MEASUREMENT AND ANALYSIS OF THE SOCIO-ECONOMIC SECURITY
OF THE INDUSTRIAL SECTOR

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ИЗМЕРЕНИЕ И АНАЛИЗ СОЦИАЛЬНО-ЭКОНОМИЧЕСКОЙ БЕЗОПАСНОСТИ
ПРОМЫШЛЕННОГО СЕКТОРА

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Abstract. The high rate of formation of sectors of the economy with a low degree of financial and economic dependence or economically independent sectors of the economy in comparison with economically dependent segments is more indicative of the accumulation of the reserve of protection and the movement of the production system to the upper limit of socio-economic security. To clarify the essence of financial and economic dependence and dynamic assessments ("narrowing" and "expanding" security) in relation to the conditions of the "open" economy, it is proposed to perform an auxiliary division of the sectors of the economy on the principle of the directions of foreign economic work - export-oriented and import-dependent. The need for such refinement of dynamic estimates is caused by the growing processes of internationalization of the industrial sector to the level elements of socio-economic security of the industrial sector. At the same time, exogenous moments prevail over endogenous ones at the stage of industrial growth. However, at the stage of decline of the "catastrophic type", as foreign experience has shown, the exogenous moment plays a significant role in increasing the value of socio-economic security of the industrial sector. However, the current practice shows the existence of sectors of the economy that are on their own production characteristics as export-oriented and import-dependent (ie, "mixed type"). In this case, can be attributed to such segments, which, according to the above typology belong to the group of resource-intensive, capital-intensive, knowledge-intensive or innovative. The impact of the dynamic sectors of the economy of the mixed type at the level of properties of socio-economic security of the industrial sector is guided by the significance of their contribution to the creation and development of the wealth of the state and a role in the formation of the production potential of the formation of the society.

Аннотация. Большие темпы становления секторов экономики с невысокой степенью финансово-экономической зависимости или экономически независимых секторов экономики в сравнении с экономически зависимыми сегментами в большей степени говорит о накоплении резерва защищенности и о перемещении производственной системы к верхней границе социально-экономической безопасности. Для уточнения сути финансово-экономической зависимости и динамических оценок («сужения» и «расширения» безопасности) по отношению к условиям «открытой» экономики предлагается выполнить вспомогательное деление секторов экономики по принципу направлений внешнеэкономической работы - экспортоориентированные и импортозависимые. Надобность

в таком уточнении динамических оценок вызвана растущими процессами интернационализации промышленного секора на уровневые элементы социально-экономической безопасности промышленного сектора. При этом экзогенные моменты на этапе промышленного подъема превалируют над эндогенными. Однако на этапе упадка «катастрофического типа», как показал иностранный опыт, экзогенный момент играет довольно весомую роль для увеличения значения социально-экономической безопасности промышленного сектора. Впрочем сложившаяся практика говорит о существовании секторов экономики, являющихся по собственным производственным особенностям как экспортоориентированными, так и импортозависимыми (т.е. «смешанного типа»). При этом, к таким можно отнести сегменты, которые по вышеприведенной типологии принадлежат группе ресурсоемких, капиталоемких, наукоемких или новаторских. Воздействие динамики секторов экономики смешанного типа на уровневые свойства социально-экономической безопасности промышленного сектора ориентируется значимостью их вклада в создание и формирование богатства государства, а также ролью в формировании производственного потенциала становления общества.

Keywords: socio-economic security; the government; society; enterprise; employee; threat; security; interests; Economics, analysis, system.

Ключевые слова: социально-экономическая защищенность; государство; общество; предприятие; работник; угроза; защищенность; интересы; экономика, анализ, система.

