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Review Paper

Post-war Economy of Ukraine: Innovation and Investment Development Project

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ABSTRACT

The article attempts to scientifically search for an answer to the question about the possibilities and prospects of innovative and investment development of the post-war economy of Ukraine, taking into account specific country conditions and trends in the global economy as a whole. The experience of the post-war reconstruction of Germany and Japan, the Marshall Plan, and much later projects for the reconstruction of Iraq and Croatia after regional military conflicts are taken as the basis for the analysis. The problems studied in the article are of particular importance in the absence of conceptual works, both fundamental and reasonably practical, devoted to a comprehensive analysis of the post-war development of Ukraine and ways to revive its economy, which would take into account the changed conditions within the country itself and in the world as a whole.

HIGHLIGHTS

- The article is devoted to seeking optimal possibilities for the development of the postwar economy of Ukraine, based on the experience of other countries' postwar development from a historical retrospective.
- The obtained results showed the expediency of the integration of the best practices of the Marshall Plan, taking into account the radically changed economic realities of the 21st century (information economy and Industry 4.0), Saudi Vision 2030, and the experience of the UAE in creating an advanced state in the desert from a small fishing village when developing and implementing plans of innovation and investment development projects for post-war Ukrainian economy.
- The practical significance of the research lies in using best practices in post-war development, which enables the fastest and most effective design of the Ukrainian economy post-war development, as well as bypassing pitfalls, thus maximizing economic and social effects.

Keywords: Post-war economy, Economic growth, Economic recovery, Innovation,Digitalization

Today, various ideas, opinions, and visions are increasingly heard on how to restore the destroyed infrastructure and economy of Ukraine. Economists and experts are discussing and looking for a version of the "Marshall Plan" for Ukraine while forgetting about the radically changed nature of the global economy and world economic relations since Marshall Plan implementation after World War II.

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Ukrainian business communities are sure that the restoration and revival of the Ukrainian economy are impossible on the traditional - pre-war - foundations and principles (Bergmann and Romanyshyn, 2022). That is why it is now necessary to decide on the foundations for restoring the country after the war. Explaining their opinion why it is impossible to restore the country on traditional foundations, business experts argue that, firstly, even before the war, Ukraine had an unfree economy (130th place in the world ranking of economic freedom) (Bergmann and Romanyshyn, 2022). Secondly, large funds for recovery will create corruption risks. Even in war conditions, corruption has not gone away but even acquired new specific forms.

At the same time, the pace of economic recovery and growth should be accelerated. It becomes a matter of the survival of the country and the nation, given the already existing volume of destruction of housing, industrial and critical infrastructure, the destruction of value chains, and the narrowing of logistical capabilities. In addition, maintaining a sufficient defense budget is becoming critical, which is impossible without a strong economy (Akimova *et al.* 2020).

Restoring the economy requires massive deregulation, investment, enormous labor resources, and extraordinary efforts of the entrepreneurial society. But, in the opinion of businesses, an effective post-war recovery of the country is possible only if an appropriate state economic policy is pursued (Ladonko *et al.* 2022). In particular, the activities proposed by the business are divided into blocks and should include (Kindzerski, 2022):

Effective state

1. Reducing the state's share in the economy through deregulation, total privatization, reducing the ratio of public spending to GDP to 35% (a moratorium on increasing spending on the state apparatus), creating stimulating labor, tax, and customs legislation. It also implies an innovative, liberal, simple, and transparent tax system.
2. Inviolability of private property.
3. Zero tolerance for corruption, and fair courts.
4. Independence and effectiveness of the antimonopoly committee, as the basis of antimonopoly and anti-oligarchic policy, without political influence.
5. An effective combination of liberal and institutional approaches, including creating heterarchical, decentralized, inclusive, adaptive state institutions.
6. Production of balanced monetary, fiscal, budgetary, and debt policies.
7. Total modernization of infrastructure after the war, and not just the restoration of the destroyed outdated infrastructure, the energy efficiency of the new infrastructure.

Liberal innovation economy

1. Creation of conditions for fair competition and business cooperation, the attraction of investments, and formation of a high level of trust in the state. Levels of opportunity for companies of different sizes and forms of ownership, as well as industries, areas, and markets. The state policy of the greatest liberalization of conditions for the development of entrepreneurship.
2. Development of human potential and a winning position in the talent competition, including migrants. Public investment in the development of human capital Deregulation of the labor market: simplification of temporary and remote employment, the abolition of Soviet requirements for document management, a service approach to inspections, freedom of the employment contract, and its provisions regarding basic employee guarantees.
3. Stimulating the development of innovations and modernization (including digitalization) of the economy in order to ensure competitiveness in the global market.
4. Barrier-free movement of capital and advanced development (recognition) of virtual assets.
5. Liberalization of foreign trade and promotion of free competition in domestic trade.
6. Privatization, leaving a limited number (up to 10) of state-owned enterprises in state ownership.

7. Deregulation according to the principle of the 'regulatory guillotine'. The introduction of the "one in – one out" rule in the future, will limit the excessive accumulation of regulatory acts.

This outline, of course, looks quite attractive, but the most important question is about the mechanisms for achieving these goals. In this context, it is of great interest to refer to the historical experience of restoring the economies of countries affected by wars and military conflicts - from the Second World War to the Iraqi conflict.

Generally, post-war economic reconstructions are divided into three "generations" (Yousif *et al.* 2020). The first generation is the reconstruction of European countries according to the Marshall Plan after the Second World War. The II generations was formed after the Cold War and the fall of the socialist bloc — Bosnia, Kosovo, Croatia, and Macedonia. The third generation is associated with September 11, 2001, and subsequent military operations in the Middle East (Iraq, Afghanistan). The analysis of this experience, taking into account the historical features of the respective eras, has great potential for developing concepts and programs for the innovation and investment development of the post-war economy of Ukraine.

MATERIALS AND METHODS

The methodological basis of the study was the method of comparative analysis and the historical method, as well as the general scientific system method and elements of macroeconomic analytics. To understand the essence and interconnection of phenomena and facts, historicism is applied. The combination of logical and historical methods made it possible to analyze the critical problems and opportunities for the post-war economic reconstruction of Ukraine.

RESULTS AND DISCUSSION

The Marshall Plan

The Marshall Plan or the program for the revival of Europe, was proposed by US Secretary of State George Marshall in his speech at Harvard University in June 1947. He spoke in favor of large-scale US assistance to European countries on the condition that they develop a unified program to restore their economies, noting that without a healthy world economy, no political stability can be achieved (Holm, 2016). The contribution of the Marshall Plan to the post-war reconstruction of Western Europe is best described by the words of P. Hoffman: "The Marshall Plan provided a critical share of support that made European self-help possible, eased the situation with important imports, expanded bottlenecks in production, stimulated higher rates capital accumulation, helped to suppress inflation, which, taken together, led to increased productivity, improvements in trade and an era of social peace and prosperity, the most durable in the entire modern history of Western Europe" (Hoffman as cited in Steil, 2018).

