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4. Міністерство фінансів України. URL: <https://minfin.com.ua/> (дата звернення: 08.01.2019)
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STRUCTURAL INFLUENCE OF INDUSTRY ON MACROECONOMIC INDICATORS OF THE COUNTRY

**СТРУКТУРНИЙ ВПЛИВ ГАЛУЗЕЙ ПРОМИСЛОВОСТІ НА
МАКРОЕКОНОМІЧНІ ПОКАЗНИКИ КРАЇНИ**

The article gives the main directions and structure of the development of industry in Ukraine. An analysis of some indicators of the sectoral structure of the industry is made. The role and necessity of considering macroeconomic indicators in the context of economic development of the country are substantiated. Some macroeconomic indicators of Ukraine's development are analyzed. The connection of the branch structure of the industry with macroeconomic indicators is considered and their influence is revealed. The basis of the economy is production, ie. creation of the final economic product. Without production, there can be no consumption. The production of material goods and services is carried out by the

following main branch: industry, agriculture, construction, communications, transport. But the foundation of the economy is still an industry, as a leading branch. The development of industry affects the pace of scientific and technological progress throughout the national economy. The industry is the base of expanded reproduction and economic development of the country, its defense capacity, it provides citizens of the country with consumer goods and various services, therefore it is necessary to study its indicators more carefully and especially in accordance with the sectoral structure of the country. Modern industry is characterized by the complexity of the branches, industries, and connections between them. Each of the branches and industries is characterized by varying degrees of capital intensity, labor intensity, material intensity, energy intensity, environmental capacity, knowledge intensity, etc. The development of economic sciences and the application of mathematical methods for analyzing economic processes allowed to determine the number of fundamental indicators of industries that characterize the economic situation of any state. Such indicators are called macroeconomic indicators. A clear understanding of the economic nature of these indicators and their mutual influence on each other is the basis for developing a policy of regulating economic processes in the state; therefore, the study of their components, depending on the structural component of the industry, is an urgent task of scientists in the modern economic system. It is necessary to influence their improvement, which in general will help to consolidate the positive image of the country on the world stage.

Keywords: Branch, industry, macroeconomic indicators, gross domestic product, the branch structure of the industry.

У статті наведено основні напрямки та структура розвитку промисловості України. Зроблено аналіз деяких показників галузевої структури промисловості. Обґрунтовано роль та необхідність розгляду макроекономічних показників у розрізі економічного розвитку країни. Проаналізовані деякі макроекономічні показники розвитку України. Розглянуто зв'язок галузевої структури промисловості з макроекономічними показниками та виявлено їх вплив. Основою економіки є виробництво, тобто. створення кінцевого економічного продукту. Без виробництва не може бути споживання. Виробництво матеріальних благ і послуг здійснюють такі основні галузі: промисловість, сільське господарство, будівництво, зв'язок, транспорт. Але фундаментом економіки все ж є промисловість, як провідна галузь. Розвиток промисловості впливає на темпи науково-технічного прогресу в усьому народному господарстві. Промисловість - база розширеного відтворення і економічного розвитку країни, її обороноздатності, вона забезпечує громадян країни товарами народного споживання і різного роду послугами, тому необхідно її показники вивчати більш ретельно і особливо у відповідності до галузевої структури країни. Сучасна промисловість відрізняється складністю складу галузей, виробництв і зв'язків між ними. Кожна з галузей і виробництв характеризуються різним ступенем капіталомісткості, трудомісткості, матеріаломісткості, енергоємності, водоемності, наукоємності тощо. Розвиток економічних наук та застосування математичних методів аналізу економічних процесів дозволило визначити ряд фундаментальних показників галузей промисловості, що характеризують економічний стан будь-якої держави. Такі показники отримали назву макроекономічні показники. Чітке розуміння економічної сутності цих показників і їх взаємного впливу один на одного - це основа для розробки політики регулювання економічних процесів в державі, тому дослідження їх складових у залежності від структурної складової промисловості є нагальною задачею науковців у сучасній економічній системі. Це необхідно для впливу на їх поліпшення, що в цілому буде сприяти закріпленню позитивного іміджу країни на світовій арені.

