

UDC 339.9.012:351

JEL Classification: P51, Q10, R11

DOI: 10.20535/2307-5651.33.2025.335861

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CHANGES IN THE UKRAINIAN AND POLISH ECONOMIES UNDER THE INFLUENCE OF THE WAR

ЗМІНИ В ЕКОНОМІКАХ УКРАЇНИ ТА ПОЛЬЩІ ПІД ВПЛИВОМ ВІЙНИ

From February 24, 2022 to the present day, almost all economic processes in Ukraine, as well as a significant number of these processes in Poland, have undergone and continue to undergo significant changes. In some industries, these processes have adapted to the existing extreme business conditions, while those industries where this has not happened are collapsing, which is reflected in the negative dynamics of important economic indicators. At the same time, it is clear that the war can be won only if there is a powerful economic base for the development of the country's defence capabilities. In such conditions, the issue of the state of the economy of Ukraine and its strategic partner Poland is actual and, without exaggeration, vitally important. That is why the purpose of the proposed article was to conduct a comparative analysis of literary sources and the identification of changes in the economies of Ukraine and Poland that occurred under the influence of the war. Achieving this goal will allow us to outline the development directions of both economies necessary for their strengthening. During the preparation of this article were used exclusively the method of analyzing secondary information, using data from the State Statistics Service of Ukraine, Ministry of Finance of Ukraine, Agency "Info Sapiens", Statista Poland, and others. The article presents statistical data characterizing the dynamics of such macroeconomic indicators in Ukraine and Poland as GDP and inflation rate, describes the features of financial support and changes in the labor market in both countries. The article also points out the changes that have occurred in agriculture, energy, and drone production. According to the authors, the practical value of the proposed article lies in identifying reserves for improving the economic situation in both countries, however, these proposals are indicated as directions that should be thoroughly substantiated in the course of prospective research.

Keywords: GDP dynamics, inflation rate dynamics, labour market, impact of war on the economy, economy of Ukraine and Poland.

З 24 лютого 2022 року по сьогоднішній день майже всі економічні процеси в Україні, а також значна кількість цих процесів у Польщі, зазнали та продовжують зазнавати суттєвих змін. У деяких галузях ці процеси адаптувалися до існуючих екстремальних умов господарювання, тоді як ті галузі, де цього не сталося, руйнуються, що відображається в негативній динаміці важливих економічних показників. Водночас очевидно, що війну можна виграти лише за наявності потужної економічної бази для розвитку обороноздатності країни. У таких умовах питання стану економіки України та її стратегічного партнера Польщі є актуальними, без перебільшення, життєво важливими. Саме тому метою запропонованої статті було проведення порівняльного аналізу літературних джерел та виявлення змін в економіках України та Польщі, що відбулися під впливом війни. Досягнення цієї мети дозволить нам окреслити напрямки розвитку обох економік, необхідні для їх зміцнення. Під час підготовки цієї статті було використано виключно метод аналізу вторинної інформації з використанням даних Державної служби статистики України, Міністерства фінансів України, Агентства "Info Sapiens", Statista Poland та інших. У статті представлено статистичні дані, що характеризують динаміку таких макроекономічних показників в Україні та Польщі, як ВВП та рівень інфляції, описано особливості фінансового забезпечення та зміни на ринку праці в обох країнах. У статті також зазначено зміни, що відбулися в сільському господарстві, енергетиці та виробництві дронів. На думку авторів, практична цінність запропонованої статті полягає у визначені резервів покращення економічної ситуації в обох країнах, проте ці пропозиції вказані як напрямки, які мають бути трунтовано обґрунтовані в ході перспективних досліджень.

Ключові слова: динаміка ВВП, динаміка рівня інфляції, ринок праці, вплив війни на економіку, економіка України і Польщі.

Problem statement. Russia's full-scale invasion of Ukraine has radically changed all aspects of the lives of Ukrainians and their closest neighbours, the Poles. The military actions have triggered a significant number of chain reactions that could not but affect the economies of both countries taken for analysis. First of all, this is internal and external migration, which most affected the eastern and southern regions of Ukraine, from where almost all residents were forced to leave, and all resources ended up in the hands of the enemy. A significant share of the economically active population of our country joined the ranks of the Armed Forces of Ukraine, and another (no less significant) share acquired the status of refugees, a large number of whom moved to Poland from the first days of the war.

