

## EXPERT AND DIAGNOSTIC ASSESSMENT OF ECONOMIC SUSTAINABILITY THREATS OF SHIPBUILDING ENTERPRISES

*The definition, classification and diagnostic-expert assessment of economic sustainability threats of the shipyards are presented in this article. The external factors suggested to divide into factors of direct and indirect impacts, and factors of the internal environment to classify as the factors shaping the economic sustainability, and the factors that affect it. Using this classification, it is possible to develop a set of indicators of assessing the economic sustainability of the enterprise in both the long and short term.*

*Using the method of expert estimations and Pareto's method the effect of exogenous and endogenous factors on the economic sustainability of the shipbuilding industry was determined; the most influential external and internal factors were established.*

*JEL: D21; L60; M21*

### Introduction

Shipbuilding is one of the priority sectors of the global economy, which is developing dynamically. Ukraine, as a Maritime state, has the necessary prerequisites to become one of the global leaders in the shipbuilding industry. Among them, the most important are the historical conditions and an advantageous geographical location. However, today the industry has seen a critical decline in production volumes, the absence of state orders and uncertain prospects, which in turn leads to a deterioration of the economic and financial situation of enterprises, in particular the reduction of economic sustainability.

Any process, including the activity of shipbuilding enterprises, is affected by many factors of internal and external environment that shape the economic sustainability of the entity. Consequently, the identification and assessment of factors of economic sustainability are two of the main stages of its provision.

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**The aim of the article is** definition, classification and diagnostic-expert assessment of threats of economic sustainability of the shipyards.

### **Recent Research and Publications Analysis**

Domestic and foreign scholars in the scientific literature widely discuss the issues relating to factors influencing the economic sustainability of the enterprise. In particular, Krolenko (2011), Sipravska (2011) in their works investigated the influence of factors on the economic sustainability of enterprises; Bazarova (2012), Zinger, Iliiasova (2015), Miskhozhev (2010), Fedotov (2013), Tumin, Koryakov, Nikiforova (2013), Shmidt, Khudyakova (2015), Leszczewska (2014), Dyllick, Hockerts (2002) in general determined the factors which influence the sustainable development of enterprises. Zinger and Iliiasova have argued that sustainability factors are reasons which may cause its increase or decrease, based on classifying the environment of occurrence, the nature and direction of impacts, the object of impact, etc. (Zinger, Iliiasova, 2015). Krolenko in order to identify the factors of influence of economic sustainability, has proposed first of all to classify economic sustainability on the variety. He has clearly divided the factors of influence for each kind of stability, and then has identified the scorecard by which you can determine the degree of sustainability of each species (Krolenko, 2011). We follow this point of view, but we believe that in conditions of crisis and uncertainty in the society we need to improve this technique. Bazarova in the monograph has noted that in the current market conditions for enterprises more important are internal factors as they may affect (Bazarova, 2012). However, the studies that concern the factors in the downturn of the economy are virtually absent.

