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ANALYSIS OF INDICATORS OF FINANCIAL STABILITY OF THE ENTERPRISE

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Abstract: *In this article, the author describes factors closely related to the types of manufactured products (services rendered) and production technology that affect the financial condition of the company. It describes how the quality of manufactured products affects the financial condition of the enterprise. Factors affecting the amount of net profit are selected. Correlation-regression analysis allows us to assess the impact of each factor on the results of the enterprise's activities.*

Keywords: *financial sustainability, correlation-regression analysis, pair correlation matrix, regression equation.*

Аннотация: *В данной статье автором описываются факторы тесно связанные с видами производимой продукции (оказываемых услуг) и технологией производства, которые влияют на финансовое состояние компании. Описано, как качество выпускаемой продукции сказывается на финансовом состоянии предприятия. Отобраны факторы, влияющие на величину чистой прибыли. Корреляционно-регрессионный анализ позволяет оценить влияние каждого фактора на результат деятельности предприятия.*

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Ключевые слова: *финансовая устойчивость, корреляционно-регрессионный анализ, матрица парных коэффициентов корреляции, уравнение регрессии.*

At present, the guarantee of the survival of the enterprise and the basis of its stable position in the market is its financial stability. In order to increase financial stability, the enterprise must promptly identify and use reserves for increase. Reserves for increasing financial stability include, first of all, reserves that determine the increase in the efficiency of the enterprise's production activities.

The stability and competitiveness of any enterprise, regardless of its size, depends primarily on the quality of its products and the commensurability of their price with the offered quality. If the products are of high quality, then their purchasing power will increase, which will have a positive effect on the financial condition of the organization [3,257]. Low product quality may be the reason for the buyer's refusal to purchase the goods, a decrease in the financial stability of the enterprise and, as a result, bankruptcy of the enterprise.

The purpose of the work is to identify the factors that affect the financial stability of the enterprise. Using correlation and regression analysis, assess the influence of each factor on the result of the enterprise's activities.

Economic factors of quality are manifested, firstly, through the manufacturer's profit from the sale of a high-quality product, and secondly, through the manufacturer's costs to ensure the quality expected by the consumer. These costs, in addition to the costs of designing and manufacturing products, include the costs of servicing the consumer when delivering quality products and maintaining this quality during the warranty period [1, 69]. The difference between the selling price of each product sold and its cost is equal to the income () from the sale of one product, i.e.

The efficiency of improving product quality is closely related to the economy of living and embodied labor spent on obtaining high-quality products.

Due to the limited resources (material, energy, labor, natural) available to society at a given time, efficiency acts as a criterion for implementing measures to improve product quality. The criterion is as follows:

where - reduced costs, rubles,; - current costs, cost price, rubles; - standard efficiency coefficient (a dimensionless value established by directive planning bodies); - one-time capital costs, rubles.

The assessment of the quality of the product is based on the change in the intensity of the utility function , adopted as the criterion of economic efficiency, with the selling price and cost price of products for the planned time of their release.

If the design of the product does not change, and only the technological process of manufacture is improved, then , where is the price of a unit of the old product at the time of calculation.

An increase in economic efficiency can be achieved by reducing the values of the cost price of products for the planned time of their release .

As can be seen from Figure 1, that part of the ordinates, which is enclosed between the cost curve C and the price curve of the product and is limited by points Q1 and Q2, reflects the profitability of production and is the basis for improving the quality of products in production. Point Q0 determines the profit corresponding to the optimal quality. Another important factor of the financial stability of the enterprise, closely related to the types of manufactured products (services rendered) and production technology, is the optimal composition and structure of assets, as well as the correct choice of the strategy for managing them. The sustainability of the enterprise and the potential efficiency of the business largely depend on the quality of management of current assets, on how much and what kind of working capital is involved, what is the amount of stocks and assets in monetary form, etc. It should be remembered that if the enterprise reduces stocks and liquid assets, it can put more capital into circulation and, consequently, receive more profit. But at the same time, the risk of insolvency of the enterprise and the stoppage of production due to insufficient stocks increases. The art of

managing current assets consists of keeping only the minimum amount of liquid assets needed for current operational activities in the company's accounts.

Analysis of the company's financial condition shows the areas in which work should be carried out, makes it possible to identify the most important aspects and the weakest positions in the company's financial condition.

