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THE STATE IN THE POST-WAR INDUSTRIAL RECOVERY AND ECONOMIC RENEWAL: HISTORICAL PARALLELS AND APPROACHES FOR UKRAINE

In 2022, Ukrainians are experiencing the most tragic events since the Second World War - the full-scale invasion of Russian troops into Ukraine has led to numerous casualties, the destruction of cities, and the disruption of infrastructure and industrial facilities. Since the first days of the war, the dependence on the industrial imports (primarily for military purposes) became obvious, as well as the fact that the ensuing socio-economic crisis cannot be overcome with domestic resources alone - both now and even after the end of the war. This prompts the search for mechanisms to ensure the stability and recovery of Ukraine's economy. The purpose of the article is to generalize the global experience of prioritizing the industry in the state policy of the leading countries of the world under the conditions of severe tests, to illustrate the implementation by the state of the functions speeding up economic recovery; and to propose conclusions and recommendations for Ukraine.

The article shows the place of industry in the policy of recovery, gaining economic independence and increasing the country's power. Using historical examples, the authors demonstrated that during 300 years the state has influenced the industry through targeted political levers and institutional frameworks, generating the optimal results of measures aimed at restructuring to overcome the consequences of wars, epidemics and crises. It is substantiated that under the severe ordeals, the state has played a leading role in economic recovery, implementing a number of functions - administration and moderation, stimulation and catalysis, integration and cooperation,

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entrepreneurship and consumption, conservation and protection - to speed up the development of national industry as a source of the stabilization of employment, domestic and foreign investment, inflation, foreign trade and the financial sector, contributing to national social balance and well-being. The authors propose a conceptual approach to the functions of the state during post-war recovery of Ukraine's economy, ensuring economic stability and growth based on the national industry.

***Keywords**: war, economic recovery, industry, state, politics, functions of the state*

The statement of the problem. In 2022, Ukrainians are experiencing the most tragic events since the Second World War: the full-scale invasion of Russian troops led to numerous casualties, the destruction of cities, infrastructure and industrial facilities. From the very first days of the war, it has become obvious that the socioeconomic crisis it caused cannot be overcome with domestic resources without foreign assistance, either now or after the war has ended. This prompts intense discussions and research to identify levers to ensure Ukraine's stability, which, among other things, results in the statement that the manufacturing industry is the foundation of economic recovery [1].

This position is quite reasonable, as historical experience proves that no country was able to overcome poverty, economic vulnerability, and external dependence, and change its income status from low to middle or from middle to high without structural changes. All countries that successfully transitioned from an agrarian to a knowledge based economy (including the old industrialized powers of Western Europe and North America and the newly industrialized economies of East Asia) only succeeded by building national industries. Considering this, the best way to boost recovery and ensure socio-economic stability in Ukraine now and after the war is to launch a new industrialization [2]. However, Ukrainian politicians believe that the basis for economic growth is the land market, privatization, deregulation, infrastructure projects, and concessions [3].

The analysis of recent research and publications. The scientific task of substantiating theoretical approaches, developing methodological tools and formulating practical recommendations for the development of industry as a source of economic stability and growth, as well as strengthening the role of the state in accelerating this process has been on the agenda of domestic scientists since the first days of Ukraine's independence.

Reflecting on the economic policy of the transition period in 1993, V. Chyrkov emphasized the decisive role of the state at the beginning of the reforms: "Our community, shocked by the criticism of the past administrative-command system, began to fear (rather, to be ashamed of) such attributes of power

as discipline, administration, and commands. All this fuels the anarchic nature of the processes taking place in the economy. But it is still possible to save the situation by creating a strong bureaucratic (in the best sense of the word) apparatus that will act decisively on the basis of stable regulations" [4, p. 3]. In the early 2000s, Halchynskyi A., Heyets V., Kinakh A., Semynozhenko V. noted that "the main strategic task of Ukraine is to implement a policy of economic growth... This, in turn, requires an increase in the role of the state at this stage... Active interaction of the state with the private sector of the economy is necessary to accelerate the formation and establishment of national capital. Its concentration should be focused on crucial priorities" [5, p. 211]. At the same time, the state should promote the preservation, development and effective use of the created scientific, technological and production potential, as well as "industrial research, which is the only one that can really ensure accelerated industrial modernization and the creation of high-tech industries" [6, p. 64]. Having analyzed the economic processes of the leading countries of the world, Ukrainian scientists note [7, 8] that industry is a driver of innovative economic development and that governments of the world are looking for modern effective directions of structural and industrial policy that would ensure an increase in added value, sustainable economic growth and an appropriate quality of life.

One of the above authors in his study on *"The renaissance of the state interventions in industrial development: recent global trends and lessons for Ukraine"*, prepared after the Russian aggression in 2014, the occupation of part of Ukraine's territory and the loss of a number of important resources, emphasizes: "A strong argument in favor of active state intervention in the rise of Ukrainian industry in today's difficult conditions is the experience of the South Korea, whose industrial policy was based on the consensus of the government and elites who realized that **the threat of invasion that existed at the time would increase, if investment and innovative modernization of the economy is not carried out quickly and fail to achieve social balance. This forced them to link national security with economic stability, which is based on the development of the national industry. Therefore, the right priorities and instruments of Ukraine's industrial policy are the key to not only economic development, but also national security**" [9, p. 37].

However, despite the above mentioned and other scientific works, arguments and recommendations, which are quite numerous, Ukrainian politicians did not consider industry as a dominant factor of economic stability and growth, nor as a factor of national security. As a result, the domestic industry, with its long history and scientific schools, did not accumulate sufficient technological, production, and investment resources to respond to new threats, and Ukraine was unprepared for the COVID-19 pandemic and military aggression by Russia, remaining dependent on supplies of strategic goods from abroad.

The current economic crisis prompts us to once again pay attention to this problem, but this time through the prism of its solution in historical retrospect: in the context of war and post-war recovery, as well as global crises that governments faced and succeeded in resolving. In view of this, *the purpose of the article* is to summarize the historical experience of the world's leading countries and to substantiate the role of the State in creating the industrial basis for economic recovery in the face of severe challenges (wars, epidemics, crises); to illustrate those functions of the State, whose implementation really speeded up the development of the national industrial potential, which contributed to economic stability and national security; and to develop proper recommendations for Ukraine.

Research methodology. To achieve this goal, the authors used the methods of analysis, synthesis and comparison to study the mechanisms of accelerating the development of industry; the logical-dialectical method and the method of comparative analysis, and functional and system-structural methods to reveal the relevant functions of the state, and to identify the organizational and institutional aspects of managerial decision-making in the context of transforming the industry into an engine of economic recovery.

The role of the state in the development of industry as an engine of economic recovery

Formed in 1701, the Kingdom of Prussia could not recover from the Thirty Years' War for a long time, and economic problems were compounded by social ones due to the bubonic plague, which killed a third of the country's population in 1708[3] [10]. Frederick-Wilhelm I, when he came to the throne in 1713, introduced the policy of "Ein Plus machen" (literally "make plus" in the sense of "make a surplus") and began "to put in order the finances, administration, army and administration of justice, since these areas were equally neglected by the previous ruler... Every year he traveled to each province, encouraging craftsmanship everywhere and promoting prosperity. Many foreigners were attracted to the country. Those who opened factories in the cities or contributed new skills were rewarded with grants, privileges, and awards" [11]. His successor, Frederick II[4], justified his decisions on further economic recovery as follows: "If a country wants to remain prosperous, it is absolutely necessary that the trade balance be favorable: if it pays for imports more than it earns from exports, it will inevitably become poorer from year to year... The means of preventing such damage are as follows: processing all available local raw materials, processing foreign materials to provide

[3] The Thirty Years' War of 1618-1648 (the first Pan-European war) and the epidemic caused huge losses: the German population fell from 17 to 11 million; only in the middle of the eighteenth century (around 1750) did Prussia manage to increase its population to the level of 1618 (up to 17 million).

