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Analysis of the Dynamics of Macroeconomic Indicators of the Ukrainian Economy in the Context of Post-War Recovery

Abstract:
The article presents a comprehensive study of the state and dynamics of Ukraine's national economy through the prism of key macroeconomic indicators during the period of 2005–2025. The relevance of the work is driven by the need for an objective assessment of the economic system's resilience under full-scale martial law, accompanied by profound structural transformations and new challenges for all sectors of the economy. The subject of the study is the set of economic processes and institutional-structural mechanisms governing the formation, transformation, and interaction of key macroeconomic indicators of Ukraine's national economy under conditions of martial law and the early stage of post-crisis stabilization. The object of the study is the state and dynamics of the main macroeconomic indicators of the national economy of Ukraine in the period from 2005 to 2025. The study aims to identify the destructive factors affecting Gross Domestic Product (GDP) and analyze the components of capital formation in conditions of political and economic instability. The study employs a combination of systemic-structural analysis, comparative and graphical methods, statistical grouping, time-series analysis, and economic-statistical techniques to examine the dynamics and structural transformations of Ukraine's key macroeconomic indicators under conditions of martial law. The study is based on official statistical data from the State Statistics Service of Ukraine and the Ministry of Finance of Ukraine, as well as analytical and scholarly publications addressing macroeconomic dynamics, investment processes, and digital transformation of the national economy. The analysis reveals that despite ongoing hostilities, the industry demonstrates signs of adaptability, reflected in the 1.46-fold growth of nominal GDP in 2024 compared to 2022. However, the authors prove that the significant gap between nominal and real GDP is caused by high inflation rates and the devaluation of the national currency. Particular attention is paid to the analysis of gross capital formation in 2024, where a sharp decline was detected in the IV quarter (by UAH 191,873 million). It is established that the key determinants of this downturn were the political crisis, migration processes leading to labor shortages, and a decrease in the population's purchasing power. A separate aspect of the work is the comparison of foreign trade operations. The study shows that over a 20-year period, import volumes grew significantly faster (16.5 times) than exports (9.9 times), indicating a deep dependence of the domestic market on foreign goods and an insufficient level of development in domestic high-tech manufacturing. A disproportion between the rapid growth of consumer spending and the slow increase in gross investment volumes was identified. The conclusion emphasizes that despite the implementation of digitalization tools, e-governance, and attempts to legalize the shadow sector, Ukraine's economy requires the immediate introduction of an effective "economic

resuscitation" mechanism. The authors substantiate that priority steps should include reforming the tax system, stimulating the production of high-value-added goods, and creating a favorable climate for attracting domestic investments to overcome the consequences of the military and demographic crises.

Keywords: gross domestic product (GDP), macroeconomic dynamics, gross capital formation, inflation, exports, imports, martial law.

Abbreviations:

GDP is Gross Domestic Product,

R&D is research and development.

Introduction

In the modern realities of Ukraine's national economy, burdened by the challenges of martial law, the monitoring and analysis of key macroeconomic indicators acquire particular importance. The resilience of the economic system directly depends on the dynamics of GDP, investment activity, and the foreign trade balance. Despite negative factors such as inflation, devaluation of the hryvnia, and significant migration of the working-age population, the industry demonstrates signs of adaptation. However, sharp fluctuations in gross capital formation and imbalances between imports and exports require detailed scientific analysis to develop mechanisms for the state's "economic resuscitation", which determines the relevance of this study.

The novelty of this study lies primarily in its comprehensive and longitudinal analysis of Ukraine's macroeconomic dynamics over the period 2005–2025, with a particular emphasis on the conditions of full-scale martial law and the initial phase of post-war recovery. Unlike most existing studies, which are either limited to short-term crisis periods or focus exclusively on pre-war or early wartime indicators, this research provides a continuous analytical perspective that makes it possible to identify not only short-term fluctuations but also persistent structural distortions in the national economy. Such a long-term analytical horizon enables a deeper understanding of qualitative changes in economic growth patterns and reproduction processes.

A significant element of scientific novelty is the comparative analysis of nominal and real gross domestic product under conditions of high inflation, currency devaluation, and distorted price signals. The article substantiates that the growth of nominal macroeconomic indicators in a wartime economy cannot be interpreted as evidence of real economic recovery without considering inflationary pressure and changes in the structure of GDP final use. In this regard, the study contributes to refining methodological approaches to the interpretation of macroeconomic dynamics in extreme socio-economic conditions, which remain insufficiently elaborated in contemporary economic research.

