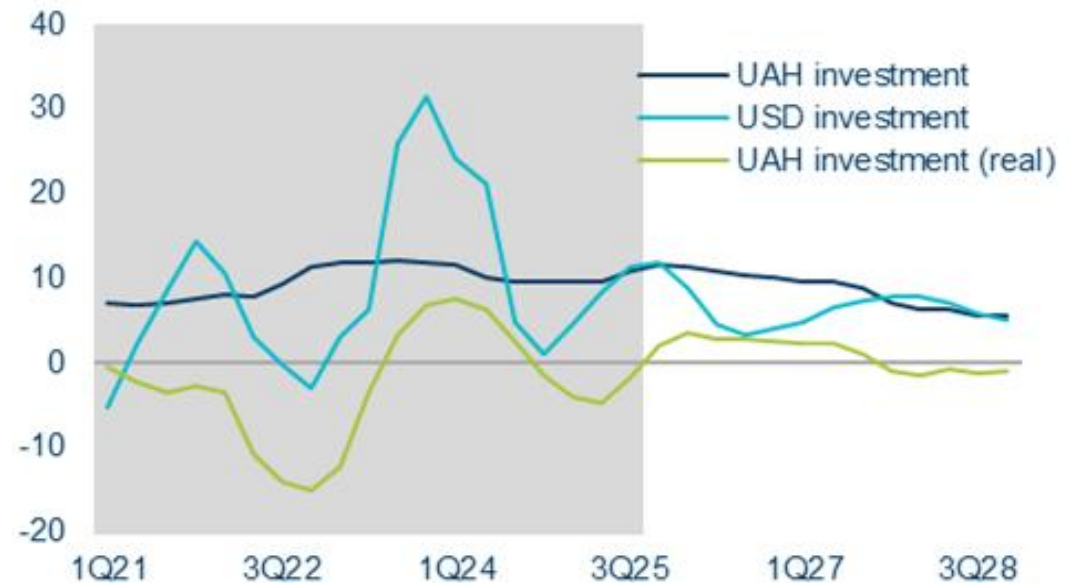
- The NBU maintains a 15.5% policy rate since March 2025, prioritizing disinflation below 10%; easing will only be possible once inflationary pressures clearly subside.
- Credit activity is gradually recovering: household loans +21% y/y, reaching UAH 357 bn, while corporate credit remains below pre-war levels. Lending is constrained by high rates (17–18% for corporates, ~28% for households) and risk premiums.
- Deposit rates (~10–11%) help maintain hryvnia attractiveness, but real returns stay negative. As inflation declines, nominal yields will fall, encouraging gradual remonetization and capital market recovery post-war.

Policy rate (qvt avg, %) and inflation (% y-o-y)



Source: Ukrstat, NBU, KSE Institute

Profitability of investments, %



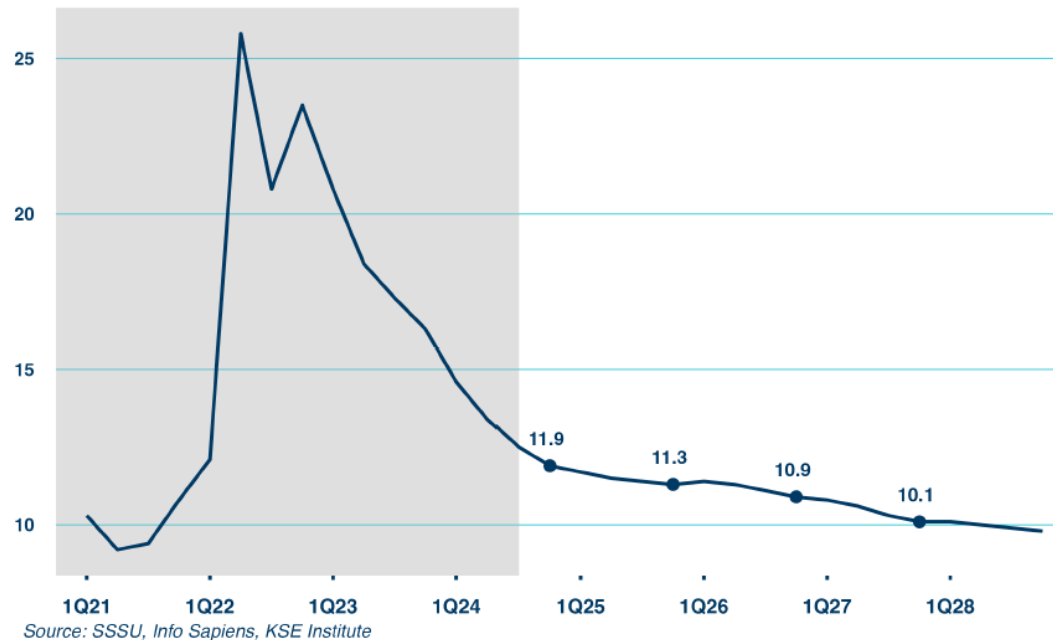
Source: NBU, KSE Institute

Enterprises are facing difficulties finding labour, especially qualified workers, leading to wage increases to compete in the shrinking market

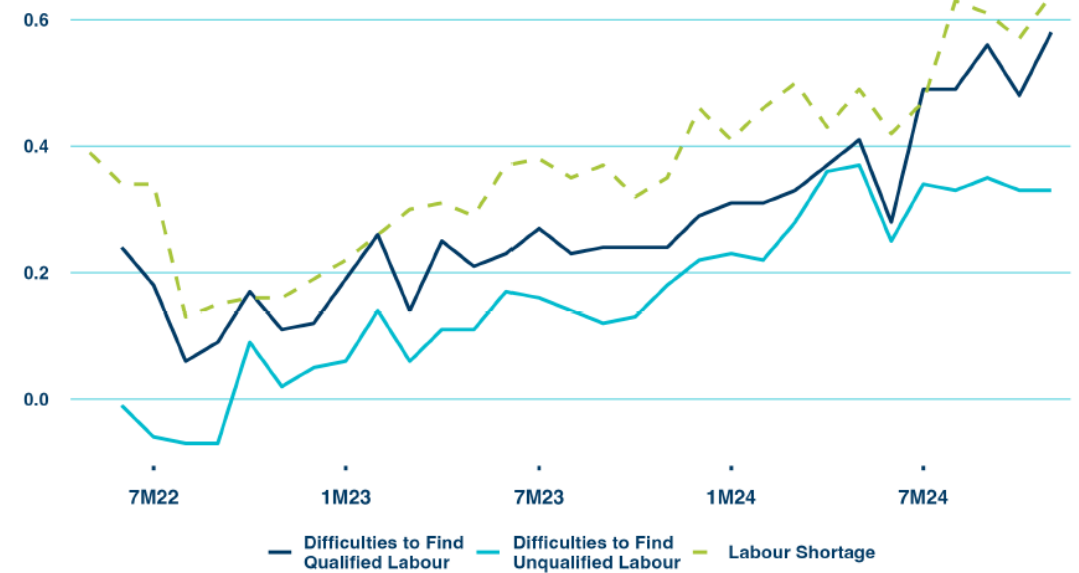
Unemployment surged to **25+%*** in **2022** driven by structural mismatches caused by large-scale migration and occupation amid heterogeneous regional production structure. Currently, situation settles and unemployment steadily declining to **11.5% as of early 2025**.