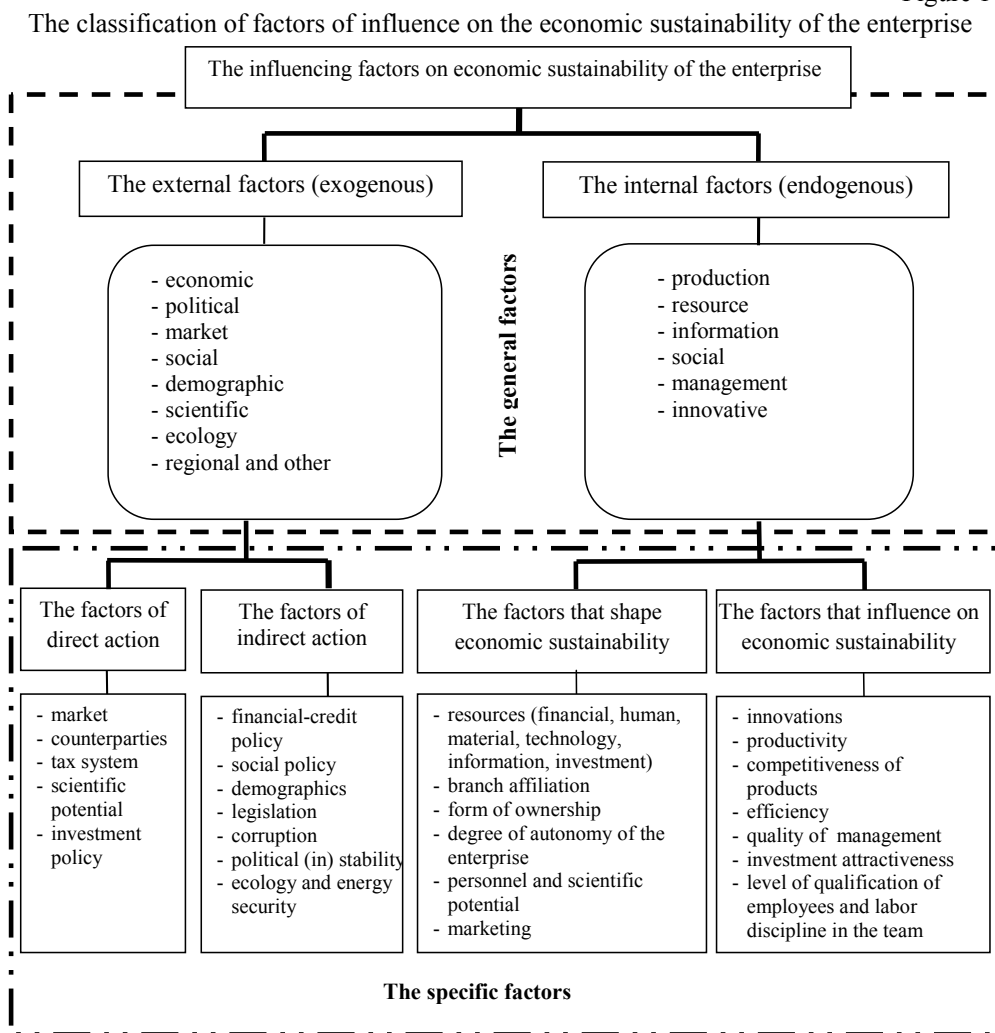
### **Research Results Presentation**

The internal environment of the enterprises is always under the scrutiny of interested users, in particular managers; the external factors are potential carriers of threats. The enterprise is able to manage its internal factors. Regarding environmental factors, it can be argued that the company is unable to influence on such factors, but can adapt to changes of the external environment.

Internal factors are under the control of the enterprise, and external – outside of accountability. However, according to the authors, it is advisable to divide the internal factors into the factors that shape the economic sustainability of the enterprise, and the factors that directly affect it; external factors to divide into direct and indirect action. First, factors that shape economic sustainability are the extensive factors, i.e. the factors that characterize the quantitative parameters of the company. The factors that affect economic sustainability are intensive factors, that is, qualitative factors of economic growth. The indirect factors of the external environment of the economic sustainability of the enterprise relate to the macroeconomic problems of the country, and the factors of direct influence of the external environment, of course, affect the decision-making legal entity. Thus, the

above factors can be predictable and unpredictable. In addition, we believe that factors that directly affect the economic sustainability of any enterprise should be divided into general and specific. General classification of factors influencing on the economic sustainability of enterprises is shown in Figure 1.

Figure 1



Source: developed by the authors.

We believe that this classification of factors will allow in the current economic conditions focus clearly, in a timely manner to determine the degree of risk and to adapt to the effects of external and internal environment. Using this classification, it is possible to identify a

number of indicators of assessing the economic sustainability of the enterprise in long term and short term.

In order to find an effective mechanism to ensure economic sustainability for the shipbuilding industry it is necessary to determine precisely those factors that directly affect the industry. For the mechanism of ensuring economic sustainability is not enough to outline the range of factors, but it is important to determine the extent of their influence. To determine these factors, their significance and degree of influence, the analysis of expert assessments using the method of pair comparisons based on the multidimensional ranking, (the form of the method used is questionnaires) was carried out. It can be used in the conditions of the impossibility of a mathematical formalization of the process of solving the problem, lack of information.

At the first stage of expert evaluation, different groups of experts, specialists in the field of shipbuilding were selected for questioning, namely: managers of different levels of management, engineers, brigadiers of the shipbuilding enterprises, employees of the accounting and economic departments, consumers of products and services of shipbuilding enterprises, etc. A total of 58 experts were interviewed.