An additional aspect of novelty is the detailed examination of gross capital formation using quarterly data, allowing the identification of sharp declines in investment activity and their underlying causes. For the first time within a single integrated study, the interconnection between political instability, migration processes, declining purchasing power, and the erosion of the economy's investment potential is systematically substantiated. This analytical perspective shifts the focus from descriptive diagnostics of crisis phenomena toward the formation of an evidence-based framework for developing effective mechanisms of "economic resuscitation" in the context of post-war recovery.

The subject of the study is the set of economic processes and institutional-structural mechanisms governing the formation, transformation, and interaction of key macroeconomic indicators of Ukraine's national economy under conditions of martial law and the early stage of post-crisis stabilization. The study focuses on how the macroeconomic system responds and adapts to exogenous shocks caused by full-scale military hostilities, demographic losses, labor migration, inflationary pressures, and shifts in external economic conditions.

The object of the study is the state and dynamics of the main macroeconomic indicators of the national economy of Ukraine in the period from 2005 to 2025.

The purpose of the article is to conduct a comprehensive analysis of transformations in the structure of Ukraine's GDP, investigate the factors influencing gross capital formation, and evaluate foreign economic activity to determine priority directions for economic stabilization.

To achieve this goal, the following objectives were set:

- analyze the dynamics of actual, nominal, and real GDP over the last decade;
- investigate the structure and causes of fluctuations in gross capital formation under conditions of political and economic crisis;
- evaluate the ratio of consumer spending, exports, and imports in the overall structure of national income;
- identify key barriers (inflation, demographic crisis) that hinder sustainable growth.

The theoretical framework of the study consists of macroeconomic reports from the State Statistics Service of Ukraine, analytical materials from the Ministry of Finance, and the works of scholars, notably K. Kraus, N. Kraus, O. Manzhura, and others, who explore issues of business process digitalization and reserves for economic growth within the national economy.

The practical value of the results lies in their utility for government authorities, economic analysts, scholars in the field of macroeconomics, and business entities requiring forecast benchmarks for planning activities under the high uncertainty of Ukraine's market environment.

Methods

To achieve the stated goal and fulfill the defined objectives, a comprehensive set of scientific methods was employed to ensure the objectivity, reliability, and analytical validity of the research results. The methodological framework of the study is based on a combination of general scientific and specialized economic methods, which together allow for a multidimensional analysis of macroeconomic processes under conditions of heightened uncertainty.

General scientific methods include the systemic approach, analysis and synthesis, comparative method, and graphical method, which are described below.

The systemic approach is a fundamental methodological principle that considers the national economy as an integrated and interdependent system composed of interconnected structural elements. This approach makes it possible to analyze economic phenomena not in isolation, but within the context of their mutual influence and functional interdependence. In this study, the systemic approach was used to examine Ukraine's national economy as a holistic macroeconomic system functioning under martial law, with particular attention to the interconnection between gross domestic product, investment activity, and foreign trade flows. This made it possible to identify structural imbalances and transmission mechanisms through which external shocks affect overall economic stability.

Analysis and synthesis are classical general scientific methods that ensure logical consistency and depth of economic research. Analysis involves the decomposition of complex economic phenomena into their constituent elements for detailed examination, while synthesis allows the

integration of individual findings into a coherent and comprehensive understanding of the object under study. In this research, analysis was applied to disaggregate GDP into its key components—consumer spending, gross capital formation, and exports/imports—enabling a detailed assessment of their individual dynamics. Synthesis was subsequently used to integrate these results into a unified interpretation of the structural state and transformation trends of the national economy.

The comparative method is widely used in economic research to identify similarities, differences, and dynamic changes across time periods or economic conditions. It allows researchers to reveal trends, cyclical patterns, and structural shifts by comparing indicators across different temporal or contextual frames. In this study, the comparative method was employed to contrast macroeconomic indicators over time, particularly by comparing the dynamics of 2022–2025 with those of 2012–2014. This made it possible to identify the specific features of economic development under martial law and to assess the scale of deviations from pre-crisis trajectories.

The graphical method serves as an important tool for visualizing quantitative data and enhancing the interpretability of complex statistical information. By transforming numerical data into visual representations, this method facilitates the identification of trends, turning points, and proportional relationships. In the present research, the graphical method was used to visualize changes in GDP dynamics, quarterly gross capital formation, and the export-to-import ratio through the construction of figures. This approach allowed for a clearer demonstration of macroeconomic trends and supported the analytical conclusions drawn from statistical calculations. In addition to general scientific methods, the study employed specialized economic and statistical methods, including the statistical grouping method, time-series analysis, and the economic-statistical method, which are described below.

Also, the researchers used such specialized methods as statistical grouping method, time-series analysis, and economic-statistical method described below.