[4] He was called Frederick the Great for turning Prussia into a great European power.

wages in the country and cheap labor to organize sales abroad" [12, p. 130]. In his opinion, the task of the state is "to improve the existing manufactories in the country; to introduce those that are still lacking; to attract as many foreigners of all estates, characters, and sorts to the country as possible" [13, p. 145]. "These three goals are aimed at preserving the country's money and population, in other words, at the revival and the increasing power of the state" [13, p. 286].

George Washington was the first president of the United States (the state formed in as a result of the War of Independence of 1775-1783) - in his first official address to Congress, he pointed out the main tasks: "The provision of a common defense deserves special attention. Being prepared for war is one of the most effective ways to preserve peace." This requires "such manufactories, as tend to render them [the free people – the author] independent on others, for essential, particularly for military supplies" [14].

Continuing this thesis, the first Secretary of the Treasury of the United States, A. Hamilton, in his "Report on the Subject of Manufactures" [15], drew attention to the priority industries for the national economy, whose development contributes to economic independence. In his recommendations for identifying industries that the government should encourage, the criteria included the reduction of manual labor and the use of labor-saving machines, and the growth of these industries should be maximized by the use of local resources.

One hundred and fifty years later (after the end of World War II), the dean of the F. Terman of the Stanford University School of Engineering noted a new round of U.S. government policy toward national industry: "The war ... brought to the west the beginning of a new era of industrialization. A strong and independent industry must, however, develop its own intellectual resources of science and technology, for industrial activity that depends upon imported brains and second-hand ideas cannot hope to be more than a vassal that pays tribute to its overlords, and is permanently condemned to an inferior competitive position" [16, p. 121].

Obviously, the governments of the catching-up countries that succeeded followed the above experience. *"The Growth Report: Strategies for Sustained Growth and Inclusive Development"* [17] analyzes 13 economies (now called "new industrialized countries"[5]) that demonstrated at least seven percent growth for at least 25 years since 1963. The authors of the report argue that in all cases, the key role was played by the technological development of local industries. These countries tried different strategies to help diversify exports or maintain competitiveness. This included industrial policies aimed at stimulating investment in new sectors [17, p. 7].

[5] 13 success stories presented in the paper cover the following economies that demonstrated sustained growth in the postwar period include the following: Botswana, Brazil, China, Hong Kong, Indonesia, Japan, the Republic of Korea, Malaysia, Malta, Oman, Singapore, Taiwan, and the United States.

In the twenty-first century, the financial and economic crisis of 2008- 2009 prompted the global consultations of the High-Level Panel of eminent persons on the Post-2015 Development Agenda, which confirmed the need for **governments to return to the issues of development industry and called for the transformation of the economy in favor of employment and overall growth based on value creation and increasing productivity through industrialization as a central strategy for achieving this transformation**. In addition, experts emphasized the need to promote inclusive and sustainable industrialization and innovation, and noted that investment in the industrial sector plays a critical role in inclusive, sustainable growth and job creation [18].

In the article "Europe's New Industrial Policy" published in "The Wall Street Journal" signed by the ministers of five EU countries (Spain, Portugal, Italy, France, Germany) - on the ways of economic recovery after 2008-2009, it is stated: "Unfortunately, Europe as a whole, constrained by the financial crisis, cannot cope with these changes at the right pace... A strong, restored and improved industrial base will enable the real sector of the economy to lead the economic recovery of Europe. There are several areas of focus: pushing forward with structural reforms; ensuring that regulation is carried out in a way that maintains competitiveness; and deploying industrial policies that can strengthen our industrial foundations and address our major imbalances" [19].

In the paper "Political Space for a New Industrial Policy in Europe" [20], the authors point out that the COVID-19 pandemic, the lockdown, the resulting disruptions in value chains and the need for rapid economic recovery raised the question of *how industrial policy should be implemented in a period of disruptive political change, economic and technological changes? How can we develop a future-oriented and welfare-oriented industrial policy that not only mitigates market failures but also addresses the most important security, social and environmental issues of society?*

To address the consequences of the COVID-19 pandemic in 2020, the EU leadership introduced various tools to restore supply chains and the stable operation of the manufacturing sector. Assessing these measures, EU Commissioner for the Internal Market Th. Breton emphasized that "the real industrial revolution begins now" with the right investments in key technologies and the right framework conditions. Europe launched mechanisms to build an industry that provides quality jobs and enables industrial enterprises to thrive even in the recovery process [21].

The paper "The Industrial Policy Revolution: The Role of Government Beyond Ideology" concludes: "The blind faith in the magic virtues of market forces in which rational agents would naturally create an optimal environment for growth and economic development has been disproved by the enormity of the Great

Recession - and the swift policy responses that governments around the world adopted to weather the crisis" [22, p. 13].

State functions and industrial development policy measures

Administration and moderation

Friedrich Wilhelm's I first step in rebuilding Prussia's economy was to change the administration system in order to optimize state institutions, ensure transparency of their activities, reduce the cost of the apparatus, speed up and coordinate actions, and at the same time gain greater control over civil servants. In 1722, the General Military Commissariat and the Main Financial Department were merged and a multifunctional state body, the General Directorate for the Army, Finance and Territories, was established on their basis [23][6]. It became the core of the country's central administrative system, focusing on the policy of industrial independence. The Directorate was responsible for a wide range of tasks, but among the priorities were the solution of the problem of Prussia's complete dependence on arms imports and meeting the needs of the army, which later became the main beneficiary of such a policy and at the same time a driver of the national economy. In 1740, on the initiative of the monarch, a specialized Department of Trade and Manufactures (the fifth department)[7] was created within the structure of the General Directorate. The fact that the monarch was directly concerned with the problems of industry is evidenced by a letter of September 15, 1742, to the head of the department: "My dear Minister Samuel von Marschall[8]! Since I learned on my way to Magdeburg that the debit of the woolen mills decreased considerably, you should take action with regard to the fifth department of the General Directorate, thoroughly investigating the causes of this decline, and find ways to eliminate it in a good and reliable way. I am not satisfied with the fact that the fifth department of the General Directorate does not pay attention to such things for which it is actually intended" [24, p. 41-42].

After the victory in the Franco-Prussian War of 1870-1871 and the unification of the German states into the German Empire, industries remained a priority for the state. The new Reich government actively cooperated with business, in particular with the Central Association of German Industrialists

[6] Today, German historians refer to this body as a "superministry" [23]. In 1808, the Prussian State Ministry became the legal successor to the General Directorate, which also included the Department of Trade and Industry. In 1847, the parliament sent a petition to the king to create a separate body to deal with industry issues, and in 1848 the Ministry of Trade, Industry and Public Works was created, but soon the Ministry of Trade and Industry (Ministerium für Handel und Gewerbe) was separated from it, which, according to the regulation, was to prepare regulatory documents on industry to be submitted to the king for signature.