The flow of refugees abroad can be conditionally divided into three parts: 1 – these are workers who left with the enterprises (i.e. did not lose their jobs); 2 – these are workers who had the opportunity to continue performing their "pre-war" functions online (and also retained their income, and therefore their means of livelihood); 3 – workers who were unable to work online and lost their jobs, and with them their income. It was this part of forced migrants from Ukraine that significantly replenished the supply on the Polish labor market, intensifying the already high competition on it. Internal migrants who moved from the eastern, southeastern, and southern regions of Ukraine mainly in a western direction also created three similar flows and had a similar impact on the labor market of the Center and West of our country as noted above.

In addition to the general changes in the labor market, the loss of agricultural land and industrial facilities, damage to infrastructure and power sources, destruction of production facilities and disruption of supply chains, increased production costs for businesses, and much more have dealt a significant blow to the Ukrainian economy. However, the martial law of 2022–2025 once again proved a long-known truth: in any war (and especially in a war of attrition, in which Ukraine is currently fighting against the aggressor), the one who has the economic basis for victory wins.

Given the above, it was considered appropriate to analyse the changes in the economies of Ukraine and Poland that occurred due to the war and to identify promising directions for levelling the identified negative changes.

Analysis of recent research and publications. It should be noted that the issues we have chosen are quite widely studied by both Polish and Ukrainian researchers. In particular, analysts of the blog "Ukraine War Economy Tracker" monitor such important economic indicators and branches: GDP, Inflation and monetary policy, Foreign financial aid, Fiscal policy, Job market and unemployment, Business and consumers expectations, Energy sector, Agriculture, Metallurgy, Banking sector, Foreign trade [1]. Scientists and practitioners are investigating the impact of the war on the foreign economic activity of the agrarian sector of Ukraine [2]. Given the rapid growth of forced migrants in the Polish market, sufficient attention has been paid to studying the behavioural characteristics of Ukrainians in Poland and Ukraine in order to determine whether the war crisis is able to change patterns of their behaviour [3–5]. The attention of scientists is also drawn to the question transformation of Polish-Ukrainian relations in the context of the implementation of migration policy [4–7].

Formulation of the objectives of the article. Based on the analysis of literary sources, it was considered

appropriate to conduct a comparative analysis of the changes that occurred in the economies of Ukraine and Poland under the influence of the war and propose solutions to the problems that have arisen.

Presentation of the main material of the study. The war in Ukraine has significantly impacted GDP dynamics, with Ukraine's economy experiencing a sharp contraction in 2022 followed by a slower recovery in 2023 and 2024. This is due to damage to infrastructure, disruption of production, and the overall economic uncertainty caused by the conflict. While Ukraine's GDP did recover by 5.3% in 2023, growth in 2024 was only 2.9%. This indicates a slowing recovery, hampered by factors like the ongoing security situation, labor shortages, and continued Russian attacks. GDP in Ukraine is still more than 20% lower than in 2021 [1].

In 2022, Poland's GDP growth rate was 5.26%, according to Statista. This was a significant decrease compared to the 6.93% growth in 2021. Statista notes that the 2022 growth was still positive and the largest since 2011.

In 2023, Poland's real GDP grew by 0.2%, a significant slowdown from the 5.3% increase in 2022 [2].

In 2024, Poland's GDP grew by 2.9%, according to preliminary estimates. This growth was driven by private consumption, which was supported by rising real wages, increased government spending, and receding inflationary pressures. While net exports had a negative impact on growth, total investment declined due to a contraction in construction investment.

The Polish economy advanced by 3.2% year-on-year in the first quarter of 2025, matching preliminary estimates and easing from a 3.4% gain in Q4 2024. The GDP growth slowdown was due to a slower increase in household consumption (2.5% vs 3.5% in Q4 2024) and a negative contribution from net trade. However, the slowdown was partially offset by a strong rebound in gross fixed capital formation (6.3% vs -6.9%). On a seasonally adjusted quarterly basis, the economy grew by 0.7% in Q1 2025, matching preliminary estimates and following a 1.4% gain in the previous three-month period [1, 2].

Poland's GDP per capita based on Purchasing Power Parity (PPP) was significantly higher than Ukraine's. Trading Economics reported Poland's GDP per capita (PPP) at \$43,585.12, while World Bank reported Ukraine's at \$17,630 in international dollars. These figures indicate a substantial difference in economic output per person when considering the relative purchasing power of each country's currency.

Ukraine entered a full-scale war with consumer inflation of 10% year-on-year (y-o-y). The Russian invasion caused a significant acceleration in inflation, which peaked in October 2022 at 26.6% year-on-year.

At the end of 2022 and throughout 2023, inflation was brought under control thanks to the stabilisation of the economic situation, the NBU's competent actions, and the refusal to finance the budget by printing hryvnia. The deceleration in inflation was also driven by the record-high harvest in 2023 [3].