For questioning of experts a questionnaire was developed where respondents were required to select from the proposed list 10 of the most influential factors of the external and internal environment, which influence the economic sustainability level of the shipbuilding enterprises, and evaluate them on a ten-point scale (10 is the most influential factor, 1 - the least influential factor).

Summarizing the results of the questionnaire, it was found that the experts' opinions do not completely coincide, namely, of the ten factors that should be chosen by the experts, each of them selected only eight. At the same time, the ranks put by the experts were different. Since the opinions of the experts did not completely coincide, the points were re-arranged and a new matrix was drawn up.

To assess the consistency and non-randomness of expert opinions, the adjusted coefficient of concordance was calculated using the following formula (1):

$$W = \frac{12 \sum_{i=1}^m (S_i - S_{cc})^2}{N^2(m^n - m) - N \sum_{j=1}^N T_j} \quad (1)$$

where  $N$  - the number of experts;

$m$  - the number of evaluation options;

$S_i$  - the sum of ranks assigned to the  $P_i$  decision by all experts;

$S_{cc}$  - the sum of the arithmetic average of the ranks;

$T_j$  - an indicator bound by (equal) ranks assigned by an expert.

According to the results of calculations in the initial ranked rows, there were bound ranks, therefore, using the method of Romashkina HT & Tatarova HH, correction factors were determined (Romashkina, Tatarova, 2005). The calculations determined the value of the coefficient of concordance at the level of 0.77734 for external factors of economic sustainability threats and 0.88235 – for internal ones. Calculated coefficients of concordance determine the high degree of coherence between experts.

Since the coefficient of concordance has a random value, its validity is checked by the Pearson criterion. Based on the calculations made it is possible to conclude that the coefficients of concordance are statistically significant, and the expert conclusions are consistent with each other.

The results of calculations have allowed evaluating the importance level of each factor that affects the level of economic sustainability of enterprises of the shipbuilding industry of Ukraine (Table 1, 2).

Table 1

The results of the evaluation of the degree of influence of factors of external environment on the economic sustainability of the shipbuilding industry

The factors	Weight of factor (%)
The insolvency of counterparties	22.2
The high level of tax burden, the inefficiency of stimulating functions of the tax system	17.6
The reduction of bank lending to industry, high cost of credits, overvalued exchange rate	15.8
The crisis in the industry	12.4
The loss of a customer from the state	11.4
The lack of qualified employees	10.3
Energy (in) dependence	5.7
The corruption	4.6

Source: calculated by the authors.

The most important exogenous factors have been identified the following: insolvency of counterparties (22.2%), high tax burden, the inefficiency of stimulating functions of the tax system (17.6%) and the reduction of Bank lending to industry, the high cost of loans, an overvalued exchange rate (15.8%).

The most influential external factor that determines the economic sustainability of the shipbuilding industry, we identified the insolvency of counterparties. In conditions of economic crisis, currency fluctuations, instability of the national currency, comes the probability of doubtful accounts receivable, or even the loss of customers.

The solvency and interest of counterparties affect the viability of economic units, in particular its economic sustainability. Indeed, in the absence of demand for shipbuilding and repair work, the company is unable to meet their needs and to obtain satisfactory financial results. This will certainly lead to the deterioration of the financial situation of the enterprise, loss of profit, and as a consequence, the deterioration of economic sustainability.

As a factor of direct influence of the external environment also was defined tax system. In conditions of the instability and variability of tax legislation the tax burden on the enterprise sector is constantly increasing, which in recent years suffered losses and was in the "doldrums". This consequently affects to the profitability of industrial enterprises. Therefore, in order to reduce the influence of the "tax system" on economic sustainability of industrial enterprises is necessary: the definition of priority sectors and providing for them tax breaks and incentives, the recognition of the shipbuilding sub-sector as a priority, ensuring a close connection of tax policy fiscal and monetary policy, the liberation of enterprises from VAT on purchases of imported components for export contracts. All these measures will reduce the tax burden of enterprises of shipbuilding and as a consequence, improve their economic sustainability.

The factor "financial and credit policy" also significantly affected the economic sustainability of shipyards. Manifestations of this impact is the rise in price of credit resources, the reduction of state funding due to limited budget finance, the discrepancy between the size of credit resources and the modern needs of Ukrainian enterprises, inflation, instability of currency and national hryvnia. The consequences of this situation are: growth of prices for products of shipbuilding industry; depreciation of assets; unprofitableness, bankruptcy and liquidation; the growth of prices for industrial products. For example, to improve the quality of the production, contract with Britain for the supply of appropriate equipment had been made.