[7] The department had the status of a ministry in the current sense.

[8] Samuel von Marschall was a minister under the Prussian kings Frederick William I and Frederick II and was considered in Prussia to be one of the most important and influential people in the country's initial economic boom.

(established in 1876 to represent the interests of the "young" heavy and mining industries of that time) on trade and customs policy. As noted in [25, p. 33], "the government's draft customs tariff of 1879[9] was based directly on the draft developed by the Central Association".

At the outbreak of World War I, the German Council for Industry was established. The expediency was justified as follows: "the successful defense of the economic and commercial interests of the German Empire, especially during and after the war, requires the lively, trusting cooperation of the central Reich government with industry, trade, and shipping" [26]. The British, assessing Germany's industrial policy, noted: "We shall not go wrong if we assume that there is a council whose proceedings are kept quiet but which takes into consideration the statistics obtainable, and as far as possible legislates, or endeavours to legislate, on the basis of these statistics. Where fiscal duties are found to be wanted, such a council puts them on; where there is an advantage in taking them off, they take them off. Where cheap transit is possible, they let it be given; for the railways are the property of the State" [27, p. 329].

As a pioneer of the Industrial Revolution, the United Kingdom in the early twentieth century professed a policy of state non-intervention and free market, but during the trials of World War I, it changed its administration system to accelerate the development of key industries that were strategically important for the economy and security [28]. In December 1916, a government agency, the Department of Scientific and Industrial Research (with ministerial powers), was established with the right to vote in parliament. It was supposed to organize and encourage scientific and industrial research by providing grants, as well as disseminate the results obtained in industry. In July 1917, the Ministry of Reconstruction was established to work during the war and for several years after it ended. It took over the functions previously performed by the Reconstruction Committee chaired by the Prime Minister. The new ministry "acted as the forcing ground for post - war planning , to the extent that the reconstruction of industry became a major objective of public policy"[10] [29, p. 21].

In 1918, in order to promote key industries,[11] the Committee for Defense and Development Economics was created to developed clear strategies that allow the producers to consolidate and become competitive in the postwar economy.

[9] On the basis of this draft, the law "On the Customs Tariff of the German Customs Territory and Revenues from Customs Duties and Tobacco Tax" of July 15, 1879, was adopted.

[10] The Ministry ceased operations in 1921, but in 1943, in response to the challenges of World War II, it was re-established by Churchill's cabinet to address urgent problems.

[11] The key industries were identified as those that produced: optical glass, its elements and optical devices; scientific and measuring instruments (including precision instruments used in machine building and workshops); various magnets; synthetic organic chemicals, analytical reagents, other fine chemicals, etc.

To overcome the effects of the Great Depression, US President Franklin D. Roosevelt created the National Recovery Administration in 1933, which aimed to eliminate fierce competition by bringing industry, labor, and government together to create codes of "fair practices" and price controls. The administration was established and operated under the National Industrial Recovery Act, passed as part of the president's New Deal legislative program, which focused on the "3Rs" - as historians call them: relief for the unemployed and poor, recovery of the economy to normal levels, and reform of the financial system to prevent another depression. The law encouraged industries to work together to formulate "codes of fair competition" that were intended to set a minimum wage and maximum number of working hours per week, as well as minimum prices at which goods can be sold[12] [30].

In West Germany, the Federal Ministry for the Marshall Plan was established in September 1949 to ensure economic recovery after World War II. The new body was responsible for the centralized implementation of the European Recovery Program (ERP), commonly known as the Marshall Plan, and supervised the use of funds. Its tasks also included issues of European economic cooperation. Initially, the ministry consisted of three divisions (as of February 1950): the Central Division, the Economics Division, and the EPO Policy Division; later, an audit division for Marshall Plan goods (which dealt with delivery, defects, and location control) was added. In February 1953, two new functions were added namely determining fundamental issues of financing and banking technology for the use and administration of EPO funds and supporting international economic and payment transactions related to the EPO, the Monetary Fund, the World Bank, and the Council of Europe. In the same year, the ministry was renamed the Federal Ministry of Economic Cooperation [31].

In France, after the Second World War, there were also changes in the public administration, but even more radical ones. Since French industrialists were discredited by their collaboration with the occupiers and the Vichy regime, society was not ready to entrust them with the management of the process of economic modernization. "On the ruins of the Second World War, a consensus emerged between the various existing political forces (Gaullists, Communists, Socialists, and Christian Democrats): the state should play a key role in the restoration of national industry" [32, p. 45]. The new body that was to facilitate this was the General Planning Commission, which was created in 1946 and accountable to the

[12] In 1935, the U.S. Supreme Court unanimously declared the law unconstitutional, ruling that it violated the separation of powers under the U.S. Constitution. The law was repealed, but many of its provisions reappeared in the National Labor Relations Act (Wagner Act), passed later that year. The long-term result was a surge in the growth and influence of labor unions, which became the core of the New Deal coalition that dominated U.S. national politics for the next three decades.

government[13]. The process of state planning[14] was the introduction of social dialogue, where the General Commissariat served as a platform for discussing with employers and trade unions common goals and mechanisms for ensuring the restoration and development of industry as a guarantee of national independence[15]. In particular, specialized commissions were created, such as the Commission for the Modernization of Agricultural Machinery, which resulted in a ten-year plan for the production of agricultural machinery in the country. Based on the work of such commissions, the General Commissariat presented the Modernization and Rearmament Plan, which became the basis for the implementation of investment programs in favor of industries whose development was to ensure the growth of the French economy after World War II [34]. Its priorities were: expanding national production and foreign trade, especially in those industries where France had the greatest advantages; increasing productivity; ensuring full employment of the labor force; raising living standards; and improving the environment. The document set production targets in line with available resources and established investment targets by identifying investment funds (including taking into account expected external assistance). This plan is well known as the Monnet plan (in honor of Jean Monnet, the first head of the General Commissariat). In particular, the First Plan, adopted in 1946, covered a seven-year period (1947-1953) and focused public-private capital on the development of six major industries: coal mining, steel

[13] It was decided to change not only the system of administration, but also that of the state employees. The Paris Institute for Training of Politicians, commonly known as Sciences Po, was liquidated after criticism of its staff's collaboration with the aggressor during World War II. By Decree No. 45-2283 of October 9, 1945, General de Gaulle created the National School of Administration (École nationale d'administration), a state institution for higher postgraduate education and professional development subordinated to the French Prime Minister. The school was to contribute to the restructuring and modernization of the French administrative apparatus, mainly by democratizing the recruitment of senior civil servants through the introduction of open competition as the only way to access the top-level civil service.

[14] The purpose of the plans was to identify priorities and indicate ways to achieve them, so the process of developing them was called "indicative planning" to distinguish it from strictly prescriptive and rigid Soviet-style planning.

[15] Public involvement in the solution of the problem dates back to the 14th century in France with the national forum "States General of Industry" ("Les Etats Generaux de l'industrie"). This approach is still in effect today - in response to the financial crisis of 2008-2009, the French government created the National Conference on Industry (Conférence nationale de l'industrie - CNI), an advisory body subordinated to the Prime Minister. Subsequently, the name of the body was adjusted to the "Conseil National de l'industrie - CNI". The CNI explains and advises the public authorities on the state of French industry and industrial services at the national and territorial levels. The CNI is authorized to propose measures at the national or European level aimed at supporting the competitiveness and development of these activities, jobs and related skills [33, p. 327].

production, electricity, railways, agricultural machinery, and cement[16]. Later, the priority industries were expanded to include oil refining, chemicals, fertilizers, synthetic fibers, shipbuilding, and other industries [32].

