

## UKRAINE'S INDUSTRIAL POLICY IN THE CONTEXT OF THE WAR: CHALLENGES AND PROSPECTS

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### Summary

The article examines Ukraine's industrial policy in the context of the full-scale Russian-Ukrainian war, focusing on the destruction of industrial capacity, institutional barriers to policy implementation, the growing role of the defense-industrial complex, and the prospects for post-war industrial recovery. The study emphasizes that industrial policy under wartime conditions cannot be limited to economic regulation, as it becomes directly connected with national security, technological autonomy, energy resilience, logistics, employment, and the ability of the state to maintain long-term economic stability.

The article substantiates that the main challenges for Ukraine's industrial development include the loss and damage of production facilities, disruption of logistics chains, energy risks, shortage of qualified personnel, limited access to financial resources, and insufficient coordination between state institutions, local authorities, business, and the scientific and educational sector. Special attention is paid to the need to transform fragmented anti-crisis measures into a coherent long-term industrial strategy. It is argued that the defense-industrial complex should become one of the key priorities of wartime industrial policy, combining state planning, private initiative, innovation, and international cooperation.

The article also analyzes the importance of European integration and international support for Ukraine's industrial recovery. Integration into European production chains, adaptation to EU standards, technological partnerships, investment programs, and risk insurance mechanisms are considered essential preconditions for the modernization of Ukrainian industry. The study concludes that Ukraine needs a new model of industrial policy based on innovation, digitalization, energy efficiency, localization of production, human capital development, support for small and medium-sized enterprises, and the strengthening of institutional capacity.

**Key words:** industrial policy, Ukraine, war, industrial recovery, defense-industrial complex, European integration, institutional capacity, technological modernization, economic resilience.

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### 1. Introduction

The full-scale Russian-Ukrainian war has radically transformed the conditions under which Ukraine's industrial policy is formed and implemented. Industry is no longer only a sphere of economic production, employment, export potential, and regional development. Under wartime conditions, it has become one of the material foundations of national resilience, defense capability, technological independence, and post-war reconstruction. The destruction of enterprises, damage to infrastructure, disruption of logistics, energy instability, labor shortages, and financial restrictions have exposed the structural vulnerability of Ukraine's industrial model and, at the same time, revealed the need for a more active, coordinated, and strategically

oriented role of the state in industrial development. The article therefore considers industrial policy as a complex system of economic, institutional, technological, and security-related decisions aimed at preserving production potential and creating conditions for its qualitative renewal.

The relevance of this research is determined by the need to move from reactive anti-crisis measures to a long-term model of industrial transformation. Ukraine's industrial recovery cannot be reduced to the mechanical restoration of destroyed facilities or the return to the pre-war structure of production.

It requires the formation of a new industrial policy that combines defense priorities, innovation, energy efficiency, digitalization, localization of critical production, European integration, international technological cooperation, and the development of human capital. In this context, particular importance is attached to the institutional capacity of the state, the quality of strategic planning, coordination between public authorities and business, the development of the defense-industrial complex, and the inclusion of Ukrainian enterprises in European and global value chains.

## **2. Theoretical Foundations of Industrial Policy in the Context of Wartime Transformations**

Industrial policy is one of the key areas of the state's economic activity, encompassing a set of strategic goals, managerial decisions, financial mechanisms, and institutional instruments aimed at developing the country's productive capacity. Its scope is not limited to supporting individual enterprises or sectors, since in contemporary conditions it functions as a comprehensive system for building technological capability, ensuring structural modernization of the economy, increasing labor productivity, and strengthening the competitive position of national producers. In this context, industrial policy combines economic, social, innovative, and security-related objectives that determine the long-term resilience of the state.

The theoretical understanding of industrial policy involves considering it as a mechanism of purposeful state influence on the structure of the national economy. This concerns the creation of conditions for the development of strategic sectors, the stimulation of investment, support for innovation, expansion of production cooperation, protection of the domestic market, and integration of enterprises into international value chains. At the same time, the effectiveness of such a policy depends not only on the scale of state support, but also on the quality of the institutional environment, the stability of rules, the transparency of administrative procedures, the coherence of actions by public authorities, and the state's capacity to define long-term development priorities (*Kindzerskyi, 2023*).

In the context of wartime transformations, industrial policy acquires a specific meaning, since industry becomes not only a source of economic growth but also a material foundation of defense capability. War changes the logic of state intervention in the economy by increasing the importance of mobilization planning, public procurement, support for critical industries, relocation of enterprises, and protection of energy and logistics infrastructure.

Industrial policy under wartime conditions has an anti-crisis, mobilization-oriented, and security-focused character. Its main task is not only to preserve existing productive capacity, but also to form a new industrial model capable of ensuring technological autonomy, defense capability, economic resilience, and the preconditions for Ukraine's post-war recovery.