Ключові слова. Промисловість, галузі, макроекономічні показники, валовий внутрішній продукт, галузева структура промисловості.

Introduction. The development of human society throughout history was characterized by various types of economic relations. To regulate these relations and understand their nature, the scientific substantiation of the economic processes that took place was improved. At different stages of the development of economic science, there were different criteria for determining the wealth of the state.

The main purpose of the economy is to ensure the vital activity of the nation, to meet its growing material and spiritual and cultural needs, and to increase the level of well-being. In connection with this, the main functions of the country's economic system are the production, distribution, exchange, consumption of material goods and services. The economy as a whole examines macroeconomics. It covers the overall structure and characteristics of the national economy, its inter-sectoral complexes, and potentials, as well as aggregates such as the public sector, households, and the private sector. The object of the study of macroeconomics is the aggregate, general indicators of the economy of the country as a whole: national wealth, gross national product (GNP), gross domestic product (GDP), national income (ND), total public and private investment, the total amount of money in circulation. At the same time, macroeconomics studies the country's average economic performance, such as income, wages, employment, and labor productivity. In addition, for the analysis of the macroeconomic situation, indicators of the rate of inflation, employment rate, unemployment, exchange rate, and others are used.

Indicators characterizing the state of the country's economy are called macroeconomic indicators. A clear understanding of the economic nature of these indicators and their impact on other processes and categories are the basis for developing a policy for regulating economic processes in the state. Without this, it is impossible to effectively manage the development of the national economy in the interests of achieving the immediate and long-term goals of socio-economic progress of society and the state.

An analysis of recent research and publications on this topic has shown that researchers study separately industrial indicators, the branch structure of the industry and macroeconomic indicators. However, the connection between these components is not explored.

The urgency of the topic of research is determined by the fact that at present the nature of the sectoral structure of the industry and its indicators increasingly affect the efficiency of the functioning of industry and the economy as a whole. Under the influence of various factors, first of all, under the influence of GNP, GDP is constantly qualitatively and quantitatively modified or transformed. This entails changes in such indicators as the growth of production volumes, the level of profitability, energy intensity, the magnitude of environmental damage, and others. In order to add GDP changes to the necessary direction (improvement or optimization of certain economic indicators), there is a need for its regulation, in particular, GDP. This is evidenced by world practice. The problem of regulation is particularly relevant in the context of the development of market relations in the

Ukrainian economy, due to the lack of appropriate methodological and methodological support.

Setting objectives. The purpose of this work is to consider the peculiarities of the structural influence of the branches of industry on the macroeconomic indicators of the country. The research covers various industries, which must have a different impact on the level of the economic performance of the country.

Methodology. The methodological and theoretical basis was the study and use of domestic and foreign monographic and other studies in the field of economics, management, system analysis, buy such authors as N. Kondratiev, K. Marx, D. M. Keynes, P. Samuelson, V. Leontiev, S.Yu. Glazyev, I. Schumpeter, V. Maevsky, A. N. Anisimov, V. Oetkin, Yu. Yaremenko, V. Bulatov, M. Sedlak, K. McConnell, S. Brue, R. Coase, V. Kosov, M. Porter.

The methods of theoretical research, systematization, and generalization for the development of recommendations and proposals concerning the study of the influence of industries on the macroeconomic indicators of the country and increase of indicators of the economic prosperity of the country are used.

Research results. Ukraine is the agrarian country in which the material production industry is developing - an industry in which manufactures of tools and other products for different sectors of the economy produce raw materials and fuel, process and recyclable products obtained in industry or in agriculture the economy. The industry is closely linked to scientific and technological progress, has a decisive influence on the level of development of society and is a leading branch of material production in Ukraine.

