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## FUNCTIONAL CHARACTERISTICS OF DESTABILIZING FACTORS OF THE INTERNAL ENVIRONMENT OF ECONOMIC SECURITY OF MACHINE-BUILDING ENTERPRISES

By investigating the destabilizing factors of the internal and external environments of machine-building enterprises, the existence of excessive interference of state bodies in production activities, which manifests itself in an unjustified number of scheduled and unscheduled inspections, burdens with excessively rigid regulations, national standards and / or technical specifications, was established. This situation leads to an increase in the number of unofficial ways to resolve issues with public authorities. The article is deal with the systematization of external and internal threats to the economic safety of machine-building enterprises by establishing and statistically confirming the list of key threats, which enabled to justify the priority areas of activity in the field of integrated provision of economic security of enterprises through the application of mutually agreed actions at macro and micro levels.

**Key words:** Economic security, machine-building enterprises, external and internal threats, financial status, innovative activity.

Шляхом дослідження дестабілізуючих чинників внутрішнього і зовнішнього середовищ машинобудівних підприємств встановлено факт існування надмірного втручання державних органів у виробничу діяльність, що проявляється у невиправданій кількості планових та позапланових перевірок, обтяженні надмірно жорсткими регламентаціями, національними стандартами і/або технічними умовами тощо. Така ситуація призводить до зростання кількості неофіційних способів вирішення питань із державними органами влади. У статті здійснено систематизацію зовнішніх та внутрішніх загроз для економічної безпеки машинобудівних підприємств через встановлення і статистичне підтвердження переліку ключових загроз, що дало змогу обґрунтувати пріоритетні напрями діяльності у сфері комплексного забезпечення економічної безпеки підприємств через застосування взаємоузгоджених дій на макро- та мікрорівні.

**Ключові слова:** економічна безпека, машинобудівні підприємства, зовнішні та внутрішні загрози, фінансовий стан, інноваційна активність.

**Formulation of the problem.** The process of ensuring the economic security of enterprises is one of the decisive aspects of their successful activities; he has a number of specific features, depending on the volume, type of activity, financial resources, activity of innovative investment and foreign economic activities, quantity and professionalism of personnel of each enterprise. The dominant nature of this process determines the need for an integrated approach to ensuring economic security, which allows developing its adequate system, identifying and taking into account the influence of destabilizing factors of the internal and external environment, utilizing the opportunities created by these environments in order to achieve the interests of the subject of economic activity.

### **Analysis of recent research and publications.**

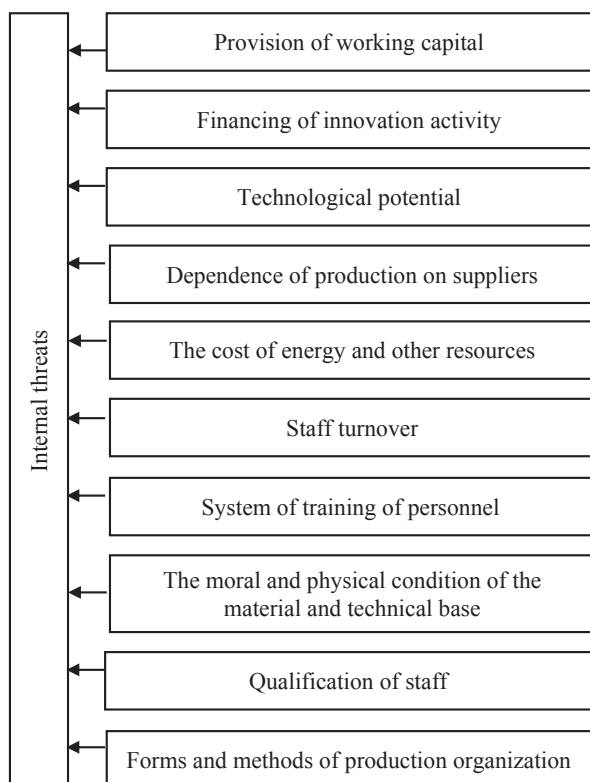
The work of a number of domestic and foreign scientists, in particular, Alkemi V.G., Bandurka O. M., Bezbozhne V. L., Belousova I.A., is devoted to the study of the process of ensuring economic security taking into account the peculiarities of the impact of threats and the sectoral affiliation of economic entities., Bendikova M. O., Beloshurskaya N. V., Bobrova Ye. A., Borisenko Z. M., Varnalia Z. S., Vasiltsiv T. G., Galitsy I. O., Gichov N. Yu., Grushka V. I., Denisenko M.P., Zhivko Z. B., Zakharova O., Zerkalova D. V., Shkarlet SM, Shulgy I.P., Yurkov N.Ya., Yaremenko O.F., Yarochkina V.I.