The statistical grouping method is used to systematize and structure primary data by organizing it into homogeneous groups based on selected criteria. This method enhances the analytical clarity of large datasets and enables the identification of regularities within economic indicators. In this study, statistical grouping was applied to process and organize primary data obtained from the State Statistics Service of Ukraine and the Ministry of Finance. The data were grouped by time periods (years and quarters) and by functional characteristics (nominal versus real GDP), which ensured the consistency and comparability of the analytical results.

Time-series analysis is a specialized quantitative method designed to study the behavior of economic indicators over time, identify trends, and assess the stability or volatility of observed processes. This method is particularly relevant for macroeconomic research, where long-term dynamics and structural changes are of primary interest. In the present study, time-series analysis was utilized to examine the dynamics of gross capital formation and foreign trade volumes (exports and imports) over a long-term period (2005–2024). This made it possible to determine the direction, intensity, and persistence of macroeconomic trends under both stable and crisis conditions.

The economic-statistical method encompasses a set of quantitative techniques aimed at calculating relative and absolute indicators that characterize economic development. It allows researchers to assess rates of change, proportional relationships, and the impact of specific factors on macroeconomic performance. In this research, the economic-statistical method was used to calculate relative values such as growth indices and indicator ratios. This enabled an

assessment of the rate of change in key macroeconomic indicators and an evaluation of the impact of inflation and currency devaluation on real production volumes and investment activity.

The application of this methodological toolkit allowed for the substantiation of conclusions regarding existing crisis phenomena and the necessity of implementing an "economic resuscitation" mechanism.

Literature Review

The research materials from the State Statistics Service of Ukraine and analytical data from the Ministry of Finance of Ukraine for the 2005–2026 period provide comprehensive information on GDP dynamics at current prices and its structure by final expenditure. These sources are essential for conducting a retrospective analysis of Ukraine's economic state, assessing the impact of martial law on macroeconomic indicators, and formulating predictive models for the national economy's development.

In the works of the research team led by N. Kraus and K. Kraus (*2021*), the virtual-real aspects of economic growth through the digitalization of business processes are explored. Their research also examines the transformation of enterprises within the gig economy and the transition to Industry 5.0 (*Kraus et al., 2023*), as well as changes in the country's "infrastructure fabric" under the influence of digital vectors (*Kraus et al., 2022*). These studies provide a theoretical foundation for the transition from traditional business models to digital ecosystems, which is critical for understanding modern requirements for investment in intangible assets.

The works of O. Manzhura and co-authors (*2024*; *2025*) focus on the practical aspects of investment. The article of 2025 (*Manzhura, 2025*) provides an in-depth analysis of capital investment amidst structural economic transformations and proposes methods for its calculation. The work of 2024 (*Manzhura, 2024*) examines innovative development through the prism of the country's R&D potential. These publications were utilized to identify problem areas in Ukraine's investment policy and to determine the role of R&D potential as a driving force for recovery.

Central to developing further research is the study (*Kraus et al., 2024*), where the authors analyze scenarios and models for reconstructing Ukraine's economy based on digital entrepreneurship, offering forecast expectations for the country's development in the post-war period. This source is pivotal for formulating the strategic recommendations of this article, as it contains ready-made development scenarios based on digitalization and innovation. Recent international research has substantially expanded the analytical understanding of the macroeconomic consequences of the war in Ukraine, particularly with regard to inflationary shocks, output losses, and the transmission of geopolitical risk into economic systems. A notable contribution in this area is the study by Caldara et al. (*2022*), which examines the impact of the war in Ukraine on global economic activity and inflation using a geopolitical risk framework. The authors demonstrate that the war constitutes a significant exogenous shock, leading to higher inflation rates and a slowdown in economic activity both globally and regionally. In the present study, the conceptual and analytical insights of Caldara et al. (*2022*) are used to substantiate the interpretation of the widening gap between nominal and real GDP in Ukraine, as well as to explain the inflationary nature of nominal growth observed under wartime conditions. Their findings provide a broader macroeconomic context for understanding how war-related shocks distort price dynamics and weaken the informational value of nominal indicators.

A regional perspective on the macroeconomic effects of the war is offered by Daianu et al. (*2025*), who analyze the consequences of the conflict for Central and Eastern European

economies using a Structural Vector Autoregression (SVAR) approach. Their study identifies statistically significant negative effects of war-related shocks on GDP growth, investment activity, and price stability across the region, highlighting strong spillover effects and heightened vulnerability of neighboring economies. In this research, the methodological logic and empirical conclusions of Daianu et al. (*2025*) are employed as a comparative benchmark for assessing Ukraine's macroeconomic dynamics. Their results support the interpretation that the observed decline in gross capital formation and investment instability in Ukraine is not an isolated phenomenon but part of a broader regional pattern intensified by geopolitical and security risks.