The tasks solved within the framework of the program had quite specific implementation mechanisms. The provision of material and financial assistance through grants provided for the creation of special accounts in the recipient country (equivalent funds), in which they previously deposited amounts in the local currency equivalent to the grants approved by the administration of the program. These funds could be used to pay off debts, stimulate production, reconstruct and rehabilitate, as well as create new sources of wealth only by agreement between the administration of the program and the government of the recipient country. This circumstance had a number of effects (Schain, 2009):

1. Leverage effect, expressed in a significant increase in funding programs, since up to 90% of material assistance was provided to Western Europe in the form of grants (Steil, 2018);
2. A disciplinary effect since the provision of a grant presupposed the fulfillment of bilateral agreements provided for by the Law;
3. A stimulating effect since priority was given to investment projects when determining the direction of the use of equivalent funds;
4. Deflationary effect since matching funds were filled from national budgets at the stage of coordinating grant deliveries.

Equivalent funds contributed to the implementation of modernization programs in the mining, manufacturing, transport, and telecommunications industries in Western Europe.

Western Europe's national economic recovery programs have been complemented by activities aimed at increasing productivity. It included technical assistance projects, engineering schemes, performance reviews conducted with the help of US experts, and performance teams made up of European company and farm management personnel who went to the United States on exchanges. Thus, in the UK, the Anglo-American Council on Productivity was created, prompting other countries to take similar steps. In general, these activities were aimed at improving technology and management, engineering and marketing methods, spreading intra-company planning, and increasing production automation (Deyneha *et al.* 2016).

Our interest in the European Restoration Program is because it solved comprehensively economic, socio-political, and ideological problems of both national and international significance on the basis of a programmatic approach. Obviously, this program can be characterized as a transitional period regional program for development (Gaman *et al.* 2022). In our opinion, the successful implementation of the European Recovery Program has become possible because:

1. The objects of programming influences were relations and connections arising in the spheres of production, distribution, and use of the national product;
2. For its preparation and implementation, a broad coalition "authority-business-society" was created, distinguished by high professionalism and reliable business reputation;
3. The program was an act of a creative state approach, taking into account the complexity of the problems and the heterogeneity of socio-economic development and other features of national economies;
4. An equilibrium path of development based on the "social contract" was chosen (so-called "social contract" equilibrium path), implying a compromise between all interested participants in the process;
5. The amount of financing of the program was minimized due to the application of the principles of integrated planning;
6. The organizational structure of the administration of the program was built into the system of power in such a way that its effective control and monitoring was possible, and a balance of interests of political groups was ensured;
7. Conditions were provided for the free action of market forces, the release of entrepreneurial initiative.

Japanese economic miracle

Japan is a vivid example of implementing the catch-up development model based on an export-oriented economy, which subsequently inspired the "Asian tigers" and the newly industrialized countries. "Japanese economic miracle", "period of high economic growth", "*sengo keizai*" (post-war economy), "transitional economy" - these equivalent terms describe the rapid growth of the Japanese economy in 1955-1973 (Stanzel, 2015). As a result of the transformations accompanying this phenomenon, Japan became one of the leading industrial powers of the world. At the same time, the impetus for the rapid development of the economy was the structural reforms carried out as part of the economic recovery in 1945-1955. The defeat of Japan in World War II deprived it of many of the gains of previous years: the country lost not only the colonies but also all the property in them, including enterprises, mines, or land. In numbers, this amounted to 44% of the entire territory of the Japanese Empire. The volume of industrial output for 1946 amounted to 30% of the figures for 1934-1936, i.e., there was a fall of more than three times; along with this, consumption was halved (Charles River Editors, 2014).

Three reforms - antitrust reform, agrarian reform, and labor law reform - laid the foundation for the launch of the market mechanism in Japan, as they covered the three pillars of the capitalist order: competition, the institution of private property, and the protection of workers' rights. Measures to address the problems of budget weakness, high inflation, and the weak competitiveness of Japanese exports were called the "reverse course", and direct economic measures - the "Dodge line" (Stanzel, 2015). The Shoup Mission (attempted to create a legitimate tax regime) was involved in tax reform. During the year, the necessary results were achieved: inflation was suppressed, the emission of the yen was stopped, and prices were liberalized.

At the first stages of its formation, the model that prevailed in Japan was, in fact, a model of catching up with development: it was necessary to close the gap with Western countries as soon as possible and take a competitive place in world production (Gavkalova *et al.* 2022). As a rule, all models of catching up development are divided into import-substituting and export-oriented. Japan, as a small country without an abundance of natural resources, chose an export-oriented model, modifying it so that development was based on domestic rather than foreign capital and also was spurred on by active protectionist policies.

At the same time, the decision taken at the beginning of the modernization of the economy is seen as remarkable and fundamental: not to restore destroyed enterprises but to create entirely new high-tech enterprises from scratch (Gupta *et al.* 2021). In this, Japan is often compared with the USSR, in which, after the war, the task was to restore the fixed assets destroyed by the war (Charles River Editors, 2014). With this decision, the Japanese leadership laid the foundations for a comprehensive modernization.

The export-oriented model, as the name implies, put the development of export industries at the forefront. In the conditions of high competition in the world market, it was critical to develop the most efficient and profitable products that would be competitive (Kalyayev *et al.* 2019). Taking into account the low availability of natural resources and, consequently, the impossibility of developing the extractive industry, the features of the Japanese model can be represented as follows:

- Emphasis on the processing of raw materials and focus on the production of competitive goods;
- Ensuring a positive balance of foreign trade in the conditions of import of raw materials and export of finished products.

The principle of functioning of the national economy, formed as a result of the modernization of the economy, can be described as follows: based on processed domestic and imported raw materials, products are manufactured that are supplied to both domestic and foreign markets (Klymenko *et al.* 2016; Kryshtanovych *et al.* 2022). Primarily, if not exclusively, foreign trade profits serve for buying raw materials from abroad, and the cycle repeats.

