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ANALYSIS OF THE PROSPECTS FOR THE FORMATION OF A NEO-INDUSTRIAL ECONOMY ON THE EXAMPLE OF UKRAINE

The object of research is industry as a type of economic activity and features of its transformation towards neo-industrialization. The paper presents the results of a study of the dynamics of changes in the results of economic activity on the example of the Ukrainian industry as a separate sector of the national economy.

In the course of the study, methods of analysis, comparison and generalization were applied. The content of the concept "structural and logical chains of industrial enterprises" in the formation of added value is revealed. It shows how a change in the view of production chains can contribute to the formation of a growth economy. The market economy presupposes the proactive determination by the owner of the enterprise of promising areas of development. But in the conditions of the loss by the state of the strategic vector of its development in the economy, there is an imbalance and intersectoral conflicts. The author investigated the dynamics of the development of certain areas of industry in Ukraine, an attempt was made to form structural and logical chains of mutual support and mutual stimulation of industrial enterprises of individual sections and sections of types of economic activity. It is shown how the principles of the "push-pull" approach function when determining the directions of the state's industrial policy. It is noted that the formation of structural and logical chains of industrial enterprises can be used as the basis for investment and innovation roadmaps of the state.

The scientific novelty of the work lies in the determination of approaches to the formation of a strategy of state industrial policy using a retrospective analysis of the dynamics of changes by type of economic activity. An enlarged analysis of statistical dynamics is proposed, which makes it possible to move from operational and tactical planning of economic policy to strategic one.

The practical value of the work lies in an attempt to show the structural and logical relationships between certain types of economic activity, which determine the prospects for the formation of investment and innovative roadmaps for the development of Ukrainian industry. Taking into account the tendencies and prospects of the neo-industrialization of the world economy, the directions are shown in which the Ukrainian industry can keep the national economy, form regional positions and take a worthy place in the world economic system.

Keywords: industrial enterprises, type of economic activity, structural and logical chains of industrial development, innovation and investment roadmaps for the development of the national economy.

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1. Introduction

The term «industrialization» is interpreted as a transition from an agricultural economy to an industrial one. This process has been going on since the middle of the 18th century, for over 200 years. The transition of the economy between structures is a disharmonious process that requires worldview thinking. Scientific thought determines the development of the fishing industry at the beginning of the 21st century along the lines of post-industrialization and neo-industrialization [1, 2]. For example, the Ukrainian economy entered the 21st century as an economy of the 2nd order, while the leading countries of the world entered the 5th economic order [3–5]. The modern economic world is formed on the 6th economic order, which provides for the individualization of industrial production using nanotechnology and bioengineering [4]. This will

guarantee the territories of economic growth and social development in the long term [4, 5]. In the opinion of the author of work [5], right now, against the background of the superposition of cyclical crises of Kitchen, Zhugliar, Kuznets, Kondratiev, a struggle for technological leadership and dominance in the economy is being formed. Transformational processes increase long-term challenges and each territory forms its own plans to overcome it. Moreover, it can be both a territory and a region. Regional projects are able to introduce only strong economically developed territories, weak territories form territorial projects and aim to stay in the cohort.

A feature of traditional economies is that middle-aged people become managers of enterprises (especially of the basic directions of industry). For the traditional development of the economy, this is logical and makes sense. But the rapid transition from the economy of the 2nd order

to the 6th order, using the example of developing countries, forms a contradiction between the rapid permanent forms and methods of industrial enterprise management and the paradigm of innovative development of the world economy. And this situation is the basis for the slowdown of national economies.

Since the consciousness of the majority of citizens does not keep up with the real world trends, speculation movements are emerging in society for a return to the usual model of the raw material economy functioning.

When forming the structure of the study, a hypothesis was put forward that the innovative development of the world economy affects the reformatting of national economies. The market environment adjusts certain types of economic activity. Formation of structural and logical chains of combination of types of economic activities of the country is relevant for the national economy. And then the innovative activity of the final structure will stimulate the acceleration of changes along the entire chain. Thus, changing the system of making managerial decisions both at the level of sectors of the economy and at the national level.

Therefore, it is relevant to determine the driving forces and promising directions for the development of the intermediate consumption market with the formation of added value in structural and logical industrial systems. Thus, *the object of research* is industry as a type of economic activity and the features of its transformation towards neo-industrialization. The paper presents the results of a study of the dynamics of changes in the results of economic activity on the example of the Ukrainian industry as a separate sector of the national economy.

The aim of the research is to investigate the prospects for the formation of a neo-industrial economy in the country through the formation of structural and logical links between industrial enterprises in the intermediate consumption market, by analyzing the retrospective dynamics of the intermediate consumption market, to determine the role of the «push-pull» approach in the formation of a new economy.