A more country-specific and detailed examination of Ukraine's wartime economy is provided by Hetmanenko (*2025*), who conducts an in-depth analysis of the macroeconomic implications of the war for Ukraine, focusing on GDP contraction, inflation acceleration, fiscal imbalances, and structural disruptions. This study emphasizes the cumulative impact of military destruction, demographic losses, and declining purchasing power on the sustainability of economic growth. In the present research, Hetmanenko's findings are used to reinforce the identification of key internal barriers to economic stabilization, particularly inflationary pressure and the erosion of the domestic investment base. The author's conclusions contribute to the justification of the need for a comprehensive "economic resuscitation" mechanism, which aligns with the analytical outcomes and policy-oriented implications developed in this article.

Results

The state of the national economy is well described by macroeconomic indicators such as gross domestic product, gross national income, national income, employment level, inflation rate and price level. There is shown the change in gross domestic product from 2022 to 2025 in actual prices in the Appendix (*Figure 1*). We see that in 2024 this indicator increased by 1.46 times compared to 2022 and by 1.15 times compared to 2023. The growth of this indicator indicates that, despite the martial law in Ukraine, industry and production in various sectors of the economy increased in quantitative terms.

We consider it interesting to consider the gross capital accumulation indicator in the GDP structure for 2024. The general trend line of gross capital accumulation has an increasing trajectory, but the sharp drop in gross capital accumulation in the VI quarter of 2024 by UAH 191,873 million is noteworthy (*Figure 2*). This's due to the political crisis in the country and the poor economic situation: the growing level of prices for goods and services; devaluation of the hryvnia; a decrease in the number of the working-age population due to their migration, which weakened the labor market and reduced employment. However, despite the above challenges, the total amount of gross capital accumulation for 2024 amounted to UAH 1,427,806 million (*Figure 2*).

In light of the sharp change in gross capital accumulation according to the results of the 3rd quarter of 2024, there is a need to find out why this happened? So, we can see a negative change in liabilities of tangible working capital, which amounted to UAH 19,814 million in total for 2024 (*Figure 3*). Gross fixed capital accumulation for 2024 amounted to UAH 1,427,806 million, while acquisitions excluding disposals of valuables reached UAH 1,649 million (*Figure 3*).

There is presented the nominal and real GDP of Ukraine from 2012 to 2024 in the Appendix (*Figure 4*). The trend line of real GDP has a tendency to increase over the 12 years presented for analysis. In 2024, Real GDP increased by 5.22 times compared to 2012. Due to

the war, in 2022 there was a sharp drop in nominal GDP (by 268,546 million UAH) and real GDP (by 497,802 million UAH) compared to the previous year 2021.

Analyzing the data, it is worth paying attention to the ratio of nominal and real GDP (*Figure 4*). We see that from 2012 to 2020 this ratio was significantly smaller, and from 2021 to 2024 this difference is larger. This is due to the growing level of inflation. Thus, the difference in real GDP in 2012 and 2013 compared to the previous year was 104,825 and 44,322 million UAH, and the nominal difference for the same period was 7.8% and 3.0%, respectively. In 2024, compared to the previous year, the difference in nominal GDP was 10.9% and real 837,571 million UAH.

Analysis of the indicators gives grounds to state a significant excess of consumer spending each year against a slow increase in gross spending (*Figure 5*). If we compare the growth of gross savings in 2024 compared to 2014, it was in the ratio of 6.5:1, while in 2014 compared to 2005 it was 2.2:1. For a complete picture of the economic situation in Ukraine, let us analyze the dynamics of changes in consumer spending. Thus, growth in 2024 compared to 2014 was 5.4:1. If we compare 2014 with 2005, then here it was 4.2:1.

Analysis of export dynamics in the structure of Ukraine's GDP from 2005 to 2024 shows a positive trend towards a systematic growth of exports of goods and services (*Figure 6*). Over 20 years, it has grown 9.9 times, which is a positive trend overall. It is exports that make it possible for the country to earn money, and if it is in the form of finished goods, and not raw materials and semi-finished products, then this is generally an economic success for Ukraine. The volume of imports over the same period has grown 16.5 times, which is not always good for the national economy, because it shows that the necessary range of goods and services needed by the population, production and industry is not produced in Ukraine and is imported from abroad.

The analysis of macroeconomic indicators allows us to verify a number of problems that the Ukrainian economy is facing. Thus, it is characterized by:

- an increase in the inflation rate; the country's GDP decreased in the first year of the war;
- the volume of imports is increasing faster than the export of goods and services;
- over the four years of the war, there has been a systemic devaluation of the hryvnia;
- the Ukrainian labor market has lost a large number of economically active people in favor of the European labor market due to migration;
- the demographic crisis in Ukraine persists.