### 3. The Impact of the Russian-Ukrainian War on Ukraine's Industrial Capacity

The full-scale Russian-Ukrainian war has become one of the most powerful factors of destructive impact on Ukraine's industrial potential. Its consequences have manifested themselves not only in the direct physical destruction of enterprises, production sites, warehouses, transport infrastructure, and energy facilities, but also in a profound transformation of the operating conditions of the entire industrial system.

One of the most tangible consequences of the war has been the loss of part of Ukraine's production capacity as a result of territorial occupation, hostilities, missile attacks, and the destruction of industrial facilities. Particularly significant losses have been suffered by enterprises in metallurgy, mechanical engineering, the chemical industry, the energy sector, and related industries, which have traditionally accounted for a substantial share of industrial output. The loss or damage of such facilities means not only a reduction in production volumes, but also the disruption of production chains, a decline in tax revenues, job losses, and the weakening of regional economic systems (*Dvulit & Andrusiak, 2023*).

The disruption of logistics links has become a major challenge for industry. The blockade of seaports, the risks associated with transportation, and the destruction of railway, road, and warehouse infrastructure have complicated the supply of raw materials, components, and finished products.

For many enterprises, this has meant the need to redirect routes, find new suppliers, increase transportation costs, and revise export strategies. As a result, logistics has turned from a technical element of business operations into one of the key factors of industrial resilience.

Energy risks have become an equally important constraint. Systematic attacks on energy infrastructure have led to instability in electricity supply, rising energy costs, and the need to introduce backup power sources (*Lisovyi & Andruk, 2025*).

For energy-intensive industries, this has created particularly difficult conditions, since the industrial cycle largely depends on continuous access to electricity, gas, water, and thermal resources. Energy vulnerability has revealed the need to modernize industrial infrastructure, improve energy efficiency, and develop autonomous systems for supporting production.

The war has also intensified personnel problems in the industrial sector. Mobilization, forced migration, population displacement, psychological exhaustion among workers, and the destruction of social infrastructure have caused a shortage of qualified personnel in many industries. This has been especially acute for enterprises for which engineering, technical, manual, and managerial competencies are critically important. At the same time, reduced investment activity, high wartime risks, and limited access to credit resources have complicated the modernization of production and the introduction of new technologies.

At the same time, the war has not only weakened industrial potential but also revealed its adaptive capacities. Some enterprises have relocated to safer regions, reoriented production toward defense needs, changed supply chains, and entered new markets. The changing structure of domestic demand, in particular the growing needs of the defense sector, reconstruction works, energy autonomy, and critical infrastructure, has formed new directions for industrial development.

#### 4. Institutional Challenges in Implementing Ukraine's Industrial Policy

The institutional challenges of implementing Ukraine's industrial policy are systemic in nature and largely determine the state's capacity to ensure industrial development during the war and in the period of post-war recovery. This concerns not only the existence of separate support programs for enterprises, but also the quality of public administration, the ability of public authorities to formulate coordinated priorities, ensure the stability of rules, accumulate resources, and create a predictable environment for industrial development. In this sense, industrial policy depends on the institutional capacity of the state no less than on financial or technological resources (*Zelenko, 2024*).

One of the key problems remains the fragmentation of strategic planning. Industrial development is often viewed through the lens of separate sectoral, regional, or anti-crisis decisions, whereas a coherent long-term model for modernizing productive capacity requires the coordination of economic, security, innovation, education, export, and regional policies.

Under wartime conditions, such fragmentation becomes more pronounced, since a significant share of managerial decisions is made under the pressure of urgent needs related to defense, energy security, enterprise relocation, and support for critical infrastructure. This is objectively necessary; however, without a strategic framework, anti-crisis measures do not always transform into a sustainable industrial policy.

An important challenge is insufficient coordination between central government bodies, local self-government authorities, military administrations, state financial institutions, and business entities. Industrial policy requires interagency cooperation, since production-related issues are connected with energy, transport, taxation, customs regulation, education, science, defense procurement, and international trade (*Zalutskyy, 2019*).

In the absence of proper coordination, duplication of functions, dispersion of resources, slow responses to enterprise needs, and weak accountability for final results arise. This problem is especially significant for enterprises that require rapid administrative decisions, access to financing, assistance with relocation, or connection to infrastructure.

The instability of the regulatory and legal environment also complicates the implementation of industrial policy. Frequent changes in rules, ambiguous procedures, lengthy approvals, and excessive administrative complexity reduce predictability for business. Under wartime risks, enterprises already operate in conditions of high uncertainty; therefore, regulatory instability further restrains investment, production modernization, and long-term planning. For industry, where investment cycles are lengthy, the stability of rules, protection of property rights, transparency of state support, and clear mechanisms of access to resources are particularly important.