Labor shortages are intensifying: in **2024**, **63%** of businesses reported difficulties with recruitment, according to the Institute for Economic Research and Policy Consulting, dominated by qualified labour shortages, leading companies to compete for available resources by constantly raising wages above inflation.

Unemployment Rate, %



Recruitment Challenges Indices



* National Bank of Ukraine estimates based on Info Sapiens surveys, it's different from a view of other organizations, used mainly because State Statistic Service of Ukraine (SSSU) halted the publication of unemployment rate estimates based on ILO methodology

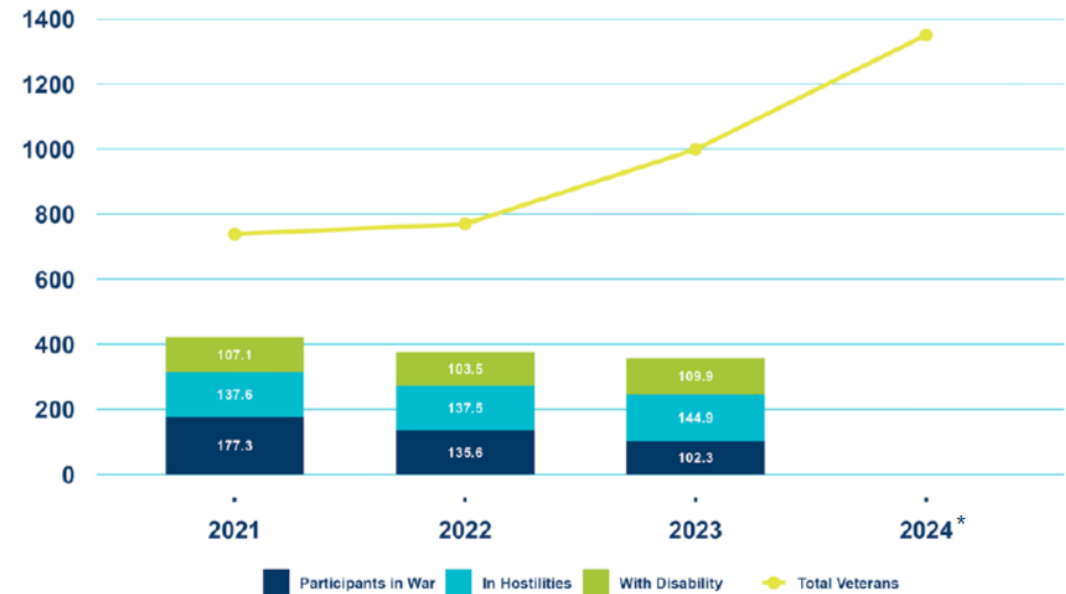
Share of veterans and their families will increase up to 15%, which require special focus on health issues and reintegration into civilian life

The projected number is **4-5 million** veterans and their families by the end of hostilities, if the war finishes in the end-2025.

In 2024, there are **1.35 million** veterans in Ukraine, of whom **66% are under 40**, indicating a change in the age structure, and requires a rethinking of veteran policy with a focus on the comprehensive integration of young veterans into civilian life.

The uneven distribution of veterans between regions is already creating asymmetries in the burden on social systems; the ability of communities to integrate and support veterans will be a critical prerequisite for their sustainable socio-economic development.

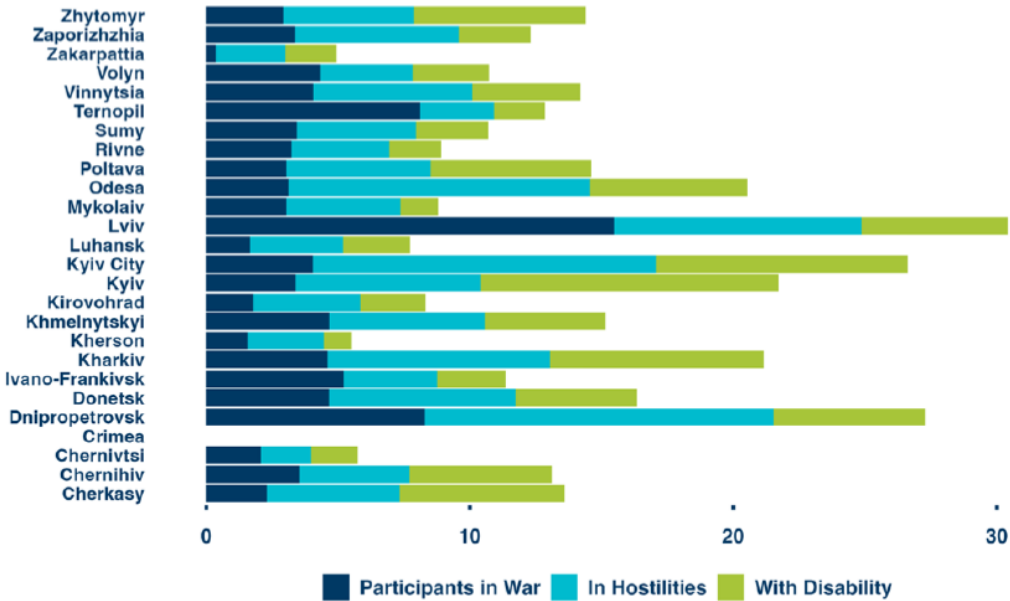
Distribution of Veterans Receiving Pensions and Total Number of Veterans, thsd