In South Korea, after the Korean War of 1951-1953, the Economic Planning Committee (EPC) was established in the system of public administration, which functioned for several decades starting in 1961 [33, p. 209]. Its structure included: a general planning bureau; a material resources mobilization bureau affiliated with the Ministry of Construction; a statistical bureau affiliated with the Ministry of Foreign Affairs; and a budget bureau affiliated with the Ministry of Finance. Later, the EPC was joined by a supply bureau, which made it possible to control the movement of all goods and capital, as well as foreign aid and investment. In 1963, the post of EPC chairman was combined with the post of deputy prime minister, which ensured EPC's dominant position compared to other ministries. In fact, the EPC became a structure that operated in parallel with the government, as it was directly subordinated to the president.

Despite the fact that the EPC's actions demonstrated strong state intervention in economic processes, much attention was paid to the introduction of broad consultations within the framework of the "forum for political dialogues" and "sectoral committees" [36]. This allowed key stakeholders to share visions and goals in the planning process, avoid bottlenecks, and link the plan more closely to its implementation. The EPC acted as a moderator of the interests of the state and business, which helped to achieve national consensus and public support for the development strategy. This improved the decision-making process as well as the government's administrative function of implementing the approved decisions. The first plan (1962-1966) launched by the EPC envisaged significant changes in the structure of the South Korean economy: it was expected that the mining and manufacturing industry would increase its share in GNP from 18 to 36%. The preamble to the section on industry states that the Plan is aimed at achieving self-sufficiency, paying special attention to such manufacturing industries as cement, fertilizers, steel, chemicals, petroleum products, etc.[17]. These industries laid the

[16] In particular, in September 1954, the "Four Modernizations" strategy was adopted on the initiative of Zhou Enlai (the first Premier of the State Council of the People's Republic of China), who believed that if the country did not build a strong modern industry, modern agriculture, modern transport and modern national defense, it would not be able to get rid of backwardness and poverty. Subsequently, the modernization of transport was replaced by the modernization of science and technology [35, p. 68].

[17] The plan envisaged the creation of about 17 industries that did not exist in the 1960 baseline. These included oil refining, fertilizer production, nylon yarn, car assembly, and diesel engine production. About 30% of total investment planned for the first plan was directed to the manufacturing sector (about half of which was for transportation equipment, fertilizers, food, fiber, cement, iron and oil production). According to the calculations, the manufacturing sector was expected to grow by about 94% over the plan period, with production of manufactured goods growing by 168%. As a result, the extractive and manufacturing industries together were supposed to grow from 16.4% (1962) to 26.1% (1966 plan) in the GDP structure, but in reality they grew to 20.5% (1966 actual).

foundation for the economic activities envisioned in the development of the second five-year plan of the national economy, during whose implementation the country's economy had to achieve self-sufficiency, based on the achievements of the first stage. The development of the above-mentioned industries stimulated the development of other sectors of the economy, creating multiplier effects in the second stage [36].

Stimulation and catalysis

The most illustrative example of government incentives is the introduction of the so-called "postal subsidies" in Germany, which helped the country build its own fleet [37]. In 1885, a law was passed that established an annual subsidy (allocation from the imperial treasury) of 4.4 million marks to support regular postal service between Germany and East Asia. The law provided for a fifteen-year agreement to subsidize the services of transportation companies. To implement it, in 1885 the state signed a contract with the North German Lloyd Company, whose special conditions said that new ships should be built in the country with maximum use of local resources. The law of April 13, 1898, increased the annual subsidy to 5.59 million marks and approved a new contract for another 15 years. Article 13 of the contract with North German Lloyd of October 30, 1898, and Article 12 of the contract with the German East Africa Line of July 21, 1900, contained the following provision: new steamships to be put into service on these lines were to be built in German shipyards and, as far as possible, from German materials. If necessary, major repairs were also to be carried out at German shipyards, as far as practicable [37, p. 179]. The *catalyst* for the development of shipbuilding was the abolition of import duties on materials intended for the construction, repair, and outfitting of ships, as well as the reduction of the rate for the transportation of raw materials and finished products used in shipbuilding, such as plates, angles, anchors, chains, etc. by German state railways. The rate was applied from steel centers on the Rhine to shipyards in Hamburg and Bremerhaven and was by 40-50% lower than the usual rate [37, p. 180].

After the Second World War, in order to equalize the pace of recovery of industries (which constituted considerable bottlenecks for the overall recovery) in West Germany, the Investment Aid Act of 1952 was passed. Its purpose was "The commercial economy, in order to cover the urgent investment needs of the coal mining, metallurgical and energy industries, shall make a one-time contribution (investment aid) in accordance with the provisions of this law, which shall accumulate one billion German marks" [38, p. 63]. In addition to this large compulsory transfer of funds, special provisions for accelerated depreciation were introduced, which made it possible to increase domestic investment in the recipient sectors.

In the chapter "The Useful State - Subsidy Policy 1948-1955" of his monograph [39], Z. Jakli notes that in Germany, subsidies were seen as a policy

tool that strengthened individual firms and sectors to achieve overall economic benefit. The main beneficiaries of this subsidy policy were both agriculture and heavy industry [39, p. 52-53].

Stimulating the acceleration of strategic industries to restore economic stability was also observed in the UK at the beginning of the First World War. According to W. Runciman (President of the Board of Trade in 1914): "the inquiries of the Government have led them to the conclusion that the excessive dependence of this country on a single foreign country for materials of such vital importance to industries in which millions of our workpeople are employed constitutes a permanent danger which can only be remedied by a combined national effort on a scale which requires and justifies an exceptional measure of State encouragement" [40, p. 190].

Integration and coordination

Established in the UK in 1915 the Committee for Scientific and Industrial Research introduced measures to encourage companies to organize cooperative industrial research associations [28, p. 50]. The Committee's task was to develop recommendations for increasing the number of competent researchers, as well as to establish cooperation between all stakeholders from education, science, industry, local authorities and government departments. The Committee's activities were to ensure the coherence of technological innovations in industries that were then carried out autonomously, encouraging cooperation not only among different firms in the same industry but also among groups of industries, promoting their development through complementary research. This organization had a positive impact not only on the industry but also on the national economy as a whole.

In Germany, the Kaiser Wilhelm Society for the Advancement of Science, established in 1911, is an example of the integration of internal resources. Research institutes were funded on the basis of public-private partnerships and acted in the interests of the rapidly developing industry. The government took over the salaries of the researchers and other staff of the institutes. The company was characterized as a "private company with the state at its center" [41, p. 69].

After the end of World War II in 1949, as part of the reorganization and expansion of the German research infrastructure and to accelerate the postwar industrial recovery of West Germany, the Fraunhofer Society was founded [33, p. 354]. Its task in the early years was to direct public funds, donations, and research personnel to business-related research, and projects implemented in cooperation with representatives of the mining, metallurgy, and mechanical engineering industries were brought to the fore.

