

UDC 005.311:005.52

DOI <https://doi.org/10.26661/2414-0287-2021-3-51-18>

EVALUATION OF INVESTMENT PROJECTS IN THE MANAGEMENT OF AN INDUSTRIAL ENTERPRISE IN THE CONDITIONS OF THE MODERN ECONOMY

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Key words:

enterprise management, investment project, return on investment

The paper proposes a method of evaluating an investment project in the process of enterprise management in modern conditions, taking into account the risk, which includes six stages: analysis of inventories and costs; calculation and analysis of the structure of profits and losses of industrial enterprises; calculation and analysis of the structure of losses on a complex economic object; calculation and analysis of indicators of profit from sales; calculation of the feasibility of the investment project; choice of investment project or investor. The paper uses estimates of the characteristics of the efficiency of use of financial resources, uses an estimate of the return on investment of all funds of the enterprise.

ОЦІНЮВАННЯ ІНВЕСТИЦІЙНИХ ПРОЕКТІВ В УПРАВЛІННІ ПРОМИСЛОВОГО ПІДПРИЄМСТВА УМОВ СУЧАСНОЇ ЕКОНОМІКИ

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69063, м. Запоріжжя, просп. Соборний, 74

Ключові слова:

управління підприємством, інвестиційний проект, рентабельність вкладених коштів

У статті запропоновано метод оцінки інвестиційного проекту в процесі управління підприємством у сучасних умовах з урахуванням ризику, що включає шість етапів: аналіз стану запасів та витрат; розрахунок та аналіз структури прибутків та збитків промислового підприємства; розрахунок та аналіз структури збитків на складному економічному об'єкті; розрахунок та аналіз показників прибутку від реалізації; розрахунок доцільності реалізації інвестиційного проекту; вибір інвестиційного проекту чи інвестора. У статті застосовано оцінки характеристики ефективності використання фінансових ресурсів використовується оцінка рентабельності вкладень всіх коштів підприємства.

Statement of the problem

The evaluation of an investment project in the context of coronavirus (Covid-19) and the process of inflation in the management of an industrial enterprise is an urgent task, which necessitates the development of a method that takes into account all components of the modern economy.

introduction of new technologies and new equipment leads, taking into account investments and leads to the emergence of new products with new characteristics, contributes to the constant study of the issues of evaluating investment projects and their application in enterprise management makes this task relevant.

Analysis of other researches and publications

Scientific research of domestic and foreign scientists Grebenyuk N.A. [1], Butinko V.V. [4], Butov A.M. [6], Blank I.A. [8], Kharlamova G.O. [9], Bryukhovetskaya N. Yu. [10], Onishchenko S.V. and Klimova G.V.[11], Sytnik L.S.[12], Kayumova V.V. [13], Yastremskaya O.M. [14], Skrinkovsky R.M. [15] confirmed the relevance of this article. A significant contribution to their research in solving the issues of evaluating investment projects was reflected in the works of Bril K.G.[2], Katan L.I.[3], Epifanov A.O.[5], Boyarko I.M.[7] According to such a study of an urgent problem, it is significant for the economy not only of enterprises, but also of states. The

Objectives of the article

The aim of the article is to build a method of evaluating an investment project in the process of enterprise management in modern conditions, taking into account the risk. Also apply the assessment of the characteristics of the efficiency of use of financial resources, which uses the assessment of the return on investment of all funds of the enterprise.

The main material of the research

The proposed assessment of an investment project in the process of managing an enterprise, taking into account the degree of risk, includes six stages:

- analysis of the state of stocks and costs;

- calculation and analysis of the structure of profits and losses of an industrial enterprise;
- calculation and analysis of the structure of losses on a complex economic object;
- calculation and analysis of indicators of profit from sales;
- calculation of the expediency of the implementation of the investment project;
- choice of investment project or investor.

Inventory and cost analysis

Stocks and costs are working capital of an industrial enterprise, directly involved or participated in the production process. Obviously, for a normal production process, subject to a successful marketing policy of an industrial enterprise, such a structure of its current assets is necessary, in which certain proportions would be maintained for a long period of time.