The decline in the purchasing power of the population, the presence of military risks, the increase in taxes and the political crisis have influenced the crisis of production and its reduction. And even attempts to mitigate these negative trends by reforming individual sectors of the economy, legalizing shadow economic activity, implementing the principles of e-government, "digitalization of business processes" (*Kraus et al., 2021*), combating corruption at all levels of economic aggregation, introducing modern digital technologies and following European integration processes, unfortunately, have not yet yielded the desired result. All this requires the Ukrainian government to take immediate steps to develop a mechanism for "economic resuscitation" of the national economy.

The study of the dynamics of Ukraine's macroeconomic indicators for the period 2005–2025 allows us to ascertain a profound structural transformation of the national economy under the influence of exogenous shocks. A key problem arising from the analysis is the growing gap

between nominal GDP growth indicators and the real capabilities of the economy. While the figures indicate an increase in production volumes at current prices, a detailed examination demonstrates that this growth is largely negated by high inflation rates and devaluation processes. Of particular concern is the sharp decline in gross capital formation during certain periods, which indicates reduced investment attractiveness and the depletion of internal resources for development.

The disproportion between the growth rates of imports and exports over a twenty-year period indicates an intensification of the economy's raw material orientation and a critical dependence on foreign consumer goods. This poses a threat to the economic security of the state, as the national producer loses the competitive struggle in the domestic market. At the same time, migration processes are creating a long-term shortage of skilled labor, rendering traditional methods of economic stimulation ineffective.

The primary issues for further discussion and research include identifying industrial sectors that can become drivers of real (rather than nominal) GDP growth in the post-war period; discussions on transitioning the export structure from raw materials to technology-oriented under conditions of investment capital shortages; the formulation of state policies aimed at the return of labor migrants to stabilize the domestic labor market; the comprehensive digitalization of business processes to compensate for the loss of physical capital and human resources; and the search for "economic resuscitation" tools that will be most effective in overcoming the consequences of political and demographic crises.

Qualitative changes in the national economy are impossible without large-scale structural reforms that require significant investment. The functioning of the investment environment in Ukraine today is determined by a complex of destructive factors caused by the full-scale war, in particular, the need for business relocation and general socio-economic instability. In this context, the steadfast implementation of planned investment policy measures, designed for the immediate two-year perspective, acquires strategic significance for military and post-war reconstruction. Key factors in ensuring innovative investment progress will be the improvement of the institutional mechanism and the intensification of the digitalization of business processes in all sectors of the economy. To achieve and exceed the pre-war level of innovation competitiveness, it seems appropriate to reorient the structure of capital investments towards financing scientific research, technical testing, and the development of domestic software (*Manzhura et al., 2025*). Therefore, the modern investment strategy must prioritize investment in intangible assets.

A key task for ensuring post-war recovery and innovative progress in Ukraine is the development of effective mechanisms for economic intensification by accelerating the digitalization of the entrepreneurial sector (*Kraus et al., 2024*). In this context, a strategically important direction is the development of telecommunications, information, and computer services. Strengthening the export potential of these industries and the widespread implementation of their products into the activities of traditional enterprises define the primary reserves for forming the country's digital ecosystem. To realize this potential, it is necessary to implement a set of measures aimed at stimulating the digital transformation of business (*Kraus et al., 2023*). This involves institutional support—the creation of a specialized financial institution (e.g., the Digital Bank for Innovative Development) to finance relevant projects—and fiscal incentives, such as the introduction of a preferential taxation regime for newly established business entities operating in innovative technologies (*Kraus et al., 2022*).

Based on the above, it can be stated that the dynamic post-war recovery of the Ukrainian economy directly depends on the effectiveness of the investment strategy, the priority of which

is the allocation of capital into intangible assets (*Manzhura et al., 2024*). The sustainable development of innovation-active business entities is driven by the synergy of several factors: the availability of financial resources for R&D projects, access to highly qualified human resources, a developed digital infrastructure, and a favorable security and social-economic environment. A coordinated innovation strategy and a balanced state investment policy play a key role in creating appropriate institutional conditions for the functioning of such enterprises.

Discussion

The results of the study are highly relevant in the context of Ukraine's current social and economic situation, characterized by prolonged martial law, structural destruction of productive capacities, and the necessity of designing an effective post-war recovery strategy. The obtained empirical evidence demonstrates that traditional macroeconomic indicators, particularly nominal GDP growth, are increasingly losing their explanatory power as indicators of real economic recovery under conditions of high inflation and currency devaluation. This finding is of critical importance for both academic research and economic policymaking, as it highlights the risk of misinterpreting nominal growth as genuine economic stabilization.