2. Methods of research

The work uses methods of generalization and integration of the research result into the global structure. This research is analytical. Methods of preliminary data processing are widely used. The research is based on materials from the State Statistics Service of Ukraine [6], which are systematized. For the indicators selected for the study, functional relationships are determined. In order to identify functional ties, statistical methods were used. To compare alternative options for the development of the system, the comparison method was used.

In order to identify the optimal parameters for managing the market for intermediate consumption goods, the optimization method was applied [7].

3. Research results and discussion

In [8], the authors showed that the lack of a unified direction of the vector of economic development in a particular territory creates chaos in the development of this territory. Uncertainty acts not as a risk factor, but as an objective reality and an invariable element of the system. This situation gives rise to an inadequacy of the

assessment of Ukrainian industry both in the domestic space and in international ratings.

Since Ukraine «1991» with a traditional industrial economy is trying to understand the trends and directions of development of the leading countries of the world, the processes of renewal and modernization of the national economy are formed chaotically.

Neo-industrialization is being formed as a transition to technologies of the sixth economic structure. Such an economy is based on information technology, it is precisely it that characterizes the direction of development of Industry 4.0.

The authors of this study put forward a hypothesis that for the conscious neo-industrialization of the Ukrainian economy, it is necessary to build a structural and logical scheme of industrial relationships, the purpose of which is to maximize added value.

The industry of Ukraine is formed from such types of economic activities [9] as:

- extractive industry and quarrying (section B on the codes of economic activities in Ukraine);
- processing industry (section C);
- supply of electricity, gas and conditioned air (section D);
- water supply, sewerage, waste management (section E).

According to the data of the State Statistics Service [6] for the systematized and digitized period (since 2010), the dynamics of changes in the activity of the industry for its components was generally determined. The results of the generalized assessment are shown in Table 1.

Thus, the Ukrainian industry remains the sphere of activity of large enterprises with a partial redistribution of sales volumes towards small businesses. To clarify the specifics of the trade turnover of small enterprises in the industrial sector of Ukraine, additional research should be carried out. And it is possible to predict the continuation of the formation of the market for intermediate consumption products according to the monopolistic type (the formation of associations of entities in the areas of market interests).

In order to identify the areas of economic activity of industrial enterprises that are important for the market, the data on the financial achievements of business entities in the industrial sector of the Ukrainian economy were systematized (Table 2).

Such a consolidated period for assessing changes was applied to fix the direction of changes, for individual years of the period may be insignificant. The dynamics are generally positive. Thus, in monetary terms, the volume of sales of industrial products at the beginning of 2020 exceeded the volume of sales by sections compared to 2012. However, the concentration of growth in the raw materials-oriented industry (mining – 156 %, energy supplies – 116 %) indicates that the economy continued to be in outdated economic structures.

In order to finally understand the feasibility of reformatting the Ukrainian economy in the context of the neo-industrialization of the world economy, the authors of the study made an attempt to analyze which types of industries formed the positive dynamics of these sections. The focus is on the traditional industrial sections of economic activities – mining and processing industries. The results are presented in Tables 3, 4. Sections of sections are highlighted that have positive and maximum dynamics in order to concretize the specifics of industry development.

Table 1

Activity of industrial entities of Ukraine in the total number of economic entities for the period from 2012 to 2020*

Indicator	Year/Distribution of industrial entities by organizational and legal forms					
	2012			2019		
	Total	Including enterprises	Including individual entrepreneurs	Total	Including enterprises	Including individual entrepreneurs
Industrial entities, fate in the total number of economic entities, %	7.10	38.55 Of these enterprises: big 0.9 %; average 13.4 %; small 85.7 %	61.45	6.71	36.58 Of these enterprises: big 0.6 %; average 10.5 %; small 88.9 %	63.42
Volume of products sold, fate to industrial products, %	100	98.77	1.23	100	98.92	1.08
Value added in terms of production costs of business entities, %	100	98.47 %	1.53	100	98.12	1.82

Note: * – the table is compiled by the author based on the data [6]

Table 2

Analysis of changes in the volume of sales of products (goods, services) by industrial enterprises (sections B, C, D, E according to the classification of economic activities) for the period from 2012 to 2020

Section code	Economic activity section Section name	Economic Activity Section
B	Mining and quarrying	+156 %
C	Processing industry	+108 %
D	Supply of energy, gas and conditioned air	+116 %
E	Water supply, sewerage, waste management	+103 %

Note: * – the table is compiled by the author based on the data [6]

Table 3

Analysis of changes in sales volumes of products (goods, services) by enterprises of the extractive industry for the period from 2012 to 2020 *

Mining and quarrying (section B)		Change in sales volume, ± %
Section	Section title	
06	Extraction of crude oil and natural gas	+276.4 %
07	Mining of metal ores, incl.:	+153.2 %
07.1	– mining of iron ores;	+146.0 %
07.2	– mining of non-ferrous metal ores	+294.0 %
08	Extraction of other minerals and quarrying, including:	+156.2 %
08.1	– extraction of stone, sand, clay;	+156.0 %
08.99	– mining of other minerals and quarrying	+116.0 %

Note: * – the table is compiled by the author based on the data [6]

Analysis shows that the market needs non-ferrous metals, as well as oil and gas. But this is traditional industrialization and will make sense only in conjunction with the processing industry.