According to the concept set forth by researcher Johnson, the following components form the economic model of Japan in all its effectiveness (Johnson as cited in Stanzel, 2015):

1. Small and highly efficient managerial apparatus. Management in Japan was carried out by people with experience, education, and abilities specifically for management. Moreover, the managerial apparatus also included people with experience in the areas in which management was carried out, for example, engineers. Their task was to identify promising industries and choose the best way for their development and then control this process. The success of managers in this system was determined not by the salary paid to them but by the results they achieved;
2. The ability of the managerial (management) apparatus to quickly make decisions that have an impact on the development of the economy. The fact is that only the main directions were determined in the laws, and abuses were suppressed. At the same time, namely the local managers and politicians made decisions quickly and taking into account the situation. This system was legitimized by the election of politicians and the ability of the law and the supreme power always to intervene and amend in the decisions made. Scientists expressly point out the need to distinguish between the concepts of "reigning" (governance) and "ruling" (management) (Stanzel, 2015). In other words, politicians reigned and managers ruled;
3. Balance of economic regulation methods. In state regulation of the economy, it is essential to always remember the inadmissibility of curbing competition since the tightening of state control inevitably leads to a decrease in the scale of competition and a drop in

efficiency. It is essential to find a balance between the dominance of public and private management, and such a balance in Japan was found in the administrative determination of development directions (administrative guidance), while maintaining freedom of action for business, which was also helped by the system of laws - there was no need to pass any law to resolve a difficult situation, but it was resolved by managers, acting by the directions given in the regulatory documents;

4. The presence of a flagship organization that develops issues of economic development. In Japan, such an organization was the Ministry of Industry and Trade - a flexible structure that has only those functions that are needed at a given period, and embodies the concept of "administrative guidance". The organization did not have power over industries, but set directions for their development using financial leverage. The high efficiency of the work of the Ministry was because the organization dealt exclusively with these issues without dispersing efforts into other areas.

Thus, the Japanese economic model represents a modified model of an export-oriented economy with a predominance of the national capital and national production, driven mainly by market mechanisms but taking into account administrative regulation, i.e., identifying priority industries and supporting them. Its functional basis is made up of an effective management apparatus and flexible legislation, which makes it possible to quickly and adequately respond to the emergence of difficulties in the economy.

One of the most important essential conditions for economic growth in post-war Japan was the possibility of finding an institutional form that would minimize transaction costs while simultaneously using the advantages of non-market hierarchical structures and market methods of coordination. The system of subcontract relations in Japan is characterized by a distribution that is unique in its scale; it is an "institutional device for reducing transaction costs", namely, an information and organizational structure has no analogs in the world. The efficiency of Japanese companies that ensured their country's economic revival and prosperity is directly related to the fact that, in the conditions of the Japanese institutional environment, it was easier for entrepreneurs to realize their "natural" tasks of minimizing transaction costs than their counterparts from other countries. Thanks to the special well-established informal rules of business interaction, the unwritten but strictly enforced ethical code of doing business within firms, and especially in large companies, it was possible to create a favorable atmosphere of trust, cooperation, mutual assistance, and high dedication, which in reality has become a new specifically Japanese institution. A specific logical chain arises: for a market economy to work effectively, efficient firms are needed, and for firms to be efficient, they need to expand and activate internal non-market forms of economic coordination, which, in turn, deeply rooted in society useful institutions capable of supporting these non-market forms of socio-economic interaction turn out to be very useful. Thus, the success of a market system is largely due to the presence and condition of non-market institutions. This approach largely explains why Japan, which embarked late on the path of capitalist development and was "burdened" with the luggage of various non-market institutions, was able to quickly adapt to new conditions while using the old institutional structures. During the war, a unique system of mutual assistance and partnership in Ukraine has also developed, a kind of code of ethics and social responsibility in business and in the relationship between citizens. This model arose in crisis conditions, revealing the hidden potential of the nation, and can become a valuable factor in the process of a country' revival, as uniting national ideas is one of the highly desirable conditions for postwar recovery. Meanwhile, lack of this idea determines 'slippage', multi-directionality, and inconsistency in the processes of the post-war reconstruction of Syria.

Restoration of post-war Germany

After the end of the Second World War, the population of the vast territories of Germany faced a disappointing reality: destruction as a result of Allied bombing and military operations, economic disproportions, general shortages, psychological problems, and the need to unite all forces for the speedy restoration of the economy and the normalization of the life of the population. A new page in the history of the German people was opening. The best hopes were attached to the future, but the legacy was heavy. By the war, the German economy was already undermined from the inside, plus significant destruction due to hostilities, the dismantling of equipment, the need to pay reparation payments, and other difficulties. All the more interesting is the experience of the revival of Germany, an unexpected success that surpassed similar achievements of neighboring countries, less affected as a result of the war.

Outwardly, the complexity of the economic situation in post-war Germany was manifested in the fact that the country was dilapidated, the shops were empty, almost all goods became scarce, there was a card system for providing the population with the most necessary products by the established minimum standards. The bare necessities were lacking: food, clothing, and medicines. At the same time, the money channels were overflowing with depreciated banknotes - Reichsmarks (RM), which could not be used to buy anything due to a general shortage or fabulous prices on the "black market" (Dobbins *et al.* 2008). Production, where it was preserved, continued to work by inertia but could not even closely meet the population's needs.

Along with the consequences of destruction, the main causes of disasters were rooted in the very mechanism of the functioning of the economy in the previous period, in the processes of management and distribution. From the previous period, the economy inherited the system of strict regulation of the national economy that had been formed since the mid-1930s while maintaining private ownership of the means of production. Back in the 1930s, many economic decisions to reduce unemployment, prevent price increases, and develop priority sectors were made voluntaristically, without taking into account the criterion of economic efficiency, often on the principle of eliminating bottlenecks. Free treatment of the monetary system and prices, the issuance of an excess amount of money, the establishment of uniform fixed prices led to the fact that the latter ceased to serve as a source of information for making production decisions and no longer contributed to the observance of the equivalence of exchange. Production and distribution were carried out based on four-year plans. As a result of the creation of new artificial conditions, a dangerous tendency to pursue imaginary goals has emerged. For example, it became natural to strive to maximize the share of investment in the generated national income and minimize consumption. The sectoral structure of production has changed. The share of consumer goods has decreased (Dobbins *et al.* 2008). The resulting imbalance only intensified over time. Ideology ruled the economy. Representatives of industrial circles, feeling the instability of the situation, even during the war made attempts to study the real situation and search for possible options for its improvement.

At the end of hostilities, it was necessary not only to restore what had been destroyed but to reorganize the entire system of economic relations, to set it up to achieve the desired final results. For this, it was necessary to resume the operation of the market fully. This process in any case, could not be painless, and not everyone agreed with this recovery option. It seemed to many that the preservation of the planned system and centralized management were a more reliable basis for the country's economic development strategy.

An important factor determining the revival of production was the state of the equipment fleet and ongoing capital investments. A significant problem in this sense was the dismantling of equipment, carried out to one degree or another in all occupation zones to obtain compensation and prevent the restoration of former military production. Only in Bizonia, according to the plan of the occupying authorities, 1636 factories and factories were subject to complete closure and dismantling (Glossner, 2012). This reduced the existing production potential, and made it difficult to provide employment for the population, supply it with the necessary products, and also make reparation payments.