The dynamic assessment of the "narrowing of security" is observed in cases where there is an increase in the volume of sectors of the economy with a significant degree of financial and economic dependence. The reverse situation leads to the conclusion of "enhanced security". The high rate of formation of sectors of the economy with a low degree of financial and economic dependence or economically independent sectors of the economy in comparison with economically dependent segments is more indicative of the accumulation of the reserve protection and the movement of the production system to the upper limit of socio-economic security. To clarify the essence of financial and economic dependence and dynamic assessments ("narrowing" and "expanding" security) in relation to the conditions of the "open" economy, it is proposed to perform an auxiliary division of economic sectors on the basis of the directions of foreign economic work-export — oriented and import-dependent. The need for such refinement of dynamic estimates is caused by the growing processes of internationalization of the industrial sector to the level elements of socio-economic security of the industrial sector. At the same time, exogenous moments at the stage of industrial growth prevail over endogenous ones. However, at the stage of decline of the "catastrophic type", as foreign experience has shown, the exogenous moment plays a significant role in increasing the importance of socio-economic security of the industrial sector. However, the current practice suggests the existence of sectors of the economy that are in their own production characteristics as export-oriented and import-dependent (ie, "mixed type"). At the same time, these include segments that belong to the group of resource-intensive, capital-intensive, knowledge-intensive or innovative according to the above typology. The impact of the dynamics of mixed economic sectors on the level properties of socio-economic security of the industrial sector is guided by the importance of their contribution to the creation and formation of the wealth of the state (1), as well as the role in the formation of the production potential of the formation of society.

The formed methodological provisions are implemented according to the scheme of measuring the socio-economic security of the industrial sector with the help of procedural steps.

The above procedure is aimed at identifying the values of socio-economic security of the industrial sector, taking into account the weight of an element in the functioning of the industrial sector. The proposed methodological conclusions make it possible to take into account both the internal circumstances of the reproductive capabilities of the state, and external, acting on the values of the non-hazardous spectrum. Thus, the analysis shows that the dominance of" resource-intensive " sectors of the economy in the industrial sector guarantees the lower limit of socio-economic security of the industrial sector, but does not increase the resource to increase its socio-economic security. As a result, the task of increasing the importance of socio-economic security is associated with the resolution of the problem of rationalization of the structure of sources of formation of the industrial sector production potential.

The proposed methodological provisions formed the basis for solving the necessary research problem-determining the impact of moments of "resource intensity" and "technology" of the economic sectors on the situation of socio-economic security of the industrial sector of the Republic of Belarus. The outcome of the decision is as follows. The moment of "resource intensity" is presented in the size of elements of the General production potential, as raw material and personnel private potentials. The moment the "adaptability" could be the value of the innovative and financial capacities of the private. In accordance with this, the range of protection of the Republic of Belarus is guided by the provision of these resources: in-1, material resources of material-intensive sectors of the economy (the lower limit of socio-economic security), in-2, quality human resources and technical and technological resources (the upper limit of socio-economic security).

Taking into account the rather high educational level of labour resources employed in the industrial sector of the Republic of Belarus, the conclusion is formed: the greater the contribution of knowledge-intensive sectors of the economy to the creation of industrial sector products, the wider the range of socio-economic security. The dispersion of the sectors of the economy by the type of "export-import-dependent", which cause a change in the values of socio-economic security of the industrial sector, it makes sense to produce a greater share in the commodity structure of exports and imports, respectively. Thus, in relation to the industrial sector of the Republic of Belarus as of 2017, the following main types of sectors of the economy are noted in the commodity structure of exports (Table).

Table.

DISTRIBUTION OF ECONOMIC SECTORS
ON THE BASIS OF FOREIGN ECONOMIC DEPENDENCE*

Types of economic sectors	
Export-oriented	*Import-dependent*
Mechanical engineering and Metalworking (24,4 %)	Fuel (27 %)
Chemical and petrochemical sector (16,9 %)**	Mechanical engineering and Metalworking (24 %)
Ferrous metallurgy (8,6 %)	Chemical and petrochemical sector (13,7 %)**
Light industry (5,7 %)	Light industry (2,9 %)
Wood and pulp and paper (4,4 %)	Ferrous metallurgy (11,9 %)

Note. * The share of the economic sectors ' products in the commodity structure of exports and imports, respectively, is given in parentheses; ** for the chemical and petrochemical sector, the share of exports and imports is accounted for including chemical fibres and filaments.
Source: author's development according to (2; 3)

The allocation of types of sectors of the economy on foreign economic dependence was made on the basis of the information array on the structure of export-import operations in the context of individual product groups. Processing data of the Table. It shows that the dispersion of sectors of

the economy is quite relative, because the bulk of the sectors of the economy are both export-oriented and import-dependent. This means that the replenishment of the resource potential of the Republic of Belarus and the corresponding value of socio-economic security is dependent on exogenous moments and proceeds mostly with the involvement of external resources available for use.