Mathematical and statistical studies are a tool for obtaining deep knowledge about the mechanism of the phenomena being studied. Objectively existing dependencies and relationships between economic phenomena are mostly described only verbally. It is much more important to quantitatively measure the closeness of cause-and-effect relationships and identify the form of influence. Correlation and regression analyses are widely used to study the intensity, type and form of causal influences. When applied to financial and economic processes, they can become the tool that will reveal complex sets of causes and effects.

Identification of quantitative relationships in the form of regression makes it possible to better understand the nature of the phenomenon being studied. And this, in turn, allows you to influence the identified factors in order to obtain the desired results [2,4].

Let us conduct a multiple correlation-regression analysis of the financial stability of the enterprise OJSC "IZTM". Net profit was adopted as the result indicator. The following factors influencing the value of profit were used: revenue from the sale of goods; cost price of products; profit from sales; fixed assets; finished goods and goods; stocks of raw materials and materials. In this regard, the annual reports of the enterprise for 5 years from 2022-2024 were processed and a matrix of initial data for information analysis was formed (Table 1).

Table 1.

Information for conducting correlation-regression analysis of financial stability of the enterprise OJSC "IZTM"

net profit	proceeds from sale of goods	cost of sales	finished products	raw materials and supplies	profit from sales	Cost of production

1880	212748	1692	10525	61574	5924	165255
1131	543735	12215	77739	69626	36504	474033
693	645133	14696	63111	192550	32132	561265
1228	602101	84428	51972	230944	29360	525629
32425	1003255	69168	141521	192512	155369	795363

In order to maximize the profit of the enterprise, it is necessary to determine the relationship between the factors affecting the profit of the enterprise and net profit. For this purpose, paired correlation coefficients were established between all parameters (Table 2).

Table 2

Matrix of paired correlation coefficients

	net profit	proceeds from sale of goods	cost of sales	profit from sales	fixed assets	finished products	raw materials and supplies
net profit	1						
proceeds from sale of goods	0,779544	1					
cost of sales	0,699183	0,992807	1				
profit from sales	0,973921	0,892813	0,833907	1			
fixed assets	0,482904	0,640933	0,641965	0,53029	1		
finished products	0,837496	0,951244	0,927625	0,937923	0,489689	1	
raw materials and supplies	0,036176	-0,24324	-0,28967	-0,12674	0,217346	-0,41719	1

The multiple regression equation is as follows:

- net profit;

- revenue from sales of goods;
- fixed assets;
- stocks of raw materials and supplies;

The interpretation of the regression equation will be as follows. Over the period under consideration (5 years), at OJSC IZTM, with an increase in sales revenue by one unit from its average level, net profit will increase by an average of 0.074793 units; with an increase in fixed assets, net profit will increase by an average of 0.090768 units, and with a decrease in stocks of raw materials and supplies by one unit from its average level, the resulting indicator will increase by an average of 0.06709 units.

To characterize the quality of the regression equation, the multiple correlation coefficient is calculated. The multiple correlation coefficient is within . If R=0, then there is no functional dependence between the quantities y, x1, x2, x3. If R=1, then the relationship between the quantities is linear. The multiple correlation coefficient R = 0.99 shows a very strong connection between revenue from the sale of goods, fixed assets of the enterprise and stocks of raw materials and supplies with net profit. Usually, it is not the correlation coefficient R itself that is interpreted, but its square R2, which is called the multiple coefficient of determination. The multiple coefficient of determination shows what share of the variation of the variable under study is explained by the variation of the other variables. In our case, R2 = 0.994, which means that the variation in net profit is 99% explained by the variation in revenue from the sale of goods, fixed assets of the enterprise and stocks of raw materials and supplies. The found values of the elasticity coefficients show that an increase in revenue from the sale of goods by 1% will lead to an increase in net profit by an average of 6.02%. An increase in fixed assets by 1% will lead to an increase in net profit by an average of 0.44%. A decrease in stocks of raw materials and supplies by 1% will lead to an increase in net profit by an average of 1.34%. Thus, the net profit of the enterprise is more influenced by the factor revenue from the sale of goods compared to the factors fixed assets of production and stocks of raw materials and materials. Management

should pay attention to these factor indicators, since their management can indicate a significant impact on the amount of net profit.

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