However, in 2024, inflation began to accelerate again: the NBU cited the exhaustion of the impact of last year's significant harvests, electricity shortages and labour shortages, and the summer drought of 2024 as the main reasons.

In April 2025, inflation accelerated to 15.1% year-on-year (0.7% m/m). The main drivers of this acceleration

were the lingering effects of last year's poor harvests and continued increases in prices for alcohol and tobacco.

Poland. From March 2021 to July 2022, goods inflation averaged 9.2 percent in the PCE price index. Over the two decades before the pandemic (1999–2019), that measure had averaged 0.4 percent.

In 2023, inflation began to cool and approached the Federal Reserve's long-run goal of 2 percent. Weakening demand for goods and slowing shelter costs combined with softening in food and energy markets brought inflation down.

In 2024, Poland's inflation rate was 3.7% and is projected to decrease to 3.6% in 2025. However, inflation is expected to remain above the National Bank of Poland's target in 2025, potentially reaching 4.6%. This is due to a combination of factors, including the withdrawal of energy support measures and continued wage pressures [1, 4].

In 2022–2025, Ukraine has received substantial foreign financing to address its war-related needs, with the EU and G7 nations being key contributors. This support encompasses financial assistance, budgetary support, humanitarian aid, and military aid. In 2025 alone, Ukraine's external financing needs are estimated at \$39.3 billion, with a focus on ensuring essential public services, macroeconomic stability, and infrastructure restoration.

In 2022–2025, Poland's foreign financing needs are primarily addressed by the inflow of EU funds, including cohesion funds and the EU Recovery and Resilience Facility. The country also leverages foreign currency borrowing, maintains a strong presence in the euro market, and utilizes financial instruments offered by the EU and international financial institutions [1, 4].

According to NBU estimates, the unemployment rate remains high, although it has decreased from 21% in 2022 to a projected 14% in 2024. It is important to note that before 2022, the State Statistics Service of Ukraine provided official unemployment data based on regular household surveys. However, these surveys were discontinued due to the war, making accurate assessments more difficult. Therefore, current figures are based on selective surveys and labor market modeling.

In 2021, Poland's registered unemployment rate ranged from 6.3% to 6.8%. By 2024, the rate had decreased to 5.1% in April. This trend continues to show a downward trend for the unemployment rate in Poland [5].

Approximately 972,000 Ukrainians in Poland, primarily for temporary work.

2020: More than 857,000 Ukrainians with temporary work permits.

2021: The number of Ukrainian temporary work migrants increased to 1,055,000.

The estimates prepared by the Polish Ministry of Labour also appear to confirm the reliability of ZUS data.

In particular, they indicate that the monthly number of Ukrainians holding a valid document legalizing their work in Poland oscillated between 700,000 and 800,000 in the years 2022–2024. Moreover, according to the Ministry of Labour data describing the number of citizens of Ukraine employed on the basis of notifications (as per end of June 2024), most Ukrainian refugees were employed in: manufacturing (about 28%), then in administrative and support service activities (19%), transportation and storage (18%), construction (8%), accommodation and catering (7%), as well as in retail and wholesale trade (7%). Compared to the structure of total employment in

Poland (National Economy/Polish LFS data), the group of Ukrainians (both pre-war economic immigrants and refugees) was overrepresented especially in such NACE categories like transportation and storage, accommodation and catering, and administrative activities [6].

First of all, from the beginning of the war the top contributor to GDP growth was physical capital accumulation. This factor alone was responsible for about 43% of total GDP growth (1.6 pp. per annum on average), and its contributions were very consistent, relatively little affected even by the major shocks as the Russian aggression in Ukraine.

The second largest contributor was (capacity utilisation-adjusted) TFP (Total Factor Productivity) growth, adding another 34% of total GDP growth (1.3 pp. per annum on average).

Second, Poland's GDP growth was also increasingly driven by growth in effective labour supply.

Over the entire period 1996–2025, labour supply growth was responsible for 22% of all GDP growth (0.8 pp. per annum on average), with its share rising to as much as 43% of GDP growth (1.7 pp. per annum) in 2013–21 and 31% of GDP growth (0.8 pp. per annum) in 2021–25.

Third, the contribution of immigrants within the labour supply component was systematically rising over time. Ukrainian refugees further expanded the labour supply in the Polish economy, while a significant, but relatively much smaller, fraction of pre-war immigrants returned to Ukraine. In effect, we see that the contribution of immigrants' labour to Poland's GDP growth increased from 3% (0.1 pp. per annum) in 2005–13, through 13% (0.5 pp. per annum) in 2013–21, to 18% (0.5 pp. per annum) in 2021–23. Specifically, the labour supply of Ukrainian refugees accounted for 29% of Poland's GDP growth in 2021–23 (0.8 pp. per annum on average) [7–9].