Currency instability rapidly has increased the cost of the equipment and components that domestic enterprises purchased abroad, as a result, value of the contracts has raised and inability to compete with businesses in other countries has come.

Analyzing statistical data and taking into account the inflation processes in the economy of Ukraine, industrial production index and their connection with unprofitability industrial enterprises it is possible to argue that their dynamics are similar and they correlate with each other. Inflation of dynamics over the period 2009-2016 were not uniform, its significant reduction in 2013 changed to a sharp growth in 2014. So, the price policy of the enterprises of the industry depends on the inflation (rise of general price level), since with increasing prices of raw materials for the industry also increases the price of the industry product.

Therefore, to reduce the negative impact of fiscal policy on economic sustainability it is needed to restore bank lending to the real sector with favorable conditions for the shipbuilding industry, the state should be the guarantor of the loans and subsidize interest rates on loans to domestic banks.

An equally important environmental factor that affects on the economic stability of the enterprises of shipbuilding and ship repair is "the crisis in the industry". The most severe crisis over the past 10 years' experience not only Ukrainian shipbuilders, but also their colleagues around the world. The crisis in the industry due to both global and regional causes. The most influential global cause it is possible to determine the excess of fleet possessed by the shipowners; for a regional reason - competition.

The main problems of domestic shipbuilding and ship repair are an artificially created non-competitive position in the global shipbuilding market. As a result of inadequate implementation of tax and customs mechanisms for regulating the activities of domestic shipbuilding, the Ukrainian enterprises cannot compete in the price segment, not only with the cheapest shipbuilding which bases of China and South Korea, but even with the most expensive European shipbuilding companies. Moreover, in conditions of the global crisis, shipowners are not afraid of lower product quality of Chinese manufacturers, as they satisfy the ratio of price to quality. Therefore, the products of domestic shipbuilding present little interest to the market.

Domestic shipbuilding enterprises have sporadic production, are not competitive with companies in China, Korea, configured for batch production. However, opening of small businesses and enterprises "phony", which suggest not very high-quality services of ship repair. Also, most shipbuilding companies, because of lower demand for its products and increasing competition, have turned into ship repair.

This situation leads to an impact on the pricing of leading domestic businesses, loss of markets, loss of economic relations with contractors. In addition, the main contractors for the shipbuilding industry are suppliers that provide resources to the business. In turn, quality resources, price and technical and technological levels of production depend on suppliers. A lot of competition among providers of resources also generates price dependence. In a market environment, competition is an essential attribute but at the state level using geopolitical legislation for "healthy" competition is required.

The loss of a customer from the state is a factor of indirect influence of the external environment. Despite the existence of the law of Ukraine "About conducting economic experiment regarding state support of shipbuilding industry" and adopted by the Cabinet of Ministers Order "About approval of Strategy of development of shipbuilding for the period till 2020", the domestic shipbuilding companies have lost a customer from the state, because these laws were populist and incapable to implementation. Currently, there is a lack of state order, reduction of state funding due to limited budget finance.

Consequently, the reduced number of jobs, not full utilization of production capacities of enterprises of shipbuilding and the loss of income and profits. The lack of orders gives rise to an incomplete download of the shipyards and production facilities that are the heritage of many years of domestic enterprises. The smaller congestion of shipyard, the more the expenses on maintenance of production facilities. In this regard, it becomes immediately increase the cost, decrease the competitiveness, the company loses its staff, and as a consequence, the market. Solving this problem requires recovery of the domestic military shipbuilding, shipbuilding, creation of the program of development of the shipbuilding industry and its legislative support.

Another factor of direct action, which is a problem for the shipbuilding and ship-repair industry, is the lack of qualified personnel. The enterprises do not have enough workers in unique professions who cannot borrow from other industries. The sector lacks ship fitters, electricians, locksmiths. This fact leads to a decrease in the efficiency of production, inadequate quality of the shipbuilding and ship-repairing works. In terms of structural and market reforms has broken the cycle of reproduction of qualified personnel. Shipbuilding

needs not only welders and fitters, but also the designers. Therefore, it is important to revive and to ensure proper funding of vocational schools and universities, which specialize in training personnel for shipbuilding, to create the state orders training of highly qualified designers, to create industrial parks based on large shipbuilding enterprises.