The devastation, the imbalance in the price policy, and inflation led to the deformation of the goals of post-war production. Enterprises did not seek to produce and profitably sell the final product. During this period, the desire to wait out, to preserve the production itself, and its qualified personnel, and to accumulate, if possible, the factors of its future activity became natural. Accumulating stocks of finished products was problematic. Given the shortage of goods, it was formally easier to explain and justify the stocks of raw materials, semi-finished products, and work in progress, which, if necessary, could be quickly turned into finished products.

The role of market factors in post-war Germany was reduced to a minimum. In the absence of prices as a carrier and source of information about the market situation, decisions were made based on quantitative data obtained directly from customers or suppliers. Production was disoriented.

Few people believed in the possibility of a rapid revival of the country, and not everyone sincerely desired this. The first plan, developed based on the Potsdam decisions, assumed several restrictions for German industry and provided for the restoration of production volumes only at 50-55% of the output of 1938 or 65% of 1936 (Glossner, 2012). It was not implemented due to the lack of economic unity of the country. The second plan was introduced by the military authorities in the territory of Bizonia starting on August 29, 1947. It gave the right to restore the industry in full at the level of 1936, although here, there were restrictions. But production capacity by this time had fallen so much that it corresponded to only 60% of the 1936 level (Dobbins *et al.* 2008).

According to official statistics, the real volume of industrial production in Bizonia in 1946 was only 33%, and in 1947 - 36-39% of the 1936 level, and this is without taking into account population growth due to the influx of refugees and emigrants. In the first half of 1948, the overall production index reached only 50% of 1936. According to Glossner, Germany was destroyed and brought into a chaotic state to such an extent that no one, not being an eyewitness to what was happening, could imagine this (Glossner, 2012).

The main "architect" of Germany's economic recovery is considered to be the German economist Ludwig Erhard. Indeed, his conviction and perseverance played an essential role in bringing about economic transformation. Erhard began his political career in 1945 at the age of 48, when he, who had not stained himself with cooperation with the fascist authorities and organizations, was offered the position of economic adviser to the American military administration of Upper and Middle Bavaria, and since September 1945, the post of Minister of Economics of Bavaria in the government of W. Högner (which he held until December 1946).

Believing that monetary reform alone would not be able to realize its potential fully and that an opportunity for further economic transformation would be missed, Erhard assumed responsibility for price liberalization and continued economic reform. On June 20, 1948, simultaneously with the beginning of the monetary reform, he published documents he had prepared earlier, according to which about 90% of the previous instructions on quotas and price controls were canceled (Dobbins *et al.* 2008). Only prices for food, rent, postal, and transport services, as well as for some types of raw materials, remained under control. The indignation of the military administration knew no bounds, and only the inexplicable, intuitive benevolence of General Clay miraculously saved Erhard and kept him in his high position (Dobbins *et al.* 2008).

Erhard was firmly convinced of the effectiveness of his decisions. He was a consistent supporter of a free competitive market economy, the benefits and social role he repeatedly explained in his publications and speeches. The economy must be subject to natural regulation, consistent with the actual diverse needs of the population and the highest economic efficiency of production. At the same time, in his opinion, namely, the market economy leads to the achievement of social goals since, due to the presence of competition, it creates maximum advantages for both more successful ("social") producers and consumers (Levytska *et al.* 2022). Erhard believed that direct assistance should be provided only to those who genuinely need it for health reasons, age, or other similar reasons, while for the majority of the population able to take care of themselves, it is necessary to create healthy economic conditions when the achievement of socially important goals will be stimulated by the personal interest of the worker in paying for their work.

Indeed, with the liberalization of prices, the desire to build up stocks on the part of production and trade has ceased. The shops were finally filled with goods. Given the senselessness of further accumulations and the lack of funds, enterprises had to start processing the accumulated semi-finished products. Despite a lack of investment capital, the industry responded to the reforms with a sharp rise in production. In the first half of 1948, an increase of 50% was recorded, and in 1949 - another 25%. The interest in earning money led to an increase in the working week for June 1948 - March 1949 in the French zone by an average of 17%, in Bizonia - by 10% (Dobbins *et al.* 2008). Under the new rules, voluntary overtime work was not subject to income tax. Hourly labor productivity at Bizonia increased by 30% over the same period (Dobbins *et al.*, 2008). The desire to increase production was also reinforced by an improvement in the food situation due to an increase in humanitarian supplies from abroad and in the French zone also due to a good harvest and reduced borrowing from the occupying authorities.

An important step was the monetary reform of 1948 - challenging and very unpopular. By introducing Deutschmarks, the money supply was reduced by almost 93%. Only 20% of the funds were opened on deposits, another 10% were frozen until 1954, and 70% were written off free of charge. The liquidation of savings caused extreme discontent. However, large owners retained up to 96% of the capital (Glossner, 2012). History has proven that such reforms are almost always carried out at the expense of the population.

Erhard insisted on tough measures against monopolies. The share of one monopoly should not exceed a third of the volume of a particular market, two or three - half, four or five - two-thirds. Small and medium business has become an essential subject of the economy. But the role of big business was no less. During the 1950s and 1960s, the concentration level gradually exceeded the pre-war level. The old conglomerates were restored - Krupp, Flick, Thyssen, Mannesmann. By the early 1970s, up to 76% of aluminum production and coal mining were controlled by one company in each industry. Almost 100% of the aviation industry and 60% of the chemical industry were in the hands of the three most significant concerns (Glossner, 2012). But it is important that the most prominent corporations began to systematically cooperate with small and medium-sized ones, which gave the German economy flexibility and high efficiency. This should be taken into account by Ukrainian officials, who have repeatedly tried to limit the work of large firms with single taxpayers.

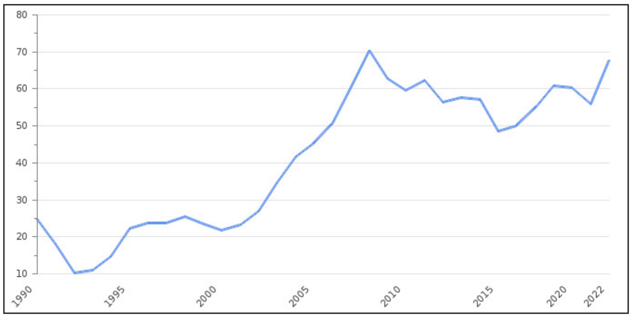
Croatia after the Balkan crisis of 1990s

During the hostilities in Croatia, thousands of people died. Many cities suffered from the destruction, the once fertile lands in the countryside were devastated. The war in Croatia claimed about 30 thousand human lives. Refugees and displaced persons amounted to about 500 thousand people. The Croatian economy was heavily damaged by the war. The volume of industrial production at the beginning of 1992 fell by a third compared with the previous year; exports fell by almost half. Many industrial enterprises stopped their work, and the number of unemployed was about a third of a million people (Stjepanović, 2014). The system of communications, railway communication, was almost destroyed in the republic.