Source: Ministry of Veteran Affairs, KSE Institute

Veterans Receiving Pension by Oblast, thsd

as of 01.01.2024



Source: SSSU, KSE Institute

* Data on veterans' pensions for 2024 will be available in July 2025

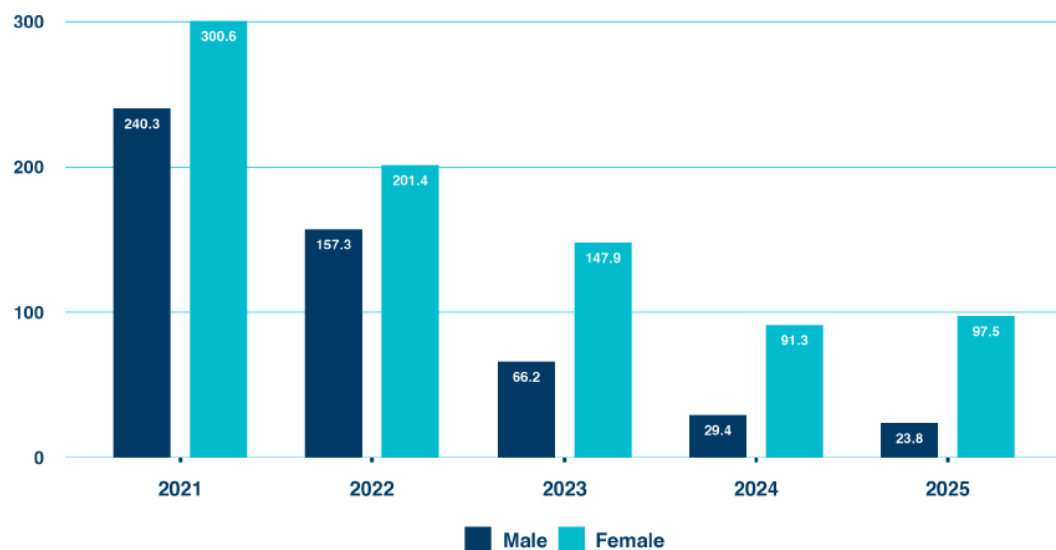
War deepens gender imbalances in the labour market — men avoid formal employment due to mobilisation risks, while gender norms still shape occupational choices

In Jan 2025, registered unemployment rose for the first time since the full-scale invasion – driven entirely by women (+6.8%), while male unemployment dropped (-19%), reflecting widespread avoidance of formal employment due to mobilisation risks.

Women have become markedly more active and adaptive in the labour market: their share among job centre clients rose from **55.5% in Jan 2021 to 80.4% in Jan 2025**, and they participate in training over five times more often than men.

Registered Unemployed by Gender, thsd

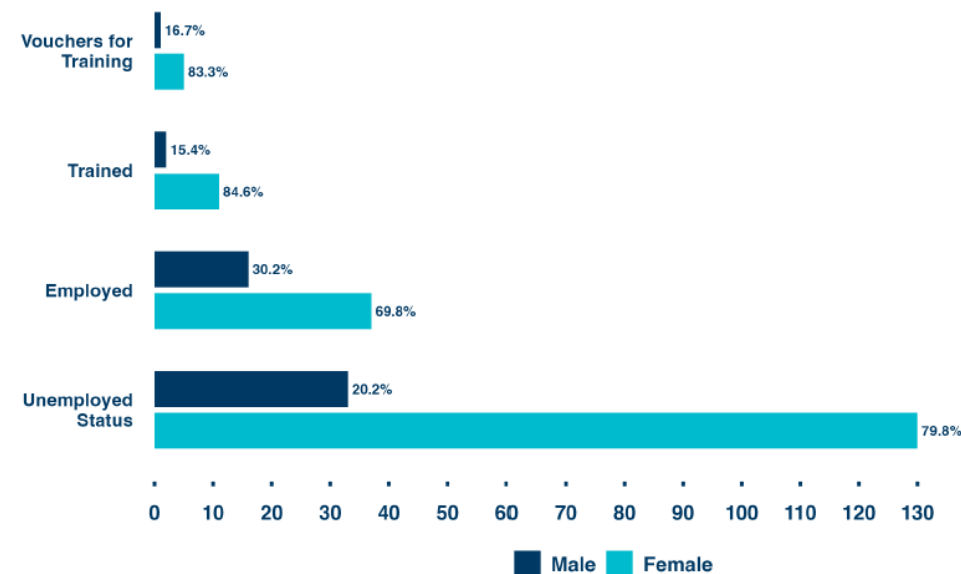
as of 01.01



Source: SESU*, KSE Institute

Gender Structure of the Unemployed and Recipients of Employment Services, thsd/%

in January-March 2025



Source: SESU, KSE Institute

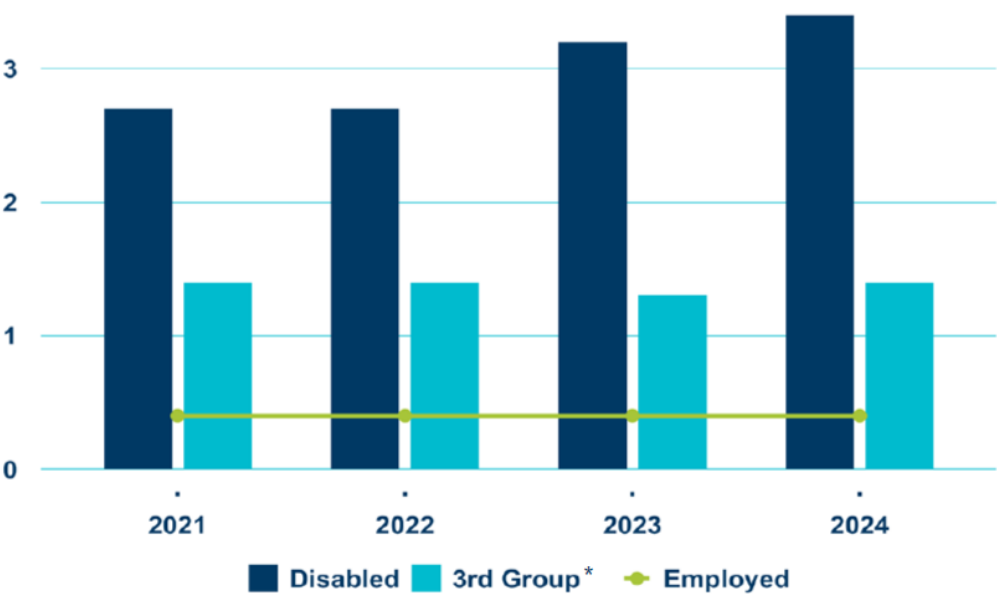
* State Employment Service of Ukraine (SESU)