In Ukraine under present conditions of management statistical data indicate low social protection of workers in the industry, despite the fact that legislation directly or indirectly reglementary certain provisions of the social policy. For example, for employees who work in adverse conditions provide benefits in the form of additional holidays, increased rates of compensation, reduction of working time and more. However, due to the effects of a number of negative factors, there are involuntary part-time employment of employees in the industrial sector, arrears in the payment of wages, low level of safety and so on.

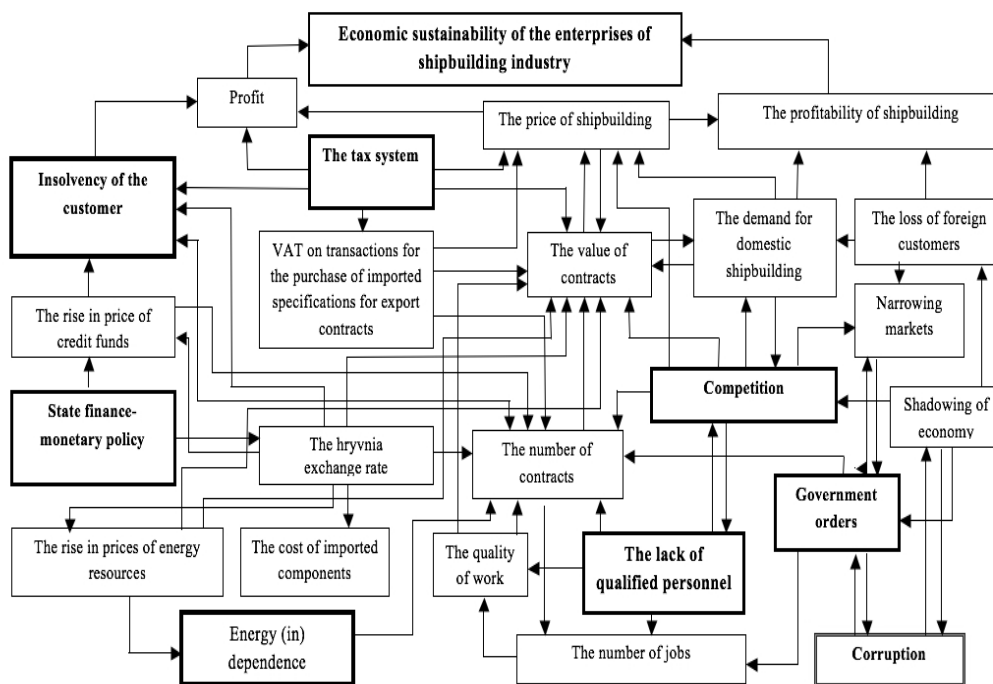
The factor of direct action, and equally important in modern conditions of managing, the experts have noted the energy (in) dependence of the enterprises of the shipbuilding industry. The manifestation of such factor is the shortage and significant price increase of energy resources. This factor affects the increase of costs, a reduction in the quality of works and services of shipbuilding and ship repair, lost customers, and as a consequence, the loss of income. Under these conditions, there is an urgent need for introduction of newest world technologies for resources and energy saving.

In relation to such factor of influence the economic sustainability of economic entities as corruption, the most revealing are studies of the Bleyzer foundation, which in their periodic studies monitors the state of the investment climate in Ukraine. During the study of the investment climate for 2016, 79% of surveyed companies believe that corruption is the following (after judicial-legal environment) the most significant factor of serious obstacles to doing business in Ukraine. In the section "Corruption" 98% of respondents pointed to corruption in the judicial system of Ukraine; 90% of the respondents found the great concern in administrative corruption on level of government officials, which require additional payments and bribes; 68% of surveyed companies said that corruption in private business with a raider attack on the enterprise is a significant factor in the serious problems in doing business in Ukraine.

Of course, if all of the above factors to consider as part of the macro environment, then, of course, between them it is possible to trace the relationship, interdependence and influence on each other. Thus, the change in one factor causes change in another. In addition, the degree of influence will depend on the size of the enterprise, its geographic location. In general, the dependence of economic sustainability of enterprises of the shipbuilding and ship-repairing industry from external factors can be represented in the following diagram (Figure 2), the main factors of economic sustainability in bold).