**Task setting** is to analyze the indicators of the state of the machine-building industry of Ukraine on the subject of compliance with economic security.

### Presentation of the main research material.

The destabilizing factors of the economic security of an enterprise of machine building of the internal environment are the challenges, threats, risks and dangers that are caused by personnel actions, problems in the work of equipment and technologies, miscalculations in the formation of methods and forms of organization of production, the provision of financial and other resources, etc. Particular attention among all the manifestations of destabilizing factors in the internal environment requires threats, because they create the need for management decisions and implementation of a set of measures to prevent the onset of risks for the enterprise machine engineering.

To visualize the ranking of threats to the economic security of machine-building enterprises of the internal environment, we have constructed a visual model of their hierarchical ordering (Fig. 1). In our opinion, it is advisable to substantiate the obtained results in a certain way, based on the materials of the analytical research of economic activity of a number of domestic machine-building enterprises, the results of scientific and applied developments of analysts, information from the State Statistics Committee, etc.



**Fig. 1. Hierarchical ordering of internal threats for machine-building enterprises of Ukraine**

The first level is represented by the threat connected with the provision of economic activity of machine-building enterprises by working

capital. In accordance with the results of the analytical study of the state and results of the financial and economic activity of the pre-selected sample of PTM, including PJSC "Kvazar", PJSC "Impulse", PJSC "Company Dnipro", PJSC "Saturn", PJSC "Khartron", Sumy PJSC SELMI, we identified and identified the threat that is typical of most of the above-mentioned enterprises and is associated with a lack of working capital. The basis of such a statement was the calculation of the coefficient of providing their own working capital.

The second priority level of counteraction identified the threat associated with the financing of innovation activities. Thus, according to the data of the State Statistics Committee, the share of machine-building enterprises engaged in innovation activity (including the production of vehicles and equipment) is low: in 2005 – 21.97%; 2011 – 24.46%, 2016 – 24.65% [3]. The volume of financing of innovation activity has a positive dynamics: in 2005 – 1619251,9 thousand UAH; 2011 – 2731693,4 thousand UAH; 2016 – 3079143,5 thousand UAH, but the share of enterprises that implemented innovations is low: in 2005 – 17,01%; 2011 – 21.48%; 2016 – 21,18%. To summarize, it can be argued that there is currently a tendency in Ukraine for insufficient financing of innovation activity, which reduces innovation activity only to the improvement of already existing prototypes. The main factors inhibiting innovation activity include the lack of own funds and the high cost of innovation.

The next threat is related to the low technological potential of PTM, because domestic transport engineering has a relatively low technical-economic level, poorly developed component production. Thus, only 27.8% of industry uses technological processes with an average age of 5 years [4].

One of the important threats is that industrial production in Ukraine is largely energy dependent and the systematic increase in prices for gas, electricity, fuel and lubricants substantially affects the level of prices, and thus the competitiveness of products and enterprises in general [5, 6].

Labor resources play an important role in the production of automotive equipment. The high staff turnover negatively affects the competitiveness of products.