Since the analysis was carried out of sales volumes in monetary terms, it can be concluded that the market is ready to pay for these products (goods, services) in real money. This means that this product has an established equilibrium market value.

An analysis of the results indicates a breakthrough in such types of economic activities as the production of plastics in primary forms, and then the production of artificial and synthetic fibers is the main consumer of crude oil and gas. Thus, a chain of structural and logical connections of the industry with the receipt of added value is built. But the further development of such a structure is hampered by the link in textile production – the Ukrainian industry «sags» and loses the advantages it has gained. According to the research results, it can be concluded

that the chemical industry in Ukraine is not structured, does not have a development strategy. Thus, the overall growth in sales of the chemical industry is 32 %, although it is this industry that demonstrates the possibilities of Ukrainian innovation. That is, a significant number of types of economic activities in the industry do not have a world outlook for future development.

Table 4

Analysis of changes in sales volumes of products (goods, services) by enterprises of the processing industry for the period from 2012 to 2020*

Mining and quarrying (section C)		Change in sales volume, ± %
Section	Section title	
10+11+12	Manufacture of food products, beverages, tobacco products	+151 %
13+14+15	Textile production, production of clothing, leather, leather goods and other materials	+232 %
16+17+18	Manufacture of wood products, paper and printing activities	+174 %
19	Production of coke and refined petroleum products	+58 %
20	Production of chemicals and chemical products, including:	+32 %
20.16	– production of plastics in primary forms;	+970 %
20.2	– production of pesticides and other agrochemical products;	+ 618 %
20.3	– production of paints, varnishes and similar chemical products;	+165 %
20.4	– production of soap, detergents, perfumes and cosmetics;	+60 %
20.6	– manufacture of artificial and synthetic fibers	+2715 %
21	Manufacturing of basic pharmaceutical products and pharmaceuticals	+249 %
22	Manufacture of rubber and plastic products	+177 %
23	Manufacture of other non-metallic mineral products	+188 %
24+25	Metallurgical production, production of finished metal products, except for machinery and equipment	+86 %
26+27+28+29+30	Mechanical engineering	+42 %
31+32+33	Manufacture of furniture, other products, repair and installation of machinery, equipment, including:	+211 %
31	– furniture manufacture;	+203 %
33	– repair and installation of machinery and equipment	+226 %

Note: * – the table is compiled by the author based on the data [6]

Another interesting chain of the structural-logical scheme can be the extraction of non-ferrous metal ores – metallurgical production, production of finished metal products – repair and installation of machinery and equipment. However, Ukrainian mechanical engineering is implicated in nature and falls out of this chain. In order to determine the possible directions of restructuring of mechanical engineering, additional research should be carried out. Ukrainian industry is losing added value due to imperfect production of electrical products.

Particular attention should be paid to the production of pharmaceutical products and pharmaceuticals in the formation of structural and logical schemes of industry. It is interesting to explore the chain and form centers for the formation of the added value of goods. The production of pesticides and other agrochemical products requires the same thorough understanding.

The conducted analysis allows to build structural and logical schemes for the development of Ukrainian industry and determine the areas of active attention from the state and entrepreneurial initiative. The vertical development of the economy behind its locomotive types of activity according to the «push-pull» principle may become the basis for withdrawing the industry from the cycle of crisis waves.

4. Conclusions

The study shows that the development of the economy of the 6th order and neo-industrialization provide for the formation of space for research and innovation through the promotion of the principles of sustainable growth. This presupposes the rational use of resources, separating economic growth from the use of resources. Countries that will be able to process their available resources with the receipt of the maximum possible added value will ensure sustainable development and favorable conditions for themselves [10, 11]. The industrial policy of Ukraine requires reflection and structural and logical renewal. The conducted research has shown one of the ways to restore the industry of Ukraine on the basis of the formation of structural and logical chains of intersectoral knitting. Such ties, using the principles of the «push-pull» system, can form sectors and areas of innovation, become the basis for the neo-industrialization of Ukrainian industry. In particular, the availability of minerals and industrial chemical production can become the basis of a new paradigm for the formation of the national economy.

The analysis of statistical data carried out in the course of the study demonstrates the potential of the Ukrainian

industry and highlights the directions of its creative development. The study of the types of economic activities that form the positive dynamics of the development of Ukrainian industry requires additional efforts and is an object of further scientific research. Sections of the extractive industry do not find their continuation in the processing industry, they drain the Ukrainian economy and form the added value of other countries. The formation of structural and logical chains not only in industry, but also in other types of economic activity, will make it possible to concretize the spheres of actual investment and innovation.

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