The revealed imbalance between consumer spending and gross capital formation underscores a fundamental structural weakness of the Ukrainian economy, namely the dominance of short-term consumption over long-term investment. This imbalance significantly constrains the potential for sustainable growth and post-war reconstruction, as insufficient capital accumulation undermines the renewal of fixed assets and limits technological modernization. Furthermore, the identified disproportion between export and import growth rates confirms the persistence of a raw-material-oriented economic model and a deep dependence on foreign goods, which poses long-term threats to economic security.

From a practical perspective, the research findings are relevant for government authorities and economic strategists involved in post-war reconstruction planning. The results provide an analytical basis for rethinking the priorities of macroeconomic policy, shifting the focus from formal indicators of growth to qualitative parameters such as investment structure, real production capacity, and the resilience of the national economic system. In this sense, the study contributes to the formation of a more realistic and analytically grounded framework for assessing economic recovery in crisis and post-crisis conditions.

Despite the comprehensiveness of the analytical approach, several research problems and limitations should be acknowledged.

First, the study relies primarily on official statistical data, which, under conditions of full-scale war, may be subject to reporting delays, methodological adjustments, or partial incompleteness. This constraint limits the precision of certain estimates, particularly those related to quarterly investment dynamics and sectoral distribution of capital formation.

Second, while the research identifies key macroeconomic distortions and their structural causes, it does not fully capture informal economic activity and the shadow sector, which traditionally play a significant role in Ukraine's economy and may have expanded under wartime conditions. The absence of reliable data on these processes restricts the ability to assess the full scale of economic adaptation mechanisms employed by households and enterprises.

Another problem concerns the limited sectoral disaggregation of the analyzed indicators. Although the study convincingly demonstrates aggregate macroeconomic trends, the lack of detailed sector-level analysis constrains the identification of specific industries that could serve as drivers of real GDP growth in the post-war period. In addition, the complex interaction between demographic losses, labor migration, and productivity changes requires further

methodological refinement and the use of micro-level data, which remain beyond the scope of the present research.

Based on the obtained results, several promising directions for further research can be proposed. First, future studies should focus on sectoral and regional analyses of gross capital formation in order to identify industries with the highest potential for generating real, rather than nominal, economic growth. Particular attention should be paid to high value-added sectors, including digital services, information and communication technologies, and knowledge-intensive manufacturing.

Second, further research should aim to integrate econometric modeling and scenario analysis to assess the long-term effects of alternative investment strategies under different post-war recovery scenarios. This would allow for a more precise evaluation of policy instruments designed to stimulate domestic investment, attract returning labor migrants, and reorient export structures toward technologically advanced products.

Third, an important direction for future investigation is the role of intangible assets—such as research and development, human capital, and digital infrastructure—in restoring the productive potential of the national economy. Given the destruction of physical capital caused by the war, the accumulation of intangible assets may become a key compensatory mechanism for economic recovery. Expanding the analytical framework to include these factors would significantly enhance the explanatory power of macroeconomic assessments.

In general, further interdisciplinary research combining macroeconomic analysis, institutional economics, and digital economy studies is necessary to develop a holistic understanding of Ukraine's post-war economic transformation and to substantiate effective mechanisms for sustainable and resilient growth.

Conclusion

This scientific article provides a comprehensive theoretical and applied analysis of the current state of Ukraine's macroeconomic system under martial law and post-crisis recovery. Based on the processing of statistical data from the State Statistics Service of Ukraine and the Ministry of Finance for the 2005–2025 period, the study yields the following results. The research findings indicate that, despite ongoing hostilities, macroeconomic indicators demonstrate a certain degree of adaptability. Notably, GDP at current prices in 2024 increased 1.46-fold compared to 2022. This suggests that industrial and manufacturing sectors have managed to increase quantitative indicators, partially compensating for the losses incurred during the first year of the war.

An analysis of the GDP structure by final expenditure revealed a critical situation in the investment sphere. A sharp decline in gross capital formation was recorded in the fourth quarter of 2024, amounting to UAH 191,873 million. The primary causes of this phenomenon include the political crisis, galloping inflation, devaluation of the hryvnia, and the loss of the labor market due to population migration.

A detailed analysis of the components of gross capital formation showed a negative change in inventories of material circulating assets (–UAH 19,814 million) by the end of 2024. At the same time, the acquisition of valuables less disposals amounted to only UAH 1,649 million, highlighting the insufficiency of domestic resources for a large-scale investment renewal of fixed assets.

The study of the ratio between nominal and real GDP for 2012–2024 confirmed that the significant excess of nominal indicators over real ones in 2021–2024 is directly linked to high

inflation rates. Although real GDP in 2024 increased 5.22-fold compared to 2012, this growth does not reflect a real increase in the physical volumes of goods and services produced.