At the same time, it must be taken into account that a change in the volume of reserves can be the result of both an improvement and a deterioration in the position of an industrial enterprise, that is, it is necessary to adhere to such a structure that would ensure maximum profit with a sufficient level of liquidity. The main data for the analysis of the state of stocks are given in Table 1.

From Table 1 it can be concluded that stocks and costs account for 15.5% of the volume of all assets. The state of stocks is characterized by a high share of work in progress (39.51%) and inventories –53.72%. If we take into account the fact that in the past period their share was 33.44% and 46.05%, it can be assumed that the company slightly increased its stocks. Under these conditions, the increase

in the share of WIP to 6.1%, in view of the foregoing, rather indicates the rhythm of production and an increase in its volumes.

A good indicator can be considered a decrease in stocks of finished products in warehouses by UAH 17,594.3 thousand, because. this is due to the successful marketing of products, that is, it is not stale.

Attention is drawn to the presence of losses in the reporting year.

The volume of products sold in 2003 amounted to UAH 561,498 thousand, of which UAH 128,476.6 thousand were offset, which is 22.5% from sold products.

For 2021, the enterprise has losses in the amount of UAH 39,849 thousand, which are reflected in Table 2.

Losses from non-operating transactions resulted from changes in the exchange rate of foreign currencies against the hryvnia. The structure of losses at the enterprise is given in table 3.

Profit from sales operations was received from discounts on bill settlements for consumed electricity.

This trend indicates the expansion of the production and commercial activities of an industrial enterprise, as it is associated with an increase in the volume of production and sales of products. This strengthens economic independence and financial stability, which increases the reliability of the industrial enterprise as a partner. At the analyzed complex economic object, there was an increase in the volume of production and sales of products. Consequently, the identified trend of losses is due to inflationary processes, which increases the risk of financial and economic activities of an industrial enterprise.

Table 1 – Structure and composition of the current assets of an industrial enterprise

The material working capital	The actual balances at the beginning of the year		The actual balances at the end of the year		Deviations from last year (+, -)	
	thousand UAH	% to the end	thousand UAH	% to the end	The absolute values (thousand UAH)	By structure (%)
The productive reserves	54063,71	46,058	56723,03	53,728	2659,32	7,669
The Low-value consumables (LVC) at residual value	2420,28	2,061	2880,93	2,728	460,65	0,666
The unfinished production	39259,83	33,446	41713,31	39,511	2453,48	6,064
The deferred costs	584,32	0,497	769,41	0,728	185,09	0,230
The finished products	20220,46	17,226	2626,12	2,487	-17594,3	-14,738
The products	831,66	0,708	859,05	0,813	27,39	0,1051
Total	117380,3	19,1	105573,5	15,5	-11806,8	x
The total balance:	613955,2	100	681667,4	100	67712,23	x

Table 2 – Structure of profits and losses of the enterprise

The profit from the sale of marketable products	thousand UAH	61973 (The profit)
The profit from other sales	–	1633 (The profit)
The profit from non-operating operations	–	103455 (The losses)

Table 3 – The structure of profit at the enterprise

The loss structure	thousand UAH
according to calculations for finished products	11067,5
prepaid for finished products	1723,1
for the sale of currency	10641
according to the calculations for raw materials and materials	8235,3

Thus, the impact of inflation on the activity of an industrial enterprise has been revealed to a large extent. Therefore, the task of determining the degree of influence of inflation on the activity of an industrial enterprise is urgent and relevant in the current situation on a complex economic object.

Criteria – coefficients for evaluating the profitability of investments, like most of the criteria of different groups discussed below, as a rule, are chosen by firms based on their own experience in evaluating the commercial activities of an entrepreneurship and can be used both to assess the financial condition of an industrial enterprise and to assess the investment attractiveness of projects.

It is proposed to use 17 coefficients of the following four groups:

- liquidity of current assets;
- attraction of borrowed funds;
- turnover – coefficient of business activity;
- profitability.

In the main provisions of the methodology for the commercial evaluation of investment projects, three groups of «financial evaluation coefficients» are used:

- profitability indicators;
- assessment of the use of investments;
- assessment of the financial situation.

The numerical values of all considered groups of criteria are determined on the basis of the consolidated analytical balance sheet, income statement and cash flow statement of the operating facility or its blocks put into operation, if the project provides for the commissioning of the facility in parts, for each step of the calculation period.