Inclusion of people with disabilities in the labour market, with ~40% not needing special workplace adaptations, will improve living standards and reduce labour shortages

- The share of people with disabilities grew from **2.7 million in 2021 to 3.3 million in 2024**, while **~40%** of them do not need special workplace adaptations*. It indicates a potential for their greater inclusion through employer incentives and government policy, amid only **~16%** of vacancies marked available for people with disabilities.
- Employment and training services must be improved as only **6%** of people with disabilities used them in **2024**.

Number of People with Disabilities and Their Status on Labour Market, mn

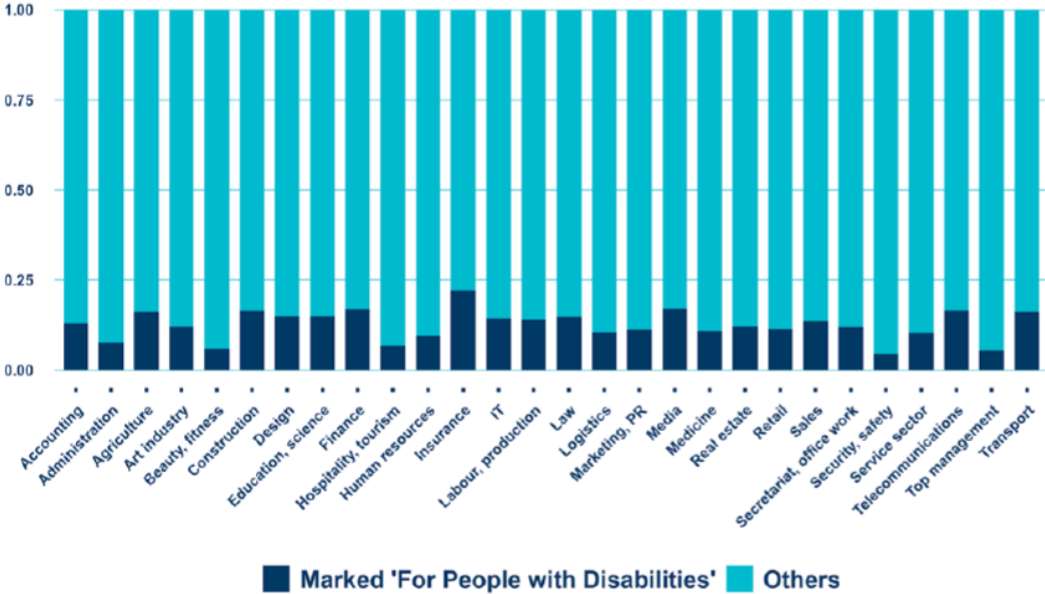
*People with 3rd group disabilities do not require special workplace adaptations



Source: Social Security of Ukraine Population, Ministry of Health, PFU, KSE Institute

Share of Vacancies for People with Disabilities by Sector, %

as of March 2025



Source: Work.ua, KSE Institute

*The third disability group is assigned to individuals with moderate health impairments that limit their ability to work but still allow them to be employed under adapted or lighter working conditions

Conclusions:

A critically important contribution

- No similar papers exist
- Important contribution for the analysis of Ukraine, but also war at large