Growth rates, the level of development and the structure of the industry are important indicators of not only quantitative but also qualitative characteristics of the national economy and living standards of the population. From the speed and level of development and national income of the organization depends on the technical level of production, the structure of the economy, its territorial organization.

The industry is a structural entity, which includes about 20 large industries, almost 150 sub-industries and more than 300 industries that produce industrial products. It is determined by the sectoral, functional, territorial and organizational structure [1].

Industry structure reflects the composition and the ratio of industries. The industry is a set of enterprises, similar to the intended products, applied technologies, the use of raw materials. Composition of industries or complexes that are part of the industry and their share in the total volume of industrial production refers to the sectoral structure of the industry. Industry structure cannot stand still, but it is moving all the time. The industry is divided into such large industries: energy; fuel; metallurgy; machine building and metal working; chemical and petrochemical; wood, woodworking, and pulp and paper; construction materials industry; light; food mixed feed; microbiological; polygraphic and others [2].

The basis of the functional structure (which reflects the division in the fields of specialization, service, auxiliary and related) industries are inter-industry complexes.

The territorial and organizational structure of the industry is based on its territorial structure, which reflects the composition and correlation of interconnected forms of territorial concentration of industry, the location of industrial (points, centers, knots, agglomerations, districts). The industry is very uneven in the territory of Ukraine. Its largest concentration was in the Donetsk region (Donetsk and Lugansk region) and Prydniprovia (Dnipropetrovsk and Zaporizhzhia regions).

The feature of the sectoral structure of Ukraine is an increased level of the weight of goods production and a low share of production services. Most of Ukraine's industry is manufacturing, which corresponds to the practice of developed countries. Industrial production by sectors of the Ukrainian economy in 2017 is shown in Figure 1.

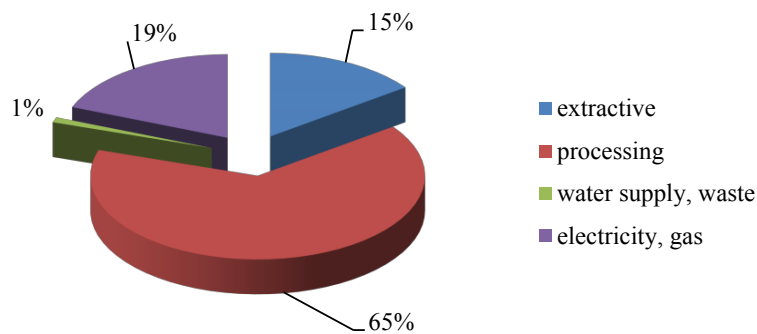


Figure 1 – Industrial production by sectors of the Ukrainian economy in 2017 [3]

However, this structure (Figure 1) misleads the average reader, as it is clear, in a more detailed examination, that the industries dominated by industries with the lowest added value, which predetermine the miserable situation of production and profit, and, accordingly, the level of economic development of the country. The structure of the Ukrainian industry for the main products in 2017 is shown in Figure 2.

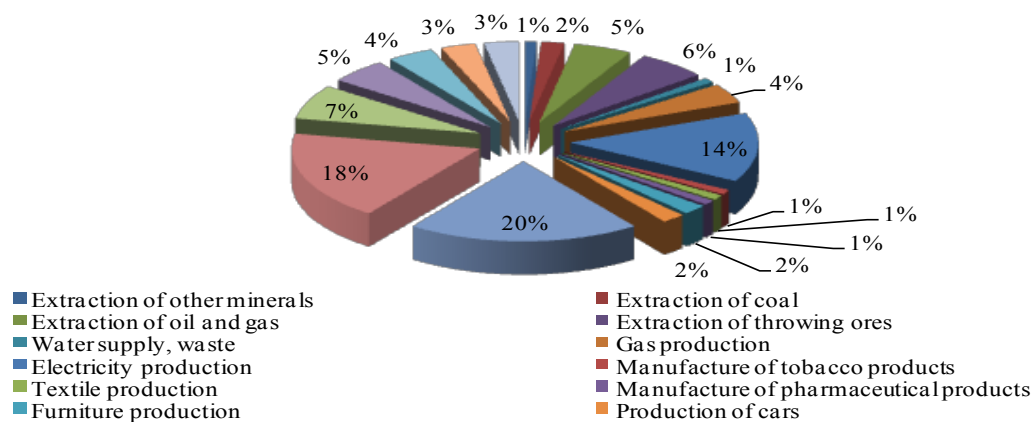


Figure 2 - Structure of Ukrainian industry by main products in 2017 [3]