In 1954, with the assistance of the Federal Ministry of Economics, an umbrella organization, the Otto von Guericke Association of Industrial Research Associations, was established in Bonn, which integrated research institutions with business and the state in order to effectively fund research for the development of

national industries [33, p. 360]. The association included representatives of the sectoral scientific community: metallurgy and metal processing, light and food industries, printing, construction industry, etc. In the same year, 1954, the Federal Ministry of Economics introduced the budget program "Joint Industrial Research"[18].

In response to the financial and economic crisis of 2008-2009, the US President initiated the creation of the National Network for Manufacturing Innovation in 2013, similar to the German Fraunhofer Institutes, in order to revitalize manufacturing in the United States through a network of institutes where researchers, companies and entrepreneurs can come together to develop new manufacturing technologies with wide application [9, p. 9].

Historical evidence shows that in order to speed up the development of local industry, governments are able not only to integrate local stakeholders and coordinate their efforts, but also to attract resources from foreign companies and direct them to national development programs. In South Korea, the government integrated foreign investment and technology into the national economy, demanding that foreign partners *use a certain share of local content*. This encouraged foreign investors to use locally produced parts and components, which, in turn, contributed to the implementation of advanced technologies and increased the added value of Korean enterprises, thereby creating additional national income and employment [9, p. 5].

Business and consumption

A textbook example of a state-entrepreneur is the construction of the Royal Prussian Rifle Factory, initiated by the King of Prussia at the expense of the state [42, p. 196]. On March 31, 1722, he issued the relevant Supreme Decree on the establishment of the first military production to meet the needs of the army. Over time, the plant became the country's largest producer of metal and weapons. The treasury allocated funds for production and residential buildings, as well as for heavy equipment. The king took care of attracting craftsmen, apprentices and their families from abroad to Potsdam, and also covered the costs of training German specialists[19]. The first M1723 musket with a silicon lock was a copy of a musket made by a manufacturer in Liege (Belgium) a former supplier to the Prussian army. Slightly modified M1723s were exported to the Allies, increasing the company's and the state's revenues.

[18] The main goal of the program is to increase the innovation activity of small and medium-sized enterprises and to organize them into technology clusters, as well as to organize effective technology transfer between the public and private sectors.

[19] The manufactured rifles were not taxed and were allowed to be sold to foreign buyers, except for those who fought with Prussia and its allies. In order to ensure the monopoly position of the new production, it was no longer allowed to build rifle factories in the country. The import and use of Swedish iron as raw material was allowed.

Another example of an "entrepreneurial state" is the decision by the British leadership to create a new company, British Dyes, Ltd, in 1915 to reduce dependence on imports from the aggressor country and ensure the smooth operation of a number of industries during the First World War [28, p. 54-55]. For this project, the budget allocated 1.7 million pounds, which the new company had to pay back over 25 years at 4% per annum. The British government became the largest shareholder of British Dyes, Ltd. The board of directors included two government representatives. The charter included a provision that ensured the company's continued British ownership and gave the government the right to intervene in business activities if the prices set by the company were unreasonable or if there was any unjustified differentiation in the distribution of products. The country's leadership believed that the supply of essential chemicals for production (from medicines to explosives) was too vital to allow for uncoordinated actions by individual firms, so the supply was controlled by the relevant government agency. Although such state aid, as well as the formation of a potential monopoly, was criticized, nothing prevented the country's leadership from launching this project in the interests of national security. In June 1919, Levinstein Ltd joined British Dyes, Ltd. The newly formed company was named British Dyestuffs Corporation. Its capitalization reached 10 million pounds and it controlled 75% of the total British dye production. The benefits of the merger, including economies of scale, were successfully realized for the benefit of British industry and postwar recovery of this country's economy in general[20].

As an entrepreneur, the state realized its function not only as a "producer" of innovative industrial products, but also as a "consumer" of them. The new German weapons produced by the aforementioned Royal Prussian Rifle Factory were more expensive than imported ones: a musket from Liege or Zul was available for 4 thalers, while a Prussian one cost 6 thalers (the price was fixed) and in some cases was of inferior quality. However, the king's state orders were given exclusively to local producers. In January 1723 (a year after the decree on its establishment was issued), the factory received its first official order for the production of 36,685 rifles for the Prussian army [42, p. 197]. This contributed to the improvement of technology, helped the company become competitive and increase business and state revenues. The position of the German leadership to prioritize local producers later became the norm for all businesses: "One reason for Germany's prosperity is due to the fact that Germany has done all in her power to instill Into her own people the love for German goods... The Germans have what is called the 10 business commandments posted up in nearly every business house, calling on

[20] While before the First World War, the consumption of dyes in the country amounted to 20 thousand tons, of which 18 thousand tons were imported from Germany, in 1920 the total production of the British Dyes Corporation reached 16 thousand tons. The total output of the concern in 1920 was approximately 45 million pounds.

Germans not to buy a foreign article when the home article would serve the same purpose because it makes the country poorer" [41, p. 73].

Preservation and protection

The Prussian Porcelain Manufactory is a good example of the state's approach to supporting local producers. Its history, as well as the history of the above-mentioned rifle factory, provides an understanding of the role of the state in preserving key industrial enterprises that determine the direction of development of the entire industry.

As noted in [42, p. 200], in the mid-eighteenth century, with royal assistance, two attempts were made to establish porcelain production in Berlin. Initially, in 1751, Wilhelm Caspar Wegely received a privilege from the monarch to build a porcelain manufactory, permission to import the necessary raw materials duty-free, and assurances to limit any competition. However, the Seven Years' War (1756-1763) slowed down the development of this production. In 1757, Wegely sold its stock, tools, and materials to the Berlin merchant Johann Ernst Gotzkowsky, who, at Frederick the Great's request, signed a contract in 1761 with the master craftsman who worked at Wegely, Ernst Heinrich Reichard (who had a secret recipe for and several other employees of the manufactory). In a few months, a powerful production facility was established, but financial difficulties that intensified at the end of the Seven Years' War again slowed down production activities, threatening the porcelain manufactory with bankruptcy. To save the production and the acquired competencies, Frederick the Great bought the manufactory for 225 thousand Reichstalers on September 19, 1763, and it became a royal manufactory (Königliche Porzellan-Manufaktur Berlin). The entire staff of 146 workers was retained, they worked on a fixed schedule, received above-average income, health insurance, and the right to a guaranteed pension; the factory did not practice child labor, and widows and orphans received assistance. Over time, the factory's technological processes were rationalized and its equipment improved. Frederick the Great himself was one of the most important buyers of the manufactory's products, jokingly calling himself the "besten Kunden" (best customer). The king encouraged innovation, and in 1784, after four years of development, a new shade of porcelain called Bleu mourant ("dying blue") was created. Frederick the Great deliberately used porcelain as a tool of diplomacy and promotion to foreign markets, presenting it to European royal families[21].

[21] The manufactory belonged to the king until the end of the monarchy in 1918, then it became state-owned, and was privatized in 2006. Jörg Woltmann, a German banker and entrepreneur, became the sole shareholder of Königliche Porzellan-Manufaktur Berlin and saved the company from bankruptcy. The factory operates on a historic site in Berlin, and the blue scepter sign and the stamping of the KPM acronym on the products are still there.

Another example of protection from bankruptcy was the decision of German Chancellor Otto von Bismarck to nationalize railroad companies that were threatened with collapse during the crisis of 1873 [43].