The analysis showed a stable excess of consumer spending over gross capital formation, indicating a low share of investment in the structure of GDP utilization. In foreign economic activity, a positive trend in export growth (9.9-fold over 20 years) is observed; however, import growth rates are significantly higher (16.5-fold), indicating a critical dependence of the economy on foreign goods.

The conducted analysis allows us to conclude that there is a deep structural crisis in the Ukrainian economy. Rising inflation, systemic devaluation of the national currency, the loss of the economically active population, and declining purchasing power necessitate a fundamental change in the public administration paradigm. Attempts to mitigate negative trends through the digitalization of business processes and the reform of individual sectors remain insufficient. There is an urgent need to develop and implement an effective "economic resuscitation" mechanism aimed at stimulating real production, supporting domestic exporters, and creating conditions for robust investment activity.

The purpose of the study—to conduct a comprehensive analysis of transformations in the structure of Ukraine's gross domestic product, examine the determinants of gross capital formation, and evaluate foreign economic activity to identify priority directions for economic stabilization—has been fully achieved. The study provides an integrated assessment of macroeconomic dynamics under conditions of martial law and the initial stage of post-war recovery, combining long-term statistical analysis with structural interpretation of key economic indicators. This approach made it possible to move beyond descriptive diagnostics and to substantiate analytically grounded conclusions regarding the qualitative state of the national economy.

In fulfilling the first research objective, the dynamics of actual, nominal, and real GDP over the last decade were systematically analyzed. The results demonstrated that although GDP at current prices showed an upward trend in the post-shock period, the growing divergence between nominal and real GDP indicates that inflationary pressure and currency devaluation significantly distort the perception of economic recovery. This finding confirms that nominal growth cannot be regarded as a reliable indicator of real economic performance in wartime conditions and highlights the necessity of adjusting analytical and policy frameworks accordingly.

The second objective, focused on investigating the structure and causes of fluctuations in gross capital formation under conditions of political and economic crisis, was achieved through a detailed quarterly analysis of investment dynamics. The identified sharp decline in gross capital formation in the fourth quarter of 2024 reflects the combined impact of political instability, declining purchasing power, labor migration, and heightened uncertainty. The structural decomposition of capital formation components revealed insufficient renewal of fixed assets and negative changes in inventories, underscoring the weakening of the investment base and the limited capacity of the economy to support sustainable long-term growth.

The third objective—evaluating the ratio of consumer spending, exports, and imports in the structure of national income—was addressed through a long-term comparative analysis covering the period from 2005 to 2024. The results revealed a persistent dominance of consumer spending over gross capital formation, indicating a consumption-oriented model of GDP utilization. At the same time, the significantly faster growth of imports relative to exports points to a deep dependence on foreign goods and an underdeveloped domestic high-value-added production sector, which poses structural risks to economic security and external balance.

The fourth objective, aimed at identifying key barriers to sustainable growth, including

inflation and the demographic crisis, was fulfilled through a comprehensive synthesis of macroeconomic, demographic, and foreign trade indicators. The analysis confirmed that rising inflation, systemic currency devaluation, and large-scale labor migration jointly constrain real economic growth and erode the productive and investment potential of the national economy. These barriers were shown to have a cumulative and mutually reinforcing effect, limiting the effectiveness of partial or short-term stabilization measures.

In general, the conducted research demonstrates that Ukraine's post-war economic recovery cannot be ensured through nominal growth indicators or consumption-driven expansion alone. Sustainable stabilization requires a structural reorientation toward investment-led development, the restoration of capital accumulation mechanisms, and the prioritization of policies aimed at strengthening domestic production capacity and reducing external dependency. The findings of this study form a solid analytical basis for further research and for developing evidence-based economic policies focused on resilience, qualitative growth, and long-term recovery of the national economy.

Conflict of Interest

The authors declare that there is no conflict of interest.

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Structure of Ukraine's GDP by Final Use from 2005 to 2025. (2026). *Ministry of Finance, January 13 2026*. (In Ukr.). https://index.minfin.com.ua/ua/economy/gdp/

Appendix

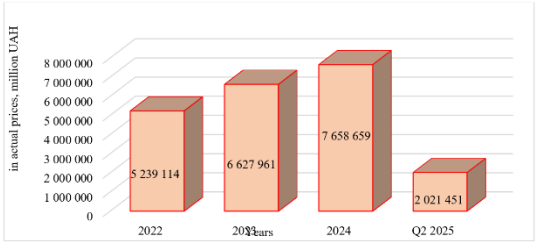

Figure 1. Dynamics of changes in the gross domestic product of Ukraine in 2022-2025 (*grouped by authors based on source* (*GDP, 2026a*))