As you can see, half of the Ukrainian economy consists of goods of primary sectors and raw materials. Most of the large industrial sectors of our state are not a development factor:

- extraction of metal ores - Specification of colonial territories. Extraction of raw materials does not even satisfy domestic demand (Ukraine imports both coal and ore);
- more processing - metal production is oriented mainly to exports because actual consumption is absent and characterized by low added value - these are pipes and sheet metal;
- machine building is fully concentrated in the production of heavy low-technological equipment. There are isolated cases is electronics (Zaporozhye plant), but not computers.

There are some perspectives for the food industry: Ukrainian products (cereals, grain, honey, sweets) and drinks are successfully represented in foreign markets among world leaders.

Completely neglected sectors of the light and chemical industry, with the exception of some enterprises.

Thus, the Ukrainian industry continues to be in the primary sectors of the economy of 3-4, with the national income of the state to structural shifts absent. But if these structural changes take place, this can affect the macroeconomic indicators of Ukraine and raise its status in the eyes of the world community.

Note that the main macroeconomic indicators are: gross domestic product;

- gross national product; a pure national product; national income; personal income.

Additional macroeconomic indicators include: the level of employment in the country (the scale of unemployment); the price level (the degree of inflation) and its dynamics; budget deficit; external debt; the volume of investments and its dynamics; indicators of well-being and quality of life.

The main indicators are interconnected and form the system of national accounts (SNA), which characterizes all major macroeconomic processes, conditions, and results of the reproduction of the economy. Accounts are a set of balances that reflect on the one hand the available resources on the other - their use. For example, the dynamics of the gross domestic product of Ukraine from 2012 to 2017 is shown in the Table.

Table – Gross domestic product of Ukraine from 2012 to 2017, UAH million

Period	NOMINAL GRANT INTERNAL PRODUCTS	NOMINAL GRANT INTERNAL PRODUCTS	Deviation	
			absolute relative	absolute relative
2012	1408889	1304064	-104825	-7,4%
2013	1454931	1410609	-44322	-3,0%
2014	1566728	1365123	-201605	-12,9%
2015	1979458	1430290	-549168	-27,7%
2016	2383182	2034430	-348752	-14,6%
2017	2982920	2445587	-537333	-18,0%

According to the dynamics of the Gross domestic product of Ukraine in 2012-2017, we see significant changes towards the decline. For six years, this indicator has fallen by more than 10%. First of all, this is due to structural changes in the industry in terms of reducing mining, engineering, and processing industries.

Also, the impact of structural shifts in industrial production in Ukraine can be traced according to the dynamics of change and the national income of the ex-industrial production in 2014-2017, which is shown in Figure 3. As the analysis showed in 2016, there was a significant improvement of this indicator, but in 2017 it already fell again. It also points to the negative shifts in the industry, which survives at the expense of individual industries, but in general, can not reach a steady level of growth.