At the same time, even after the war conflict ended, corruption in Croatia has been primitive: former Prime Minister Ivo Sanader forced his collaborators to bring cash to the party safely. Nadan Vidošević, head of the Croatian Chamber of Industry for 18 years, was caught sharing kickbacks with contractors. A search of the basement of his stylish villa in a prestigious area turned up a collection of valuable paintings and trophy effigies. Sanader's convictions revealed that much of the political system, like much of the state-owned enterprise, was operating outside the bounds of legality (Bičanić and Franičević, 2003). Croatian politicians boasted that after joining the EU, foreign investment would increase significantly. However, this did not happen. If there were favorable conditions for doing business in Croatia, then no EU 'stamp' would be needed. This demonstrates how primitively politicians sometimes perceive reality, which is, to some extent, observed in Ukraine.

Nevertheless, Croatia has a successful experience in creating free economic zones in territories that were under occupation. Such a policy of the Ukrainian authorities towards parts of the Donetsk and Lugansk regions, as well as the Kherson region, could contribute to their speedy return to the mainstream of positive economic development. In Croatia, all the former occupied territories fell into the regime of free economic zones, and this policy paid off. The areas affected by the war began to develop faster. Fifteen years later, when they aligned in their development with other parts of

Croatia, the status was abolished. After the war, the economy began to improve. Before the 2007-2008 financial crisis, the Croatian economy grew at 4-5% per year, incomes doubled, and economic and social opportunities improved dramatically (Djidrov *et al.* 2013). The results of Croatian economic policy are visible in the dynamics of GDP growth (Fig. 1).



Source: *Djidrov et al., 2013.*

Fig. 1: Dynamics of Croatian GDP, 1990-2022

Iraq after war conflict

The post-war reconstruction of Iraq in the period 2003-2014 indicates the priority of the tasks of diversifying the national economy and minimizing military and political risks for investors, active interaction of international donors with national bodies, integration of donor funding mechanisms with budgetary ones, strengthening of institutional capacity and eradication of corruption in state bodies.

In the historical context, the post-war reconstruction of Iraq belongs to the so-called reconstruction of the III generations (Yousif *et al.* 2020).

The participation of donors in the development of the private sector of the economy focused on the issues of the financial sector and the provision of microcredits, reforming of state enterprises, and institutional and regulatory reforms. The USA provided the most significant aid for the reconstruction of Iraq — 60.6 billion dollars. One of the first decisions of Congress in April 2003 was the allocation of 2.5 billion dollars for quick humanitarian aid to the population - food, water, and medicines (Gunter, 2013). After that, the restoration of oil production and infrastructural projects became the priority directions of efforts: the revival of the system of providing electricity and drinking water, the creation of waste management systems, and the reconstruction of the education and health care sectors.

US contributions to the reconstruction of Iraq were administered by the Department of State through the Office of Iraqi Reconstruction, the Department of Defense through the Office of Project Coordination, and the Agency for International Development (USAID). Institutions such as USACE, CPA, ORHA, PMO, PCO were also included in the organizational structure of the Iraqi reconstruction management. This situation was explained by donors' fears about the political and administrative capacity of the Iraqi Government to use the aid provided effectively. The Iraqi Ministry of Planning, Development and Cooperation indicated that off-budget financing of official development assistance prevented the adoption of a comprehensive national budget and a balanced mechanism for financing capital expenditures (Yousif *et al.* 2020).

Bypassing national institutions is justified when humanitarian aid or other rescue measures are rapidly being provided to save human lives. However, when it comes to medium- and long-term reconstruction, the results of the activities of external actors are not perceived as their own by the majority of the country's population. They are not sufficiently integrated into the system of economic development measures.

Based on the experience of rebuilding Iraq, Ukrainian experts should draw the following conclusions for themselves:

1. Donors' plans and projects for the country's reconstruction must be agreed/coordinated with national authorities and implemented in cooperation with them. In Iraq, donor planning and funding was carried out outside the framework of the Iraqi state apparatus and budget system without any connection with national measures. Therefore, Iraqis did not feel like the beneficiaries of donor efforts, which reduced the effectiveness of such efforts and could be nullified after the cessation of donor funding.
2. Organizations implementing international projects and national institutions should implement reconstruction projects beyond the framework of trust funds and consider the broad context of the impact of such

projects on the country's economy. The projects that were financed from the funds for the reconstruction of Iraq, as a rule, had a narrow focus and a detached character; donor funding was also poorly coordinated with government funding of capital investments.

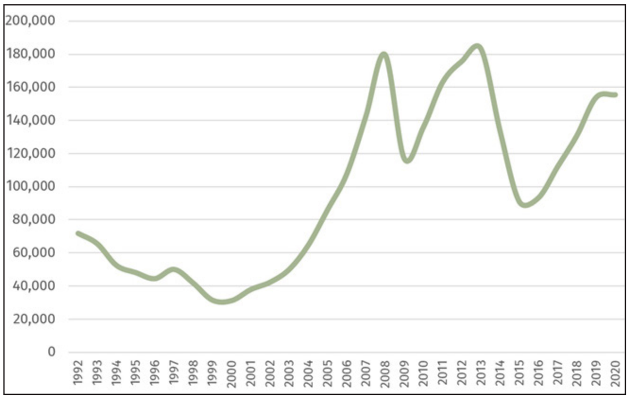
3. The financial and economic mechanisms of reconstruction should be built in such a way as to stimulate the activities of the private sector and activate private sources of investment financing and job creation. In Iraq, the neglect of risk minimization tools for private investors, the lack of credit support for investors, and excessive emphasis on the development of the oil industry inhibited diversification. It reduced the long-term growth rates of the economy.

Implications for Ukraine

Significant investments are needed to change the structure of Ukraine's economy, but foreign investors are in no hurry to invest their capital. The lack of confidence in protecting property rights is what holds them back the most. Known cases of nationalization of enterprises with foreign capital, including against the background of the political situation, do not contribute to the confidence of foreign investors.