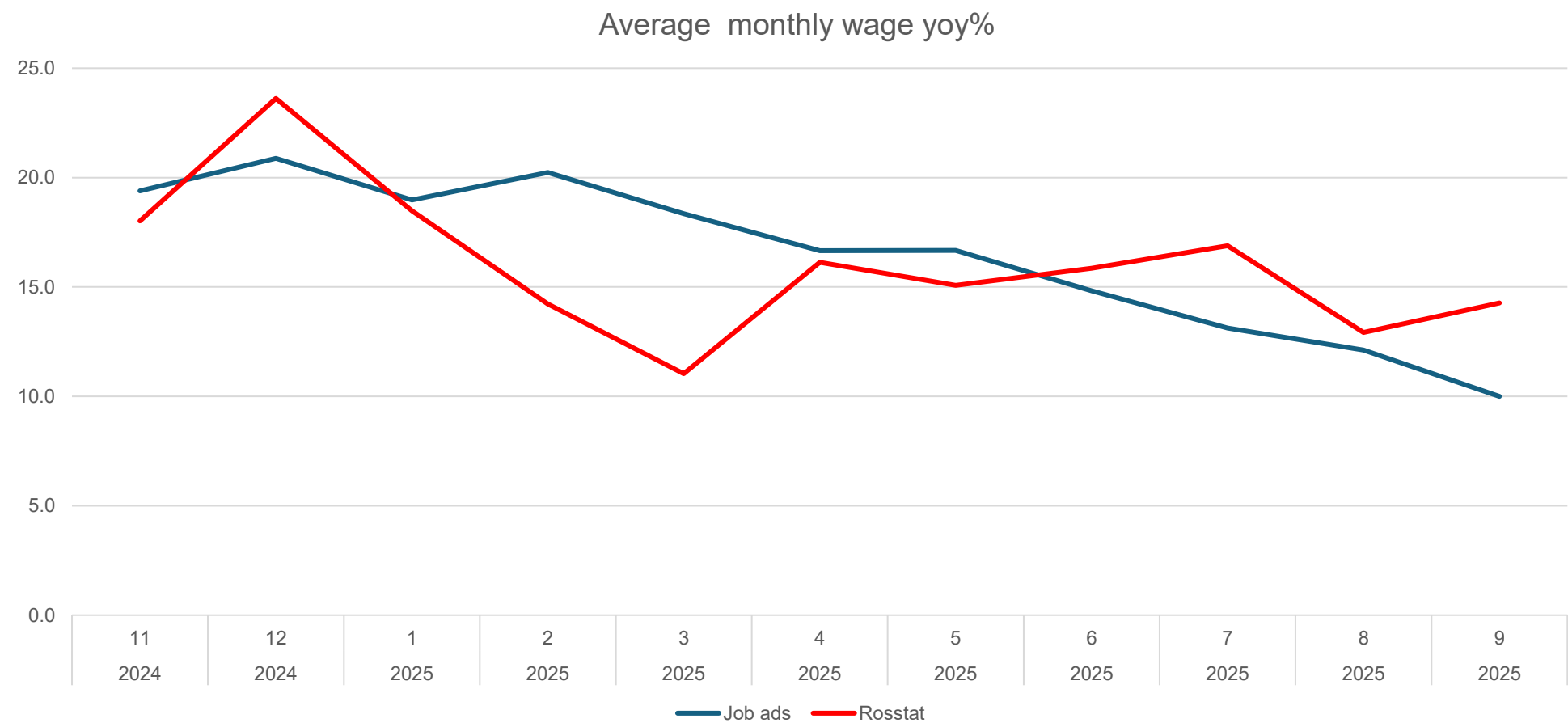
Deep analysis

- Not only descriptive, consideration for biases and robustness checks

Policy implications

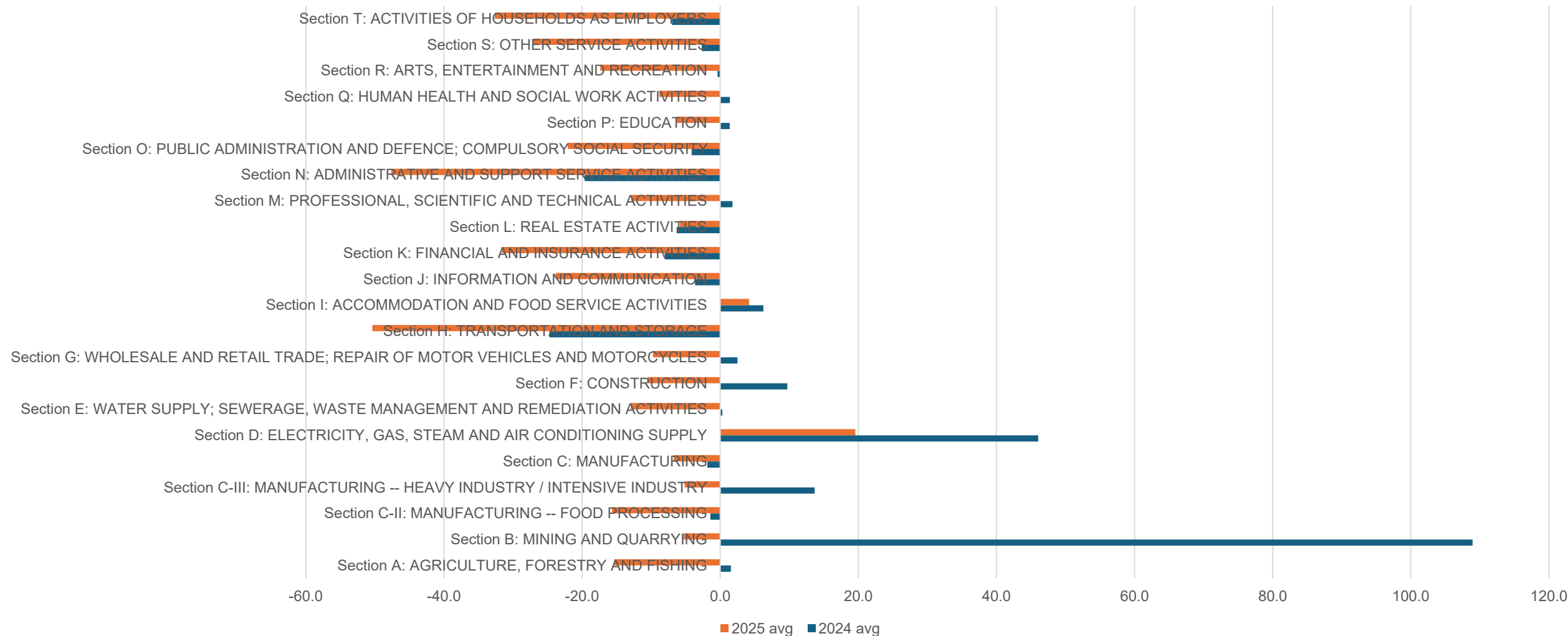
- Not just for some time in the future, reconstruction, but critically important now for macro stability.