Figure 2  
The map of interrelations of external factors of economic sustainability of enterprises of the shipbuilding industry



Source: developed by the authors.

Thus, the external factors are potential carriers of threats. For the purpose of timely elimination of negative trends is necessary at the national or sector level to monitor environmental factors. Under these conditions, the company will have the ability to react, to adapt, to revive their desired state and make correct decisions.

The internal environment for industrial enterprises can also be a source of problems. The calculation results in the original ranked lines, as in the case of external factors, were observed associated grades.

On the basis of calculations has defined the coefficient of concordance, which is statistically significant (of 0.8235); the expert opinions agreed among themselves.

The results of calculations allowed evaluating the importance level of each factor that affects to the level of economic sustainability of enterprises of the shipbuilding and ship-repairing industry (Table 2).

As the most important factors the experts have been identified the following: technical condition of production assets (17.8%), utilization of production assets and efficiency of use (17.68%), the efficiency of contracts (12.92%), duration of operating cycle (11%), the profitability of the process of ship-repair and assemble-welding production (10.2%).

Table 2

The results of the evaluation of the degree of influence of factors of the internal environment on the economic sustainability of the shipbuilding industry

The factors	Weight of factor (%)
The technical condition of fixed production assets	17.8
The utilization of production assets and efficiency of use	17.68
The efficiency of the contracts	12.92
The duration of the operating cycle	11.0
The profitability of production processes	10.2
The number of received adequate orders	8.9
The number of regular and new customers	6.9
The level of skills and efficiency of their use	5.9
The rhythms orders	4.8
The waiting period orders	3.9

Source: calculated by the authors.

So, for the normal operation of enterprises and market competitiveness of the shipbuilding and ship-repair services there must have the modern production equipment, which has high resource usage and not morally outdated and physically worn-out. For the industry, this is a very important problem, because of the difficult financial situation of the company is not able to restore, upgrade existing park equipment.

At the same time, the technical condition of the production capacity is affected by the level of deterioration, age, structure, recovery rates, the level of introduction of new technologies and automation of the production process. So, the level of deterioration of the production facilities of shipbuilding and ship repair industry exceeds 70%, and the rate of renewal does not exceed 10%. It is important to note that the production facilities of shipbuilding enterprises take a significant share in assets (as shown the analysis of the industry – up to 71%), which require the cost of their maintenance and service (even when the enterprise is idle), therefore the level of economic stability will depend on the degree of coverage of fixed assets with the value of the contracts.

The utilization of production assets and the effectiveness of their use directly affects onto the economic sustainability of the enterprises of shipbuilding, the degree of coverage of fixed assets with the value of the contracts. Unfortunately, in the current economic conditions, enterprises of industry load their main production resources less than 50%, their "portfolio of orders" is also small. On this basis, it can be argued that the enterprises of the shipbuilding industry cannot cover the costs to maintenance and service of fixed assets by the value of the contracts. As a result, receive a loss, losing income and economic sustainability.

In modern conditions of managing, the efficiency of contracts of shipbuilding enterprises is quite low. In conditions of high competition with foreign enterprises, often for the sake of "survival" the enterprises fulfill any orders, not even quite profitable. Consequently, the company loses profit and economic sustainability.

A feature of the enterprises of the shipbuilding industry is in the uniqueness of the production and duration of production and operating cycle. The operating cycle for shipyards is the period of time between the purchase of inventories for the implementation of the activities in obtaining the contract and receipt of money from its implementation. The production cycle for enterprises of shipbuilding will be equal to the duration of turnover of inventories of the enterprise that according to the calculations in the industry ranges from 15 to 1738 days. The results of the industry analysis revealed that the operating cycle for the shipbuilding industry ranges from 56 to 1738 days. It is clear that for enterprises making repair work the duration of the operating cycle is less (from 56 to 406 days). The duration of the operating cycle is affected by the period of encashment of receivables and inventory turnover. Slow turnover of inventories and increasing the period of encashment of receivables lead to increasing of the period of the operating cycle and as a consequence the deterioration of economic sustainability.