Along with the preservation of industrial production, the state protected it. After the Seven Years' War, the Prussian monarch, having gained control of Silesia, introduced a series of duties on the import of raw materials for light industry starting in 1748. By 1755, imports of almost all Saxon goods were banned, and high tariffs were imposed on exports of raw materials, livestock, and grain. The purpose of this measure was to encourage producers to use local resources "so that the money for it would not leave the country as before, but instead provide the inhabitants with more food and work" [42, p. 198].

After the Royal Prussian Rifle Factory was launched, the king banned the import of foreign rifles. But the function of protection gained a greater scope after the war and the unification of the lands into the German Empire - on July 15, 1879, with the adoption of the law "On the Customs Tariff of the German Customs Territory and Revenues from Customs Duties and Tobacco Tax," which established duties on locomotives, wagons, light industry equipment, cast iron, industrial iron, iron and steel products, machine-building products, etc. [44].

To protect the gains of the new chemical and pharmaceutical industry, the German government raised tariffs. While in 1879 Germany imposed moderate tariffs on industrial products, in 1885 and 1888 tariffs were increased. By 1902, the new general tariff provided a very high level of protection for finished products, while only low tariffs were applied to semi-finished products and raw materials were not subject to duties. The success of the development of pharmaceuticals based on the production of synthetic dyes and Germany's leadership in this field on the eve of the First World War were due to the state's efforts (among other things) to protect tariffs [41].

The United Kingdom also took similar measures after the First World War. The article "Protection of the Chemical Industry," published on February 26, 1921, in the professional publication The Chemist and Druggist, presented the position of the members of the Association of British Chemical Manufacturers on the immediate introduction of industry protection [45]. As a result, in August 1921, the Safeguarding of Industries Act was passed, which introduced duties on a number of goods to protect key industries in the UK and employment in these industries from the effects of foreign currency depreciation and imports of goods at prices below production costs. In particular, Part I regulated the import of "key" products (their list was formed in view of their strategic importance). In order to protect and

encourage output growth, the UK imposed an import duty of 33 - 1/3 percent *ad valorem* for 10 years[22].

In conclusion, it should be noted that the British leadership implemented the above functions in a coordinated manner, with the active participation of business and a common understanding of the importance and urgency of such actions for the future. As noted in [28, p. 65], the British position was as follows: "We are at this present moment at a crisis of our history... in a time of unmeasured trial ... it is not mere knowledge that we want... We want existing manufactures able, by reason of their size, and the mastery which those who work them have attained from chemistry, to bear at once the overload that would be thrown on their shoulders should war again befall us".

In 1939, the results of this position and protection policy became apparent. Within a relatively short period, the industry underwent structural changes as a result of the development of many new plants and modernization of old ones. "Today, the industry is in a position to provide a constant output of a splendid range of fine chemicals of unsurpassed quality which falls short in no respects from making the country nationally and industrially self-reliant. The policy of safeguarding "key" industries has been wholly justified" [46, p. 286].

Summarizing the above facts, we can say that during 300 years, in times of great challenges, the state, using targeted political levers and institutional frameworks, was ensured the sustainability of industry, building its potential and turning it into an engine of economic recovery. Certainly, with the restoration of the innovation and industrial foundation and the achievement of financial and economic stability after World War II, the policies of the Western countries towards industry mentioned in this paper underwent significant transformations. But the new unprecedented challenge of the COVID-19 pandemic, which claimed millions of lives on all continents and effectively brought the global economy to a standstill (causing supply disruptions and blocking value chains, and hitting industry harder than any other economic shock in modern economic history, including the 1997-1998 and 2008-2009 financial crises), made it difficult to maintain a stable and sustainable economy, prompted the governments of these countries to take radical (by modern standards of economic policy) measures and statements that "the state would intervene in any way necessary to protect the country's economic assets" to rescue companies in difficulty [47].

Conceptual framework for improving management of industrial development in Ukraine

The historical parallels between the situation in the early twentieth century (World War I and the Spanish flu pandemic) and the events of recent years (the

[22] After its expiration, this mechanism was extended by the adoption of the Import Duties Act of 1932.

COVID-19 pandemic and full-scale Russian aggression in Ukraine) allowed the authors to confirm the conclusion made earlier that "the current crisis is not a new phenomenon in the global economy ... it is a repetition of the situation that took place a hundred years ago in the next round of history" [28, p. 37]. **Therefore, the answer to the question *"How to ensure the recovery of Ukraine's economy in the period of severe war test?"* should, in our opinion, be sought not in the current policy measures of developed countries (where a powerful industrial potential has been formed by the joint efforts of the government and business over many years and the activities of governments are now aimed at crisis management to preserve and strengthen this potential), but mainly in retrospective policy measures that ensured the growth of existing industries and the creation of new ones to ensure economic efficiency and national security.**

Ignoring the state's management function for 30 years led to the following in Ukraine: a reduction in the share of the manufacturing industry in GDP and the associated irreparable loss of not only knowledge and competencies, but entire industries (production of internal combustion engines, electronics, machine tools, fine chemicals, etc.); deterioration of the position of national producers in foreign markets; their displacement from the domestic market by foreign companies; and bankruptcy and forced labor migration of hundreds of thousands of Ukrainians even before the war. Ukrainian industry suffers from the main problem of low competitiveness of goods and from the inability to increase it due to the lack of mechanisms for state aid for innovation, cheap "long" loans, lack of own working capital, and hence the inability of the private sector to implement its own large-scale scientific, technical, innovation, and investment projects. Even if industrial companies have technological developments, launching new products requires additional resources for: developing design documentation; purchasing new equipment for organizing the production process; manufacturing non-standard and special technological equipment for manufacturing components of a new product and assembling it; designing and manufacturing thousands of items of technological equipment; and certification of components and finished products. Only a very limited number of Ukrainian industrial companies have their own research departments, and sectoral research institutions that could perform this work in the interests of technological development of the industry were largely liquidated in Ukraine. As a result, on the eve of Russia's full-scale military invasion, Ukraine was positioned on the world market as a supplier of low-value-added products, in particular agricultural and metallurgical products. According to the authors' research [48, p. 77], the contribution of medium- and high-tech industries to Ukraine's economy fell to 4.3% of GDP[23] (this figure remained almost

[23] For comparison, in the Republic of Korea, this figure reaches 15.9% [48, p. 77].

unchanged over the past 20 years), and the country's ranking in the Competitive Industrial Performance Index fell from 60th place in 2000 to 69th in 2020.

The generalization of the regulatory framework (both the one developed during the years of Ukraine's independence and the current one) for regulating and stimulating innovation and investment activities in the Ukrainian industry, reports on the implementation of budget programs, presented by the authors in [48], give grounds for the following conclusion: in the absence of a targeted state policy of industrial development in Ukraine, acceleration of post-war recovery and structural transformations is impossible. Obviously, the solution to these problems lies in the formation of a dualistic state policy that, in conditions of limited resources and time, would ensure, on the one hand, the attraction and positive contribution of foreign technologies to industrial development, and, on the other hand, building the capacity of existing and creating new domestic enterprises (including technology-oriented startups) on the basis of national innovations.