Presented indicators demonstrate the significant negative impact of the war on the Ukrainian economy. But the 2022–2025 war years have once again proven to us the well-known maxim that you can only win a war if you have the economic basis for it. Many trends have already been mentioned by our dean and other colleagues. I will highlight today just three, not only because these three areas have been leaders in the last three years, but also because, in my opinion, they should develop even more intensively.

In these 3 years, Ukraine's economy has seen the development of several key industries, particularly those related to technology, defence, and agricultural innovation. While traditional industries like agriculture and heavy manufacturing remain significant, the IT sector and related areas have taken center stage, driven by both wartime necessities and a broader trend towards digitalization.

The war years have seen Ukraine's drone industry evolve from a nascent sector to a booming powerhouse. Before 2022, Ukraine had only a handful of drone producers, mostly small enterprises or defence research units with limited output. The full-scale invasion, however, served as an urgent catalyst for change. In the span of three years, Ukraine achieved skyrocketing production capacity, technological advancement, and significant investment in unmanned systems [1].

The agrarian sector of the country's economy as a whole, even with its pronounced dual structure, demonstrates the highest, compared to other industries, ability to survive in

the national economy against the background of complex – not only military – problems.

Under the conditions of the war, large agricultural enterprises in Ukraine turned-out to be less mobile, economically inert, more difficult to adapt to the catastrophic consequences of the war – the disruption of logistics chains and access to traditional sales markets, the increase in the price of fuel and fertilizers and other materials, the outflow of labor resources due to mobilization into the ranks of the Armed Forces of Ukraine and migration abroad, ect.

Smaller agricultural producers, which in Ukraine are medium and small and small agricultural enterprises, farmers, family farms and personal peasant farms and even “gardeners”, adapt better and faster to the difficult and dynamic conditions of war. That is, a small agrarian business in the conditions of war is more stable and capable of economic survival due to a higher level of mobility and adaptability than a large agribusiness with its narrow specialization, even with a much higher level of mechanization.

Throughout the winter, Russia continued to target Ukraine's power system, aiming to cause maximum damage and prolonged blackouts. However, Ukrainian energy workers repaired all damages and strengthened the protection of critical infrastructure. As a result, Ukraine entered 2025 with minimal or no power outages for households and industrial consumers. The stable situation even allowed for commercial electricity exports at certain hours, helping to balance the grid and generate additional income for energy companies [1–3].

In April, Ukraine continued both exporting and importing electricity. Imports remained dominant, but exports gradually increased as well, setting a more-than-yearly high on 24 April 2025, when daily export volumes reached a record

14.2 GWh. Overall, net exports remained negative – meaning Ukraine imported more electricity than it exported.

In March 2025, household deposits continued to grow overall. Both hryvnia and foreign currency demand deposits remained at around 190% of their December

2021 level, indicating strong demand for liquidity. Hryvnia time deposits grew at a moderate pace, while foreign currency time deposits declined slightly, reflecting caution toward long-term savings in foreign currency.

According to preliminary data from the NBU, Ukraine's trade balance in goods and services was negative in March 2025, amounting to -\$4 billion. Imports of goods reached \$6.9 billion, significantly exceeding exports of goods at \$3.4 billion. Similarly, imports of services (\$1.8 billion) surpassed exports of services (\$1.3 billion) [1, 5, 9].

Conclusions. Therefore, without repeating the statistical data mentioned in the article, it should be noted that there is no obvious and stable positive dynamics of such important macroeconomic indicators as GDP and GDP per capita. Appropriate measures have been taken to curb inflation in both countries, but this indicator is quite high. In Ukraine, this indicator also decreased, but due to the narrowing of the labor market supply due to the destruction of a significant number of enterprises.

In Poland, from the beginning of the war the top contributor to GDP growth was physical capital accumulation; the second largest contributor was TFP (Total Factor Productivity) growth; Poland's GDP growth was also increasingly driven by growth in effective labour supply; the contribution of immigrants within the labour supply component was systematically rising over time. In 2022–2025, Ukraine's economy has seen the development of several key industries, particularly those related to technology, defence, and agricultural innovation.

To the authors' deep conviction, the analysis showed that the economies of both countries, in the fourth year of the full-scale invasion, continue to demonstrate insufficient adaptation to the conditions of martial law. This applies to almost all areas of production necessary for the country's defence, the deployment of which should ensure improvement in macroeconomic indicators. At the same time, the rational use of the potential of both countries can cover a significant share of the needs of both the front and the rear, even without completely converting Ukraine's economy to military rails.

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