For enterprises of the shipbuilding industry, it is inherent complexity of the technological and production processes. Typically, the production structure of the shipyard consists of the basic production and auxiliary shops and engineering services for the construction of modern ships. The structure of the ship repair production consists of mechanical, hull, electrical, wood-painting workshops, blanking and auxiliary production.

It is important to note that most of the profitability (loss-making) processes of production are different. It will depend on the cooperation of the shipbuilding industry and other industries that provide it, for example, iron and steel industry. Therefore, in modern conditions of managing of the enterprises of the domestic metallurgy that provide shipbuilding steel are mainly concentrated in the Donetsk and Lugansk regions. On this territory, the hostilities are taking place, and that is why shipbuilding companies are forced to wait or purchase steel in other countries at inflated prices, leading to loss of production processes. Getting a loss or lower profitability leads to the deterioration of the economic sustainability of the shipbuilding industry.

The number of received adequate and permanent orders, new customers is interrelated and has almost the same impact on economic sustainability. Adequate orders must be for the enterprise highly profitable and provide jobs for the long term. The stability of production depends on the number of loyal customers; however, preferably the number of new orders will ensure the workload of the production fixed assets of the company. Also, the quality of the management and marketing policy of the enterprise depends on the amount of received adequate orders, and regular and new customers. In the presence of these characteristics increases the enterprise income, profits, and, consequently, the level of economic sustainability.

An important role in ensuring the economic sustainability of the shipbuilding industry plays a skill level of workers and the efficiency of their use. Workers in shipyards must have a high enough qualification required by the conditions of production. The preparation of such



To identify factors that have a decisive influence on economic sustainability, used the Pareto's principle, the basic postulate of which treats: 20% of efforts give 80% of the result, and the remaining 80% of effort only add 20% of the result. In this framework, the application of the Pareto's Law has developed principles of interaction of factors and desired results. Factors of the internal and external environment are compiled in a common matrix: their complex effects are identified, respectively, 100% and carried out by ranking according to the criterion of a share of influence on economic sustainability. The matrix of the combined factors is presented in Table 3.

Table 3

The ranking of factors by the percentage impact on the economic sustainability of the shipbuilding industry

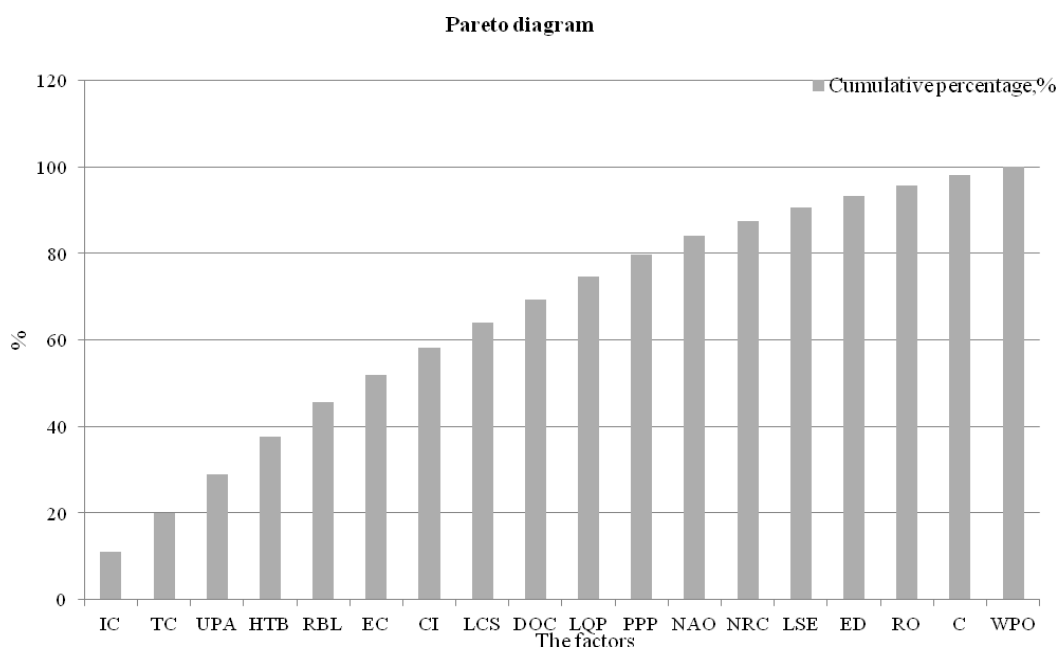
Factors	Abbrev	Group	Share of factor groups (external/internal)	Ranking percentage	Cumulative percentage
The insolvency of counterparties	IC	E	22.20	11.10	11.10
Technical condition of fixed production assets	TC	I	17.80	8.90	20.00
The utilization of production assets and efficiency of use	UPA	I	17.68	8.84	28.84
The high level of tax burden, the inefficiency of stimulating functions of the tax system	HTB	E	17.60	8.80	37.64
The reduction of bank lending to industry, the high cost of loans, an overvalued exchange rate	RBL	E	15.80	7.90	45.54
The effectiveness of the contracts	EC	I	12.92	6.46	52.00
The crisis in the industry	CI	E	12.40	6.20	58.20
The loss of a customer from the state	LCS	E	11.40	5.70	63.90
The duration of the operating cycle	DOC	I	11.00	5.50	69.40
The lack of qualified personnel	LQP	E	10.50	5.25	74.65
The profitability of production processes	PPP	I	10.20	5.00	79.65
The number of received adequate orders	NAO	I	8.90	4.45	84.10
The number of regular and new customers	NRC	I	6.90	3.45	87.55
The level of skills and efficiency of their use	LSE	I	5.90	2.95	90.50
Energy (in) dependence	ED	E	5.70	2.85	93.35
The rhythms orders	RO	I	4.80	2.40	95.75
Corruption	C	E	4.60	2.30	98.05
The waiting period orders	WPO	I	3.90	1.95	100.00