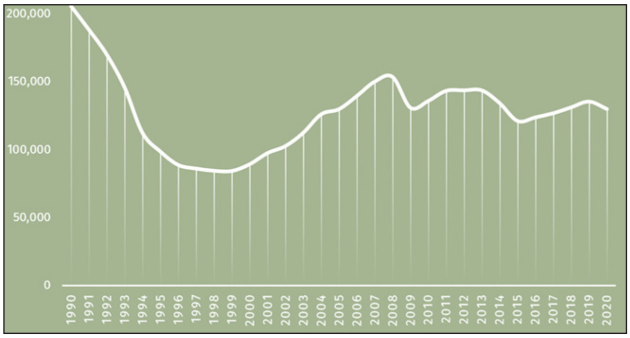
"We do not see factors that would help to make an economic breakthrough in the coming years. The economy needs high volumes of investments, impossible without improving the investment climate. A favorable investment climate includes the protection of property rights, an efficient judicial system, and a low level of corruption", the Concorde Capital analysts believe (Bergmann and Romanyshyn, 2022). In addition, it is essential to preserve the gains made in the reforms, such as the independence of the National Bank and the policies it implements in the currency, supervisory, and monetary spheres, adds Dragon Capital (Bergmann and Romanyshyn, 2022).

It is interesting to compare the dynamics of Ukraine's nominal and real GDP (Figs 2 and 3). Nominally, Ukraine's GDP has long exceeded the level of the early 1990s, but in reality, this is not quite the case (Kushnir, 2019). Real GDP in 2020 was at the GDP of the first years of Ukraine's independence.



Source: *Wilson Center (2021). From "the Ukraine" to Ukraine: A contemporary history. Ibidem-Verlag.*

Fig. 2: Nominal GDP of Ukraine, 1992-2020, million US dollars.



Source: *Wilson Center (2021). From "the Ukraine" to Ukraine: A contemporary history. Ibidem-Verlag.*

Fig. 3: Real GDP of Ukraine, 1992-2020, million US dollars (in 2010 prices)

It is significant that in 2014 there was no sharp decline in real GDP, and its fall was much less than in 1991-1999. The political elites of the country in the early 1990s rejected "shock therapy" as a way to quickly introduce market relations. 'In front of them', in the foreground, there were the problems of national building, the formation of Ukrainian identity, the search for own particular Ukrainian path of transformation (Ulyanova and Chaika, 2021). In the first half of the 1990s, the problems of Crimea were acute, raising the question of broad autonomy and even independence, the status of Sevastopol, and the division of the Black Sea Fleet. At the same time, a decisive economic downturn affected most sectors of the Ukrainian economy, but most severely - foreign and domestic trade, investment in fixed capital (Ulyanova and Chaika, 2021). Simultaneously, industrial and agricultural production was greatly reduced. At the same time, the decline in Ukraine in the considered sectors of the economy was more substantial than in the CIS countries as a whole. Energy transit has become the most stable sector of the Ukrainian economy under these conditions. As a result of geopolitical changes, the country has become one of the largest transit countries in the world. Revenues from the transit of oil and natural gas and the related re-export of these goods played an essential role in stabilizing the country's financial situation and forming a class of Ukrainian capitalists. In addition, in 1991-1994, Ukraine experienced the highest inflation among the CIS countries, as the authorities solved the problem of social payments from the budget by printing karbovanets.

Projecting this situation for today, we can draw some parallels. Significant amounts of financial assistance from Western countries, and even more so financial "injections" of the hryvnia from the NBU, are pumping up inflation. Despite the shortage of funds due to the war and the catastrophic situation in the economy, the Ministry of Finance, which is responsible for government spending, and the National Bank of Ukraine (NBU), which deals with inflation, the hryvnia exchange rate, and the banking system, as a whole, managed to keep the situation under control, says Gleb Vyshlinsky, executive director of the Center for Economic Strategy (Vyshlinsky as cited in Lewarne *et al.* 2022). Banks and the State Treasury have been operating uninterruptedly during all the months of the war. "Usually, when a full-scale war begins in a country, a payment crisis sets in, but our banks and the state treasury did not stop for a day", said the head of the National Bank, Kirill Shevchenko, in an interview with Forbes (Lewarne *et al.* 2022). The question is at what cost it was achieved? To cover the critical needs of the state budget, the NBU has printed UAH 285 billion since the beginning of March 2022. As of the end of May, the National Bank covered about half of the state budget deficit for the three months of the war. Some of these funds were transferred to the foreign exchange market, which in May led to an increase in the retail dollar rate to more than 37 hryvnia/$ (the official rate remained fixed at 29.25 hryvnia/$). The existence of similar rates burned the NBU's foreign exchange reserves very quickly - in June, the National Bank had to sell on the interbank market a billion dollars a week. In an attempt to preserve reserves, contain devaluation and rising inflation, in early June, the NBU raised the discount rate from 10% to 25% at once, which is a rather unprecedented practice even in times of crisis.

The post-war reconstruction of Ukraine will be a very difficult task. Money for these purposes can be found, but there are serious fears, supported by historical examples, that without political and social reforms in the country, not only the recovery process but also its result will be far from expectations. In addition, as some experts rightly note, the lack of unity in the country is one of the main risks for the post-war restoration of Ukraine (Lewarne *et al.* 2022). In this sense, the general "background", the landscape on which the innovation and investment development of post-war Ukraine will take place, differs from the examples of post-war Europe and Iraq considered above.

The case of Ukraine is unique. The level of the country's economic development, the existence of well-formed state institutions and legitimate authorities, well-established production processes, and the stability of the financial system significantly distinguish Ukraine's recovery prospects from, for example, Afghanistan, Iraq, and Angola. At the same time, the Marshall Plan in its pure form may also be inappropriate due to the peculiarities of the mentality of citizens and the high level of corruption. Therefore, it is advisable to "depart from patterns" and consider not only the experience of post-war economic recovery but also the experience of rapid post-industrial development and a leap from a semi-feudal economy and society into the formation of post-industrial capitalism. A good example, in this case, is the United Arab Emirates. It is also worth noting the "revolutionary" Vision-2030 of Saudi Arabia.

Middle Eastern experience: a desert state "from scratch" and a "revolutionary turn" on traditional foundations. Lessons for Ukraine

The United Arab Emirates did not experience military destruction, but the country was "created" in the shortest possible time, in fact, 'from scratch', turning into one of the world leaders in the latest technologies and tourism, including business tourism. The UAE has become one of the most successful economies in the world, surrounded by hostile states. Until the middle of the 19th century, the southern coast of the Persian Gulf was the base of pirates who hunted by robbing merchant ships on their way to India. By 1861, the then-world hegemon - Great Britain - took control of the region, concluding protectorate agreements with local rulers, including with the emirs of Trucial Oman - the current UAE. In December 1971, the emirates gained independence and united to form the UAE. Sheikh Zayed bin Sultan of Abu Dhabi became president. The new country found itself in a very turbulent environment. Large neighbors (Iran and Saudi Arabia), which had severe territorial claims against the emirates of Abu Dhabi and Sharjah, refused to recognize the established state. The emirates broke off the enslaving agreements with British oil companies and invited American ones to take their place. The new overseas partner at the same time, became a shield against the encroachments of neighbors. The second half of the 60s and especially the 70s of the 20th century was the period of the dawn of development economic theory in developing countries. According to it, governments wishing to develop the country should make every effort to develop their own complex industry (Gunel, 2019). Immediately after independence, UAE President Sheikh Abu Dhabi Zayed bin Sultan initiated a program to create its own industry in the country and the actual introduction of five-year economic planning.