Attempt to collect Russian job announcements

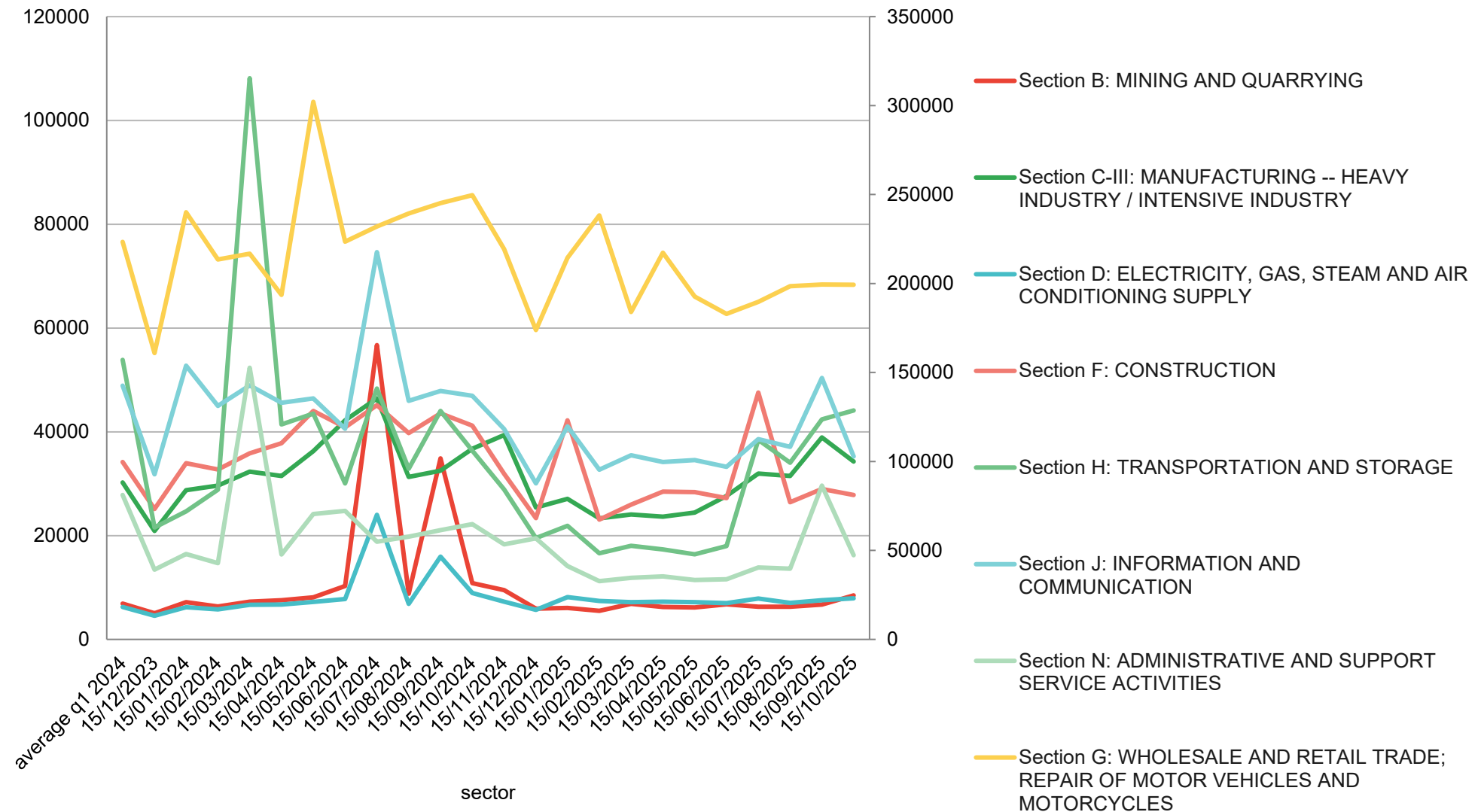


Attempt to collect Russian job announcements

Number of announcement, annual avg % change to 1q2024



Attempt to collect Russian job announcements



KEY ECONOMIC PROJECTIONS

Source: KSE analysis

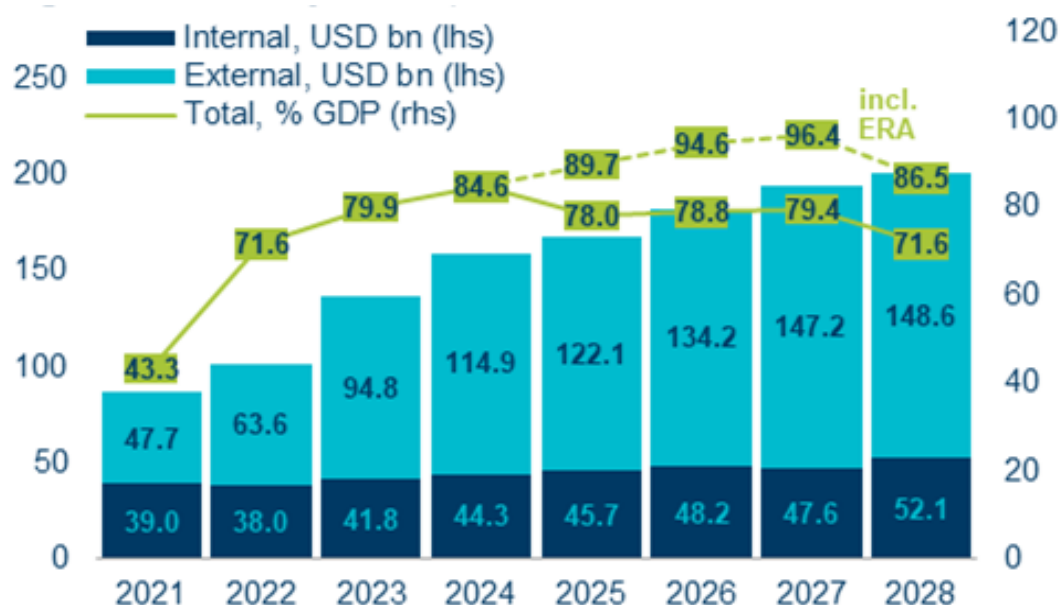
RISKS: ENERGY SUPPLY

- ❑ Energy damage is severe: Recent attacks have knocked out roughly half of gas production and left over a quarter of electricity demand unmet, making winter 2025–26 more difficult than last year.
- ❑ High import needs: Ukraine may need substantial gas and electricity imports, driving up costs and widening the trade deficit, with risks of further shortages if damage escalates.
- ❑ Gas import needs are 4.1 bcm (\$1.9B) in the base case and 6.9 bcm (\$3.2B) if damage worsens; electricity import capacity is limited to 2.35 GW (10.3 TWh), allowing only 4.5 TWh (\$1.4B)—still insufficient to avoid winter outages.
- ❑ Large repair costs: Rebuilding damaged energy infrastructure will require \$2.4–4.3B, depending on the severity of future attacks.
- ❑ Economic impact: Energy shortages could cut GDP growth by roughly 0.6 pp, similar to the 2022–23 winter impact, though inflation effects are expected to be limited.
- ❑ Financing options: Solutions include greater international support, reallocation of budget funds, special energy bonds, or banking-system-based financing, each with trade-offs for stability and credibility.