This prompts the authors to develop a conceptual approach to improving the implementation of state functions with a focus on administration and moderation, stimulation and catalysis, integration and cooperation, entrepreneurship and consumption, preservation and protection (which in the past took place in the policy of revival, economic independence and increasing the power in the Western countries) in the post-war recovery of the Ukrainian economy, as well as ensuring stability and growth. The latter, according to V. Heyets is only possible "thanks to the activities of the development state, which is responsible for the implementation of industrial policy" [49, p. 9-10].

And the first step towards this should be to a change in the state management of Ukrainian industry. The Ministry of Strategy and Industry, established in 2020, is the main body in the system of central executive bodies that shapes and implements state industrial policy; the Ministry of Economy is the main body in the system of central executive authorities that shapes and implements the national industrial policy; the Ministry of Economy defines and implements the national investment policy, the government’s innovation policy in the real sector, in the field of entrepreneurship development, public-private partnership, and therefore, in the post-war reconstruction of the country. These ministries together should implement the function of "state administrator" to build the capacity of industry, which would promote:

- stabilizing employment by increasing the number of existing and creating new business entities in the industrial sector and increasing direct and indirect employment (in related production activities and the service sector), which will help to increase incomes, reduce poverty and social tensions;

- stabilizing Ukraine’s and foreign investment by increasing the technological level of production through innovation thus contributing to productivity growth;

- stabilizing inflation by reducing production costs (including through the development of production of capital and intermediate goods - the output of industry - and reducing their imports), and thus helping to reduce costs and prices;

- stabilizing foreign trade by increasing exports of technologically sophisticated industrial products that are competitive on the global market, and thus helping reduce the balance of payments deficit;

- stabilizing the financial sector by increasing added value (due to the multiplier effects of the industry's development), thus increasing the taxes paid and payments to budgets of all levels, which would ultimately help increase spending on education, science, healthcare and other services, contributing to social stability and well-being.

Failure to make sufficient efforts to prioritize the industries that will become the engines of economic stability in a long list of "priorities" will result in the dispersion of funds (including those obtained from foreign donors) aimed at helping businesses recover from the war; will complicate capital accumulation and, given the serious practical difficulties, will undermine (both foreign and domestic) investors' confidence in policy and politicians. In view of this, the priority issue is to identify priority industrial activities for the economy and security, since in a resource-constrained environment, investment without prioritization is inefficient and would not bring a simultaneous breakthrough in all areas.

The experience of successful countries proves that the state as a *moderator* through social dialogue is able to identify priority industries and direct public-private capital to their development, promoting the effect of synergy in the economy. In Ukraine, the realization of this function of the state is to create an institutional vertical - from the Prime Minister of Ukraine to the specialized unit of the Ministry of Strategic Industry, which is directly involved in the design and implementation of industrial policy, through communication with the advisory body of the government (created within this ministry[24]) chaired by the Prime Minister. This would make it possible to quickly implement the identified priorities and adjust the mechanisms for their implementation to take into account new needs, failures or new opportunities in order to maintain the strategic direction and achieve the target. Consistency in industrial policy and the resulting strengthening

[24] In Ukraine, such a body with the function of "providing recommendations for the transformation of Ukraine's economy from a raw material-oriented to a high-tech industrial model through the introduction of effective tools for the implementation of industrial and innovation policy" operated on the platform of the Ministry of Economic Development from 2016 to 2021 in accordance with the Resolution of the Cabinet of Ministers of Ukraine of December 14, 2016, No. 956 "On Approval of the Regulation on the National Committee for Industrial Development and its Composition". Among its achievements is the launch of a mechanism for partial compensation of the cost of agricultural machinery and equipment with a given level of localization of production in Ukraine purchased by farmers [35].

of trust in the government would help stabilize expectations and provide positive impetus to investors.

The state as a stimulator and catalyst for industrial development is able to influence both supply and demand through the mechanism of financial assistance, creating multiplier effects by "linking" a number of economic sectors, as the German experience in creating the country's shipbuilding sector has shown. Formally, the German government did not pay subsidies to shipyards, but instead it introduced incentives and requirements (especially regarding the use of local resources) for transport companies as ship operators that ensured the development of not only local shipyards, but also metallurgical and machine-building industries and the economy as a whole. In view of this, it is recommended that these functions of the state in Ukraine be implemented on a modular basis, where the parts of the structure are industry and service sector entities that perform their functions essentially autonomously, but must coordinate them to strengthen the competitiveness and price advantages of Ukrainian industrial products. The development of the production of the final product (whether a medicinal product or sophisticated technology) should be accompanied by the development of related products in key areas, such as raw material processing, manufacturing of components, packaging materials, specialized technological equipment and machinery for production processes. Implementation of this approach on the basis of targeted state aid[25] in industrial development will help reduce dependence on imports and prevent the negative effects of "truncated industrialization" leading to structural problems.

The practice introduced in Ukraine consisting in stimulating domestic demand for locally produced agricultural machinery[26] with a given level of localization through partial compensation of their cost has laid the foundation not only for the renaissance of this important industry for the national economy, but also for transforming Ukraine's place and role in the global market for agricultural machinery and equipment. This transparent and non-corrupt mechanism should be extended to other sectors of the machine-building industry, which would facilitate large-scale modernization of the railways, energy, transport, forestry, water, elevator, housing and utilities, etc. At the same time, the implementation of the partial cost compensation mechanism should be supplemented by incentives for technological innovation in metallurgy and machine building (in terms of creating a component base).

[25] The conceptual foundations of the targeted approach to the implementation of the state industrial policy of Ukraine in the context of growing dependence on imports are presented in [50].

[26] The paper [35] summarizes the results of the implementation of this mechanism for the national economy and substantiates the need to expand state support for this industry.

As an integrator and coordinator, the state is able to "stitch together" the elements of the national innovation system, encouraging industrial enterprises to build networks for communication with research institutions, higher education institutions, and research departments of other companies through the mechanism of assistance for the implementation of innovative projects. Access to complementary assets of network members helps manufacturers solve technological problems, becomes a specific resource, and provides them with unique competitive advantages in the market. In Ukraine, along with the development of such networks, it is necessary to create a basic industry-oriented (sectoral) research institution, following the example of the German Fraunhofer Society, to accumulate efforts to conduct applied research in the field of advanced technologies on the principles of public-private partnership to ensure the implementation of large-scale industrial projects and the creation of high-tech products based on national innovation achievements.

To implement such projects, it is necessary to introduce a budget program (at the initial stage, this may be a pilot project for at least three years) similar to the German Joint Industrial Research program. It is recommended that budget funds under the program be used to implement innovative business projects aimed at technological innovation for the development of industries in two forms: 1) co-financing of project implementation; 2) partial compensation of interest on loans taken by manufacturers to implement projects (these forms can be used simultaneously)[27].

The experience of world leaders in implementing the *state-entrepreneur* function (such as the creation of the British company British Dyes or the Royal Prussian Rifle Factory with budgetary funds) proves that in the face of great challenges, the state takes the initiative to develop strategic enterprises that affect the stability of the economic system and national security. Currently, Ukraine, which has lost control of the Luhansk cartridge-manufacturing plant back in 2014 (which remains on the occupied territory), still does not have its own enterprise of that profile. As noted by Defense Express, an information and consulting company, "UkrOboronProm spoke about plans to establish ammunition production, which was a priority at the government level, but since 2014, this strategic task for ensuring the defense capability of the country as a whole has not been fulfilled" [52]. To understand the current realistic timeframe for establishing full production in this area, experts draw attention to the experience of Turkey, in particular the

[27] The conceptual foundations of the mechanism of state support for technological innovations for the development of Ukrainian industry are presented in [51].