For the criteria of probable liberalization of foreign trade associated with the state's accession to the WTO, the assessment of the impact of exogenous factors is a separate methodological dilemma. The resolution to some extent has the ability to be secured through the use of models for analysis of inter-industry linkages of the type "input-output". The forecasting of the results of import liberalization, as it was noted, is formed on the basis of the rapid analysis technique, which provides an opportunity to detect the impact of segments of the industrial sector to increase imports in domestic markets. In particular, we study the impact of profitability of certain sectors of the economy to lower tariffs at constant production volumes, as well as to reduce production at constant tariffs. Calculations to determine the sensitivity of profitability of individual sectors of the economy to lower tariffs at constant production volumes are presented in (3). Part of the profit in the price of sold products demonstrates how the reduction in the cost of finished products in the segments of the industrial sector will lead to a decrease in the profitability of products to zero, if the size of sales does not change. The reduction of tariffs for products in the domestic market in this case is caused by the rise of competition due to the increase of foreign products in it. The available data make it possible to note that the fuel, chemical and petrochemical segments, metallurgy have a large "margin of safety". The minimum "margin of safety" has a large number of sectors of the economy, in particular: forest, woodworking, pulp and paper, food segments, light industry and production of building materials, engineering and Metalworking, electricity.

The impact of the profitability of the economic sectors to reduce production at constant tariffs is determined by the indicator "break-even margin", which is considered as an absolute (100%) degree of break-even. From a financial and economic point of view, a more desirable aspect for assessing the sensitivity of segments of the industrial sector to adverse changes in exogenous moments is the indicator "break-even margin". The advantages of the provided indicator is that it displays how much has the ability to be reduced in output (%) before product profitability reaches zero on the indicator. But the condition is that the number of employees and the amount of wages is not reduced. The study shows that a larger "break-even reserve" contains metallurgy, fuel, petrochemical and chemical segments. The maximum risk of loss of profitability of products from the decline in production are light industry, electricity and construction materials. The applied method of analysis of industrial sector segments sensitivity to import liberalization provides an opportunity to obtain only joint properties. For more accurate monitoring, it is necessary to assess the level of expected "switching" of domestic demand from products manufactured by enterprises-residents of the Republic of Belarus, to imported products with a decrease in the rates of import customs duties on the main commodity items. The above presented an opportunity to create a methodology for forecasting socio-economic security [1, 2].

Measures of state support of scientific and technological development contribute to the approach to the optimal level of socio-economic security. But "fix" at this level does not allow the fact that the group of sectors of the economy is dominated by the volume of output attributable to the medium-high and medium-low science intensity. At the same time, the observed desire to reduce innovative activity in a group of sectors of the economy shows the emerging "narrowing" of security. Measurement of the dynamic element of the value of socio-economic security of the industrial sector according to comparative estimates related to the external environment, demonstrates the following. In-1-x, there is a significant gap in relation to its emerging dynamics of

global development. In-2, the pace of industrial development of the Republic of Belarus is set by mechanical engineering. If we take into account the fact that this segment is classified as a type of labour-intensive and knowledge-intensive sectors of the economy, and the volume of products in the commodity structure of exports and imports is not too noticeable, it forms the basis for shifting the assessment of the value of socio-economic security towards the indicator "shrinking security". Indirect evidence of this assessment is obtained by comparing the degree of depreciation of fixed assets in a particular segment in the amount of 65.8% with the pre-crisis threshold of 60-70%.

Thus, the available results make it possible to conclude that at the moment the minimum degree of socio-economic security is maintained in the Republic of Belarus, the engineering industry is forming a "safety reserve". In addition, the formation of the "safety reserve" supports the industrial policy aimed at resource saving and stimulating the emergence of import-substituting industries, involving new varieties of local resources in the economic turnover. This creates the necessary prerequisites for increasing the importance of socio-economic security of the industrial sector.

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