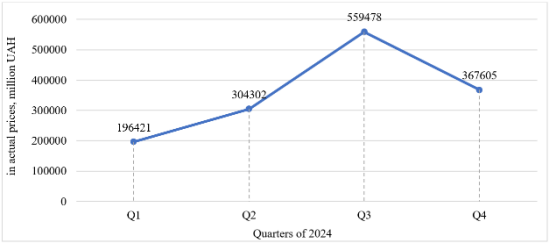

Figure 2. Gross capital formation in Ukraine by quarters in 2024 (*grouped by authors based on source* (*GDP, 2025*))

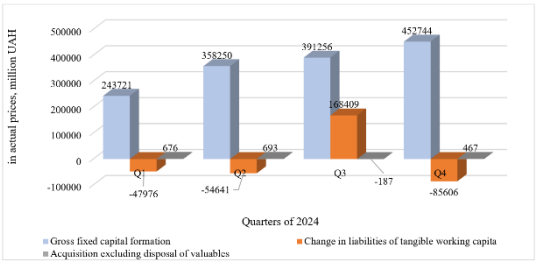

Figure 3. Components of gross capital formation in Ukraine by quarters of 2024 (*grouped by authors based on source* (*GDP, 2025*))

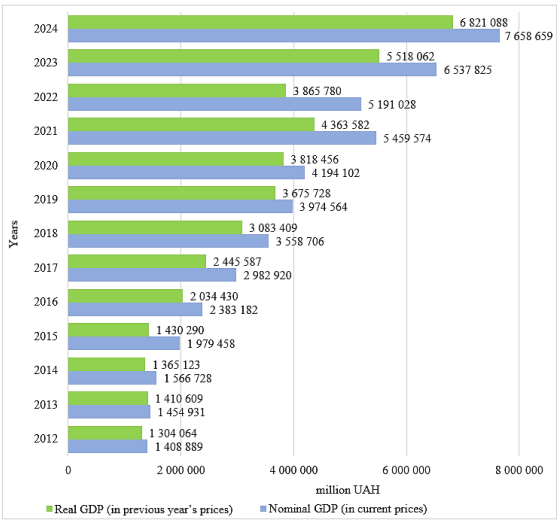

Figure 4. Gross domestic product of Ukraine from 2012 to 2024 (*grouped by authors based on source* (*GDP, 2026b*))

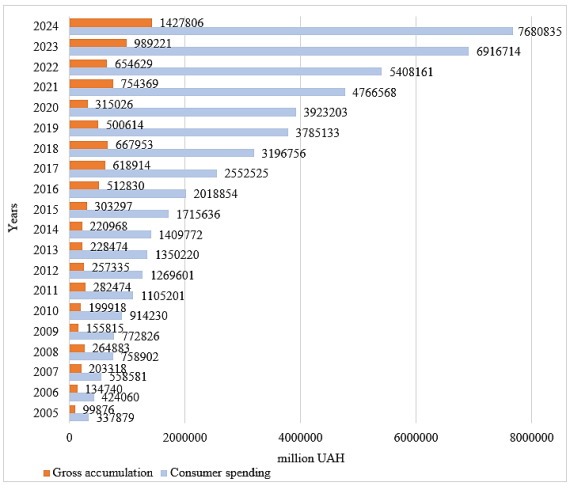

Figure 5. Dynamics of consumer spending and gross accumulation in the structure of Ukraine's GDP from 2005 to 2024 (*grouped by authors based on source* (*Kraus, 2021*)

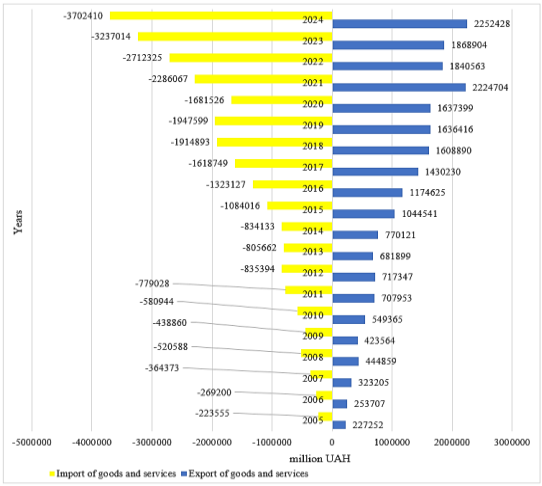

Figure 6. Dynamics of exports and imports of goods and services in the structure of Ukraine's GDP from 2005 to 2024 (*grouped by authors based on source* (*Structure…, 2026*))