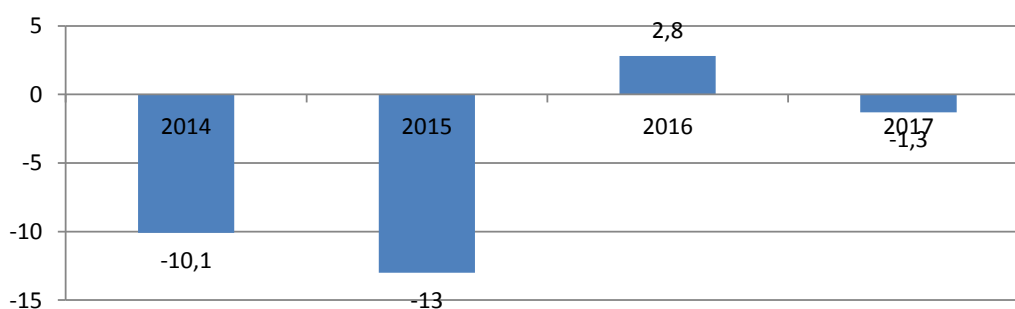


Figure 3 – Dynamics of change and the national income of the ex-industrial production in Ukraine in 2014 – 2017,%. Submitted based on [9]

Each branch of industry is characterized by such economic indicators as the volume of production, employment, the magnitude of environmental damage, and others. These indicators are taken as a whole in the industry, play the role of indicators of the branch structure of the industry, as the content determines the significance of these indicators.

Economic indices of industries have different meanings, reflecting the specifics of the industry: the fuel industry is characterized by higher fiscal income, with the light industry being characterized by more employment. These differences give rise to a certain structural effect: the change in the parity ratio of industries leads to an increase or decrease in one or another indicator in the whole industry due to the priority development of those or other industries [4].

Economic systems develop on the basis of processes of self-development, self-organization, which have their own logic. The logic of self-development of an industrial enterprise is aimed at maximizing profits. The interaction of the enterprise with other enterprises generates a macro level (for the industry it is meso-level), which, in turn, has its own logic of self-development. One of the most significant areas of the logic of self-development of the level of industry is to obtain a structural effect, which is realized by optimizing the indicators of the branch structure of industry [5].

In world practice and in Ukraine, the main indicator of the sectoral structure of the industry is profitability. According to this indicator, the state supports the development or reduction of certain sectors, uses a large part of the investment. Other indicators in the decision-making process are usually of secondary importance. In the process of self-development and interaction of economic entities (state, enterprise, household), other indicators of the industrial structure of the industry, such as employment, environmental damage, energy intensity, and others, become popular

The need to regulate various indicators of the industry structure of the industry and the choice of the corresponding partial balance of industries makes the task of improving the industry structure of industry multicriteria [6].

The objective basis of formation (industry structure of industry) is the further development of the NTP improvement of the division and cooperation of labor, which is carried out in the conditions of globalization of the economy, increasing the importance of information, reorientation of resources from the sphere of production to the sphere of services and the influence of other structure-forming factors. Formation of the industry structure of the industry is exposed to a large number of structural factors that can be classified according to the following principles:

- reproductive;
- technological;
- territorial aspect;
- the influence of the environment.

The methodological basis for regulating the transformation of the industry structure of the industry is to consider it as one of the parties to the management process, which allows us to identify the most characteristic features of the formation of the industry structure of the industry. The most actual problem is the adequacy of regulation of the transformation of the industry structure of industry for the purposes of industrial development or other set objectives. The adequacy of the regulation of the transformation of the sectoral structure of industry lies in the

fact that the applicable regulatory methods could ensure the realization of the possible development of industry [7].

Existing methods of regulating the transformation of the industry structure of the industry are local, temporary and aimed at the elimination of certain negative phenomena of the economy or improvement of individual indicators. In its turn, it does not fully realize the reproductive capabilities of the industry structure of the industry and does not always fully take into account the interests of business entities. In view of this, there is a need for an integrated, systematic approach to the transformation of the industry structure of the industry, which requires a certain mathematical apparatus, a certain method [8].

The analysis of the characteristic features of the transformation of the industry structure of the industry and the principles and methods that are adequate to them to optimize the partial balance of industries revealed the following. In the process of method regulation methods, it is more expedient to use such methods as one-criterion optimization method, multi-criteria optimization method, hierarchy analysis method. The most acceptable method, which allows the complex solution of the formation of the industry structure of the industry, is the method of hierarchy analysis (MAI).