The results of the functioning of an industrial enterprise are evaluated not only by absolute, but also by relative indicators. A relative indicator is the system of profitability indicators.

Profitability indicators characterize the relative profitability or profitability, measured as a percentage.

The influence of the main factors on the value of the profitability of production assets and functional assets is assessed for the change in profitability and is affected by:

- change in the level of capital productivity,
- change in the level of turnover of material circulating assets,
- change in the profitability of sold products.

To characterize the efficiency of the use of financial resources, the return on investment of all funds is used. In this case, three coefficients are calculated.

$$Kp1 = \frac{\text{The profit from sales}}{\text{The average annual balance sheet total}}, \quad (1)$$

$$Kp1 = 74666 / 681667,4 = 0,109.$$

The most complete picture of the profitability of investments in the production activities of an industrial

enterprise is given by the ratio of profit to operating assets. Especially when the numerator takes profit from the sale of products.

The profitability of own funds allows you to determine the effectiveness of the use of investment by the owners of the funds of an industrial enterprise and compare it with the possible income from investments in securities:

$$Kp1 = \frac{\text{The profit from sales}}{\text{The average annual equity}}, \quad (2)$$

$$Kp2 = 74666 / 141022,81 = 0,53;$$

$$Kp3 = \frac{\text{The sales profit}}{\text{The average annual final balance}}, \quad (3)$$

$$Kp3 = 74666 / (681667,4 - 10638 - 6640,83) = 0,112.$$

The three most important criteria for this group are:

- return on capital;
- gross margin (profit ratio);
- profitability.

The listed criteria must be determined when studying the investment attractiveness of projects at any stage of work: both in the preparation of preliminary materials and in the preparation of a business plan based on the results of project study.

Profitability (profitability) of capital: the criterion is defined as the ratio of net profit to the amount of assets. Since a complex economic object suffered a loss in the reporting year, this indicates that the assets of an industrial enterprise are used without benefit and efficiency for an industrial enterprise.

The Vmr criterion is calculated as the ratio of the sales cost minus the cost and VAT to the sales cost:

$$Vmr = (712556 - 36053 - 594955) / 712556 = 11,5\%. \quad (4)$$

This criterion shows the limit of the «total profit», i. e. the share of gross profit attributable to the monetary unit of sold products. It allows you to determine the amount of income that remains after deducting the cost and VAT to cover other expenses: interest on a loan, operating expenses, paying taxes and generating net profit.

Return on sales (Ren) is defined as the ratio of net profit to the amount of sales (sales value):

$$Ren = 74666 / 712556 * 100\% = 10,5\%. \quad (5)$$

Expressed as a percentage. The criterion shows the amount of net income received by a complex economic object per monetary unit of sold products (Table 4).

Factor analysis of profit from sales according to these factors is carried out according to the following formulas:

– the impact of changes in the volume of sales of products on the amount of profit:

$$\Delta P1 = P0 * \left(\frac{F1}{F0} - 1 \right), \quad (6)$$

Table 4 – The Analysis of profit from sales indicators for 2021

The indicator, thousand UAH	The symbol	The last year, thousand UAH	The symbol	The present year, thousand UAH
Sales of products at wholesale prices	Q0	700837	Q1	712556
The Full cost of production	FO	627689	F1	594955
The Implementation result	PO	70773	P1	74666
The product sales profitability	Rp0	6,29	Rp1	7,97

– the impact of shifts in the structure on the range of products sold:

$$\Delta P2 = P0 * \left(\frac{Q1}{Q0} - \frac{F1}{F0} \right), \quad (7)$$

– the impact of changes in the cost of production due to structural changes:

$$\Delta P2 = F0 * \left(\frac{Q1}{Q0} \right) - F1, \quad (8)$$

$$\Delta P3 = 627689 * (712556/700837) - 594955 = 39010,89$$

(thousand UAH).

Conclusions

The paper proposes a methodology for evaluating investment projects in enterprise management. This method made it possible to determine the increase in profit from the sale of products, which amounted to about UAH 144,114 thousand, which was caused by a change in the sales volume (UAH 11,719 thousand) and the cost of production (UAH 32,734.6 thousand). The results obtained indicate that all factors influence the process of managing an industrial enterprise and make it possible to increase the volume of its production.

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