Abu Dhabi concentrated on oil refining and the production of essential goods needed for this. The rest of the emirates were offered to find their niche and were promised to fund for projects. They were strongly recommended to create competition with each other. A case in point is the tiny Emirate of Ras Al Khaimah, which has no oil at all. In 1971, the first asphalt plant was opened. At the time of independence, there were almost no paved roads in the emirates. In 1972, the first modern Sharjah-Ras al-Khaimah highway (80 km) was built by a company from Saudi Arabia. By the end of 1976, 900 km of paved highways had already been laid. In the early 70s, the Sheikh of Abu Dhabi initiated the construction of the first cement plant in the UAE in Ras Al Khaimah due to the proximity of the raw material base. In 1980, on the initiative of Sheikh Saud Al-Qasim, the Julphar Pharmaceutical Plant was founded - today it is the largest manufacturer of medicines in the region (Hudson, 2022). Since the second half of the 1980s, mass construction of offices and hotels has begun in Dubai. It required a large number of building materials, which were mainly supplied by local newly built factories.

The real beginning of the UAE's future success was creating free economic zones (FEZs), designed to enhance trade and foreign investment. In the mid-1980s, the first free economic zone, Jebel Ali, was registered 30 kilometers from Dubai. Today their number has grown to 31 (22 registered in Dubai). Few people remember that the main purpose of creating the Jebel Ali Free Economic Zone was to revitalize the Dubai Airport. After a few years of operation of the zone, the results exceeded all expectations: the airport significantly increased the number of flights received (today, the annual passenger flow reaches 70 million people), and investments began to flow into the country (Mallakh, 2018). When the UAE authorities first spoke about the development of tourism, many took it as a joke, asking seemingly reasonable question: "What can be interesting in a country where one can only admire the sands and camels, and before the discovery of oil fields, the population hunted pearls and fish?" (Hudson, 2022). However, the Emir of Dubai, Sheikh Mohammed, has shown determination to turn his emirate into an Asian tourist capital. Over time, one can say that he succeeded: today, the UAE is one of the main tourist destinations in the world with luxury hotels, well-trained staff, and entertainment for every taste (it is even possible to go skiing in a fantastic complex where mountain slopes covered with artificial snow are imitated). It is quite obvious that the creation of innovative tourist complexes in Ukraine is much easier and requires much lower costs due to very favorable natural conditions.

Dubai is the center of the Emirates tourism industry. According to experts, the total investment in the UAE tourism industry in 2016 amounted to 7.7 billion dollars, and the expenditure of tourists was about 27 billion. In 2016, about 15 million people visited the country as tourists, which is, exactly ten times more than in 2000 (Mallakh, 2018). Today, not only ordinary tourists go there - it is prestigious to organize international exhibitions, conferences, and forums in Dubai, and there is the necessary infrastructure for holding sports competitions or festivals. Other emirates are also trying to keep up: in Abu Dhabi, Ras al-Khaimah, Ajman and Fujairah, structures responsible for the development of tourism have been created. They are mainly engaged in marketing research and promotion of their emirates at the international level. The expediency of such an approach is also obvious for the "promotion" of the regions of Ukraine, each of which has its own, unique advantages.

The country's economy is one of the most open in the world - it is a hub, both in terms of logistics and transport and in terms of ease of doing business. In 2020, the President of the UAE amended the 2015 law and removed the mandatory requirement that part of the shareholding be owned by a UAE citizen. Now companies registered in the Emirates can be 100% owned by foreigners, regardless of nationality. For 50 years of UAE independence, this has been proven by the result. After all, where foreign business comes, new jobs are created, and the economy moves forward.

In 2000, a business park for IT companies was created – "Dubai Internet City", where in the first year after the opening, over 700 companies began their activities, including such industry titans as IBM, Microsoft, Sony Ericsson (Kuzmina *et al.* 2021). In the same year, Dubai Media City opened. This project turned out to be even more successful, eventually leading world publications - CNN, Reuters, Associated Press, and others, as well as most of the Middle East news agencies moved their Middle East offices to Dubai. By analogy with the American Silicon Valley, a technology park was built in 2005, called the "Silicon Oasis". This is the first such regional center, which is a cutting-edge technology theme park created from scratch. The technopark houses prestigious scientific and educational institutions such as GEMS International School and AMA University. A few years later, Silicon Oasis became a full-fledged center for innovative development. The main investments were directed to the development of microelectronics and the semiconductor industry. For example, the aerospace conglomerate Dubai Aerospace Enterprise, which produces computer chips, was created in the oasis. In 2016, the Emirates ranked 41st in the world in the Global Innovation Index and 16th in the Doing Business rankings. The innovation share in the UAE's GDP has reached 3% (Hudson, 2022). Creating such 'Silicon Oasis' in Ukraine, while not requiring many funds for its opening, would allow the launching of rapid technological and business development, as well as attracting investors, in particular, institutional ones.

The country is actively developing alternative energy, thus reducing the cost of energy resources for businesses and the population. The well-known hotel chain InterContinental Hotels Group has launched a hotel project that will be fully provided with solar electricity. According to experts, in the future, the hotel will supply electricity to the entire quarter in which it will be located, reducing the cost of electricity by 25-30% (Hudson, 2022). A no less ambitious project is being developed by the largest port operator DP World. It is planned to cover with solar panels the roofs of all buildings in the Jebel Ali SEZ, and all the parking lots surrounding it, as well as equip all the roofs of the Port Rashid cruise terminal with solar panels. It will be a full-fledged solar power plant on the roof. The government's plans go much further: in the long term, a solar park will be created in the UAE - a complex that will bring together several solar energy production enterprises and will coordinate its work. The planned capacity of the park is one thousand megawatts. By 2030, the share of solar energy in total energy consumption will exceed 5% (Gunel, 2019).