DEBT STABILIZATION DEPENDS ON CONCESSIONAL FINANCING

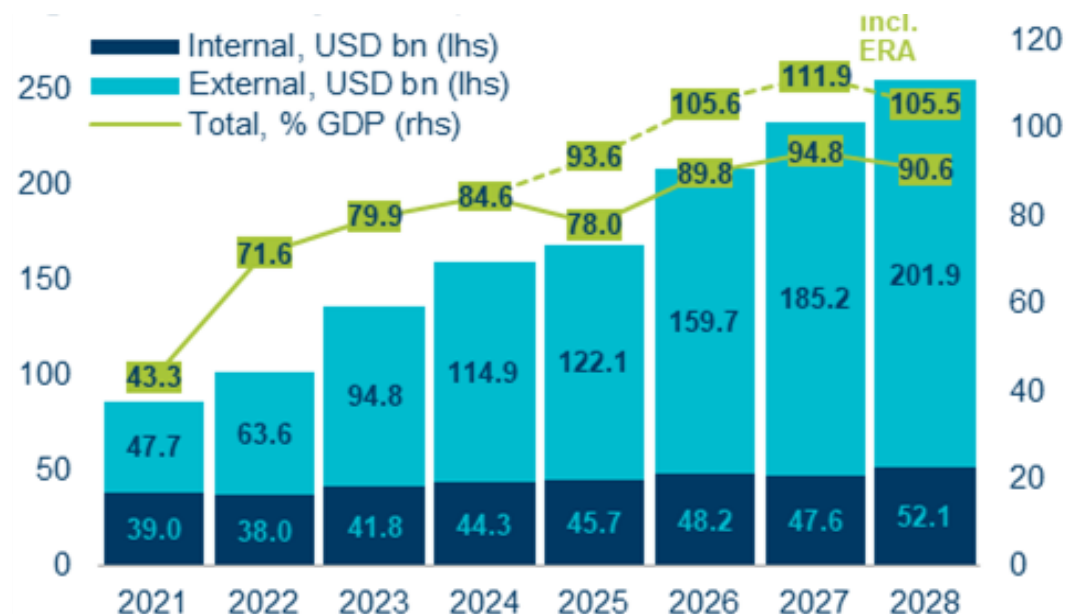
- State debt stands at UAH 7.9 tn (\$193 bn) or roughly 80% of GDP, heavily concentrated in external concessional borrowing; FX exposure is rising despite low average rates.
- In the baseline, debt gradually declines toward 70% of GDP by 2028, but including ERA loans would raise the ratio to about 96%, though these are conditional and non-repayable without reparations.
- A downside scenario with full borrowing of uncovered needs would push debt above 110% of GDP, threatening macro-financial stability and underscoring the need to sustain grant and soft-loan financing.

Debt dynamics, baseline scenario



Source: Ministry of Finance, KSE Institute

Debt dynamics, downside scenario

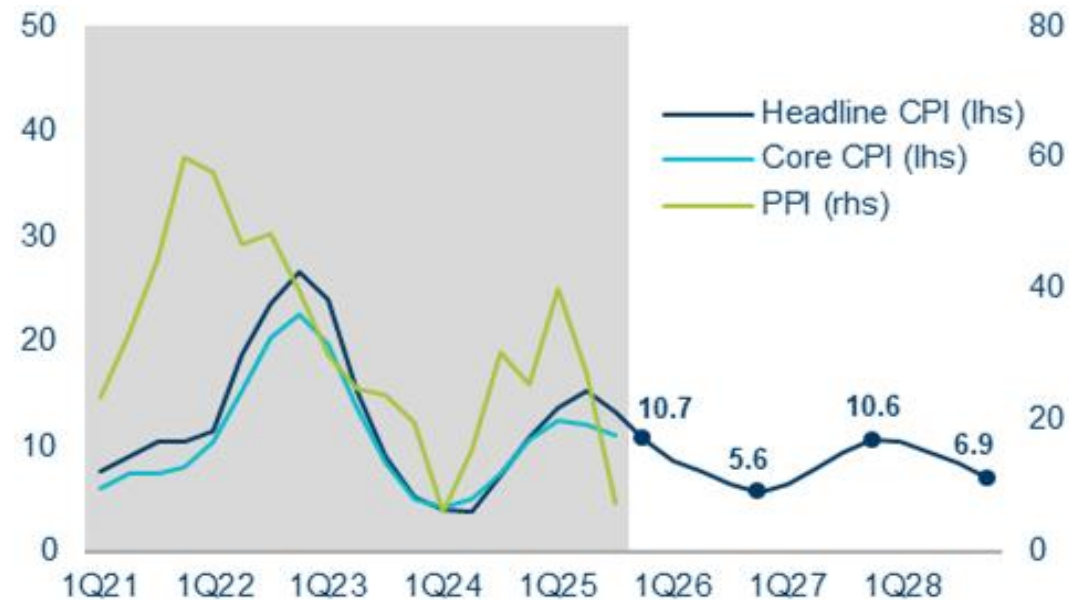


Source: Ministry of Finance, KSE Institute

INFLATION EASES, BUT COST-PUSH PRESSURES PERSIST

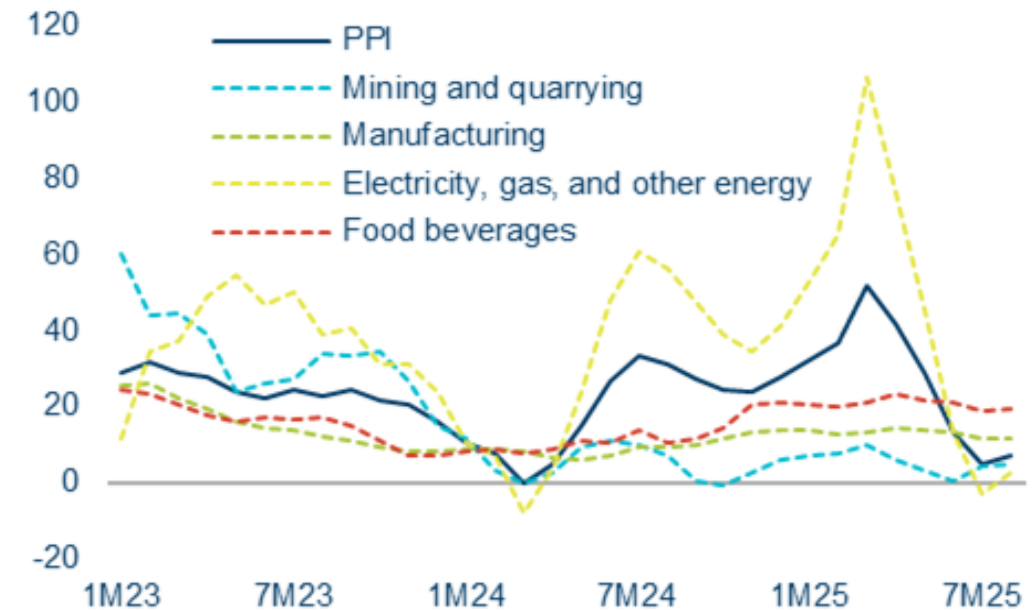
- Headline inflation slowed to 11.9% y/y in Sept 2025 (from 15.9% in May), driven by cheaper non-animal food, stable utility tariffs, and subdued consumer demand; core inflation eased to ~11%, while PPI rose to 7.3% amid energy and food cost pressures.
- Energy tariffs remain frozen (gas 7.96 UAH/m³, electricity 4.32 UAH/kWh), containing short-term inflation, but deferred price adjustments and excise increases (tobacco +29%, sugary drinks tax) will add pressure in 2026.
- Inflation expectations stay anchored near 10%, reflecting NBU credibility, yet supply shocks, labor shortages, and rising wages could lift inflation toward 9–10% in 2027, as post-war recovery accelerates.