MKEK Barutsan[28], which took 12 months and $25 million to open [52]. In Ukraine, public investment (including with the involvement of private investors) in the creation of strategic enterprises; a provision to ensure the permanent Ukrainian ownership of the company in its charter; introduction of state representatives to the board of directors; the government's (as the owner's) influence on economic activity in terms of the price of products purchased by the state at the expense of taxpayers and control over supplies will not only reduce dependence on imports and optimize costs, but will also contribute to the economy and security. The state (including infrastructure monopolists), as the primary consumer of the products of such enterprises, will help speed up their creation, development and strengthening of competitiveness with the prospect of entering foreign markets.

With regard to the function of the *state as a saver*, international experience shows that in order to contain economic shocks (resulted from wars and crises), the leadership of countries took such steps as nationalization of private enterprises (as a rule, they either had unique competencies or belonged to strategic industries on which the economy and security depended (energy production, metallurgy, military-industrial complex, major financial institutions, rail, air, pipeline transport, electricity supply network, etc.) This mechanism became an effective defense against bankruptcy, preventing a wave of socio-economic problems. In its post-war recovery, Ukraine should use this experience to protect the country's strategic assets by either nationalizing them or becoming a shareholder in companies, both of which are elements of sovereignty and national security, to protect them from bankruptcy or takeover by foreign competitors or unfriendly investors.

Without the implementation of the function of the *state protector*, measures aimed at developing industries will not have a long-term effect. Here, we should once again recall the position of the British, who, since the beginning of the First World War, were completely dependent on the German industry: "As to the future, some form of protection is of vital necessity to our chemical industry, for without it anything accomplished will be demolished rapidly and completely by competition from abroad ... no opportunity should be lost of impressing upon the nation and its rulers the fact that the possession of a powerful and self-contained chemical-industry

[28] The plant was established as part of the Mechanical Engineering and Chemical Industry Corporation (MKEK) on the basis of a public-private partnership using exclusively Turkish equipment and technologies. MKEK is the leader of the Turkish defense industry, with a deep history dating back to the Ottoman Empire of the 15th century, and with different names and statuses. The corporation received an impetus for development during the War of Independence and the establishment of the Republic of Turkey in 1923. In 2021, it was transformed into a joint-stock company, whose nominal owner is the country's Treasury, and whose governing body is the Ministry of National Defense. The new MKEK Barutsan facility is located on an area of 4,584 square meters and is capable of producing ammunition of all calibers - from 5.56 to 203 mm - under one roof; the annual production capacity is 200 tons.

is of the same degree ' of importance as a great engineering industry has proved to be. Educational requirements and grants are only the initiation of the work. We must as a nation do something more to safeguard new industries" [53, p. 778].

Undoubtedly, Ukraine has a much narrower room for maneuver in its postwar recovery. Global economic governance (in particular, WTO agreements), the Association Agreement with the EU, and the relevant laws and regulations already adopted in Ukraine impose certain restrictions on the introduction of incentive mechanisms for the policy of forced industrialization and protection of infant industries, whose effectiveness, as the study shows, is proven by time. However...

In connection with the ongoing full-scale armed aggression of the Russian Federation against Ukraine, martial law was declared in the country on the basis of a proposal by the National Security and Defense Council of Ukraine. **This fact can be used as an argument for the introduction of economic measures to accelerate the development of industries that Ukraine considers necessary to ensure its own security, in particular, to impose requirements on foreign investors and establish preferential or prohibitive regimes in the interests of industrial development**[29].

Conclusions

Having summarized everything mentioned above, it should be noted that the world experience proves that in the face of severe challenges (wars, epidemics, financial crises), the state plays a leading role in economic recovery, implementing a number of functions - administration and moderation, stimulation and catalysis, integration and cooperation, entrepreneurship and consumption, preservation and protection - to speed up the development of national industry as a source of employment stabilization, domestic and foreign investment, inflation reduction, foreign trade growth and financial stability, social balance and welfare. Given the multidimensional nature of the above mentioned state's functions, in Ukraine this is the task of not just one ministry, but a number of government agencies: along with the Ministry of Strategy and the Ministry of Economy, the Ministry of Finance (financial and budgetary policy), the Ministry of Education and Science (science, technology and innovation policy), the National Bank (monetary policy), and the Antimonopoly Committee (competition policy) should be involved in the process of implementing measures to develop the national industry (within their respective powers). The pace and results of measures to ensure economic stability and growth depend on the coordinated and complementary actions of these institutions. The proposals and recommendations presented in this paper require a professional discussion with scientists, industrialists and civil servants and coordination of positions on the above conceptual approach to the implementation

[29] This issue is described in more detail in [41, p. 81].

of the state's functions in the post-war recovery of the Ukrainian economy, ensuring economic stability and growth based on national industry (which determines the prospects for further research). Based on the results of such a discussion, the authorities should make appropriate changes in the regulatory framework and complementary actions to implement the outlined measures in the interests of the national economy and security.

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ДЕРЖАВА У ПОВОЄННІЙ РОЗБУДОВІ ІНДУСТРІЇ ТА ВІДНОВЛЕННІ ЕКОНОМІКИ: ІСТОРИЧНІ ПАРАЛЕЛІ ТА РЕКОМЕНДАЦІЇ ДЛЯ УКРАЇНИ

Українці у 2022 р. переживають найтрагічніші події з часів Другої світової війни – повномасштабне вторгнення російських військ до України призвело до численних людських жертв,

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руйнування міст, знищення інфраструктури та промислових об'єктів. Уже з перших днів війни стала очевидна залежність від імпорту промислових товарів (передусім військового призначення), а також те, що викликану цими подіями соціально-економічну кризу неможливо подолати власними ресурсами без іноземної допомоги – як нині, так і після закінчення війни. Це спонукає до пошуку механізмів забезпечення стабільності та відновлення національного господарства. Мета статті – узагальнити світовий досвід пріоритезації індустрії у державній політиці провідних країн світу в умовах суворих випробувань, унаочнити реалізацію державою функцій, які прискорили відновлення економіки; запропонувати висновки та рекомендації для України.

У статті показано місце промисловості у політиці відродження, здобутті економічної незалежності та збільшенні могутності країни; на історичних прикладах продемонстровано, що 300 років держава впливає на промисловість через цілеспрямовані політичні важелі та інституційні рамки, генеруючи оптимальні результати заходів, спрямованих на структурні перетворення, аби подолати наслідки війн, епідемій та криз. Обґрунтовано, що в умовах суворих випробувань держава відігравала провідну роль у відновленні економіки, реалізуючи низку функцій – адміністрування та модерації, стимулювання та каталізації, інтегрування та кооперації, підприємництва та споживання, збереження та захисту – для прискорення розвитку національної індустрії як джерела стабілізації зайнятості, внутрішніх та зовнішніх інвестицій, інфляції, зовнішньої торгівлі та фінансового сектора, сприяючи соціальному балансу та добробуту нації. Запропоновано концептуальний підхід до реалізації функцій держави у повоєнному відновленні української економіки, забезпеченні економічної стабільності та зростанні з опорою на національну промисловість.

Ключові слова: *війна, відновлення економіки, промисловість, індустрія, держава, політика, функції держави*