The average number of permanent employees of mechanical engineering enterprises for the period from 2010 to 2017 decreased, which is typical for the enterprises of the industry as a whole. The number of jobs taken as well as the number of workers released during the period under review in industry varies in a straightforward proportion (table 1).

Table 1

**Employment in industry and machine-building industry of Ukraine, thousand people, [7; 8]**

Years	The average number of employees in the machine-building industry	Average number of industrial workers	Number of accepted in industry	Number of discharged in industry	Conversion rate of admission	Outflow turnover ratio
2011	958	4267,2	260,5	113,5	0,06	0,02
2012	867	4063,5	286,3	83,4	0,07	0,02
2013	810	3943,6	295,9	73,0	0,07	0,01
2014	793	3941,2	101,5	46,6	0,03	0,01
2015	773	3913,3	312,2	46,2	0,08	0,01
2016	740	3362,0	302,9	50,7	0,09	0,01

According to the statistical data given in Table 1, we can note that a quarter of all hired workers in industry have incomplete higher education, while only one-sixth of all employees in industry have higher education.

In addition, the sixth part of the workforce is retired, and this indicator for the analyzed period tends to increase, which also indicates a decrease in the quality of staff working in industrial enterprises.

Skilled professionals provide only 40% of the sector, although it is positively estimated that there is an increase in the number of employees who have increased their qualifications and studied new professions. However, their share is less than 15% and 7% respectively; this situation cannot be assessed as positive. The consequence of this situation may be not only the low level of competitiveness of products, R & D, but also ultimately the fall in the level of financial status of the industry as a whole.

Such a situation calls into question the achievement of an adequate level of intellectual and personnel indicators of economic security in the whole industry and in particular in machine building.

According to [9], the ratio of external and internal threats to the enterprise is 20:80, that is, 4/5 of all problems arise in the enterprise itself from the staff side. One can agree with the opinion of scientists Kozachenko G. V., Ponomarev V. P., Lyashenko O. M. [10] that the workforce of any organization is positioning as its weakest link in maintaining information that has a direct impact on the level of economic security.

The following position is supported by scholars [11], which determine the following list of negative influences of employees at the level of its EB:

- Conscious or unconscious actions of individual employees (regardless of rank and position);
- Influence on the top management of representatives of state authorities, including supervisory bodies;
- The influence of competitors in order to reduce the personnel potential of the enterprise;

– Acceptance by employees of ineffective decisions as a result of negligence, lack of sufficient qualification, bribery;

– Scams from leading experts and representatives of top management;

– Falsification of documents by employees; – unauthorized and uncoordinated actions with the assets of the enterprise;

– Unauthorized access to and disclosure of confidential information;

Such a situation calls into question the achievement of an adequate level of intellectual and personnel indicators of economic security in the whole industry and in particular in machine building.

In the modern period of development of the domestic machine-building complex can be divided into three stages:

1) 1990-1999 – the phase of recession, the period of a sharp decline in production due to the transition from the command-administrative to the market economy.

2) 2000-2008 period of chaotic development of the industry, which was characterized by insignificant increases in the level of profitability of enterprises of the machine-building complex due to investments in the industrial complex.

3) In 2009-2017, in general, the industry noted a slight increase in volumes of released products, despite a decrease in its number by some separate groups [12].

According to the statistics collected in Table 4, the total amount of fixed assets in the machine-building industry has been steadily increasing over the past years.

The positive moment is the excess of the coefficient of the introduction of the exit factor. However, the rate of substitution is rather low, as evidenced by the coefficient of compensation for the disposal of fixed assets, calculated as the ratio of the number of departures to the introduced fixed assets. According to our calculations it is:  $K_{K_{2011}}=0,63$ ;  $K_{K_{2012}}=0,59$ ;  $K_{K_{2013}}=0,42$ ;  $K_{K_{2014}}=0,34$ ;  $K_{K_{2015}}=0,28$ ;  $K_{K_{2016}}=0,30$ ;  $K_{K_{2017}}=0,31$ .