A separate problem is the limited availability of financial resources and the weakness of long-term instruments for supporting production. Under wartime conditions, the state budget is largely oriented toward defense, social expenditures, and critical needs, which limits the possibilities for large-scale industrial stimulation.

At the same time, bank lending remains insufficiently accessible for many manufacturing enterprises due to high risks, insufficient collateral, loss of assets, or uncertainty in sales markets. This highlights the need to develop guarantee mechanisms, industrial funds, affordable lending programs, war-risk insurance, and public-private partnership instruments (*Andrushchak & Herasymenko, 2024*).

Interaction between the state, business, and the scientific and educational sector also remains insufficient. Industrial modernization is impossible without technological innovation,

the training of qualified personnel, applied research, and the transfer of knowledge into production. However, the gap between the needs of enterprises, the capacities of educational institutions, and state policy often leads to a shortage of competencies, weak commercialization of scientific developments, and insufficient university participation in industrial development.

### 5. The defense-industrial complex as a priority of military industrial policy

Under the conditions of the full-scale war, the defense-industrial complex has become one of the central elements of Ukraine's industrial policy, since it provides the material and technical foundation of national defense capability. Whereas in peacetime the defense industry was largely viewed as a separate sector of the economy associated with state defense procurement, under wartime conditions it has turned into a strategic system on which the state's ability to sustain prolonged resistance, maintain the combat capability of the armed forces, reduce dependence on external supplies, and respond rapidly to changes in the nature of warfare depends.

The production of weapons, military equipment, ammunition, communication systems, electronic warfare systems, unmanned platforms, surveillance and protection equipment, and military logistics assets has acquired particular importance. Contemporary warfare demonstrates that superiority is determined not only by the quantity of conventional weapons, but also by the ability to rapidly introduce technological solutions, adapt production to the needs of the front, modernize equipment, and ensure repair and maintenance within compressed timeframes (*Hmyria et al., 2025*).

State procurement plays an important role in the development of the defense-industrial complex. It generates the basic demand for defense products, defines production priorities, provides predictability for enterprises, and allows them to plan investments in capacity expansion.

At the same time, state procurement must be sufficiently flexible to respond to changing military needs, the emergence of new technologies, and the experience of combat use. Excessive bureaucratization of procurement, lengthy approval procedures, or unstable financing may reduce the effectiveness of defense production; therefore, the institutional quality of governance in this area is of fundamental importance.

The development of the private sector has become a separate factor in the transformation of the defense industry. Private companies, start-ups, and engineering groups often demonstrate a high pace of innovation, the ability to experiment, and the capacity to scale specific technological solutions rapidly. This is particularly evident in the fields of unmanned systems, software, electronic warfare, optics, sensors, and logistics solutions. The involvement of the private sector makes it possible to expand the production base of the defense industry and reduce dependence on a limited number of state-owned enterprises (*Polishchuk, 2020*).

At the same time, Ukraine's defense-industrial complex cannot develop in isolation from international cooperation. Partnerships with foreign states and companies create opportunities for joint production, technology transfer, localization of individual components, product standardization, and integration into broader security and production chains. Thus, the defense-industrial complex should become the core of wartime industrial policy, combining state planning, private initiative, innovation-driven development, and international partnership in order to strengthen Ukraine's defense capability and long-term technological capacity.

## 6. European integration and international support for Ukraine's industrial recovery

European integration is one of the defining factors of Ukraine's industrial recovery, since it shapes not only the foreign policy vector of development but also a practical framework for the modernization of the national economy. For the industrial sector, this process means gradual approximation to European Union standards, renewal of production practices, and higher requirements for product quality, environmental sustainability, energy efficiency, production safety, and transparency of administrative procedures. In this context, European integration serves as an instrument of structural transformation capable of combining the tasks of post-war recovery with the long-term modernization of the industrial base.

International financial assistance and investment programs are of considerable importance for overcoming the resource constraints caused by the war. The destruction of enterprises, loss of assets, rising production costs, and high wartime risks significantly limit the possibilities of domestic financing for industrial development. Under such conditions, external support may be directed not only toward the restoration of destroyed infrastructure, but also toward the creation of new production capacities, the introduction of modern equipment, the development of industrial parks, support for export-oriented enterprises, and the insurance of investment risks. At the same time, the effectiveness of such support depends on the state's ability to ensure transparent planning, proper control over the use of funds, and alignment of international programs with national industrial priorities.