E – external factor; I – internal factor.

Source: calculated by the authors.

All of the factors in the sum are 100% influence. The distribution shows that two powerful factors (insolvency of contractors and the technical condition of production facilities) in the sum influence on 20% that means – 20% of these factors shape 80% impact on economic sustainability, and the remaining 80% only add 20% of the result. Cumulative distribution of the factors of external and internal environment, which influence on the economic sustainability of the enterprises of the shipbuilding industry, by the Pareto’s principle is presented in figure 4 (the abbreviation for the factors, look table 3).

Figure 4  
Cumulative distribution of the factors of external and internal environment, which influence on the economic sustainability of the enterprises of the shipbuilding industry, by the Pareto principle



As can be seen, the most significant impact on the economic sustainability of the enterprises of the shipbuilding and repair industry will have the following: insolvency of contractors, technical condition of fixed assets, utilization of production assets and efficiency of their use. It should also be noted that the combined effect of all factors leads to a synergistic effect, i.e. improving the effectiveness of the joint action of factors in comparison with those, which operate separately. Therefore, the combined effect of the most important factors has a significant impact on the economic sustainability of industrial enterprises.

## Research Conclusions and Outlook

Thus, the economic sustainability of enterprises of shipbuilding and ship repair industry is affected by many external and internal factors.

The identification of the factors and measure their impact on economic sustainability is a necessary component of it. Based on studies the external factors proposed to divide on the factors of direct and indirect impacts, and factors of the internal environment to classify on the factors shaping the economic sustainability, and the factors that affect it. This classification of factors will allow in the current economic conditions focus clearly, in a timely manner to determine the degree of risk and to adapt to the effects of the external and internal environment. Using this classification, it is possible to develop a set of indicators of assessing the economic sustainability of the enterprise in both the long and short term.

Using the method of expert estimations, the influence of exogenous and endogenous factors on the economic sustainability of the shipbuilding industry has been determined. So, the most significant external factors have been revealed the following: insolvency of counterparties (22.2%), high tax burden, the inefficiency of stimulating functions of the tax system (17.6%) and the reduction of bank lending to industry, the high cost of loans, an overvalued exchange rate (15.8%). The most significant internal factors have been identified: technical condition of fixed production assets (17.8%), utilization of production assets and efficiency of their use (17.7%), the efficiency of contracts (12.9%), duration of operating cycle (11%), the profitability of production processes (10.2%). Based on the Pareto's principle the most influential factors of the external and internal environment have been identified and assessed their impact. It was revealed that 80% impact on the economic sustainability of the enterprises supported by two powerful factors - the insolvency of contractors and the technical condition of production facilities, which total 20%, and the remaining 80% factors are added, only 20% of the influence.

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