In Saudi Arabia, in February 2015, the ruling monarch reformatted the structure of the state apparatus, initiating the creation of the Council for Economics and Development, which oversees economic and social ministries and departments, and the Council for Politics and Security (which is responsible for the structures of the internal political department, ministries of emergency situations and special services). Anticipating the advent of Vision 2030, the monarch stated that the Saudi economy should turn into an "investment economy" (KPMG, 2017). Presenting the program Vision 2030 on April 25, 2016 at a press conference in the royal office, Prince Mohammed bin Salman spoke about the beginning of a "national turn", the eradication of "bureaucracy and corruption," and the "transformation of a blessed homeland". The objectives of the program were summarized as "doubling the opportunities" of the country. The "doubling opportunity" line was associated with "space for the private sector", its transformation into a "partner" of the state and "the main tool for creating jobs". Vision 2030 set the task of attracting foreign specialists to work in higher educational institutions of the country. The creation of "amateur circles for children and adolescents" in specially formed for this purpose [let us recall Plast youth organizations in Ukraine which have historically successful experience of upbringing patriotic and responsible citizens] throughout the country "using modern world experience in socio-cultural clubs" was proclaimed an important (and appearing for the first time in Saudi history) direction of the authorities' activities. The economic part of the program focused on encouraging small and medium-sized businesses proclaimed "one of the main sources of economic growth". Its share in GDP, according to Vision 2030, was supposed to be increased from 20 to 35%. The state undertook to increase the level of banking and financial support for this sector. The development of this area was supposed to reduce unemployment - from 11.6 to 7%. The role of women, who comprise "more than 50% of university graduates", was explicitly stipulated. Based on the fact that Saudi Arabia is one of the largest countries (ranking "third largest in the world") in terms of military spending, the program noted that only 2% of this spending is realized in the country itself. This circumstance forced the authors of Vision 2030 to raise the question (justifying it with "challenges of a regional nature") about the need to create a national military industry capable of satisfying 50% of the needs of the Armed Forces. A special place in this regard was given to the aviation cluster. The solution of the task was supposed to be carried out based on "direct public investment and strategic cooperation with the world's largest companies" through the "transfer of technologies and knowledge" and "training of national personnel" (Moshashai *et al.* 2020). The tasks set could be realized only on the basis of changes in the structure of public administration. The question concerned not only the reduction of expenses for the administrative apparatus, but also "irreconcilability against all manifestations of corruption" and the use of "global experience in achieving transparency". At the same time, Vision 2030 is far from secular - "Islam and its principles" remained "the basis of life, embodied in laws, deeds, decisions, and aspirations". These principles were proclaimed the "starting point" of the program itself. But it was about Islam of "moderation, tolerance, creativity, discipline, justice" (Moshashai *et al.* 2020).

Most of the tasks set in Saudi Vision 2030 are also relevant for post-war Ukraine, including in the field of the military-industrial complex due to security threats, and the cooperation with the Turkish drone company Bayraktar is already, in fact, a pilot project. Also, like the "Islamic" framework of the Saudi reforms, the post-war revival of Ukraine can be carried out "in the orbit" of the revival of national identity, which became the main public discourse during the Russian invasion.

In July 2022, in Lugano, Switzerland, Ukraine presented a post-war reconstruction plan worth more than $750 billion, including 850 projects to rebuild the country. This is stated on the website of the Recovery Plan and the presentation of the plan in Lugano. The plan is designed for 10 years - from 2023 to 2032 - and will take place in two waves. The first will last in 2023-2025, in which it is planned to implement most of these projects - 580. These three years will cost more than $350 billion. The second wave will contain fewer projects but will require more funding - more than $400 billion (Bergmann and Romanyshyn, 2022). At the same time, the plan stipulates that the Ukrainian economy will grow by 7% annually within 10 years. Given that the average growth rate, even in the UAE with its rapid development, is 5%, this figure seems quite unrealistic. In addition, the document presented in Lugano does not even hint at economic models and the logic of growth. Formally defined as priorities, innovation growth (increasing the "complexity" of the economy, in particular, the transition to the production of high value-added products) and the development of human capital are mentioned. But the logic of how exactly innovations and human development will affect the country's recovery cannot be traced. At the Conference, there was no convergence of positions between the Ukrainian authorities and international partners (Jackson and Lough, 2022). The latter expected a clear plan of action and a transparent architecture of the financing system – instead, they were offered only general aspects and directions for recovery.

The most expensive programs presented in the document are the rehabilitation and modernization of housing and infrastructure in the regions, which requires $150-250 billion, and the expansion and integration of logistics with the EU, which will cost $120-150 billion. The need for energy independence and the 'Green Deal' reaches $150 billion. Macro-financial stability will require $60–80 billion, and $75 billion are implied to ensure competitive access to capital (Zogg, 2022). The development of sectors of the economy with added value requires 50 billion dollars, and the same amount is implied for the defense sector. Other large-scale programs include the restoration and modernization of social infrastructure and the development of culture and sports systems, the funding of which is estimated at 20-35 billion dollars each (Datzenko, 2022). Thus, the most expensive "projects" are non-profitable (!) social development projects, and not the projects of technological innovations and the development of the most promising industries in the world within the Industry 4.0 era.

In this context, the integration of the best practices of the Marshall Plan, taking into account the radically changed economic realities of the 21st century (information economy and Industry 4.0), Saudi Vision 2030, and the experience of the UAE in creating an advanced state in the desert from tiny fishing villages (virtually from scratch, that is, with incomparably worse starting conditions than now in Ukraine after the destruction of infrastructure, industrial, social, and housing funds as a result of attacks by the Russian Federation).

To determine priority areas and sectors for financing and development, it seems appropriate to use the BCG matrix a "classic", but very versatile and effective, well-proven tool. This matrix might look like this (Fig. 4):

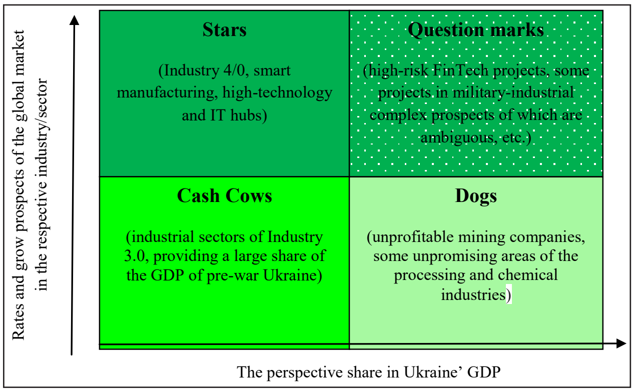


Fig. 4: Matrix BCG to identify the most promising areas, industries, and sectors for development in post-war Ukraine

It is advisable to develop the regions of Ukraine, taking into account regions' specifics, and their absolute (natural) and relative (industrial, business, social, educational base, social capital) advantages. Such development can be completely autonomous, following the example of the UAE, which will make it possible to make the best use of the advantages of a particular region and refuse to develop areas that are costly and unpromising in a particular region.

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