Headline CPI, core inflation, and PPI, % y-o-y



Source: NBU, KSE Institute

Producer price inflation, % y-o-y

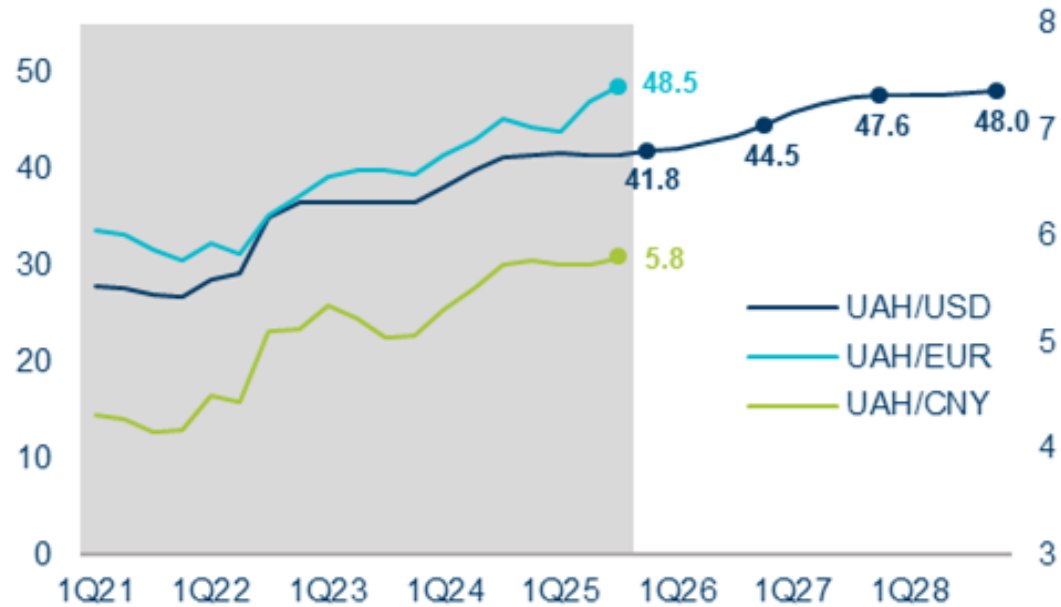


Source: Ukrstat, KSE Institute

EXCHANGE RATE STABILITY SUPPORTED BY STRONG FX INTERVENTIONS

- The hryvnia remains stable around 41.5 UAH/USD through 2025, backed by \$2–4 bn/month NBU interventions and strong external aid inflows (~\$42.5 bn).
- A moderate depreciation to ~45 UAH/USD in 2026 is expected as support inflows slow and the trade deficit widens; one-year expectations hover around 43.7–45.3 UAH/USD.
- The NBU diversified reserves toward the euro (27% share), reflecting closer EU integration, while the dollar weakened; this rebalancing should reduce volatility vs. the euro and stabilize import prices.

FX UAH/USD (lhs), UAH/EUR (lhs), UAH/CNY (rhs)



Source: NBU, KSE Institute

NBU FX interventions, USD billion



Source: NBU, KSE Institute

KEY ECONOMIC PROJECTIONS

| | 2021 | 2022 | 2023 | 2024 | 2025f | 2026f | 2027f | 2028f |
|-------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Real GDP growth, % | 3.4 | -28.8 | 5.5 | 2.9 | 2.0 | 2.6 | 4.3 | 5.9 |
| Nominal GDP, UAH bn | 5,451 | 5,239 | 6,628 | 7,659 | 8,961 | 9,982 | 11,473 | 13,369 |
| Nominal GDP, \$ bn | 200.6 | 160.5 | 181.2 | 190.2 | 215.1 | 230.5 | 244.3 | 279.4 |
| Budget balance, \$ bn | -7.1 | -28.4 | -37.9 | -33.4 | -41.7 | -44.8 | -33.8 | -22.2 |
| Foreign grants, \$ bn | 0.9 | 17.5 | 14.1 | 14.0 | 7.4 | 1.0 | 1.9 | ... |
| Foreign loans, \$ bn | 2.3 | 16.6 | 30.7 | 28.3 | 35.1 | 26.5 | 20.2 | 1.4 |
| Budget financing gap, \$ bn | ... | ... | ... | ... | 8.4 | 17.1 | 12.5 | 15.3 |
| Headline inflation, % avg | 9.4 | 20.2 | 12.8 | 6.5 | 13.1 | 7.0 | 8.5 | 8.8 |
| Exchange rate (USD), avg | 27.3 | 32.3 | 36.6 | 40.2 | 41.7 | 43.2 | 46.9 | 47.8 |
| Policy rate, % avg | 7.5 | 18.6 | 22.4 | 13.7 | 15.2 | 13.8 | 10.0 | 8.0 |
| Current account, \$ bn | -3.9 | 8.0 | -9.6 | -15.1 | -33.6 | -39.2 | -34.0 | -32.3 |
| External financing gap, \$ bn | 0.2 | 2.3 | -11.4 | -2.9 | 2.8 | 17.8 | 1.4 | 9.4 |
| Total reserves, \$ bn eop | 30.9 | 28.5 | 40.5 | 43.8 | 41.0 | 23.2 | 21.8 | 12.3 |
| Unemployment rate, % avg | 9.9 | 20.6 | 18.2 | 13.1 | 10.6 | 8.9 | 9.9 | 7.9 |
| Nominal wage, UAH avg | 13,992 | 14,863 | 17,442 | 21,491 | 26,396 | 32,029 | 36,399 | 41,107 |