According to the above data, the share of losses among domestic enterprises is critically high, in

Table 2

## Distribution of employees by level of education and age at industrial enterprises of Ukraine, [7; 8]

Years	Number of employees	Individuals with incomplete and basic higher education		Individuals with complete higher education		Number of working pensioners		Number of working youth	
		of all	%	of all	%	of all	%	of all	%
2012	4063,5	889,6	25,0	538,1	15,1	604,7	17,0	623,0	17,5
2013	3943,6	874,3	25,5	548,5	16,0	595,4	17,3	626,0	18,2
2014	3941,2	850,0	24,6	557,6	16,1	585,4	16,9	1083,9	31,3
2015	3913,3	839,0	24,4	582,4	16,9	580,3	16,9	1086,5	31,6
2016	3851,8	806,3	23,9	594,4	17,6	584,2	17,3	1068,3	31,7

Table 3

## Indicators of the movement of fixed assets and their status in the machine-building industry, UAH million [2; 3; 4]

Years Cost	Years Cost	Movement				Residual value	Degree of wear,%
		Put into operation	Rate of input%%	Deleted	Output factor%		
1	2	3	4	5	6	7	8
2011	50590	881	1,74	554	1,09	21724	
2012	49567	887	1,78	530	1,07	20728	58,2
2013	54233	1265	2,33	540	0,99	20956	61,4
2014	50544	1713	3,39	592	1,17	20998	58,5
2015	58488	1809	3,09	522	0,89	22239	62,0
2016	56784	2042	3,59	625	1,10	21354	63,5

particular, in 2016 – 38.5%, with a low profitability of all activities – 7% in the same period. One can assume that one of the key threats to domestic machine-building enterprises is the low efficiency and unloading of production capacities.

Thus, summing up the study of destabilizing factors of the internal environment of economic security of machine-building enterprises, one can establish the existence of a significant influence of the personnel, in this connection, the problem of management of human capital with the aim of achieving a stable level of economic security is actualized.

**Conclusions.** By investigating the destabilizing factors of the internal and external environment of the enterprises of transport engineering, the existence of excessive interference of state bodies in production activity, which manifests itself in an unjustified number of scheduled and unscheduled inspections, burdens with excessively rigid regu-

lations, national standards and / or technical conditions, etc., was established. This situation leads to an increase in the number of unofficial ways to resolve issues with public authorities.

On the basis of the analytical assessment of the state of ensuring the economic security of domestic machine-building enterprises, it has been established that more than a third of enterprises are loss-making, despite the level of financial results, which is why one can explain the current situation which is now accompanied by the fall of production, curtailment of innovation projects, the release of highly skilled personnel, decrease level of investment in fixed capital and reorientation of production; Apart from lost production and distribution channels and difficulties with their restoration, significant negative factors are excessive state interference in economic processes, significant influence of world competition and imperfection of the domestic market.

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## FUNCTIONAL CHARACTERISTICS OF DESTABILIZING FACTORS OF THE INTERNAL ENVIRONMENT OF ECONOMIC SECURITY OF MACHINE-BUILDING ENTERPRISES

In particularly difficult circumstances today, domestic engineering has appeared. Today, the machine-building sector has faced a number of problems, primarily because of geopolitical changes in the external environment. In the context of the constant growth of competition in world markets, the national machine-building industry faced challenges of a strategic nature. In addition, many external and internal factors that have a negative impact on machine building and require research.

The machine-building complex is the main component of the larger processing industry, whose contribution to gross value added in the processing industry is 25% and, in turn, about 3.5% to the gross domestic product of Ukraine.

By investigating the destabilizing factors of the internal and external environments of machine-building enterprises, the existence of excessive interference of state bodies in production activities, which manifests itself in an unjustified number of scheduled and unscheduled inspections, burdens with excessively rigid regulations, national standards and/or technical specifications, was established. This situation leads to an increase in the number of unofficial ways to resolve issues with public authorities.

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