The inclusion of Ukrainian enterprises in European production chains is of particular importance. It opens opportunities for expanding sales markets, technological renewal, improving product quality, and attracting new partnerships. Ukrainian industry can strengthen its positions in mechanical engineering, the food industry, raw material processing, defense production, energy equipment, and renewable energy. At the same time, integration into the European economic space requires adaptation to technical regulations, environmental standards, competition rules, and corporate governance requirements (*Ishchuk, 2025*).

Technological partnership with international companies and institutions should become one of the mechanisms for moving from simple recovery to qualitative modernization. This concerns technology transfer, joint production, localization of individual components, development of engineering competencies, and the participation of Ukrainian enterprises in international innovation projects. Thus, European integration and international support can become the basis for forming a new industrial model of Ukraine, oriented toward competitiveness, technological advancement, export development, and sustainable post-war growth.

## 7. Prospects for Developing a New Model of Industrial Policy in Ukraine

The prospects for developing a new model of Ukraine's industrial policy are connected with the need to move from situational anti-crisis responses to long-term industrial development. Under wartime conditions, the state is objectively focused on priority tasks related to supporting defense, preserving critical industries, ensuring energy resilience, and maintaining basic economic governability. However, this logic cannot remain the sole basis of industrial policy. Post-war recovery will require not merely the restoration of the pre-war industrial structure, but the formation of a qualitatively new model capable of responding to security, technological, social, and European integration challenges.

One of the key directions of this model should be the innovative modernization of production. Ukrainian industry requires the renewal of fixed assets, the introduction of modern technological processes, automation, robotization, the development of engineering solutions, and an increase in labor productivity (*Boldovskyi, 2025*).

At the same time, innovation should be considered not only as the result of the activities of individual high-tech companies, but also as a cross-cutting principle of industrial development. This implies support for applied research, technology transfer, cooperation between enterprises and universities, industrial parks, research institutions, and innovation clusters.

An important component of the new industrial policy is the digitalization of production and management processes. The use of digital platforms, monitoring systems, data analytics, electronic services for business, and transparent mechanisms of state support can increase the efficiency of industrial development management. Digitalization also contributes to reducing administrative barriers, improving coordination between the state and enterprises, accelerating access to support programs, and strengthening control over the use of resources. In this sense, digital instruments should not be an auxiliary element, but an organic part of the institutional modernization of industrial policy.

Energy efficiency and technological autonomy are acquiring particular importance. The war has demonstrated the vulnerability of production to attacks on energy infrastructure, disruptions in the import of components, and instability of logistics routes. Therefore, prospective industrial policy should be oriented toward reducing the energy intensity of production, developing autonomous energy supply sources, localizing critical components, expanding domestic raw material processing, and supporting industries that are important for defense, infrastructure, and economic security. Such an approach will reduce dependence on external risks and strengthen the resilience of the national economy.

The development of human capital is no less important. The new industrial model requires qualified engineers, technical specialists, skilled workers, managers, and researchers capable of working with modern technologies. This requires the renewal of vocational education, strengthening of dual training, development of retraining programs, reintegration of specialists into the labor market, and closer interaction between education and production. Without adequate staffing, even the most effective financial and technological solutions will not be able to ensure sustainable industrial development.

The new model of Ukraine's industrial policy should combine innovation, digitalization, energy efficiency, localization of production, support for small and medium-sized enterprises, development of human capital, and strengthening of the state's institutional capacity. Its effectiveness will depend on the ability of public institutions to formulate long-term priorities, coordinate resources, ensure transparent rules, and integrate industrial development into a broader strategy of national security, European integration, and post-war recovery.

## 8. Conclusions

The conducted analysis shows that the Russian-Ukrainian war has become a decisive factor in the transformation of Ukraine's industrial policy. Its consequences are manifested not only in the physical destruction of enterprises and infrastructure, but also in the disruption of production chains, energy insecurity, financial constraints, personnel losses, and the weakening of regional industrial systems. At the same time, the war has demonstrated the adaptive potential

of Ukrainian industry, including the relocation of enterprises, the reorientation of production toward defense needs, the search for new logistics routes, and the emergence of new technological and organizational practices. This confirms that industrial policy in wartime should be understood as a strategic tool for strengthening economic resilience, national security, and the state's ability to ensure long-term development.

The prospects for Ukraine's industrial recovery are connected with the formation of a new model of industrial policy based on innovation, digital transformation, energy efficiency, technological autonomy, localization of production, and integration into European economic space. The defense-industrial complex should become one of the key priorities of this model, while international support and European integration should serve not only as sources of financial assistance, but also as mechanisms for technological modernization and institutional renewal. The effectiveness of such a policy will depend on the state's ability to ensure stable rules, transparent support mechanisms, interagency coordination, cooperation with business and the scientific sector, and a clear connection between industrial development, national security, and post-war reconstruction.

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