Conclusions. Thus, macroeconomic indicators are indicators of the country's economic well-being, and also show the results of the state's economic activity. Macroeconomic indicators are important for forecasting the economic development of the country, making the right decisions, identifying problems and factors of the success of the economy.

And although macroeconomic indicators are only a characteristic of the material well-being of society and do not take into account the shadow economy, the change in the income of free time and the quality of goods, the environmental consequences of production, thus, do not give an idea of real prosperity, nevertheless, they are fairly accurate and useful and national income icers measuring the performance of the national economy.

Analyzing macroeconomic indicators, it is possible to accurately predict the development of the country as a whole, as well as to compare the economies of different countries, so in each country, a great deal of attention is paid to macroeconomic indicators.

All macroeconomic indicators are closely interconnected, therefore, it is necessary to conduct a comprehensive study of all macroeconomic indicators, as in aggregate they can give a more accurate picture of the development of the economy of different countries and based on some indicators can be calculated by others.

However, one should not forget about the system of various social indicators, which together with macroeconomic indicators give more accurate results of the country's development as a whole.

From the analysis of dynamics, a gross domestic product of Ukraine carried out in this paper, shows that gross domestic product of the country is constantly

decreasing, which means that the country has not yet entered the path of stable economic development.

Thus, the sectoral structure of the industry increasingly receives the raw material orientation, not least due to the overwhelming, in comparison with other sectors, investment support to the raw materials industries without taking into account the efficiency of the use of investments; the raw material orientation of the industry structure of the industry does not allow to take full advantage of other industries (technology, scientific, human resources) due to the lack of a comprehensive approach to the regulation of the parameters of the branch structure of industry; in the process of regulating the parameters of the branch structure of industry, there is a need for the use of modern algorithms (such as MAIs) that allow taking into account both the interests of business entities and modern tentational income of the development of the NTP, the division and cooperation of labor both inside and outside the country; Given the fact that the change in the industry structure of industry is constant in nature, there is a need for a general reservation in the developed countries for structural transformations (structural demperfer); it seems expedient to increase the efficiency of the country's economy by reorienting the formation of the branch structure of industry on the development of the raw materials industries in the knowledge-intensive and labor-intensive industries (chemistry-petrochemistry, aircraft building and automotive in engineering, light and food industries); creation of a monitoring system, which allows for constant monitoring of the state of the industry structure of industry; creation of the information database, which allows to improve the process of regulating the parameters of the industry structure of industry.

References:

1. Macroeconomics: Teaching. manual / per unit Ed. V.Peshetilo Kharkov: KhNUMG named after A. M. Beketov, 2013. 224 p.
2. Kozhevina O. Management of the macroeconomic dynamics of the system on the basis of the principles of the nonequilibrium economy. *Problems of the theory and practice of management* 2015. No. 11. P. 126-132.
3. Official site of the State Statistics Service of Ukraine. URL: <http://ukrstat.gov.ua>.
4. Economic theory: teach. manual / V.P. Reshetylo, G.V.Stadnyk, N.V. Mozaykin, etc.; per community Ed. V. P. Reshetylo; Kh. KhNUMG named after A. M. Beketov, 2014. 290 p.
5. Moiseev S.R. The New Macroeconomic Theory of an Open Economy. *Money and Credit*. 2016. No. 1. P. 18-25.
6. Nikiforov A.A., Antipina O.N., Miklashevskaya N.A. Macroeconomics as an aggregate of scientific research programs: new opportunities and competitive advantages. *The Bulletin of the Moscow University*. Sir 6. Economy. 2015. № 2. P. 3-16.
7. Obstfeld M. Fundamentals of International Macroeconomics: A Textbook / M. Obstfeld, K. Rogoff; per. from english M. : Business, 2015. 949 p.
8. Shirov A.A., Yantovsky A. A Interdisciplinary Macroeconomic Model of RIM - Development of Instrumentation in Modern Economic Conditions. *Problems of Forecasting*. 2017. No. 3. P. 3-18.
9. The State Statistics Service of Ukraine. URL: <http://www.ukrstat.gov.ua/>